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Junos<sup>®</sup> OS

## Routing Matrix with a TX Matrix Plus Router Deployment Guide



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# About the Documentation

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## Documentation and Release Notes

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To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at <https://www.juniper.net/documentation/>.

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

Juniper Networks Books publishes books by Juniper Networks engineers and subject matter experts. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration. The current list can be viewed at <https://www.juniper.net/books>.

## Using the Examples in This Manual

---

If you want to use the examples in this manual, you can use the **load merge** or the **load merge relative** command. These commands cause the software to merge the incoming configuration into the current candidate configuration. The example does not become active until you commit the candidate configuration.

If the example configuration contains the top level of the hierarchy (or multiple hierarchies), the example is a *full example*. In this case, use the **load merge** command.

If the example configuration does not start at the top level of the hierarchy, the example is a *snippet*. In this case, use the **load merge relative** command. These procedures are described in the following sections.

## Merging a Full Example

To merge a full example, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration example into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following configuration to a file and name the file **ex-script.conf**. Copy the **ex-script.conf** file to the **/var/tmp** directory on your routing platform.

```
system {
  scripts {
    commit {
      file ex-script.xml;
    }
  }
}
interfaces {
  fxp0 {
    disable;
    unit 0 {
      family inet {
        address 10.0.0.1/24;
      }
    }
  }
}
```

2. Merge the contents of the file into your routing platform configuration by issuing the **load merge** configuration mode command:

```
[edit]
user@host# load merge /var/tmp/ex-script.conf
load complete
```

## Merging a Snippet

To merge a snippet, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration snippet into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following snippet to a file and name the file **ex-script-snippet.conf**. Copy the **ex-script-snippet.conf** file to the **/var/tmp** directory on your routing platform.

```
commit {
  file ex-script-snippet.xml; }
```

2. Move to the hierarchy level that is relevant for this snippet by issuing the following configuration mode command:

```
[edit]
```

```
user@host# edit system scripts
[edit system scripts]
```

3. Merge the contents of the file into your routing platform configuration by issuing the **load merge relative** configuration mode command:







```
[edit system scripts]
user@host# load merge relative /var/tmp/ex-script-snippet.conf
load complete
```

For more information about the **load** command, see [CLI Explorer](#).

## Documentation Conventions

[Table 1 on page xix](#) defines notice icons used in this guide.

*Table 1: Notice Icons*

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

[Table 2 on page xix](#) defines the text and syntax conventions used in this guide.

*Table 2: Text and Syntax Conventions*

Convention	Description	Examples
<b>Bold text like this</b>	Represents text that you type.	To enter configuration mode, type the <b>configure</b> command:  user@host> <b>configure</b>

Table 2: Text and Syntax Conventions (continued)

Convention	Description	Examples
Fixed-width text like this	Represents output that appears on the terminal screen.	<code>user@host&gt; show chassis alarms</code> <code>No alarms currently active</code>
<i>Italic text like this</i>	<ul style="list-style-type: none"> <li>Introduces or emphasizes important new terms.</li> <li>Identifies guide names.</li> <li>Identifies RFC and Internet draft titles.</li> </ul>	<ul style="list-style-type: none"> <li>A policy <i>term</i> is a named structure that defines match conditions and actions.</li> <li><i>Junos OS CLI User Guide</i></li> <li>RFC 1997, <i>BGP Communities Attribute</i></li> </ul>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name:  [edit] root@# <b>set system domain-name</b> <i>domain-name</i>
Text like this	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> <li>To configure a stub area, include the <b>stub</b> statement at the [edit protocols ospf area area-id] hierarchy level.</li> <li>The console port is labeled <b>CONSOLE</b>.</li> </ul>
< > (angle brackets)	Encloses optional keywords or variables.	<code>stub &lt;default-metric metric&gt;;</code>
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	<code>broadcast   multicast</code>  <code>(string1   string2   string3)</code>
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	<code>rsvp { # Required for dynamic MPLS only</code>
[ ] (square brackets)	Encloses a variable for which you can substitute one or more values.	<code>community name members [ community-ids ]</code>
Indentation and braces ( { } )	Identifies a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop address; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
<b>GUI Conventions</b>		
<b>Bold text like this</b>	Represents graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> <li>In the Logical Interfaces box, select <b>All Interfaces</b>.</li> <li>To cancel the configuration, click <b>Cancel</b>.</li> </ul>



Table 2: Text and Syntax Conventions (continued)

Convention	Description	Examples
> (bold right angle bracket)	Separates levels in a hierarchy of menu selections.	In the configuration editor hierarchy, select <b>Protocols&gt;Ospf</b> .

## Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback rating system—On any page of the Juniper Networks TechLibrary site at <https://www.juniper.net/documentation/index.html>, simply click the stars to rate the content, and use the pop-up form to provide us with information about your experience. Alternately, you can use the online feedback form at <https://www.juniper.net/documentation/feedback/>.
- E-mail—Send your comments to [techpubs-comments@juniper.net](mailto:techpubs-comments@juniper.net). Include the document or topic name, URL or page number, and software version (if applicable).

## Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or Partner Support Service support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <https://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <https://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

## Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <https://www.juniper.net/customers/support/>
- Search for known bugs: <https://prsearch.juniper.net/>
- Find product documentation: <https://www.juniper.net/documentation/>
- Find solutions and answer questions using our Knowledge Base: <https://kb.juniper.net/>

- Download the latest versions of software and review release notes:  
<https://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications:  
<https://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum:  
<https://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <https://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://entitlementsearch.juniper.net/entitlementsearch/>

## Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <https://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <https://www.juniper.net/support/requesting-support.html>.

## PART 1

# Overview

- [Understanding How a Routing Matrix with a TX Matrix Plus Router Works on page 3](#)
- [Supported Routing Matrix Configurations with a TX Matrix Plus Router on page 11](#)
- [System Requirements on page 29](#)



## CHAPTER 1

# Understanding How a Routing Matrix with a TX Matrix Plus Router Works

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Routing Matrix Terms and Acronyms on page 4](#)
- [Managing the Routing Matrix as a Single Router on page 5](#)
- [Merging Examples on page 6](#)
- [Routing Engine Connectivity in a Routing Matrix with a TX Matrix Plus Router on page 8](#)
- [Redundant Host Subsystems in a Routing Matrix with a TX Matrix Plus Router on page 9](#)

### Overview of a Routing Matrix with a TX Matrix Plus Router

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The TX Matrix Plus router is the centralized switch fabric of the routing matrix, which is a multiterabit routing system for interconnecting routers.

The routing matrix multichassis architecture provides scalable growth for aggregation and core services for voice, video, and data networks. It provides a flexible and cost-effective means to simplify large point-of-presence (POP) and central office environments. The routing matrix delivers high availability services from tunnel services, ATM, DS3, OC3/STM1, OC12/STM4, Gigabit Ethernet, 10-Gigabit Ethernet, 100-Gigabit Ethernet, OC48/STM16, OC192/STM64, and other high-speed interfaces.

The routing matrix leverages the intelligent virtual services capabilities of the Junos<sup>®</sup> operating system (Junos OS), which enables you to create multiple application-specific logical networks over a single physical topology. This gives you the ability to virtually separate traffic types that require unique network attributes—such as ATM or high-priority voice over IP (VoIP) and third-generation (3G) mobile traffic—from bulk transit IP traffic.

The router architecture cleanly separates control operations from packet forwarding operations. This design eliminates processing and traffic congestions, permitting the routing matrix to achieve terabit performance levels. Control operations in the routing matrix are performed by the host subsystem, which runs Junos OS to handle traffic engineering and configuration management. High availability, interchassis communications are provided by an Ethernet LAN that interconnects the host subsystems in the TX Matrix Plus router (also referred to as the switch-fabric chassis or the SFC) and the line-card chassis (LCC) routers.

A routing matrix based on a Juniper Networks® TX Matrix Plus router is a multichassis architecture composed of one TX Matrix Plus router and one of the following LCC configurations:

- TXP-T1600 configuration—Supports up to four interconnected Juniper Networks T1600 Core Routers.
- TXP-T1600-3D configuration—Supports up to eight interconnected Juniper Networks T1600 Core Routers.
- TXP-T4000-3D configuration—Supports up to four interconnected Juniper Networks T4000 Core Routers.
- TXP-Mixed-LCC-3D configuration—Supports the following combinations of T1600 and T4000 routers:
  - Six T1600 routers and one T4000 router
  - Four T1600 routers and two T4000 routers
  - Two T1600 routers and three T4000 routers

The TXP-T1600-3D, TXP-T4000-3D, and TXP-Mixed-LCC-3D configurations use 3D SIBs (TXP-F13-3D and TXP-F2S-3D SIBs on the SFC and TXP-LCC-3D SIB on the LCC). For more details on the hardware components used in the routing matrix with a TX Matrix Plus router, see the [TX Matrix Plus Router Hardware Guide](#).

**Related  
Documentation**

- [Routing Matrix with TXP-T1600 Configuration on page 11](#)
- [Routing Matrix with TXP-T1600-3D Configuration on page 14](#)
- [Routing Matrix with TXP-T4000-3D Configuration on page 18](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)
- [Use Case for a Routing Matrix with a TX Matrix Plus Router in a TXP-Mixed-LCC-3D Configuration on page 25](#)
- [Example Configuration for a Routing Matrix with a TX Matrix Plus Router on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)

---

## Routing Matrix Terms and Acronyms

### L

**line-card chassis (LCC)** A T1600 router or T4000 router installed in a routing matrix.

### R

**routing matrix** A high capacity, multichassis router. The routing matrix with a TX Matrix router combines multiple T640 routers with a TX Matrix router switch fabric. The routing matrix with a TX Matrix Plus router combines multiple T1600 or T4000 routers with a TX Matrix Plus router switch fabric.

**S**

<b>Switch Interface Board (SIB)</b>	On T640, T1600, and T4000 routers and on TX Matrix router and TX Matrix Plus routers, a switch fabric plane component that forwards packets from a source Packet Forwarding Engine to a destination Packet Forwarding Engine.
<b>switch-card chassis (SCC)</b>	A TX Matrix router installed in a routing matrix.
<b>switch-fabric chassis (SFC)</b>	A TX Matrix Plus router installed in a routing matrix.

**T**

<b>TX Matrix Plus router</b>	A high-speed centralized switch fabric that connects multiple T1600 or T4000 routers in a routing matrix.
<b>TX Matrix router</b>	A high-speed centralized switch fabric that connects multiple T640 routers in a routing matrix.

**Related Documentation**

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

---

## Managing the Routing Matrix as a Single Router

Although a routing matrix can contain multiple separate physical components, from the perspective of the user interface, the routing matrix appears as a single router for most operations and uses the existing Junos OS CLI.

To manage the multichassis system, some enhancements have been made to the CLI to enable you to select the amount of output you want to display when you issue operational commands. For example, you can specify the entire routing matrix, the TX Matrix Plus router, a specific T1600 or T4000 router and its Flexible PIC Concentrators (FPCs), or a combination thereof.

When you issue configuration and operational commands on a TX Matrix Plus router, your view of the routing matrix shows a single routing device with a single range of FPC numbers (from 0 through 31 or from 0 through 63 rather than from 0 through 7 for each FPC). As a result, you will need to adjust certain configuration statements to accommodate the global numbering of FPCs installed on the routing matrix. When you include the `fpc` statement at the `[edit chassis lcc lcc-number]` hierarchy level, specify the FPC hardware slot number (0 through 7) as labeled on the T1600 or the T4000 router chassis. Do not specify the corresponding global FPC number.

**Related Documentation**

- [Routing Engine Connectivity in the Routing Matrix on page 8](#)
- [Redundant Host Subsystems in the Routing Matrix on page 9](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

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## Merging Examples

If you want to use the examples in this manual, you can use the **load merge** or the **load merge relative** command. These commands cause the software to merge the incoming configuration into the current candidate configuration. If the example configuration contains the top level of the hierarchy (or multiple hierarchies), the example is a *full example*. In this case, use the **load merge** command.

If the example configuration does not start at the top level of the hierarchy, the example is a *snippet*. In this case, use the **load merge relative** command.

These procedures are described in the following sections:

- [Merging a Full Example on page 6](#)
- [Merging a Snippet on page 7](#)
- [For More Information on page 7](#)

### Merging a Full Example

To merge a full example, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration example into a text file, save the file with a name, and copy the file to a directory on your router.

For example, copy the following configuration to a file and name the file **ex-script.conf**. Copy the **ex-script.conf** file to the **/var/tmp** directory on your router.

```
system {
  scripts {
    commit {
      file ex-script.xsl;
    }
  }
}
interfaces {
  em0 {
    disable;
    unit 0 {
      family inet {
        address 10.0.0.1/24;
      }
    }
  }
}
```



2. Merge the contents of the file into your router configuration by issuing the **load merge** configuration mode command:

```
[edit]
user@host# load merge /var/tmp/ex-script.conf
load complete
```

## Merging a Snippet

To merge a snippet, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration snippet into a text file, save the file with a name, and copy the file to a directory on your router.

For example, copy the following snippet to a file and name the file **ex-script-snippet.conf**. Copy the **ex-script-snippet.conf** file to the **/var/tmp** directory on your router.

```
commit {
  file ex-script-snippet.xml; }
```

2. Move to the hierarchy level that is relevant for this snippet by issuing the following configuration mode command:

```
[edit]
user@host# edit system scripts
[edit system scripts]
```

3. Merge the contents of the file into your router configuration by issuing the **load merge relative** configuration mode command:

```
[edit system scripts]
user@host# load merge relative /var/tmp/ex-script-snippet.conf
load complete
```

## For More Information

For more information about using the **load** command, see *Loading a Configuration from a File or the Terminal* and *Examples: Loading a Configuration from a File* in the *CLI User Guide*.

### Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Deployment Guide](#)
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Routing Engine Connectivity in a Routing Matrix with a TX Matrix Plus Router

---

The TX Matrix Plus router contains two Connector Interface Panels (CIPs)—one for each Routing Engine—that are referred to as **TXP-CIP-0** and **TXP-CIP-1**. In a routing matrix with a TX Matrix Plus router, all Routing Engines are connected to their respective Control Boards, which in turn are connected to ports on the two CIPs on the TX Matrix Plus router:

- On a TX Matrix Plus router, the Routing Engine (RE-TXP-SFC) and Control Board (TXP-CB) function as a unit, or host subsystem. For each of the two host subsystems in the router, the Junos OS automatically creates two internal Ethernet interfaces, **ixgbe0** and **ixgbe1**, for the two 10-Gigabit Ethernet ports on the Routing Engine. The port at **ixgbe0** connects the TX Matrix Plus Routing Engine to the Routing Engines of every T1600 or T4000 router configured in the routing matrix. Another internal Ethernet interface, **ixgbe1**, is created on each Routing Engine in order to support fault tolerance.
- On a T1600 or T4000 router configured in a routing matrix, the Routing Engine (RE-TXP-LCC) and Control Board (LCC-CB) function as a unit, or host subsystem. For each of the two host subsystems in the router, the Junos OS automatically creates two internal Ethernet interfaces, **bcm0** and **em1**, for the two Gigabit Ethernet ports on the Routing Engine. The port at **bcm0** connects the LCC Routing Engine to the Routing Engines of every other T1600 or T4000 router configured in the routing matrix.



**NOTE:** The Routing Engines in the TX Matrix Plus router and in the T1600 routers configured in a routing matrix do not support the management Ethernet interface **fxp0** or the internal Ethernet interfaces **fxp1** or **fxp2**.

Configurations and automated scripts that have been developed for standalone T1600 (T1600 routers not configured in a routing matrix) might contain references to the **fxp0**, **fxp1**, or **fxp2** interfaces.

Before reusing the configurations or scripts on T1600 routers in a routing matrix, update the files as appropriate:

- Edit any command lines that reference the T1600 router management Ethernet interface **fxp0** by replacing “**fxp0**” with “**em0**.”
- Ensure that any **show interfaces** commands that are intended to list the T1600 router internal Ethernet interfaces refer to the **bcm0** or **em1** interfaces.

For more detailed information, see the *Junos OS Network Interfaces Library for Routing Devices*.

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Redundant Host Subsystems in a Routing Matrix with a TX Matrix Plus Router

The TX Matrix Plus router and the T1600 or T4000 routers in the routing matrix are all configured with redundant host subsystems.

- In a TX Matrix Plus router, the independent control planes are connected by two physical links between the two 10-Gigabit Ethernet ports on their respective Routing Engines. The primary link to the remote Routing Engine is at the **ixgbe0** internal 10-Gigabit Ethernet interface. The alternate link to the remote Routing Engine is at the **ixgbe1** internal 10-Gigabit Ethernet interface. If one of the two links between the host subsystems fails, both Routing Engines can use the other link for IP communication.
- In a T1600 or T4000 router in a routing matrix, the independent control planes are connected by two physical links between the Gigabit Ethernet ports on their respective Routing Engines. The primary link to the remote Routing Engine is at the **bcm0** internal Ethernet interface. The alternate link to the remote Routing Engine is at the **em1** internal Ethernet interface. If one of the two links between the host subsystems fails, both Routing Engines can use the other link for IP communication.

Two Routing Engines provide redundancy and graceful Routing Engine switchover (GRES) capabilities.



**NOTE:** If GRES is configured, the CLI command prompt indicates Routing Engine mastership (**{master}** or **{backup}**) and physical slot number (**-re0** or **-re1**).

For example, the following CLI prompt indicates that you are logged in to the master Routing Engine in slot RE0 of the router with hostname **mylcc3**:

```
{master}
user@mylcc3-re0>
```

The following CLI prompt indicates that you are logged in to the backup Routing Engine in slot RE1 of the router with hostname **mylcc3**:

```
{backup}
user@mylcc3-re1>
```

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)

- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## CHAPTER 2

# Supported Routing Matrix Configurations with a TX Matrix Plus Router

- Routing Matrix with TXP-T1600 Configuration on page 11
- FPC Numbering for Interfaces in TXP-T1600 Configuration on page 13
- Routing Matrix with TXP-T1600-3D Configuration on page 14
- FPC Numbering for Interfaces in TXP-T1600-3D Configuration on page 16
- Routing Matrix with TXP-T4000-3D Configuration on page 18
- FPC Numbering for Interfaces in TXP-T4000-3D Configuration on page 20
- Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22
- Use Case for a Routing Matrix with a TX Matrix Plus Router in a TXP-Mixed-LCC-3D Configuration on page 25
- FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration on page 26

## Routing Matrix with TXP-T1600 Configuration

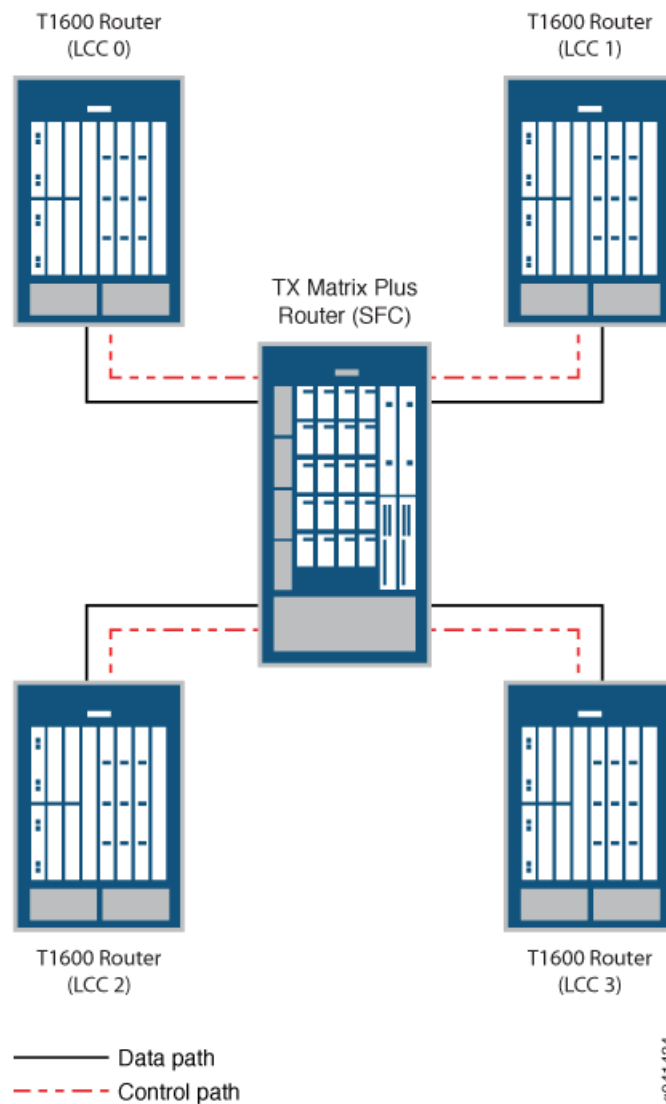
---

A routing matrix with the TXP-T1600 configuration consists of two types of chassis: a Juniper Networks TX Matrix Plus Router and Juniper Networks T1600 Core Routers.

- TX Matrix Plus router—A routing matrix can contain only one Juniper Networks TX Matrix Plus router. A TX Matrix Plus router is also referred to as the *switch-fabric chassis* (SFC). In the Junos OS command-line interface (CLI), **sfc 0** is used to refer to the TX Matrix Plus router. For information about installing and connecting to a TX Matrix Plus router, see the [TX Matrix Plus Router Hardware Guide](#).
- T1600 routers—A routing matrix can contain from one to four T1600 routers, numbered from 0 through 3. A T1600 router in a routing matrix is also referred to as a *line-card chassis* (LCC). In the Junos OS CLI, **lcc 0** through **lcc 3** are used to refer to T1600 routers in a TXP-T1600 configuration. For information about connecting to a T1600 routers in a routing matrix, see the [TX Matrix Plus Router Hardware Guide](#).

In a routing matrix, the TX Matrix Plus router controls all the connected T1600 routers, as shown in [Figure 1 on page 12](#).

Figure 1: TXP-T1600 Configuration



A key element of the routing matrix design is the ability to migrate existing standalone T1600 routers and connect them with a TX Matrix Plus router through fiber-optic cables and Switch Interface Boards (SIBs).

The TX Matrix Plus router connection between the T1600 routers uses a scalable, three-stage switch fabric. This system architecture provides terabit bandwidth expansion capacity and eliminates the use of subscriber line cards to connect devices within points of presence (POPs). As a result, the primary application for the routing matrix is to collapse aggregation and core layers in large POPs and central offices.

Similarly, you can limit which portions of the routing matrix are modified during configuration or maintenance procedures (for example, performing software upgrades or halting Routing Engines).

- Related Documentation**
- [FPC Numbering for Interfaces in TXP-T1600 Configuration on page 13](#)
  - [Example Configuration for a Routing Matrix with a TX Matrix Plus Router on page 48](#)

## FPC Numbering for Interfaces in TXP-T1600 Configuration

A routing matrix with the TXP-T1600 configuration can consist of up to four T1600 routers (also referred to as line-card chassis), which are assigned numbers from 0 through 3 depending on the chassis ID setting. In the Junos OS CLI, **lcc 0** through **lcc 3** are used to refer to T1600 routers in a routing matrix with the TXP-T1600 configuration. Each T1600 router can contain up to eight Flexible PIC Concentrators (FPCs) in FPC hardware slots labeled 0 through 7. Therefore, in the TXP-T1600 configuration, a routing matrix with a TX Matrix Plus router can contain up to 32 FPCs.

In the Junos OS CLI, an interface name has the following format:

*type-fpc/pic/port*

When you specify the FPC number for a T1600 router in a routing matrix, Junos OS determines which T1600 router contains the specified FPC. [Table 3 on page 13](#) shows the basic correspondence between FPC hardware slot numbers (0 through 7), which are labeled on the T1600 chassis, and routing matrix FPC numbers (0 through 31), which are used in the Junos OS CLI.

**Table 3: FPC Numbering for up to Four Routers in a Routing Matrix**

T1600 Router in a Routing Matrix (TXP-T1600 Configuration)	Basic Correspondence of FPC Numbering	
	FPC Hardware Slot Numbers	Global FPC Numbers
LCC 0	0–7	0–7
LCC 1	0–7	8–15
LCC 2	0–7	16–23
LCC 3	0–7	24–31

To easily convert an FPC hardware slot number on a specific LCC (T1600 router) in a routing matrix to the corresponding global FPC number (routing matrix FPC number), use the conversion chart shown in [Table 4 on page 14](#). You can use the converted FPC number to configure the interfaces on the TX Matrix Plus router in your routing matrix.

Table 4: FPC Numbering for up to Four T1600 Routers in a Routing Matrix Conversion Chart

Conversion Chart for FPC Numbering									
	LCC 0								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-1/0/0, the global FPC number 1 refers to the FPC hardware slot 1 in the T1600 router <b>lcc0</b> .
Global FPC Numbers	0	1	2	3	4	5	6	7	
	LCC 1								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-11/2/0, the global FPC number 11 refers to the FPC hardware slot 3 in the T1600 router <b>lcc1</b> .
Global FPC Numbers	8	9	10	11	12	13	14	15	
	LCC 2								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-20/0/1, the global FPC number 20 refers to the FPC hardware slot 4 in the T1600 router <b>lcc2</b> .
Global FPC Numbers	16	17	18	19	20	21	22	23	
	LCC 3								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-31/1/0, the global FPC number 31 refers to the FPC hardware slot 7 in the T1600 router <b>lcc3</b> .
Global FPC Numbers	24	25	26	27	28	29	30	31	

You can use a CLI operational command to display the numbers of the connected FPCs in a routing matrix. To display the FPC numbers in both global numbering mode (from 0 through 31, as used to specify an interface name in a routing matrix) and the associated local numbering mode (LCC number and FPC physical slot number), you can use various forms of the **show chassis location** command. For more information, see [“Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router” on page 121](#).

#### Related Documentation

- [show chassis lccs on page 1111](#)
- [FPC Numbering for Interfaces in TXP-T1600-3D Configuration on page 16](#)
- [FPC Numbering for Interfaces in TXP-T4000-3D Configuration on page 20](#)
- [FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration on page 26](#)

## Routing Matrix with TXP-T1600-3D Configuration

A routing matrix with the TXP-T1600-3D configuration consists of two types of chassis: a Juniper Networks TX Matrix Plus Router and Juniper Networks T1600 Core Routers.

- TX Matrix Plus router—A routing matrix contains only one Juniper Networks TX Matrix Plus router. In a routing matrix, a TX Matrix Plus router is also referred to as the



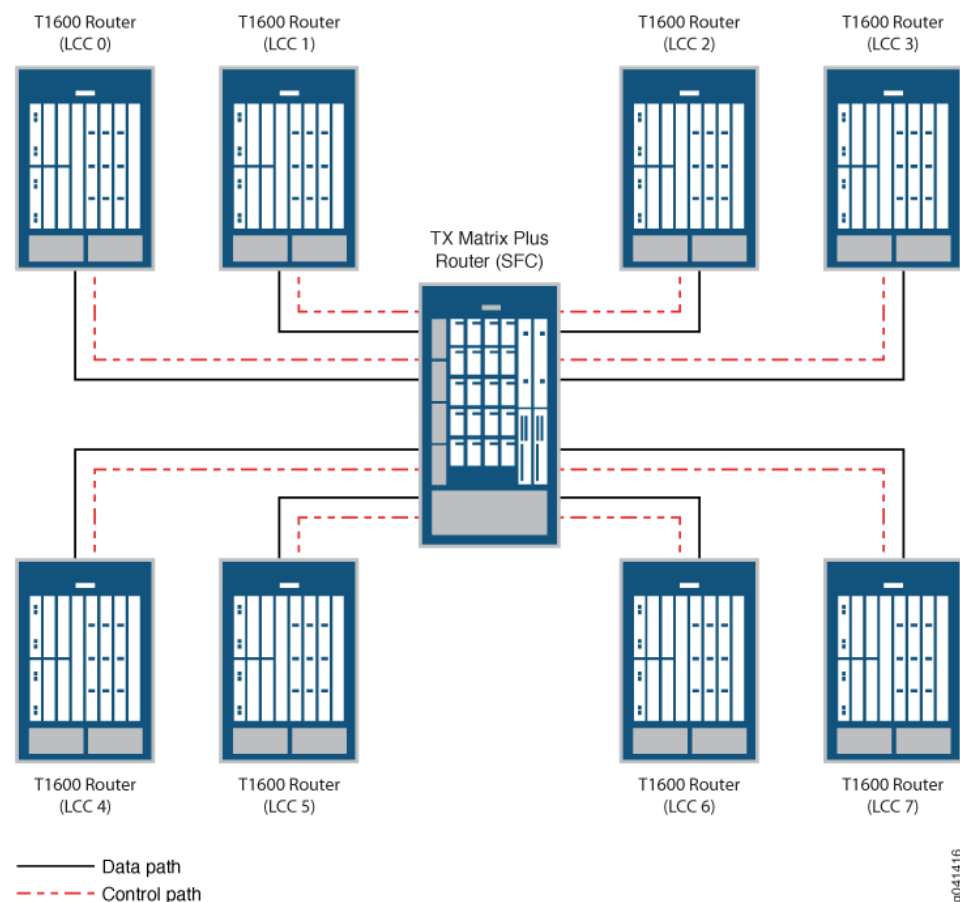
*switch-fabric chassis* (SFC). In the Junos OS command-line interface (CLI), **sfc 0** is used to refer to the TX Matrix Plus router. For information about installing and connecting to a TX Matrix Plus router, see the [TX Matrix Plus Router Hardware Guide](#).

- T1600 router—In the TXP-T1600-3D configuration, a routing matrix can contain up to eight T1600 routers, numbered from 0 through 7. A T1600 router in a routing matrix is also referred to as a *line-card chassis* (LCC). In the Junos OS CLI, **lcc 0** through **lcc 7** are used to refer to T1600 routers in a TXP-T1600-3D configuration. For information about connecting a T1600 router in a routing matrix, see the [TX Matrix Plus Router Hardware Guide](#).

To enable the TXP-T1600-3D configuration in the Junos OS CLI, the LCC mode on the SFC must be set to **t1600**. By default, the LCC mode is set to **t1600**. If the mode is not the set to **t1600** (due to previous configurations), you can set the LCC mode to **t1600**, by including the **set lcc-mode lcc lcc-number mode t1600** statement at the **[edit chassis]** hierarchy level.

In a routing matrix, the TX Matrix Plus router controls all the connected T1600 routers, as shown in [Figure 2 on page 15](#).

**Figure 2: TXP-T1600-3D Configuration**



- Related Documentation**
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
  - [FPC Numbering for Interfaces in TXP-T1600-3D Configuration on page 16](#)
  - [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)

## FPC Numbering for Interfaces in TXP-T1600-3D Configuration

A routing matrix with the TXP-T1600-3D configuration can include up to eight T1600 routers (also referred to as line-card chassis), which are assigned numbers from 0 through 7, depending on the chassis ID setting. In the Junos OS CLI, **lcc 0** through **lcc 7** are used to refer to T1600 routers in a routing matrix with the TXP-T1600-3D configuration. Each T1600 router can contain up to eight Flexible PIC Concentrators (FPCs) in FPC hardware slots labeled 0 through 7. Therefore, a routing matrix with a TX Matrix Plus router in the TXP-T1600-3D configuration can contain up to 64 FPCs. For information about which FPCs are supported in the TXP-T1600-3D configuration, see the [TX Matrix Plus Router Hardware Guide](#).

In the Junos OS CLI, an interface name has the following format:

*type-fpc/pic/port*

When you specify the FPC number for a T1600 router in a routing matrix, Junos OS determines which T1600 router contains the specified FPC. [Table 5 on page 16](#) shows the basic correspondence between FPC hardware slot numbers (0 through 7), which are labeled on the T1600 chassis, and the global FPC numbers (0 through 63), which are used in the Junos OS CLI.

**Table 5: FPC Numbering for up to Eight T1600 Routers in a Routing Matrix**

T1600 Router in a Routing Matrix (TXP-T1600-3D Configuration)	Basic Correspondence of FPC Numbering	
	FPC Hardware Slot Numbers	Global FPC Numbers
LCC 0	0–7	0–7
LCC 1	0–7	8–15
LCC 2	0–7	16–23
LCC 3	0–7	24–31
LCC 4	0–7	32–39
LCC 5	0–7	40–47
LCC 6	0–7	48–55
LCC 7	0–7	56–63

To easily convert an FPC hardware slot number on a specific LCC (T1600 router) in a routing matrix to the corresponding global FPC number (routing matrix FPC number), use the conversion chart shown in [Table 6 on page 17](#). You can use the converted FPC number to configure the interfaces on the TX Matrix Plus router in your routing matrix.

**Table 6: FPC Numbering for up to Eight T1600 Routers in a Routing Matrix — Conversion Chart**

Conversion Chart for FPC Numbering									
	LCC 0								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-1/0/0, the global FPC number 1 refers to the FPC hardware slot 1 in the T1600 router <b>lcc 0</b> .
Global FPC Numbers	0	1	2	3	4	5	6	7	
	LCC 1								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-11/2/0, the global FPC number 11 refers to the FPC hardware slot 3 in the T1600 router <b>lcc 1</b> .
Global FPC Numbers	8	9	10	11	12	13	14	15	
	LCC 2								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-20/1/0, the global FPC number 20 refers to the FPC hardware slot 4 in the T1600 router <b>lcc 2</b> .
Global FPC Numbers	16	17	18	19	20	21	22	23	
	LCC 3								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-31/1/0, the global FPC number 31 refers to the FPC hardware slot 7 in the T1600 router <b>lcc 3</b> .
Global FPC Numbers	24	25	26	27	28	29	30	31	
	LCC 4								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-39/1/0, the global FPC number 39 refers to the FPC hardware slot 7 in the T1600 router <b>lcc 4</b> .
Global FPC Numbers	32	33	34	35	36	37	38	39	
	LCC 5								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-46/0/1, the global FPC number 46 refers to the FPC hardware slot 6 in the T1600 router <b>lcc 5</b> .
Global FPC Numbers	40	41	42	43	44	45	46	47	
	LCC 6								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-49/1/0, the global FPC number 49 refers to the FPC hardware slot 1 in the T1600 router <b>lcc 6</b> .
Global FPC Numbers	48	49	50	51	52	53	54	55	

Table 6: FPC Numbering for up to Eight T1600 Routers in a Routing Matrix — Conversion Chart (continued)

Conversion Chart for FPC Numbering								
	LCC 7							
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7
Global FPC Numbers	56	57	58	59	60	61	62	63

**Example:** In the interface name xe-63/1/0, the global FPC number **63** refers to the FPC hardware slot 7 in the T1600 router **lcc 7**.

You can use a CLI operational command to display the numbers of the connected FPCs in a routing matrix. To display the FPC numbers in global numbering mode (**0** through **63**, as used to specify an interface name in a routing matrix) and the associated local numbering mode (LCC number and FPC physical slot number), you can use various forms of the **show chassis location** command. For more information, see “[Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router](#)” on page 121.

#### Related Documentation

- [show chassis lccs on page 1111](#)
- [FPC Numbering for Interfaces in TXP-T1600 Configuration on page 13](#)
- [FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration on page 26](#)
- [FPC Numbering for Interfaces in TXP-T4000-3D Configuration on page 20](#)

## Routing Matrix with TXP-T4000-3D Configuration

A routing matrix with the TXP-T4000-3D configuration consists of two types of chassis: a Juniper Networks TX Matrix Plus Router and Juniper Networks T4000 Core Routers.

- TX Matrix Plus router—A routing matrix contains only one Juniper Networks TX Matrix Plus router. In a routing matrix, a TX Matrix Plus router is also referred to as the *switch-fabric chassis* (SFC). In the Junos OS command-line interface (CLI), **sfc 0** is used to refer to the TX Matrix Plus router. For information about installing and connecting to a TX Matrix Plus router, see the [TX Matrix Plus Router Hardware Guide](#).
- T4000 router—In the TXP-T4000-3D configuration, a routing matrix can contain up to four T4000 routers that are assigned the even LCC numbers 0, 2, 4, and 6. A T4000 router in a routing matrix is also referred to as a *line-card chassis* (LCC). In the Junos OS CLI, **lcc 0**, **lcc 2**, **lcc 4**, and **lcc 6** are used to refer to T4000 routers in a TXP-T4000-3D configuration.

For information about connecting a T4000 router to a routing matrix, see the [TX Matrix Plus Router Hardware Guide](#).

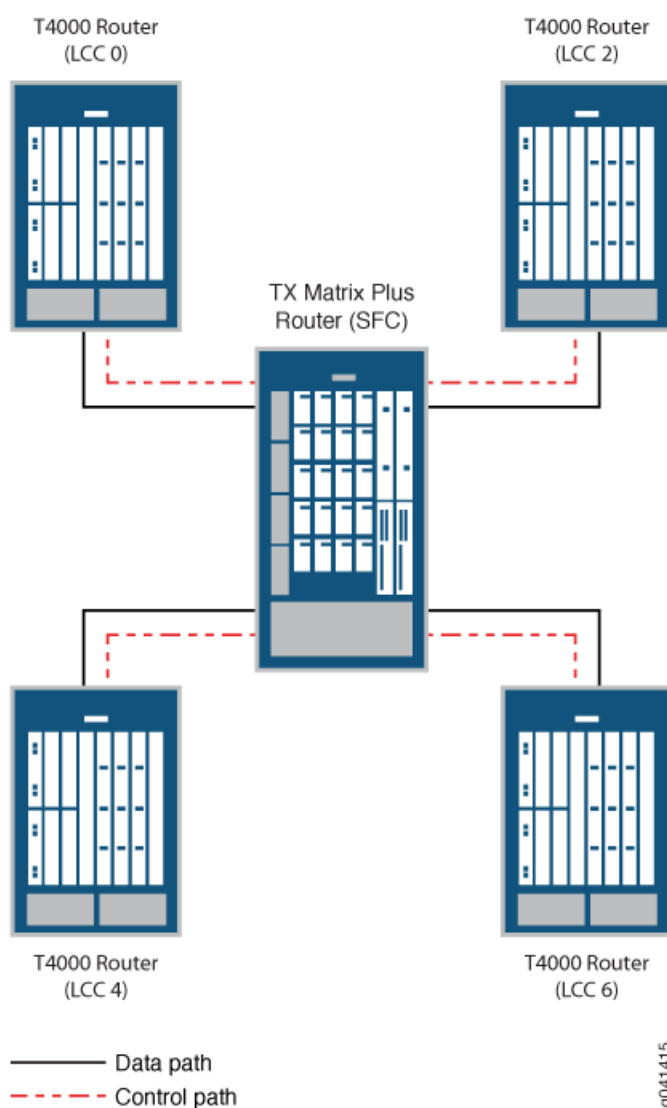
To enable the TXP-T4000-3D configuration in the Junos OS CLI, you must configure the LCC mode on the SFC. To configure the LCC mode, include the **set lcc-mode lcc lcc-number mode t4000** statement at the **[edit chassis]** hierarchy level. By default, the LCC mode is set to **t1600**.



**NOTE:** When you set the LCC mode as t4000, you must set the next LCC (odd-numbered) mode as empty. For example, if you set LCC mode t4000 on LCC 2, then you must set the LCC 3 mode as empty. Otherwise, the commit fails. Setting the LCC mode for an LCC as empty disables the control plane and data plane connections between that LCC and the SFC, so the LCC does not come online.

In a routing matrix, the TX Matrix Plus router controls all the connected T4000 routers, as shown in [Figure 3 on page 19](#).

*Figure 3: TXP-T4000-3D Configuration*



- Related Documentation**
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
  - [FPC Numbering for Interfaces in TXP-T4000-3D Configuration on page 20](#)
  - [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)

## FPC Numbering for Interfaces in TXP-T4000-3D Configuration

A routing matrix with the TXP-T4000-3D configuration can include up to four T4000 routers (line-card chassis) that are assigned even numbers (0, 2, 4, and 6). In the Junos OS CLI, **lcc 0**, **lcc 2**, **lcc 4**, and **lcc 6** are used to refer to T4000 routers in a routing matrix with the TXP-T4000-3D configuration. Each T4000 router can contain up to eight Flexible PIC Concentrators (FPCs) in FPC hardware slots labeled 0 through 7.

In the Junos OS CLI, an interface name has the following format:

*type-fpc/pic/port*

When you specify the FPC number for a T4000 router in a routing matrix, Junos OS determines which T4000 router contains the specified FPC. [Table 7 on page 20](#) shows the basic correspondence between FPC hardware slot numbers that are labeled on the T4000 chassis, and routing matrix FPC numbers that are used in the Junos OS CLI.

**Table 7: FPC Numbering for up to Four T4000 Routers in a Routing Matrix**

T4000 Router in a Routing Matrix (TXP-T4000 Configuration)	Basic Correspondence of FPC Numbering	
	FPC Hardware Slot Numbers	Global FPC Numbers
LCC 0	0–7	0–7
LCC 2	0–7	16–23
LCC 4	0–7	32–39
LCC 6	0–7	48–55

To easily convert an FPC hardware slot number in a specific LCC (T4000 router) in a routing matrix to the corresponding global FPC number (routing matrix FPC number), use the conversion chart shown in [Table 8 on page 21](#). You can use the converted FPC number to configure the interfaces on the TX Matrix Plus router in your routing matrix.

Table 8: FPC Numbering for up to Four T4000 Routers in a Routing Matrix Conversion Chart

Conversion Chart for FPC Numbering									
	LCC 0								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-1/0/0, the global FPC number <b>1</b> refers to the FPC hardware slot <b>1</b> in the T4000 router <b>lcc 0</b> .
Global FPC Numbers	0	1	2	3	4	5	6	7	
	LCC 2								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-16/2/0, the global FPC number <b>16</b> refers to the FPC hardware slot <b>0</b> in the T4000 router <b>lcc 2</b> .
Global FPC Numbers	16	17	18	19	20	21	22	23	
	LCC 4								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-34/0/1, the global FPC number <b>34</b> refers to the FPC hardware slot <b>2</b> in the T4000 router <b>lcc 4</b> .
Global FPC Numbers	32	33	34	35	36	37	38	39	
	LCC 6								
FPC Hardware Slot Numbers	0	1	2	3	4	5	6	7	<b>Example:</b> In the interface name xe-54/1/0, the global FPC number <b>54</b> refers to the FPC hardware slot <b>6</b> in the T4000 router <b>lcc 6</b> .
Global FPC Numbers	48	49	50	51	52	53	54	55	

You can use a CLI operational command to display the numbers of the connected FPCs in a routing matrix. To display the FPC numbers in global numbering mode (**0** through **55**, as used to specify an interface name in a routing matrix) and the associated local numbering mode (LCC number and FPC physical slot number), you can use various forms of the **show chassis location** command. For more information, see [“Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router”](#) on page 121.

#### Related Documentation

- [show chassis lccs on page 1111](#)
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [FPC Numbering for Interfaces in TXP-T1600 Configuration on page 13](#)
- [FPC Numbering for Interfaces in TXP-T1600-3D Configuration on page 16](#)
- [FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration on page 26](#)

## Routing Matrix with a TXP-Mixed-LCC-3D Configuration

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A routing matrix with the TXP-Mixed-LCC-3D configuration consists of three types of chassis: a Juniper Networks TX Matrix Plus router and a combination of Juniper Networks T1600 Core Routers and Juniper Networks T4000 Core Routers.

- TX Matrix Plus router—A routing matrix contains only one Juniper Networks TX Matrix Plus router. A TX Matrix Plus router in a routing matrix is also referred to as the *switch-fabric chassis* (SFC). In the Junos OS CLI, **sfc 0** is used to refer to the TX Matrix Plus router. For information about installing and connecting to a TX Matrix Plus router, see the [TX Matrix Plus Router Hardware Guide](#).
- T1600 and T4000 routers—In the mixed LCC configuration, a routing matrix can comprise:
  - Six T1600 routers and one T4000 router
  - Four T1600 routers and two T4000 routers
  - Two T1600 routers and three T4000 routers

To enable the TXP-Mixed-LCC-3D configuration in the Junos OS CLI, you must configure the LCC mode on the SFC. To configure the LCC mode, include the **set lcc-mode lcc lcc-number mode (empty | t1600 | t4000)** statement at the **[edit chassis]** hierarchy level. By default, the LCC mode is set to **t1600**.

To view the configured LCC mode information, use the **show chassis lcc-mode operational** mode command.



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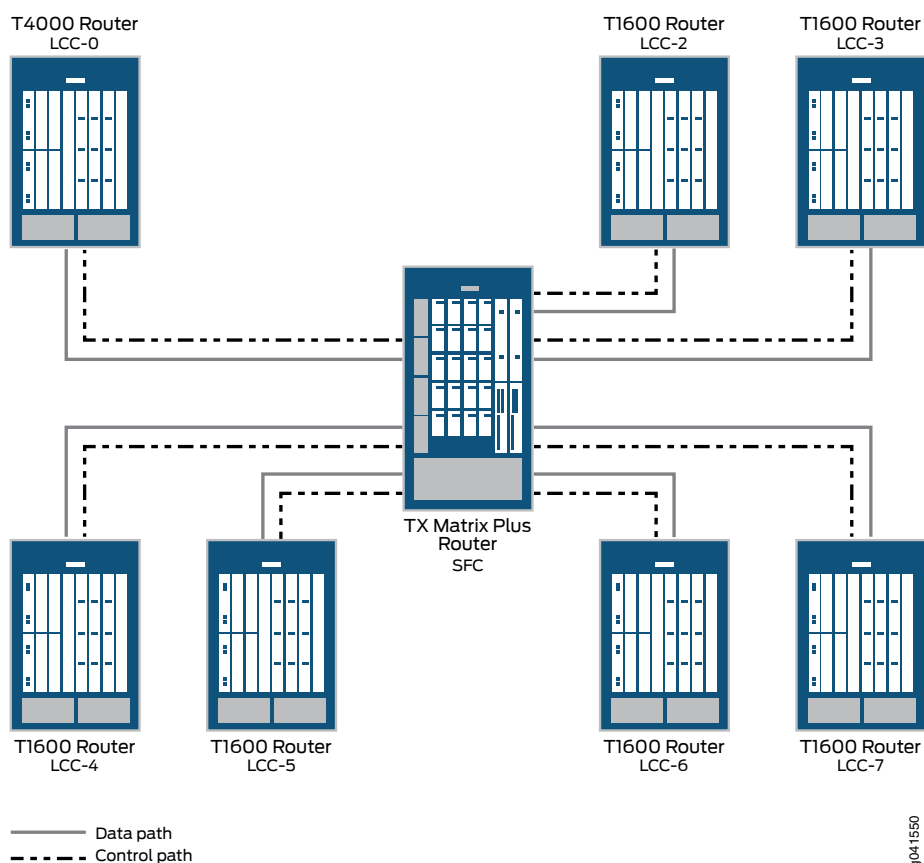
### NOTE:

- The LCC mode **t4000** is supported only on the even-numbered LCCs—LCC 0, LCC 2, LCC 4, and LCC 6.
  - When you set the LCC mode as **t4000**, you must set the next LCC (odd-numbered) mode as **empty**. For example, if you set LCC mode **t4000** on LCC 2, then you must set the LCC 3 mode as **empty**. Otherwise, the commit operation fails. Setting the LCC mode for an LCC as **empty** disables the control plane and data plane connections between that LCC and the SFC, so the LCC does not come online.
  - LCC numbers in a mixed-mode configuration can be changed as long as the T4000 LCC is assigned an even number. For other valid combinations of LCCs in the mixed-mode configuration, see [Line-Card Chassis ID](#) in the [TX Matrix Plus Router Hardware Guide](#).
  - LCC numbers in a mixed-mode configuration can be changed as long as the T4000 LCC is assigned an even number. For other valid combinations of LCCs in the mixed-mode configuration, see [Line-Card Chassis ID](#) in the [TX Matrix Plus Router Hardware Guide](#).
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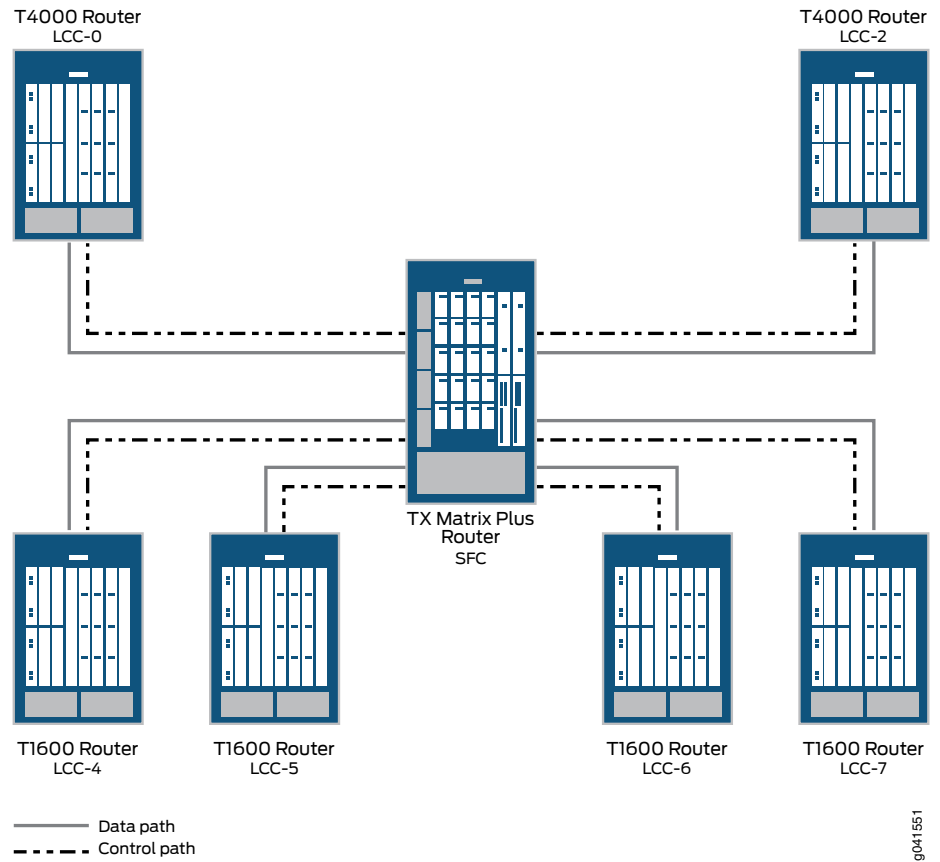


In a routing matrix, the TX Matrix Plus router controls all the connected T1600 and T4000 routers, as shown in [Figure 4 on page 23](#), [Figure 5 on page 24](#), and [Figure 6 on page 25](#).

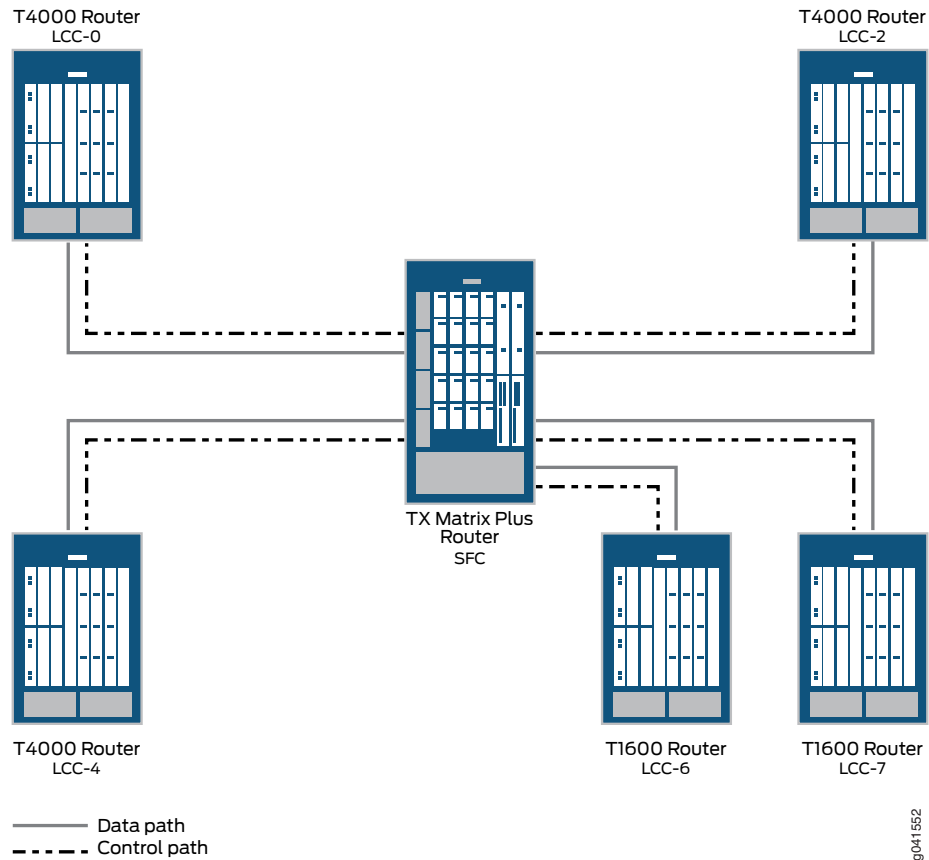
**Figure 4: TXP-Mixed-LCC-3D Configuration with One T4000 Router and Six T1600 Routers**



*Figure 5: TXP-Mixed-LCC-3D Configuration with Two T4000 Routers and Four T1600 Routers*



**Figure 6: TXP-Mixed-LCC-3D Configuration with Three T4000 Routers and Two T1600 Routers**



#### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Use Case for a Routing Matrix with a TX Matrix Plus Router in a TXP-Mixed-LCC-3D Configuration on page 25](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)

## Use Case for a Routing Matrix with a TX Matrix Plus Router in a TXP-Mixed-LCC-3D Configuration

The TX Matrix Plus router is the centralized switch fabric of the routing matrix that interconnects multiple line-card chassis (LCCs) to build a multichassis routing matrix. In releases earlier than Junos OS Release 13.1, only the T1600 LCCs were supported on the routing matrix with the TX Matrix Plus router. In Junos OS Release 13.1 and later releases with enhanced Switch Interface Boards (SIBs), you have the flexibility to connect the TX Matrix Plus router to a hybrid configuration of T1600 and T4000 LCCs by means of additional interfaces and FPC types. This hybrid configuration is known as a

TXP-Mixed-LCC-3D or a mixed-mode configuration in the routing matrix with a TX Matrix Plus router.

One of the use case scenarios for using the mixed-mode configuration is to support large-scale subscribers. For example, suppose you are using an existing routing matrix with a TX Matrix Plus router, you have retail subscribers on T1600 LCCs, and you need to provide services to both retail and enterprise subscribers on a single routing matrix that can work as a provider edge (PE) router. In such a situation, you can add T4000 LCCs to the existing routing matrix (by using the mixed-mode configuration) and use the routing matrix as a PE router. For more details on T1600 and T4000 router capabilities, see the [T1600 Product Portfolio](#) and [T4000 Product Portfolio](#).

In a fully scaled routing matrix with a TX Matrix Plus router, the following combinations of T1600 and T4000 LCCs are supported:

- Six T1600 LCCs and one T4000 LCC
- Four T1600 LCCs and two T4000 LCCs
- Two T1600 LCCs and three T4000 LCCs

For other valid combinations of LCCs in the mixed-mode configuration, see the [TX Matrix Plus Router Hardware Guide](#).

**Related  
Documentation**

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)

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## FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration

A routing matrix with the TXP-Mixed-LCC-3D configuration supports the following combinations of T1600 and T4000 routers:

- Six T1600 routers and one T4000 router
- Four T1600 routers and two T4000 routers
- Two T1600 routers and three T4000 routers

In the mixed mode of operation, one T4000 line-card chassis (LCC) can be placed instead of two T1600 LCCs. The T1600 routers are assigned numbers from 0 through 7, depending on the chassis ID setting. The T4000 routers are assigned the even numbers 0, 2, 4, and 6.

The FPC numbering scheme for the TXP-Mixed-LCC-3D configuration remains the same as that used for the TXP-T1600-3D and TXP-T4000-3D configurations. For more details see, “[FPC Numbering for Interfaces in TXP-T1600-3D Configuration](#)” on page 16 and “[FPC Numbering for Interfaces in TXP-T4000-3D Configuration](#)” on page 20.

**Related  
Documentation**

- [show chassis lccs on page 1111](#)
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [FPC Numbering for Interfaces in TXP-T1600 Configuration on page 13](#)
- [FPC Numbering for Interfaces in TXP-T1600-3D Configuration on page 16](#)
- [FPC Numbering for Interfaces in TXP-T4000-3D Configuration on page 20](#)



## CHAPTER 3

# System Requirements

- [System Requirements for a Routing Matrix with a TX Matrix Plus Router on page 29](#)

### System Requirements for a Routing Matrix with a TX Matrix Plus Router

To implement a routing matrix with a TX Matrix Plus router, your system must meet the following minimum requirements:

- One to four Juniper Networks T1600 Core Routers—Junos OS Release 9.6 or later is required.
  - The TX Matrix Plus router must contain the following components:
    - Two C2600 Routing Engines—Model RE-DUO-C2600-16G
    - Two LCC-CB Control Boards (CBs)—Model CB-LCC
    - F13 SIB Switch Interface Boards (SIBs)—Model SIB-TXP-F13
    - F2 SIB Switch Interface Boards (SIBs)—Model SIB-TXP-F2S
  - The T1600 router must contain the following components:
    - Two C1800 Routing Engines—Model RE-DUO-C1800-8G or RE-DUO-C1800-16G
    - Two LCC-CB Control Boards (CBs)—Model CB-LCC
    - Five TXP-T1600 Switch Interface Boards (SIBs)—Model SIB-TXP-T1600
    - One rear fan tray—Model FAN-REAR-TXP-LCC
- Up to eight Juniper Networks T1600 Core Routers—Junos OS Release 13.1 or later is required.
  - The TX Matrix Plus router must contain the following components:
    - Two C2600 Routing Engines—Model RE-DUO-C2600-16G
    - Two LCC-CB Control Boards (CBs)—Model CB-LCC
    - F13 SIB Switch Interface Boards (SIBs)—Model SIB-TXP-3D-F13
    - F2 SIB Switch Interface Boards (SIBs)—Model SIB-TXP-3D-F2S
    - Fan tray—Model PWR-TRAY-TXP-5-60-DC

- The T1600 router must contain the following components:
  - Two C1800 Routing Engines—Model RE-DUO-C1800-8G or RE-DUO-C1800-16G
  - Two LCC-CB Control Boards (CBs)—Model SIB-TXP-3D-LCC
  - Five TXP-T1600 Switch Interface Boards (SIBs)—Model SIB-TXP-3D-T1600
  - One rear fan tray—Model FAN-REAR-TXP-3D-LCC
  - Two power supplies—PWR-T-6-60-DC

For information about upgrading a standalone T1600 router and integrating it into a routing matrix, see the [TX Matrix Plus Router Hardware Guide](#).

- Two to four Juniper Networks T4000 Core Routers—Junos OS Release 13.1 or later is required.
  - The TX Matrix Plus router must contain the following components:
    - Two C2600 Routing Engines—Model RE-DUO-C2600-16G
    - Two LCC-CB Control Boards (CBs)—Model CB-LCC
    - F13 SIB Switch Interface Boards (SIBs)—Model SIB-TXP-3D-F13
    - F2 SIB Switch Interface Boards (SIBs)—Model SIB-TXP-3D-F2S
    - Fan tray—Model PWR-TRAY-TXP-5-60-DC
  - The T4000 router must contain the following components:
    - Two C1800 Routing Engines—Model RE-DUO-C1800-8G or RE-DUO-C1800-16G
    - Two LCC-CB Control Boards (CBs)—Model SIB-TXP-3D-LCC
    - Five TXP-T1600 Switch Interface Boards (SIBs)—Model SIB-TXP-3D-T1600
    - One rear fan tray—Model FAN-REAR-TXP-3D-LCC
    - Two power supplies—PWR-T-6-60-DC

For information about upgrading a standalone T1600 router and integrating it into a routing matrix, see the [TX Matrix Plus Router Hardware Guide](#).

- Physical Interface Cards (PICs) of your choice. To view a list of supported PICs, see the [T1600 Interface Module Reference](#).

#### **Related Documentation**

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
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## PART 2

# Configuring a Routing Matrix with a TX Matrix Plus Router

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## CHAPTER 4

# Configuring a Routing Matrix with a TX Matrix Plus Router

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### Roadmap for Configuring a Routing Matrix with a TX Matrix Plus Router

This topic summarizes the procedures for configuring a routing matrix with a TX Matrix Plus router.

To configure a routing matrix with a TX Matrix Plus router, complete the following tasks:

1. Plan your hardware configuration. Determine the SFC configuration size for the TX Matrix Plus router, and the LCC chassis ID for each T1600 or T4000 router to be added to the routing matrix. For more details, see the [TX Matrix Plus Hardware Guide](#).
2. Install and configure the TX Matrix Plus router, including setting the SFC chassis ID and the configuration size. If you are upgrading to 3D SIBs, you must change the SFC configuration size to 03. For more information about the initial hardware installation and configuration procedures, upgrade procedures, and setting the chassis ID and configuration size, see the [TX Matrix Plus Hardware Guide](#).

3. (Only for a routing matrix with a TX Matrix Plus router with 3D SIBs) Log on to the TX Matrix Plus router and configure the LCC mode for each T1600 or T4000 router to be added to the routing matrix. For more information, see [lcc-mode](#).



**NOTE:** You can set the LCC mode before the LCCs are connected to the routing matrix.

4. Install the standalone T1600 or T4000 routers. For more information, see [T1600 Router Hardware Guide](#) and [T4000 Router Hardware Guide](#).
5. Upgrade, connect, and integrate the T1600 or T4000 LCC into the routing matrix, including setting the LCC chassis ID. For more information, see the [TX Matrix Plus Hardware Guide](#).



**NOTE:** After the LCCs are integrated into the routing matrix, all configuration and operational commands for the LCC are performed from the TX Matrix Plus router.

6. Log on to the TX Matrix Plus Router. For more information, see the [TX Matrix Plus Hardware Guide](#).
7. Verify that the same Junos OS version is loaded on TX Matrix Plus router and the LCCs using the `show version` command.
8. Create and apply Routing Engine configuration groups, as described in “[Using Configuration Groups and Inheritance in a Routing Matrix with a TX Matrix Plus Router](#)” on page 36.

In general, configuration groups and inheritance of the statements in configuration groups support configuration of various router components. The special Routing Engine configuration groups (`re0`, `re1`, `lccn-re0`, and `lccn-re1`, where *n* is the LCC number) offer a simple way to establish hostnames, management interfaces, and default routes for the Routing Engines in the routing matrix.

9. Adjust certain configuration statements to accommodate the global number of FPCs installed on the LCCs, as described in “[Using Global FPC Numbering for Interfaces in a Routing Matrix with a TX Matrix Plus Router](#)” on page 42.
10. (Optional) Configure protocols and other features on the routing matrix, as described in “[Configuring Protocols and Other Features on a Routing Matrix with a TX Matrix Plus Router](#)” on page 43.

Other than the expanded range of FPC numbers for interfaces and the requirement to create groups for the routers, you can configure protocols in exactly the same manner as you would for other Juniper Networks routers.

11. (Optional) For T1600 or T4000 LCCs in a routing matrix, you can configure PIC-specific features, create an alarm for LCCs that do not come online, and take LCCs offline. For

more information, see [“Configuring Chassis-Specific Features on a Routing Matrix with a TX Matrix Plus Router” on page 43.](#)

12. Commit configurations on the routing matrix, as described in [“Committing Configurations on a Routing Matrix with a TX Matrix Plus Router” on page 45.](#)

#### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)
- [lcc on page 209](#)

## Connecting to a Routing Matrix with a TX Matrix Plus Router

On a routing matrix with a TX Matrix Plus router, you can perform management and service operations on the routing matrix through a Junos OS command-line interface (CLI) session with the TX Matrix Plus router.

This topic contains the following information:

- [Accessing a Routing Engine by Direct Console Connection to a Serial Port on page 35](#)
- [Accessing a Routing Engine by Telnet Access to a Management Ethernet Port on page 35](#)
- [Accessing a Routing Engine by Logging In from the CLI of Another Routing Engine on page 36](#)

### Accessing a Routing Engine by Direct Console Connection to a Serial Port

For an out-of-band connection to a Routing Engine in the routing matrix with TX Matrix Plus router, you can attach one or more management console or auxiliary devices to the appropriate serial ports on a Routing Engine in a routing matrix. On a TX Matrix Plus router, the **CONSOLE** or **AUXILIARY** serial ports are located on each control board (TXP-CB). After you connect the T1600 or T4000 routers to a TX Matrix Plus router, we recommend that you manage the routers using the **CONSOLE** or **AUXILIARY** serial ports on the TX Matrix Plus router. For more information, see [TX Matrix Plus Hardware Guide](#).

### Accessing a Routing Engine by Telnet Access to a Management Ethernet Port

After you configure the em0 Management Ethernet interface logical port, **em0.0**, with a valid IP address, you can establish a Telnet session over the network connection using the **ETHERNET** port located on each TXP-CB. This provides an out-of-band management connection to the a TX Matrix Plus router. The control plane connections to the TX Matrix Plus router allow you to configure and operate the T1600 and T4000 routers in the routing matrix by logging on to the TX Matrix Plus router. For more information about the initial software configuration for the TX Matrix Plus router, control plane connections, and integrating T1600 or T4000 routers into a routing matrix, see [TX Matrix Plus Hardware Guide](#)

## Accessing a Routing Engine by Logging In from the CLI of Another Routing Engine

After you are logged in to one Routing Engine in a routing matrix, you can issue the [request routing-engine login](#) command to connect to another Routing Engine in the routing matrix.



**BEST PRACTICE:** We recommend that you access a routing matrix by connecting to the master Routing Engine on the TX Matrix Plus router as described in “[Accessing a Routing Engine by Direct Console Connection to a Serial Port](#)” on page 35, “[Accessing a Routing Engine by Telnet Access to a Management Ethernet Port](#)” on page 35, and “[Accessing a Routing Engine by Logging In from the CLI of Another Routing Engine](#)” on page 36. Under normal operating conditions, you do not need to access or configure the T1600 or T4000 routers directly after they have been integrated into the routing matrix.

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Using Configuration Groups and Inheritance in a Routing Matrix with a TX Matrix Plus Router

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To simplify configuration of individual Routing Engines in a routing matrix with a TX Matrix Plus router, you can create a configuration group for each Routing Engine in the routing matrix:

- [Overview of Configuration Groups and Inheritance in a Routing Matrix on page 36](#)
- [Creating Configuration Groups in a Routing Matrix on page 37](#)
- [Applying a Configuration Group in a Routing Matrix on page 38](#)
- [Displaying Inherited Statements on page 38](#)
- [Disabling Inheritance of a Configuration Group in the Routing Matrix on page 39](#)
- [Using Special Configuration Groups for the Routing Engines in the Routing Matrix on page 39](#)

## Overview of Configuration Groups and Inheritance in a Routing Matrix

The configuration groups feature in the Junos OS enables you to create a group containing configuration statements and to direct the inheritance of that group's statements in the rest of the configuration. The same group can be applied to different sections of the

configuration, and different sections of one group's configuration statements can be inherited in different places in the configuration.

Configuration groups enable you to create smaller, more logically constructed configuration files, making it easier to configure and maintain the Junos OS. For example, you can group statements that are repeated in many places in the configuration, such as when configuring interfaces, and thereby limit updates to just the group.

Configuration groups use true inheritance, which involves a dynamic, ongoing relationship between the source of the configuration data and the target of that data. Data values changed in the configuration group are automatically inherited by the target. The target need not contain the inherited information, although the inherited values can be overridden in the target without affecting the source from which they were inherited.

This inheritance model allows you to see only the instance-specific information without seeing the inherited details. A command pipe in configuration mode allows you to display the inherited data.

## Creating Configuration Groups in a Routing Matrix

For areas of your configuration to inherit configuration statements, you must first put the statements into a configuration group and then apply that group to the levels in the configuration hierarchy that require the statements.

To create configuration groups in a routing matrix with a TX Matrix Plus router, you can include the **groups** statement at the **[edit]** hierarchy level on the TX Matrix Plus router:

```
[edit]
groups {
  group-name {
    ...configuration-data...
  }
}
```

The **group-name** statement specifies the name of a configuration group. You can configure more than one configuration group by specifying multiple **group-name** statements at the **[edit groups]** hierarchy level.

You cannot use the prefix **junos-** in a group name because it is reserved for use by the Junos OS. One reason for the naming restriction is a configuration group called **junos-defaults**. This preset configuration group is applied to the configuration automatically. You cannot modify or remove the **junos-defaults** configuration group. For more information about the Junos default configuration group, see "Using Junos OS Defaults Groups" in the *CLI User Guide*.

Similarly, the configuration group **juniper-ais** is reserved exclusively for Juniper Advanced Insight Solutions (AIS)-related configuration. For more information about the **juniper-ais** configuration group, see the *Juniper Networks Advanced Insight Solutions Guide*.

## Applying a Configuration Group in a Routing Matrix

To have a configuration inherit the statements in a configuration group, include the **apply-groups** statement on the TX Matrix Plus router:

```
apply-groups [ group-names ];
```

Include the **apply-groups [ group-names ]** statement anywhere in the configuration that the configuration statements contained in a configuration group are needed.

If you specify more than one group name, list them in order of inheritance priority. The configuration statements in the first group take priority over configuration statements in subsequent groups.

You can include only one **apply-groups** statement at each specific level of the configuration hierarchy. The **apply-groups** statement at a specific hierarchy level lists the configuration groups to be added to the containing statement's list of configuration groups.

Values specified at the specific hierarchy level override values inherited from the configuration group.

Groups listed in nested **apply-groups** statements take priority over groups in outer statements. In the following example, the BGP neighbor 10.0.0.1 inherits configuration data from group one first, then from groups two and three. Configuration data in group one overrides data in any other group. Data from group ten is used only if a statement is not contained in any other group.

```
apply-groups [ eight nine ten ];
protocols {
  apply-groups seven;
  bgp {
    apply-groups [ five six ];
    group some-bgp-group {
      apply-groups four;
      neighbor 10.0.0.1 {
        apply-groups [ one two three ];
      }
    }
  }
}
```

## Displaying Inherited Statements

Configuration groups can add some confusion regarding the actual values used by the router, because configuration data can be inherited from configuration groups. To view the actual values used by the router, use the **display inheritance** command after the pipe in a **show** command. This command displays the inherited statements at the level at which they are inherited and the group from which they have been inherited.



The following example shows part of the output of the **show | display inheritance** command that shows configuration statements inherited from the special configuration group **re0**, which contains configuration statements that apply to the Routing Engine in slot 0 (labeled **RE0**) on the TX Matrix Plus router:

```
[edit]
user@host# show | display inheritance
...
system {
  ## 'sfc0' was inherited from group 're0'
  host-name sfc0;
  ## 'backup-router' was inherited from group 're0'
  backup-router 192.168.35.254;
}
interfaces {
  ## 'em0' was inherited from group 're0'
  em0 {
    ## '0' was inherited from group 're0'
    unit 0 {
      ## 'inet' was inherited from group 're0'
      family inet {
        ## '192.168.35.95/24' was inherited from group 're0'
        address 192.168.35.95/24;
      }
    }
  }
}
...
```

## Disabling Inheritance of a Configuration Group in the Routing Matrix

To disable inheritance of a configuration group at any level except the top level of the hierarchy, include the **apply-groups-except** statement:

```
apply-groups-except [ group-names ];
```

This statement is useful when you use the **apply-group** statement at a specific hierarchy level but also want to override the values inherited from the configuration group for a specific parameter.

## Using Special Configuration Groups for the Routing Engines in the Routing Matrix

Using special configuration group names for all Routing Engines in the routing matrix allows you to configure the individual Routing Engines in each router differently. Parameters that are not configured at the **[edit groups]** hierarchy level apply to all Routing Engines in the routing matrix.

To configure configuration groups and apply inheritance for the Routing Engines in a routing matrix, you can include the **groups** statement at the **[edit]** hierarchy level on the TX Matrix Plus router and then include special configuration group names for all the Routing Engines in the routing matrix:

```
[edit]
groups {
  re0 { # Create the group for the SFC master Routing Engine.
    system {
```

```
        host-name sfc0-re0-hostname;  
        backup-router ip-address;  
        ...  
    }  
    interfaces {  
        em0 {  
            unit logical-unit-number {  
                ...  
            }  
        }  
    }  
}  
re1 { # Create the group for the SFC backup Routing Engine.  
    system {  
        host-name sfc0-re1-hostname;  
        backup-router ip-address;  
        ...  
    }  
    interfaces {  
        em0 {  
            unit logical-unit-number {  
                ...  
            }  
        }  
    }  
}  
lccn-re0 { # Create the group for the master Routing Engine in a specific LCC.  
    system {  
        host-name lccN-re0-hostname;  
        backup-router ip-address;  
        ...  
    }  
    interfaces {  
        em0 {  
            unit logical-unit-number {  
                ...  
            }  
        }  
    }  
}  
lccn-re1 { # Create the group for the backup Routing Engine in a specific LCC.  
    system {  
        host-name lccN-re1-hostname;  
        backup-router ip-address;  
        ...  
    }  
    interfaces {  
        em0 {  
            unit logical-unit-number {  
                ...  
            }  
        }  
    }  
}  
...additional-routing-engine-group-configurations...  
}  
apply-groups [ re0 re1 lccn-re0 lccn-re1 ... ]; # Enable inheritance of the groups.
```

For routers in a routing matrix with a TX Matrix Plus router, you can specify the following special group names:

- **re0**—Configuration statements apply to the Routing Engine in slot 0 (labeled **RE0**) on the TX Matrix Plus router.
- **re1**—Configuration statements apply to the Routing Engine in slot 1 (labeled **RE1**) on the TX Matrix Plus router.
- **lccn-re0**—Configuration statements apply to the Routing Engine in slot 0 (labeled **RE0**) on the router identified as **lccn**, where **n** is the LCC number and has the following values depending on the LCC configuration:
  - From **0** through **3** on a T1600 router in a routing matrix with a TX Matrix Plus router.
  - From **0** through **7** on a T1600 router in a routing matrix with a TX Matrix Plus router with 3D SIBs.
  - **0, 2, 4, or 6** on a T4000 router in a routing matrix with a TX Matrix Plus router with 3D SIBs.
- **lccn-re1**—Configuration statements applied to the Routing Engine in slot 1 (labeled **RE1**) on the router identified **lccn**, where **n** is the LCC number and has the following values depending on the LCC configuration:
  - From **0** through **3** on a T1600 router in a routing matrix with a TX Matrix Plus router.
  - From **0** through **7** on a T1600 router in a routing matrix with a TX Matrix Plus router with 3D SIBs.
  - **0, 2, 4, 6** on a T4000 router in a routing matrix with a TX Matrix Plus router with 3D SIBs.

Because the configuration statements in the special configuration groups for Routing Engines apply to specific Routing Engines in the routing matrix, you can create a single configuration for all of the routers, with each Routing Engine using only the configuration statements that apply to it.

Each Routing Engine configuration group contains at a minimum the configuration for the Routing Engine hostname and the management Ethernet interface (**em0**). In addition, if each Routing Engine uses a different management interface, the group also should contain the configuration for the backup router and static routes.

Note that apply groups can be nested. For example, any configuration statements that are common to **lcc0-re0** and **lcc0-re1** can be included in a separate configuration group and then added as an apply group to the **lcc0-re0** and **lcc0-re1** groups, which in turn are applied to the main configuration.

For more information about configuring and applying configuration groups, see the *CLI User Guide*.

#### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)

- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Using Global FPC Numbering for Interfaces in a Routing Matrix with a TX Matrix Plus Router

---

When configuring interfaces on a routing matrix with a TX Matrix Plus router, you must adjust the routing matrix configuration to accommodate increased FPC numbers used in interface names.

For example, if you have a Gigabit Ethernet interface installed in FPC slot 7, PIC slot 0, port 0 of T1600 router lcc 3, you can configure this interface on the TX Matrix Plus router by including the **ge-31/0/0** statement at the **[edit interfaces]** hierarchy level:

```
[edit]
interfaces {
  ge-31/0/0 { # In a standalone T1600 router, the interface is 'ge-7/0/0'.
    unit 0 {
      family inet {
        address ip-address;
      }
    }
  }
}
```

For more information about converting FPC hardware slot numbers on a T1600 or T4000 router to the global FPC numbers used for interfaces in a routing matrix and vice versa, see [“FPC Numbering for Interfaces in TXP-T4000-3D Configuration” on page 20](#), [“FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration” on page 26](#), [“FPC Numbering for Interfaces in TXP-T1600-3D Configuration” on page 16](#), [“FPC Numbering for Interfaces in TXP-T1600 Configuration” on page 13](#), and [“Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router” on page 121](#).



**NOTE:** When you include the **fpc** statement at the **[edit chassis lcc lcc-number]** hierarchy level, specify the FPC hardware slot number (0 through 7) as labeled on the T1600 router chassis. Do not specify the corresponding global FPC number (0 through 31).

---

For more information about physically connecting a TX Matrix Plus router and T1600 or T4000 routers together in a routing matrix, [TX Matrix Plus Router Hardware Guide](#) For more information about the interface naming conventions for a routing matrix, see the *Junos OS Network Interfaces Library for Routing Devices*.

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)

- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Configuring Protocols and Other Features on a Routing Matrix with a TX Matrix Plus Router

Other than the expanded range of FPC numbers for interfaces and the requirement to create groups for the T1600 or T4000 routers, the configuration of a routing matrix with a TX Matrix Plus router is exactly the same as for all other Juniper Networks routers. You can configure routing protocols, Multiprotocol Label Switching (MPLS) applications, virtual private networks (VPNs), routing and forwarding options, and other software features as usual.

For more information about configuring Junos OS-based routers, see the Junos OS configuration guides.

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Configuring Chassis-Specific Features on a Routing Matrix with a TX Matrix Plus Router

You can configure chassis-specific features on specific T1600 routers in a routing matrix with a TX Matrix Plus router:

- [Configuring PIC-Specific Features on a T1600 or T4000 Router in a Routing Matrix on page 43](#)
- [Configuring an Alarm to Trigger if an LCC in the Routing Matrix Does Not Come Online on page 44](#)
- [Configuring an LCC in the Routing Matrix to Stay Offline on page 44](#)
- [For More Information on page 45](#)

### Configuring PIC-Specific Features on a T1600 or T4000 Router in a Routing Matrix

You can configure PIC-specific features on specific routers in a routing matrix with a TX Matrix Plus router. To configure, include the **`lcc lcc-number`** statement at the **[edit chassis]** hierarchy level and specify the PIC-specific feature to configure.

```
[edit]
chassis {
```

```

lcc lcc-number {
  fpc slot-number { # Use the T1600 or T4000 router FPC hardware slot number.
    pic pic-number {
      ...pic-specific-configuration...
    }
  }
}

```



**NOTE:** When you include statements at the `[edit chassis lcc lcc-number]` hierarchy level, specify the actual FPC hardware slot number as labeled on the T1600 or T4000 router chassis. Do not specify the corresponding global FPC number. For details, see [“FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration”](#) on page 26, [“FPC Numbering for Interfaces in TXP-T4000-3D Configuration”](#) on page 20, [“FPC Numbering for Interfaces in TXP-T1600-3D Configuration”](#) on page 16, [“FPC Numbering for Interfaces in TXP-T1600 Configuration”](#) on page 13, and [“Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router”](#) on page 121.

## Configuring an Alarm to Trigger if an LCC in the Routing Matrix Does Not Come Online

By default, the Junos OS allows all T1600 or T4000 routers in the routing matrix to come online. Optionally, you can configure the TX Matrix Plus router to generate an alarm if the T1600 or T4000 routers in the routing matrix do not come online.

To configure, include the **online-expected** statement at the `[edit chassis lcc lcc-number]` hierarchy level on the TX Matrix Plus router:

```

[edit]
chassis {
  lcc lcc-number {
    online-expected;
  }
}

```

If you do not include the **online-expected** statement at any `[edit chassis lcc lcc-number]` hierarchy level on the TX Matrix Plus router, no alarm triggers if any T1600 or T4000 fails to come online.

## Configuring an LCC in the Routing Matrix to Stay Offline

If you do not want a T1600 or T4000 router to be part of the routing matrix, such as while you are performing maintenance on that LCC, you can configure the router to be offline.

To configure a T1600 or T4000 router to be offline, include the **offline** statement at the `[edit chassis lcc lcc-number]` hierarchy level:

```

[edit]
chassis {
  lcc lcc-number {
    offline;
  }
}

```

When you are ready to bring the T1600 or T4000 router back online, delete the **offline** configuration statement at the **[edit chassis lcc *number*]** hierarchy level.



**NOTE:** If you do not include the **offline** statement at any **[edit chassis lcc *lcc-number*]** hierarchy level on the TX Matrix Plus router, any T1600 or T4000 router that is part of the routing matrix is allowed to come online.

## For More Information

For more information about chassis-specific statements, see the *Junos OS Administration Library*.

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Committing Configurations on a Routing Matrix with a TX Matrix Plus Router

On a routing matrix with a TX Matrix Plus router, you must commit configuration changes on the TX Matrix Plus router (also referred as SFC) rather than on the individual T1600 or T4000 routers. All configuration changes you commit on the SFC are distributed to all the T1600 or T4000 routers in the routing matrix and override any configuration changes committed directly on a T1600 or T4000 router.



**NOTE:** If you commit a configuration directly on a T1600 or T4000 router in a routing matrix, the configuration is not distributed to the SFC or to the other T1600 or T4000 routers in the routing matrix.

There are three main ways to commit configurations on a TX Matrix Plus router:

- [Committing a Configuration to Both Master and Backup Routing Engines in the Routing Matrix on page 45](#)
- [Committing a Configuration to the Master Routing Engines \(Only\) in the Routing Matrix on page 47](#)
- [Synchronizing to the Configuration on the Other Routing Engine on page 47](#)

## Committing a Configuration to Both Master and Backup Routing Engines in the Routing Matrix

To commit the same configuration to both the master and backup Routing Engines in the routing matrix, issue the **commit** operational command with the **synchronize** option.

The Routing Engine on which you execute the **commit synchronize** command (the requesting Routing Engine) copies and loads its candidate configuration to the other Routing Engine (the responding Routing Engine). Both Routing Engines then perform a syntax check on the candidate configuration file being committed. If no errors are found, the configuration is activated and becomes the current operational configuration on both Routing Engines.

The **commit synchronize** command makes the active or applied configuration the same for both Routing Engines with the exception of two special configuration groups for Routing Engines:

- Configuration statements specified in the **re0** configuration group are applied only to Routing Engines in slot 0 (designated **re0**).
- Configuration statements specified in the **re1** configuration group are applied only to Routing Engines in slot 1 (designated **re0**).



**NOTE:** If you do not synchronize the configurations between two Routing Engines and one of them fails, the router may not forward traffic correctly because the backup Routing Engine may have a different configuration.

---

The following example shows command output for the **commit** command issued on the TX Matrix Plus router with the **synchronize** option:

```
[edit groups]
user@host# set re0 system hostname sfc0-re0-hostname

user@sfc0-re0-hostname#commit synchronize;
sfc0-re0:
configuration check succeeds
lcc0-re1:
commit complete
lcc0-re0:
commit complete
lcc2-re1:
commit complete
lcc2-re0:
commit complete
sfc0-re1:
commit complete
sfc0-re0:
commit complete
```

It can happen that the **commit synchronize** command is initiated at the same time from both Routing Engines, which causes the process to hang. For example, suppose you had the following configuration in combination with nonstop active routing (NSR):

```
event-options {
  policy testpolicy {
    events rpd_bgp_neighbor_state_changed;
    then {
      change-configuration {
```



```

        commands {
            "set system login announcement policy_executed";
        }
    }
}

```

With NSR enabled, both Routing Engines run `rpd` and both notice the `rpd_bgp_neighbor_state_changed` event. Prior to Junos OS Release 15.1, in this situation, both Routing Engines tried to lock the configuration and execute a synchronous commit. The action hung while each Routing Engine tried to obtain a configuration database lock from the other, and the CLI became unresponsive for an extended period of time (at least for one hour). As of Junos OS Release 15.1, to handle unresponsiveness, the system waits 20 seconds for the database lock. If in that time interval the lock cannot be taken, control is returned with the following error messages:

```

error: could not get initial lock on database: Resource temporarily unavailable
error: Database lock failed for file '/var/run/db/juniper.db': Resource temporarily
unavailable
error: Could not initialize database

```

This message indicates that the database lock is temporarily not available due to internal system conditions; the user can retry the **commit synchronize** process after several seconds.

## Committing a Configuration to the Master Routing Engines (Only) in the Routing Matrix

In a routing matrix with a TX Matrix Plus router, issuing the basic form of the **commit** operational command on the TX Matrix Plus router commits the candidate configuration only to the master Routing Engines in the routing matrix.

The following example shows command output for the basic form of the **commit** command:

```

user@host# commit
sfc0-re0:
configuration check succeeds
lcc0-re0:
commit complete
lcc1-re0:
commit complete
sfc0-re0:
commit complete

```

## Synchronizing to the Configuration on the Other Routing Engine

In a routing matrix with a TX Matrix Plus router, issuing the **commit synchronize** command with the **force** option directs one Routing Engine to synchronize its configuration with the other.



**NOTE:** We recommend that you use the **force** option only if you are unable to resolve the issues that caused the **commit synchronize** command to fail.

The Routing Engine on which you issue this command (the requesting Routing Engine) copies and loads its candidate configuration to the other Routing Engine (the responding Routing Engine). Both Routing Engines then perform a syntax check on the candidate configuration file being committed. If no errors are found, the configuration is activated and becomes the current operational configuration on both Routing Engines.

The **commit synchronize** command does not work if the responding Routing Engine has uncommitted configuration changes. However, you can enforce commit synchronization on the Routing Engines by using the **force** option.



**NOTE:** When you issue the **commit synchronize** command with the **force** option from one Routing Engine, the configuration sessions on the other Routing Engine will be terminated and its configuration synchronized with that on the Routing Engine from which you issued the command.

#### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

---

## Example Configuration for a Routing Matrix with a TX Matrix Plus Router

The following sections describe an example configuration for a routing matrix with a TX Matrix Plus router:

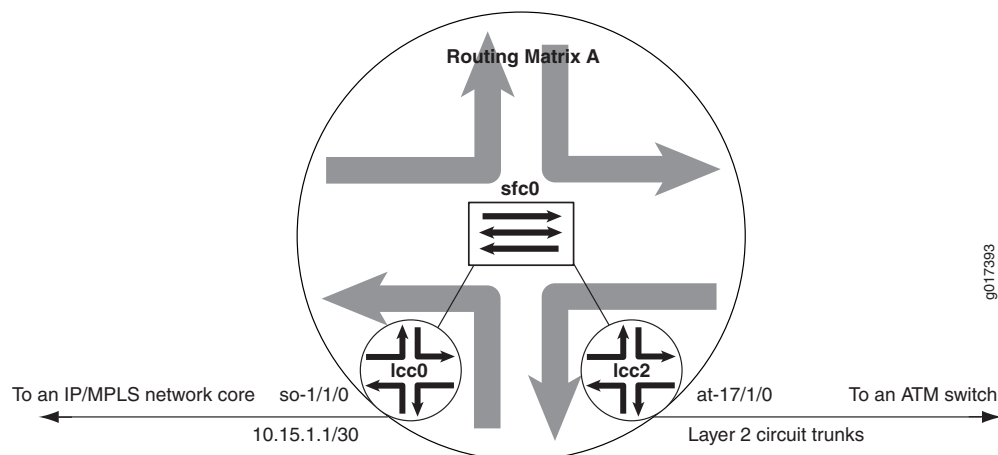
- [Example Routing Matrix Topology on page 48](#)
- [Example Routing Matrix Configuration on page 49](#)
- [Verifying the Configuration of a Routing Matrix with a TX Matrix Plus Router on page 55](#)

### Example Routing Matrix Topology

This example is based on **Routing Matrix A**, a basic routing matrix consisting of a TX Matrix Plus router (**sfc0**) and two T1600 routers (**lcc0** and **lcc2**). [Figure 7 on page 49](#) shows that **Routing Matrix A** is acting as a provider edge (PE) router in a Layer 2 circuit network. SONET interface **so-1/1/0** in the T1600 router designated as **lcc0** connects to an IP/MPLS core network. Asynchronous Transfer Mode 2 (ATM2) intelligent queuing (IQ) interface **at-17/1/0** in the T1600 router designated as **lcc2** runs Layer 2 circuit trunk mode to connect to an ATM switch.

For more information about Layer 2 circuit networks, see the *Junos OS VPNs Library for Routing Devices*.

Figure 7: Example Topology of a Routing Matrix with a TX Matrix Plus Router



Note the following key considerations for this routing matrix configuration:

- For most operations, you will manage the routing matrix as a single router, executing operational commands and committing configurations on the TX Matrix Plus router designated as **sfc0**.
- Create configuration groups for each Routing Engine in the routing matrix by using the special configuration groups for a routing matrix consisting of routers with dual Routing Engines: **re0**, **re1**, **lcc0-re0**, **lcc2-re0**, **lcc0-re1**, and **lcc2-re1**. In these Routing Engine configuration groups, configure hostnames, default routes, and management Ethernet interfaces.
- To configure interfaces, use the routing matrix FPC numbering convention of slots **0** through **31**.
- To enable ATM2 IQ trunk mode and other chassis-based commands, include the **lcc lcc-number** statement at the **[edit chassis]** hierarchy level and use the hardware FPC slot numbers **0** through **7** of node **lcc2**.
- Configure most other processes as usual, such as routing, class of service (CoS), and firewalls.

## Example Routing Matrix Configuration

To configure the example **Routing Matrix A** described in the previous section, commit the following configuration at the TX Matrix Plus router:

```
[edit]
groups { # Create special configuration groups in a routing matrix.
  re0 { # Create a group for the master Routing Engine on TX Matrix Plus router sfc0.
    system {
      host-name sfc0;
      backup-router 192.168.17.254;
    }
  }
}
```

```
interfaces { # Configure an IP address for the management interface logical port.
  em0 {
    unit 0 {
      family inet {
        address 192.168.77.158/21;
      }
    }
  }
}
}
re1 { # Create a group for the backup Routing Engine on TX Matrix Plus router sfc0.
  system {
    host-name sfc0_alt_re;
    backup-router 192.168.17.254;
  }
  interfaces { # Configure an IP address for the management interface logical port.
    em0 {
      unit 0 {
        family inet {
          address 192.168.77.168/21;
        }
      }
    }
  }
}
}
lcc0-re0 { # Create a group for the master Routing Engine on T1600 router lcc0.
  system {
    host-name mylcc0;
    backup-router 192.168.17.254 destination [10.0.0.0/8 192.168.0.0/16];
  }
  interfaces { # Configure an IP address for the management interface logical port.
    em0 {
      unit 0 {
        family inet {
          address 192.168.77.157/21;
        }
      }
    }
  }
}
}
lcc0-re1 { # Create a group for the backup Routing Engine on T1600 router lcc0.
  system {
    host-name mylcc0_alt_re;
    backup-router 192.168.17.254 destination [10.0.0.0/8 192.168.0.0/16];
  }
  interfaces { # Configure an IP address for the management interface logical port.
    em0 {
      unit 0 {
        family inet {
          address 192.168.77.169/21;
        }
      }
    }
  }
}
}
lcc2-re0 { # Create a group for the master Routing Engine on T1600 router lcc2.
```

```

system {
    host-name mylcc2;
    backup-router 192.168.17.254 destination [10.0.0.0/8 192.168.0.0/16];
}
interfaces { # Configure an IP address for the management interface logical port.
    em0 {
        unit 0 {
            family inet {
                address 192.168.77.159/21;
            }
        }
    }
}

lcc2-re1 { # Create a group for the backup Routing Engine on T1600 router lcc2.
    system {
        host-name mylcc2_alt_re;
        backup-router 192.168.17.254 destination [10.0.0.0/8 192.168.0.0/16];
    }
    interfaces { # Configure an IP address for the management interface logical port.
        em0 {
            unit 0 {
                family inet {
                    address 192.168.77.192/21;
                }
            }
        }
    }
}

apply-groups [ re0 re1 lcc0-re1 lcc2-re1 lcc0-re0 lcc2-re0 ]; # Enable inheritance.
system { # Configure system management properties.
    syslog {
        file messages {
            any any;
        }
    }
}

chassis { # You must apply chassis commands to a specific T1600 router.
    lcc 2 { # Specify the T1600 router and the FPC hardware slot of the node.
        fpc 1 { # This FPC is equivalent to slot 17 in the routing matrix.
            pic 1 {
                atm-l2circuit-mode {
                    trunk nni;
                }
            }
        }
    }
}

interfaces {
    so-1/1/0 { # This is a SONET interface at FPC 1, PIC 1, port 0
        mtu 9192; # on the T1600 router LCC0.
        unit 0 {
            family inet {
                address 10.15.1.1/30 {
                    destination 10.15.1.2;
                }
            }
        }
    }
}

```

```
    }
  }
  family iso;
  family mpls {
    filter {
      input filter_1;
    }
  }
}
}
at-17/1/0 { # This is an ATM2 IQ interface at FPC 1, PIC 1, port 0
  encapsulation atm-ccc-cell-relay; # on the T1600 router LCC2.
  atm-options {
    pic-type atm2;
    scheduler-maps { # CoS on an ATM2 IQ PIC works the same in a routing matrix.
      cos1 { # as it does in a standalone T1600 router.
        forwarding-class ubr {
          priority low;
          transmit-weight percent 25;
        }
        forwarding-class nrtvbr {
          priority low;
          transmit-weight percent 25;
        }
        forwarding-class rtvbr {
          priority low;
          transmit-weight percent 25;
        }
        forwarding-class cbr {
          priority high;
          transmit-weight percent 25;
        }
      }
      cos2 {
        forwarding-class ubr {
          priority low;
          transmit-weight percent 10;
        }
        forwarding-class nrtvbr {
          priority low;
          transmit-weight percent 20;
        }
        forwarding-class rtvbr {
          priority low;
          transmit-weight percent 30;
        }
        forwarding-class cbr {
          priority high;
          transmit-weight percent 40;
        }
      }
      cos3 {
        forwarding-class ubr {
          priority low;
          transmit-weight percent 40;
        }
      }
    }
  }
}
```

```

        forwarding-class nrtvbr {
            priority low;
            transmit-weight percent 30;
        }
        forwarding-class rtvbr {
            priority low;
            transmit-weight percent 20;
        }
        forwarding-class cbr {
            priority high;
            transmit-weight percent 10;
        }
    }
}
unit 0 {
    trunk-id 0;
    trunk-bandwidth 10m;
    cell-bundle-size 2;
}
unit 1 {
    trunk-id 1;
    trunk-bandwidth 10m;
    cell-bundle-size 1;
    atm-scheduler-map cos1;
}
unit 2 {
    trunk-id 2;
    trunk-bandwidth 10m;
    cell-bundle-size 2;
    atm-scheduler-map cos2;
}
unit 3 {
    trunk-id 3;
    trunk-bandwidth 10m;
    cell-bundle-size 3;
    atm-scheduler-map cos3;
}
}
lo0 {
    unit 0 {
        family inet {
            address 127.0.0.1/32;
            address 10.255.77.158/32 {
                primary;
            }
        }
        family iso {
            address 47.0005.80ff.f800.0000.0108.0001.0102.5507.0158.00;
        }
        family inet6 {
            address 2001:db8::10:255:77:158/32 {
                primary;
            }
        }
    }
}
}

```

```
    }  
  }  
  protocols { # You can configure protocols in the routing matrix as usual.  
    mpls {  
      interface so-1/1/0.0;  
    }  
    isis {  
      interface so-1/1/0.0;  
      interface lo0.0;  
    }  
    ldp {  
      interface so-1/1/0.0;  
      interface lo0.0;  
    }  
    l2circuit {  
      neighbor 10.255.71.97 {  
        interface at-17/1/0.0 {  
          virtual-circuit-id 100;  
        }  
        interface at-17/1/0.1 {  
          virtual-circuit-id 101;  
        }  
        interface at-17/1/0.2 {  
          virtual-circuit-id 102;  
        }  
        interface at-17/1/0.3 {  
          virtual-circuit-id 103;  
        }  
      }  
    }  
  }  
  }  
  class-of-service { # You can configure CoS in the routing matrix as usual.  
    forwarding-classes {  
      queue 0 ubr;  
      queue 1 nrtvbr;  
      queue 2 rtvbr;  
      queue 3 cbr;  
    }  
    traceoptions {  
      flag all;  
    }  
  }  
  firewall { # You can configure firewalls in the routing matrix as usual.  
    family mpls {  
      filter filter_1 {  
        term plp0 {  
          from {  
            exp [ 0 2 4 6 ];  
          }  
          then {  
            count LOW;  
            loss-priority low;  
          }  
        }  
      }  
      term plp1 {  
        from {
```



```

        exp [ 1 3 5 7 ];
    }
    then {
        count HIGH;
        loss-priority high;
    }
}
}
}
}
}

```

## Verifying the Configuration of a Routing Matrix with a TX Matrix Plus Router

In general, when you issue standard operational commands on a TX Matrix Plus router, you receive output from the master Routing Engines of all components in the routing matrix. To display information for the TX Matrix Plus router only, include the **sfc sfc-number** option. To limit the output of information for a specific T1600 router within the routing matrix, include the **lcc lcc-number** option. To display information for all T1600 routers within the routing matrix (selected commands only), include the **all-lcc** option. Any exceptions to this general rule are mentioned next to the appropriate commands.

The following sections contain examples of specific **show** operational commands you can use to verify the configuration of the example:

- [Displaying Junos OS Versions on page 55](#)
- [Displaying Configured Interfaces on page 59](#)
- [Displaying Available Routes on page 60](#)
- [Displaying Alarms and System Uptime on page 60](#)
- [Displaying Craft Interface Messages on page 61](#)
- [Displaying System Uptime on page 63](#)
- [Displaying Chassis Hardware and Status on page 64](#)

### Displaying Junos OS Versions

The **show version** command provides an excellent example of how you can select output for various components of the routing matrix with a TX Matrix Plus router. If the TX Matrix Plus router (**sfc sfc-number**) or a T1600 router (**lcc lcc-number**) is not specified in the command, the command displays output for all components.

```
user@host> show version ?
```

Possible completions:

<[Enter]>	Execute this command
brief	Display brief output
detail	Display detailed output
invoke-on	Remote command execution
lcc	Show software version on specific LCC (0..3)
sfc	Show software version on SFC (0..0)
	Pipe through a command

You can display information about individual software components in the TX Matrix Plus router, in a specific T1600 router, or the entire routing matrix:

- [Displaying Junos OS Versions for All Routers on page 56](#)
- [Displaying Junos OS Version for the SFC Only on page 57](#)
- [Displaying Junos OS Version for a Specific LCC on page 57](#)
- [Displaying Junos OS Versions for All LCCs on page 58](#)

### ***Displaying Junos OS Versions for All Routers***

To display the software version for all routing matrix components, issue the **show version** command on the TX Matrix Plus router:

```
user@sfc0> show version
```

```
sfc0-re0:
```

```
-----  
Hostname: sfc0  
Model: txp  
JUNOS Base OS boot [9.6-20090713.1]  
JUNOS Base OS Software Suite [9.6-20090713.1]  
JUNOS Kernel Software Suite [9.6-20090713.1]  
JUNOS Crypto Software Suite [9.6-20090713.1]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]  
JUNOS Online Documentation [9.6-20090713.1]  
JUNOS Voice Services Container package [9.6-20090713.1]  
JUNOS Border Gateway Function package [9.6-20090713.1]  
JUNOS Services AACL Container package [9.6-20090713.1]  
JUNOS Services LL-PDF Container package [9.6-20090713.1]  
JUNOS Services Stateful Firewall [9.6-20090713.1]  
JUNOS AppId Services [9.6-20090713.1]  
JUNOS IDP Services [9.6-20090713.1]  
JUNOS Routing Software Suite [9.6-20090713.1]
```

```
lcc0-re0:
```

```
-----  
Hostname: mylcc0  
Model: t1600  
JUNOS Base OS boot [9.6-20090713.1]  
JUNOS Base OS Software Suite [9.6-20090713.1]  
JUNOS Kernel Software Suite [9.6-20090713.1]  
JUNOS Crypto Software Suite [9.6-20090713.1]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]  
JUNOS Online Documentation [9.6-20090713.1]  
JUNOS Voice Services Container package [9.6-20090713.1]  
JUNOS Border Gateway Function package [9.6-20090713.1]  
JUNOS Services AACL Container package [9.6-20090713.1]  
JUNOS Services LL-PDF Container package [9.6-20090713.1]  
JUNOS Services Stateful Firewall [9.6-20090713.1]  
JUNOS AppId Services [9.6-20090713.1]  
JUNOS IDP Services [9.6-20090713.1]  
JUNOS Routing Software Suite [9.6-20090713.1]
```

```
lcc2-re0:
```

```
-----  
Hostname: mylcc2  
Model: t1600
```

```

JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]

```

### *Displaying Junos OS Version for the SFC Only*

To display the software version for the TX Matrix Plus router only, include the **sfc number** option:

```

user@mysfc> show version sfc 0
sfc0-re0

```

```

-----
Hostname: sfc0
Model: txp
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]

```

### *Displaying Junos OS Version for a Specific LCC*

To display the software version for a specific T1600 router, include the **lcc** option:

```

user@host> show version lcc 0
lcc0-re0:

```

```

-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]

```

```
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

### *Displaying Junos OS Versions for All LCCs*

To display the software versions for all T1600 routers, include the **all-lcc** option:

```
user@host> show version all-lcc
lcc0-re0:
```

```
-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

**lcc2-re0**

```
-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

## Displaying Configured Interfaces

Although individual FPCs are installed in each of the T1600 routers, the routing matrix is designed to collect interface information centrally at the TX Matrix Plus router. To display available interfaces in the routing matrix, issue a **show interfaces** command on the TX Matrix Plus router:

```
user@host> show interfaces terse
```

Interface	Admin	Link	Proto	Local	Remote
so-1/0/0	up	up			
so-1/1/0	up	up			
so-1/1/0.0	up	up	inet	10.15.1.1	--> 10.15.1.2
			iso		
			mpls		
so-1/3/0	up	down			
at-2/1/0	up	up			
ge-2/2/0	up	up			
so-3/3/0	up	up			
so-3/3/1	up	up			
so-3/3/2	up	down			
so-3/3/3	up	down			
so-16/0/0	up	down			
so-16/0/1	up	down			
so-16/0/2	up	down			
so-16/0/3	up	up			
ge-16/1/0	up	down			
so-17/0/0	up	down			
at-17/1/0	up	up			
at-17/1/0.0	up	up	ccc		
at-17/1/0.1	up	up	ccc		
at-17/1/0.2	up	up	ccc		
at-17/1/0.3	up	up	ccc		
at-17/1/1	up	up			
ge-17/2/0	up	up			
ge-17/2/1	up	up			
so-17/3/0	up	down			
so-19/0/0	up	down			
so-19/1/0	up	down			
so-19/2/0	up	down			
so-19/3/0	up	down			
bcm0	up	up			
bcm0.0	up	up	tnp	4	
dsc	up	up			
em0	up	up			
em0.0	up	up	tnp	4	
fxp0	up	up			
fxp0.0	up	up	inet	192.168.77.158/21	
gre	up	up			
ipip	up	up			
lo0	up	up			
lo0.0	up	up	inet	10.255.70.158	--> 0/0
				127.0.0.1	--> 0/0
			iso		
				47.0005.80ff.f800.0000.0108.0001.0102.5507.0158.00	
			inet6	2001:db8::10:255:70:158	
				fe80::280:42ff:fe13:269d	
lo0.16385	up	up	inet		
			inet6	fe80::280:42ff:fe13:269d	
lsi	up	up			

mtun	up	up
pimd	up	up
pime	up	up
tap	up	up

---

### Displaying Available Routes

When you need to verify route information for a routing matrix, you must issue operational commands on the TX Matrix Plus router. To display available routes for the routing matrix, issue a **show route** command:

```
user@host> show route summary
Router ID: 10.255.77.158
inet.0: 13 destinations, 14 routes (12 active, 0 holddown, 1 hidden)
    Direct:    4 routes,    3 active
    Local:     2 routes,    2 active
    Static:    6 routes,    6 active
    IS-IS:     2 routes,    1 active
inet.3: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
    LDP:       1 routes,    1 active
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
    Direct:    1 routes,    1 active
mpls.0: 7 destinations, 7 routes (7 active, 0 holddown, 0 hidden)
    MPLS:      3 routes,    3 active
    LDP:       2 routes,    2 active
    L2CKT:     2 routes,    2 active
inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
    Direct:    2 routes,    2 active
__juniper_private1__.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0
hidden)
    Direct:    1 routes,    1 active
l2circuit.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
    LDP:       1 routes,    1 active
    L2CKT:     4 routes,    4 active
```

---

### Displaying Alarms and System Uptime

To display alarms for all routing matrix components, issue the **show chassis alarms** command at the TX Matrix Plus router:

```
user@host> show chassis alarms
sfc0-re0:
-----
2 alarms currently active
Alarm time           Class  Description
2009-07-10 02:27:46 PDT  Minor  LCC 0 Minor Errors
2009-07-09 17:12:29 PDT  Major  LCC 2 Major Errors

lcc0-re0:
-----
1 alarms currently active
Alarm time           Class  Description
2009-07-10 02:27:46 PDT  Minor  PEM 1 Absent

lcc2-re0:
-----
1 alarms currently active
```

Alarm time	Class	Description
2009-07-09 17:12:29 PDT	Major	PEM 1 Not OK

### Displaying Craft Interface Messages

To display the messages that are currently displayed on the craft interface for all routing matrix components, issue the **show chassis craft-interface** command at the master Routing Engine of the TX Matrix Plus router:

```
user@host> show chassis craft-interface
sfc0-re0:
```

#### FPM Display Contents:

```
+-----+
|sfc0      |
|13 Alarms active |
|R: LCC 0 Major Error|
|R: LCC 2 Minor Error|
+-----+
```

#### SFC Front Panel Switch Settings:

```
SFC Chassis Number : 00
Config Size       : 1
```

#### Front Panel System LEDs:

```
Routing Engine    0    1
```

```
-----
OK                *    .
Fail              .    .
Master            *    .
```

#### Front Panel Alarm Indicators:

```
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *
```

#### Front Panel F13 SIB LEDs:

SIB	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Fail	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OK	*	*	.	*	*	.	*	*	*	*	.	.	.	.	.	.
Active	*	*	.	*	*	.	*	*	*	*	.	.	.	.	.	.

#### PS LEDs:

```
PS    0    1
```

```
-----
Red    .    .
Green  *    .
```

#### Fan Tray LEDs:

```
FT    0    1    2    3    4    5
```

```
-----
Red    *    .    .    .    *    .
Green  .    *    *    *    .    *
```

#### CB LEDs:

```
CB    0    1
```

```

Amber . .
Green * .
Blue  * .

```

```
1cc0-re0:
```

```
-----
FPM Display contents:
```

```

+-----+
|1cc0      |
|2 Alarms active  |
|Y: Spare SIB 4 Absen|
|Y: PEM 1 Absent  |
+-----+

```

```
Front Panel System LEDs:
```

```
Routing Engine    0    1
```

```

-----
OK                *    .
Fail              .    .
Master            *    .

```

```
Front Panel Alarm Indicators:
```

```

-----
Red LED          .
Yellow LED       *
Major relay      .
Minor relay      *

```

```
Front Panel FPC LEDs:
```

```
FPC    0    1    2    3    4    5    6    7
```

```

-----
Red      .    .    .    .    .    .    .    .
Green    *    *    .    .    .    .    .    *

```

```
CB LEDs:
```

```
CB    0    1
```

```

-----
Amber . .
Green * .
Blue  * .

```

```
SCG LEDs:
```

```
SCG    0    1
```

```

-----
Amber . .
Green * *
Blue  * .

```

```
SIB LEDs:
```

```
SIB    0    1    2    3    4
```

```

-----
Red      .    .    .    .    .
Green    *    *    *    *    .

```

```
1cc2-re0:
```

```
-----
FPM Display contents:
```

```

+-----+
|1cc2      |
|2 Alarms active  |

```



```

|Y: Spare SIB 4 Absen|
|Y: PEM 1 Absent     |
+-----|

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    .
Master            *    .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED       *
Major relay      .
Minor relay      *

Front Panel FPC LEDs:
FPC    0    1    2    3    4    5    6    7
-----
Red     .    .    .    .    .    .    .    .
Green   *    *    .    .    .    .    .    *

CB LEDs:
CB     0    1
-----
Amber   .    .
Green   *    .
Blue    *    .

SCG LEDs:
SCG    0    1
-----
Amber   .    .
Green   *    *
Blue    *    .

SIB LEDs:
SIB    0    1    2    3    4
-----
Red     .    .    .    .    .
Green   *    *    *    *    .

```

### Displaying System Uptime

To display the amount of time the routing matrix components have been in operation, issue the **show system uptime** command on the TX Matrix Plus router:

```

user@host> show system uptime
sfc0-re0:
-----
Current time: 2009-07-10 07:55:56 PDT
System booted: 2009-07-09 17:08:41 PDT (14:47:15 ago)
Protocols started: 2009-07-09 17:09:22 PDT (14:46:34 ago)
Last configured: 2009-07-09 17:08:28 PDT (14:47:28 ago) by root
7:55AM up 14:47, 1 user, load averages: 0.00, 0.00, 0.00

lcc0-re0:

```

```
-----
Current time: 2009-07-10 07:55:56 PDT
System booted: 2009-07-09 17:07:40 PDT (14:48:16 ago)
Last configured: 2009-07-09 17:08:43 PDT (14:47:13 ago) by root
7:55AM up 14:48, 0 users, load averages: 0.07, 0.02, 0.01
```

**lcc2-re0:**

```
-----
Current time: 2009-07-10 07:55:56 PDT
System booted: 2009-07-09 17:07:33 PDT (14:48:23 ago)
Last configured: 2009-07-09 17:08:47 PDT (14:47:09 ago) by root
7:55AM up 14:48, 0 users, load averages: 0.00, 0.00, 0.00
```

## Displaying Chassis Hardware and Status

To display the hardware inventory for a routing matrix with a TX Matrix Plus router, you can select output for the TX Matrix Plus router only, a specific T1600 router, or all components. If a specific component (**sfc** or **lcc**) is not specified as an option in the command, the default output displays information for the entire routing matrix.

```
user@host> show chassis hardware ?
```

Possible completions:

```
<[Enter]>      Execute this command
clei-models    Display CLEI barcode and model number for orderable FRUs
detail        Include RAM and disk information in output
extensive      Display ID EEPROM information
lcc            Display chassis-specific information (0..3)
models        Display serial number and model number for orderable FRUs

sfc            Display chassis-specific information (0..0)
|             Pipe through a command
```

You can display information about individual hardware components in the TX Matrix Plus router, in a specific T1600 router, or the entire routing matrix:

- [Displaying Information About All Hardware Components on page 64](#)
- [Displaying Information About SIBs on page 67](#)
- [Displaying Information About Routing Engines on page 68](#)
- [Displaying Information About FPCs on page 71](#)
- [Displaying Information About LCCs on page 71](#)

### Displaying Information About All Hardware Components

To display all hardware components in a routing matrix, issue the **show chassis hardware** command on the TX Matrix Plus router:

```
user@host> show chassis hardware
```

**sfc0-re0:**

```
-----
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1131103AHB	TXP
Midplane	REV 05	710-022574	TS4035	SFC Midplane
FPM Display	REV 01	710-024027	DR4982	TXP FPM Display
CIP 0	REV 02	710-023792	DS4568	TXP CIP

CIP 1	REV 02	710-023792	DS4562	TXP CIP
PEM 1	VER 01	740-027463	123456	Power Entry Module
Routing Engine 0	REV 01	740-026942	737A-1024	RE-DUO-2600
Routing Engine 1	REV 01	740-026942	737A-1008	RE-DUO-2600
CB 0	REV 01	710-022606	DP8889	SFC Control Board
CB 1	REV 05	710-022606	DW1103	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 03	750-024564	DT9486	F13 SIB
B Board	REV 02	710-023431	DT6550	F13 SIB Mezz
SIB F13 1	REV 03	750-024564	DT9456	F13 SIB
B Board	REV 02	710-023431	DT6562	F13 SIB
SIB F13 3	REV 04	710-022600	DX0900	F13 SIB
B Board	REV 03	710-023431	DX0957	F13 SIB Mezz
SIB F13 4	REV 04	750-024564	DW5753	F13 SIB
B Board	REV 03	710-023431	DW9034	F13 SIB Mezz
SIB F13 6	REV 03	750-024564	DT9483	F13 SIB
B Board	REV 02	710-023431	DT6558	F13 SIB Mezz
SIB F13 7	REV 04	750-024564	DW5790	F13 SIB
B Board	REV 03	710-023431	DW9072	F13 SIB Mezz
SIB F13 8	REV 04	710-022600	DX0833	F13 SIB
B Board	REV 03	710-023431	DX0938	F13 SIB Mezz
SIB F13 9	REV 03	750-024564	DT9465	F13 SIB
B Board	REV 02	710-023431	DT6574	F13 SIB Mezz
SIB F13 11	REV 04	750-024564	DW5756	F13 SIB
B Board	REV 03	710-023431	DW9072	F13 SIB Mezz
SIB F13 12	REV 04	750-024564	DW5749	F13 SIB
B Board	REV 03	710-023431	DW9050	F13 SIB Mezz
SIB F2S 0/0	REV 03	710-022603	DV0063	F2S SIB
B Board	REV 03	710-023787	DT9917	F2S SIB Mezz
SIB F2S 0/2	REV 03	710-022603	DV0090	F2S SIB
B Board	REV 03	710-023787	DT9994	F2S SIB Mezz
SIB F2S 0/4	REV 03	710-022603	DV0076	F2S SIB
B Board	REV 03	710-023787	DT9930	F2S SIB Mezz
SIB F2S 0/6	REV 03	710-022603	DV0035	F2S SIB
B Board	REV 03	710-023787	DT9951	F2S SIB Mezz
SIB F2S 1/0	REV 03	710-022603	DV0067	F2S SIB
B Board	REV 03	710-023787	DT9922	F2S SIB Mezz
SIB F2S 1/2	REV 03	710-022603	DV0036	F2S SIB
B Board	REV 03	710-023787	DT9950	F2S SIB Mezz
SIB F2S 1/4	REV 03	710-022603	DV0085	F2S SIB
B Board	REV 03	710-023787	DT9935	F2S SIB Mezz
SIB F2S 1/6	REV 03	710-022603	DV0028	F2S SIB
B Board	REV 03	710-023787	DT9960	F2S SIB Mezz
SIB F2S 2/0	REV 03	710-022603	DV0047	F2S SIB
B Board	REV 03	710-023787	DT9965	F2S SIB Mezz
SIB F2S 2/2	REV 03	710-022603	DV0023	F2S SIB
B Board	REV 03	710-023787	DT9927	F2S SIB Mezz
SIB F2S 2/4	REV 03	710-022603	DV0046	F2S SIB
B Board	REV 03	710-023787	DT9946	F2S SIB Mezz
SIB F2S 2/6	REV 03	710-022603	DV0025	F2S SIB
B Board	REV 03	710-023787	DT9914	F2S SIB Mezz
SIB F2S 3/0	REV 03	710-022603	DV0110	F2S SIB
B Board	REV 03	710-023787	DT9944	F2S SIB Mezz
SIB F2S 3/2	REV 03	710-022603	DV0056	F2S SIB
B Board	REV 03	710-023787	DT9979	F2S SIB Mezz
SIB F2S 3/4	REV 03	710-022603	DV0024	F2S SIB
B Board	REV 03	710-023787	DT9920	F2S SIB Mezz
SIB F2S 3/6	REV 03	710-022603	DV0108	F2S SIB
B Board	REV 03	710-023787	DT9989	F2S SIB Mezz
SIB F2S 4/0	REV 02	710-022603	DT2821	F2S SIB

B Board	REV 02	710-023787	DT1719	F2S SIB Mezz
SIB F2S 4/2	REV 03	710-022603	DV0031	F2S SIB
B Board	REV 03	710-023787	DT9953	F2S SIB Mezz
SIB F2S 4/4	REV 03	710-022603	DV0094	F2S SIB
B Board	REV 03	710-023787	DT9918	F2S SIB Mezz
SIB F2S 4/6	REV 03	710-022603	DV0022	F2S SIB
B Board	REV 03	710-023787	DT9943	F2S SIB Mezz
Fan Tray 0	REV 02	710-024029	DP5653	Front Fan Tray
Fan Tray 1	REV 02	760-024497	DP5661	Front Fan Tray
Fan Tray 2	REV 02	760-024502	DP5660	Rear Fan Tray
Fan Tray 3	REV 02	760-024502	DR8267	Rear Fan Tray
Fan Tray 4	REV 02	760-024502	DR8265	Rear Fan Tray
Fan Tray 5	REV 02	760-024502	DR8272	Rear Fan Tray

**lcc0-re0:**-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1090A04AHA	T1600
Midplane	REV 01	710-017247	RB8601	T-series Backplane
FPM GBUS	REV 09	710-002901	JW7364	T640 FPM Board
FPM Display	REV 05	710-002897	JY6782	FPM Display
CIP	REV 06	710-002895	JW7565	T-series CIP
PEM 0	Rev 14	740-002595	SL26454	Power Entry Module
PEM 1	Rev 15	740-002595	SM30230	Power Entry Module
SCG 0	REV 03	710-003423	HA4517	T640 Sonet Clock Gen.
SCG 1	REV 04	710-003423	HF6049	T640 Sonet Clock Gen.
Routing Engine 0	REV 00	740-026941	737F-1051	RE-DUO-1800
Routing Engine 1	REV 01	740-026941	737F-1095	RE-DUO-1800
CB 0	REV 05	710-022597	DV4262	LCC Control Board
CB 1	REV 06	710-022597	DX4009	LCC Control Board
FPC 7	REV 01	710-010845	JB7158	FPC Type 4
CPU	REV 02	710-011481	JB6048	FPC CPU-Enhanced
MMB 0	REV 06	710-010842	JP1703	ST-MMB
SPMB 0	REV 04	710-023321	DV3863	LCC Switch CPU
SPMB 1	REV 04	710-023321	DW3634	LCC Switch CPU
SIB 1	REV 07	710-022594	DW4208	LCC SIB
B Board	REV 07	710-023185	DW3944	LCC SIB Mezz
SIB 2	REV 07	710-022594	DW4205	LCC SIB
B Board	REV 07	710-023185	DW3945	LCC SIB Mezz
SIB 3	REV 07	710-022594	DW4218	LCC SIB
B Board	REV 07	710-023185	DW3931	LCC SIB Mezz
SIB 4	REV 07	710-022594	DW4183	LCC SIB
B Board	REV 07	710-023185	DW3936	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

**lcc2-re0:**-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1102900AHA	T1600
Midplane	REV 03	710-017247	RC3766	T-series Backplane
FPM GBUS	REV 10	710-002901	DR1415	T640 FPM Board
FPM Display	REV 01	710-021387	DN7019	T1600 FPM Display
CIP	REV 06	710-002895	DP6012	T-series CIP
PEM 0	Rev 07	740-017906	UC26613	Power Entry Module 3x80
PEM 1	Rev 07	740-017906	UC26544	Power Entry Module 3x80
SCG 0	REV 15	710-003423	DR0914	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-026941	737F-1032	RE-DUO-1800

Routing Engine 1	REV 01	740-026941	737F-1024	RE-DUO-1800
CB 0	REV 05	710-022597	DV4260	LCC Control Board
CB 1	REV 01	710-022597	DM1159	LCC Control Board
FPC 0	REV 12	710-013037	DR1172	FPC Type 4-ES
CPU	REV 08	710-016744	DR0997	ST-PMB2
PIC 0	REV 11	750-017405	DP8833	4x 10GE (LAN/WAN) XFP
Xcvr 0		NON-JNPR	344512071800039	XFP-10G-SR
MMB 0	REV 04	710-016036	DR0651	ST-MMB2
MMB 1	REV 04	710-016036	DR0803	ST-MMB2
FPC 1	REV 07	710-013560	DP9980	E2-FPC Type 3
CPU	REV 05	710-013563	DR0088	FPC CPU-Enhanced
PIC 0	REV 22	750-007141	DR1955	10x 1GE(LAN), 1000 BASE
PIC 1	REV 22	750-007141	DR1944	10x 1GE(LAN), 1000 BASE
PIC 2	REV 22	750-007141	DR1963	10x 1GE(LAN), 1000 BASE
PIC 3	REV 07	750-015217	DN4835	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	P9F1AQL	SFP-SX
MMB 0	REV 07	710-010171	DP1350	MMB-5M3-288mbit
MMB 1	REV 07	710-010171	DP1386	MMB-5M3-288mbit
FPC 2	REV 14	710-010845	DN1255	FPC Type 4
CPU	REV 06	710-011481	DM9414	FPC CPU-Enhanced
MMB 0	REV 01	710-016606	DP1869	ST-MMB
SPMB 0	REV 04	710-023321	DV3859	LCC Switch CPU
SPMB 1	REV 01	710-023321	DM1161	LCC Switch CPU
SIB 0	REV 07	710-022594	DW4197	LCC SIB
B Board	REV 07	710-023185	DW3916	LCC SIB Mezz
SIB 1	REV 06	710-022594	DT8266	LCC SIB
B Board	REV 06	710-023185	DT5793	LCC SIB Mezz
SIB 2	REV 07	710-022594	DW4184	LCC SIB
B Board	REV 07	710-023185	DW3915	LCC SIB Mezz
SIB 3	REV 06	710-022594	DT8271	LCC SIB
B Board	REV 04	710-023185	DS2323	LCC SIB Mezz
SIB 4	REV 06	710-022594	DT8238	LCC SIB
B Board	REV 06	710-023185	DT5783	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 2

### Displaying Information About SIBs

To display all the SIBs in the entire routing matrix, issue the **show chassis sibs** command on the TX Matrix Plus router.

```
user@host> show chassis sibs
sfc0-re0:
```

Slot	State	Type	Uptime
0	Online	SIB F13	1 hour, 27 minutes, 13 seconds
1	Online	SIB F13	1 hour, 26 minutes, 56 seconds
2	Invalid		
3	Online	SIB F13	1 hour, 28 minutes, 23 seconds
4	Online	SIB F13	1 hour, 28 minutes, 20 seconds
5	Invalid		
6	Fault	SIB F13	
7	Online	SIB F13	1 hour, 27 minutes, 56 seconds
8	Online	SIB F13	1 hour, 27 minutes, 48 seconds
9	Online	SIB F13	1 hour, 27 minutes, 31 seconds

10	Invalid		
11	Online	SIB F13	1 hour, 27 minutes, 24 seconds
12	Online	SIB F13	1 hour, 27 minutes, 21 seconds
13	Invalid		
14	Invalid		
15	Invalid		
0/0	Online	SIB F2S	1 hour, 27 minutes, 20 seconds
0/2	Online	SIB F2S	1 hour, 27 minutes, 19 seconds
0/4	Online	SIB F2S	1 hour, 27 minutes, 17 seconds
0/6	Online	SIB F2S	1 hour, 27 minutes, 16 seconds
1/0	Online	SIB F2S	1 hour, 28 minutes, 30 seconds
1/2	Online	SIB F2S	1 hour, 28 minutes, 28 seconds
1/4	Online	SIB F2S	1 hour, 28 minutes, 27 seconds
1/6	Online	SIB F2S	1 hour, 28 minutes, 26 seconds
2/0	Online	SIB F2S	1 hour, 28 minutes, 19 seconds
2/2	Online	SIB F2S	1 hour, 28 minutes, 18 seconds
2/4	Online	SIB F2S	1 hour, 28 minutes, 17 seconds
2/6	Online	SIB F2S	1 hour, 28 minutes, 16 seconds
3/0	Online	SIB F2S	1 hour, 27 minutes, 55 seconds
3/2	Online	SIB F2S	1 hour, 27 minutes, 53 seconds
3/4	Online	SIB F2S	1 hour, 27 minutes, 52 seconds
3/6	Online	SIB F2S	1 hour, 27 minutes, 51 seconds
4/0	Online	SIB F2S	1 hour, 27 minutes, 31 seconds
4/2	Online	SIB F2S	1 hour, 27 minutes, 29 seconds
4/4	Online	SIB F2S	1 hour, 27 minutes, 28 seconds
4/6	Online	SIB F2S	1 hour, 27 minutes, 27 seconds

**lcc0-re0:**

Slot	State	Uptime
0	Empty	
1	Online	1 hour, 1 minute, 55 seconds
2	Fault	
3	Online	1 hour, 1 minute, 51 seconds
4	Online	1 hour, 1 minute, 49 seconds

**lcc2-re0:**

Slot	State	Uptime
0	Online	1 hour, 1 minute, 2 seconds
1	Online	1 hour, 1 minute, 17 seconds
2	Check	1 hour, 1 minute, 15 seconds
3	Online	1 hour, 1 minute, 6 seconds
4	Online	1 hour, 1 minute, 4 seconds

**Displaying Information About Routing Engines**

To display information about all master Routing Engines in the routing matrix, issue the **show chassis routing-engine** command on the TX Matrix Plus router:

```
user@host> show chassis routing-engine
```

```
sfc0-re0:
```

**Routing Engine status:****Slot 0:**

Current state	Master
Election priority	Master (default)
Temperature	28 degrees C / 82 degrees F
CPU temperature	42 degrees C / 107 degrees F

```

DRAM                                3327 MB
Memory utilization                   13 percent
CPU utilization:
  User                              0 percent
  Background                         0 percent
  Kernel                             2 percent
  Interrupt                           0 percent
  Idle                               98 percent
Model                               RE-TXP-SFC
Serial ID                           737A-1024
Start time                          2009-07-09 17:08:13 PDT
Uptime                              14 hours, 55 minutes, 39 seconds
Last reboot reason                   Router rebooted after a normal shutdown.
Load averages:                      1 minute   5 minute  15 minute
                                      0.00      0.00    0.00

```

**Routing Engine status:****Slot 1:**

```

Current state                       Backup
Election priority                    Backup (default)
Temperature                          29 degrees C / 84 degrees F
CPU temperature                      45 degrees C / 113 degrees F
DRAM                                3327 MB
Memory utilization                   11 percent
CPU utilization:
  User                              0 percent
  Background                         0 percent
  Kernel                             0 percent
  Interrupt                           0 percent
  Idle                               100 percent
Model                               RE-TXP-SFC
Serial ID                           737A-1008
Start time                          2009-07-08 12:38:29 PDT
Uptime                              1 day, 19 hours, 25 minutes, 35 seconds
Last reboot reason                   Router rebooted after a normal shutdown.

```

**lcc0-re0:****Routing Engine status:****Slot 0:**

```

Current state                       Master
Election priority                    Master (default)
Temperature                          33 degrees C / 91 degrees F
CPU temperature                      47 degrees C / 116 degrees F
DRAM                                3327 MB
Memory utilization                   12 percent
CPU utilization:
  User                              0 percent
  Background                         0 percent
  Kernel                             2 percent
  Interrupt                           0 percent
  Idle                               98 percent
Model                               RE-TXP-LCC
Serial ID                           737F-1051
Start time                          2009-07-09 17:06:52 PDT
Uptime                              14 hours, 56 minutes, 37 seconds
Last reboot reason                   Router rebooted after a normal shutdown.
Load averages:                      1 minute   5 minute  15 minute
                                      0.00      0.02    0.00

```

**Routing Engine status:****Slot 1:**

```

Current state                       Backup

```

Election priority	Backup (default)
Temperature	33 degrees C / 91 degrees F
CPU temperature	47 degrees C / 116 degrees F
DRAM	3327 MB
Memory utilization	9 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-LCC
Serial ID	737F-1095
Start time	2009-07-08 12:40:14 PDT
Uptime	1 day, 19 hours, 24 minutes, 1 second
Last reboot reason	Router rebooted after a normal shutdown.

## lcc2-re0:

-----  
Routing Engine status:

## Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	30 degrees C / 86 degrees F
CPU temperature	45 degrees C / 113 degrees F
DRAM	3327 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-TXP-LCC
Serial ID	737F-1032
Start time	2009-07-09 17:06:53 PDT
Uptime	14 hours, 56 minutes, 48 seconds
Last reboot reason	Router rebooted after a normal shutdown.
Load averages:	1 minute    5 minute    15 minute
	0.01        0.01        0.00

## Routing Engine status:

## Slot 1:

Current state	Backup
Election priority	Backup (default)
Temperature	30 degrees C / 86 degrees F
CPU temperature	44 degrees C / 111 degrees F
DRAM	3327 MB
Memory utilization	9 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-LCC
Serial ID	737F-1024
Start time	2009-07-08 12:37:52 PDT
Uptime	1 day, 19 hours, 26 minutes, 22 seconds
Last reboot reason	Router rebooted after a normal shutdown.



### Displaying Information About FPCs

To display information about FPCs in a routing matrix, issue the **show chassis fpc** command. Because there are no FPCs in a TX Matrix Plus router, there is no **sfc** option available for this command.

```
user@host> show chassis fpc
```

```
lcc0-re0:
```

Slot	State	Temp (C)	CPU Utilization (%)		Memory DRAM (MB)	Utilization (%)	
			Total	Interrupt		Heap	Buffer
0	Empty						
1	Empty						
2	Empty						
3	Empty						
4	Empty						
5	Empty						
6	Empty						
7	Online	49	4	0	1024	7	49

```
lcc2-re0:
```

Slot	State	Temp (C)	CPU Utilization (%)		Memory DRAM (MB)	Utilization (%)	
			Total	Interrupt		Heap	Buffer
0	Online	47	8	0	2048	6	24
1	Online	28	4	0	1024	4	49
2	Online	39	5	0	1024	7	49
3	Empty						
4	Empty						
5	Empty						
6	Empty						
7	Empty						

### Displaying Information About LCCs

You can also check to see if the TX Matrix Plus router and T1600 routers are communicating correctly within the routing matrix. To verify that the T1600 routers have proper connectivity to the routing matrix, issue the **show chassis lccs** command. In this example, there are two T1600 routers in the routing matrix.

```
user@host> show chassis lccs
```

Slot	State	Uptime
0	Online	15 hours, 5 minutes, 58 seconds
1	Empty	
2	Online	15 hours, 5 minutes, 58 seconds
3	Empty	

#### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Verifying the Configuration of the Routing Matrix on page 97](#)
- [Merging Examples on page 6](#)

- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## **Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode**

---

The mixed-mode (TXP-Mixed-LCC-3D) configuration supports the following combinations of T1600 and T4000 routers:

- Six T1600 routers and one T4000 router
- Four T1600 routers and two T4000 routers
- Two T1600 routers and three T4000 routers

This example provides a step-by-step procedure and commands for configuring and verifying a routing matrix with a TX Matrix Plus router and 3D SIBs in a mixed-mode configuration of two T1600 routers and three T4000 routers.

- [Requirements on page 72](#)
- [Overview on page 72](#)
- [Configuration on page 74](#)
- [Verification on page 82](#)

### **Requirements**

This example uses the following software and hardware components:

- Junos OS Release 13.1 or later.
- One TX Matrix Plus router SFC (also referred to as the switch-fabric chassis (SFC) in a routing matrix).
- Three T4000 routers (also referred to as line-card chassis (LCC) in a routing matrix).
- Two T1600 routers (also referred to as line-card chassis (LCC) in a routing matrix).
- Interchassis UTP Category 5 Ethernet cables that connect the SFC and LCC control planes.
- Equipment racks for the SFC and the LCCs.

Before you configure a routing matrix with a TX Matrix Plus router and 3D SIBs, make sure that you understand how to connect the hardware components, and upgrade to a TX Matrix Plus router with 3D SIBs including setting the SFC configuration size. For more information, see the [TX Matrix Plus Hardware Guide](#).

### **Overview**

TX Matrix Plus routers with 3D SIBs double the T Series multichassis bandwidth when compared with TX Matrix Plus routers without 3D SIBs. Each T1600 LCC adds up to 1.6 terabits per second (Tbps) full-duplex (3.2 Tbps of any-to-any, nonblocking, half-duplex) switching. Each T4000 LCC adds up to 2.0 Tbps, full-duplex (4.0 Tbps of any-to-any, nonblocking, half-duplex) switching.

In this example, you configure a routing matrix in mixed mode that includes a TX Matrix Plus router with 3D SIBs, and two T1600 and three T4000 LCCs with 3D SIBs.

Note the following key considerations for this routing matrix configuration:

- The TX Matrix Plus router with 3D SIBs, or the SFC, manages the routing matrix as a single router. All the operational commands and configurations required for the connected LCCs are executed on the TX Matrix Plus router with 3D SIBs which is designated as **sfc0**.
- Create configuration groups for each Routing Engine in the routing matrix by using the special configuration groups for a routing matrix consisting of routers with dual Routing Engines: **re0**, **re1**, **lcc0-re0**, **lcc2-re0**, **lcc4-re0**, **lcc6-re0**, **lcc7-re0**, **lcc0-re1**, **lcc2-re1**, **lcc4-re1**, **lcc6-re1**, and **lcc7-re1**. Configure hostnames, default routes, and management Ethernet interfaces in these Routing Engine configuration groups.
- To configure interfaces, use the routing matrix FPC numbering convention of slots 0 through 63. For details, see the [FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration](#).

### Topology

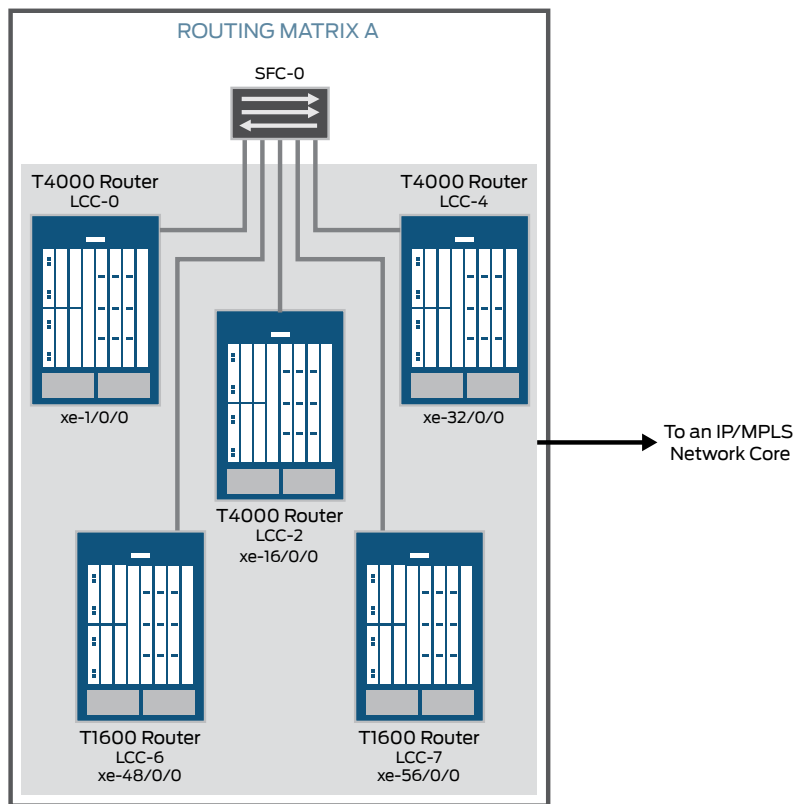
In this example, Routing Matrix A comprises a TX Matrix Plus router (**sfc0**) with 3D SIBs, three T4000 routers with 3D SIBs, and two T1600 routers with 3D SIBs.

In this example, the following hostnames are used for the TX Matrix Plus router and the LCCs:

- **sfc0**—Master Routing Engine on the TX Matrix Plus router
- **sfc0\_alt\_re**—Backup Routing Engine on the TX Matrix Plus router
- **lcc0**—Master Routing Engine on T4000 LCC 0
- **lcc0\_alt\_re**—Backup Routing Engine on T4000 LCC 0
- **lcc2**—Master Routing Engine on T4000 LCC 2
- **lcc2\_alt\_re**—Backup Routing Engine on T4000 LCC 2
- **lcc4**—Master Routing Engine on T4000 LCC 4
- **lcc4\_alt\_re**—Backup Routing Engine on T4000 LCC 4
- **lcc6**—Master Routing Engine on T1600 LCC 6
- **lcc6\_alt\_re**—Backup Routing Engine on T1600 LCC 6
- **lcc7**—Master Routing Engine on T1600 LCC 7
- **lcc7\_alt\_re**—Backup Routing Engine on T1600 LCC 7

Figure 8 on page 74 shows that Routing Matrix A is a provider edge (PE) router in a Layer 2 circuit network. Ethernet interfaces xe-1/0/0 on LCC 0, xe-16/0/0 on LCC 2, xe-32/0/0 on LCC 4, xe-48/0/0 on LCC 6, and xe-56/0/0 on LCC 7 connect to an IP/MPLS core network.

Figure 8: Topology of a Routing Matrix with a TX Matrix Plus Router in a Mixed Mode



g041553

## Configuration

To configure a routing matrix with a TX Matrix Plus router in mixed mode, perform the following tasks:

- [Configuring LCC Mode on page 77](#)
- [Creating Special Configuration Groups on page 78](#)
- [Configuring Interfaces on page 79](#)
- [Configuring Protocols on page 80](#)
- [Configuring Firewall Filters on page 81](#)

### CLI Quick Configuration

To quickly configure this example, copy the following commands, paste them in a text file, remove any line breaks, change any details necessary to match your network configuration, and paste the commands into the CLI at the **[edit]** hierarchy level.

```
set chassis lcc-mode lcc 0 t4000
set chassis lcc-mode lcc 1 empty
set chassis lcc-mode lcc 2 t4000
set chassis lcc-mode lcc 3 empty
set chassis lcc-mode lcc 4 t4000
set chassis lcc-mode lcc 5 empty
set chassis lcc-mode lcc 6 t1600
```

```

set chassis lcc-mode lcc 7 t1600
set groups re0 system host-name sfc0
set groups lcc0-re0 system host-name lcc0
set groups lcc2-re0 system host-name lcc2
set groups lcc4-re0 system host-name lcc4
set groups lcc6-re0 system host-name lcc6
set groups lcc7-re0 system host-name lcc7
set groups re1 system host-name sfc0_alt_re
set groups lcc0-re1 system host-name lcc0_alt_re
set groups lcc2-re1 system host-name lcc2_alt_re
set groups lcc4-re1 system host-name lcc4_alt_re
set groups lcc6-re1 system host-name lcc6_alt_re
set groups lcc7-re1 system host-name lcc7_alt_re
set groups re0 system backup-router 10.216.63.254
set groups lcc0-re0 system backup-router 10.216.63.254
set groups lcc2-re0 system backup-router 10.216.63.254
set groups lcc4-re0 system backup-router 10.216.63.254
set groups lcc6-re0 system backup-router 10.216.63.254
set groups lcc7-re0 system backup-router 10.216.63.254
set groups re1 system backup-router 10.216.63.254
set groups lcc0-re1 system backup-router 10.216.63.254
set groups lcc2-re1 system backup-router 10.216.63.254
set groups lcc4-re1 system backup-router 10.216.63.254
set groups lcc6-re1 system backup-router 10.216.63.254
set groups lcc7-re1 system backup-router 10.216.63.254
set groups lcc0-re1 system backup-router 10.216.63.254
set groups re0 interfaces em0 unit 0 family inet address 10.216.49.204/20
set groups lcc0-re0 interfaces em0 unit 0 family inet address 10.216.49.205/20
set groups lcc2-re0 interfaces em0 unit 0 family inet address 10.216.49.206/20
set groups lcc4-re0 interfaces em0 unit 0 family inet address 10.216.49.207/20
set groups lcc6-re0 interfaces em0 unit 0 family inet address 10.216.49.208/20
set groups lcc7-re0 interfaces em0 unit 0 family inet address 10.216.49.209/20
set groups re1 interfaces em0 unit 0 family inet address 10.216.49.210/20
set groups lcc0-re1 interfaces em0 unit 0 family inet address 10.216.49.211/20
set groups lcc2-re1 interfaces em0 unit 0 family inet address 10.216.49.212/20
set groups lcc4-re1 interfaces em0 unit 0 family inet address 10.216.49.213/20
set groups lcc6-re1 interfaces em0 unit 0 family inet address 10.216.49.214/20
set groups lcc7-re1 interfaces em0 unit 0 family inet address 10.216.49.215/20
set apply-groups [ re0 re1 lcc0-re0 lcc0-re1 lcc2-re0 lcc2-re1 lcc4-re0 lcc4-re1 lcc6-re0
  lcc6-re1 lcc7-re0 lcc7-re1 ]
set interfaces xe-1/0/0 mtu 9192
set interfaces xe-1/0/0 unit 0 family inet address 10.15.1.2/30
set interfaces xe-1/0/0 unit 0 family iso
set interfaces xe-1/0/0 unit 0 family mpls filter input filter_1
set interfaces xe-8/0/0 mtu 9192
set interfaces xe-8/0/0 unit 0 family inet address 11.15.1.2/30
set interfaces xe-8/0/0 unit 0 family iso
set interfaces xe-8/0/0 unit 0 family mpls filter input filter_2
set interfaces xe-32/0/0 mtu 9192
set interfaces xe-32/0/0 unit 0 family inet address 12.15.1.2/30
set interfaces xe-32/0/0 unit 0 family iso
set interfaces xe-32/0/0 unit 0 family mpls filter input filter_3
set interfaces xe-48/0/0 mtu 9192
set interfaces xe-48/0/0 unit 0 family inet address 13.15.1.2/30
set interfaces xe-48/0/0 unit 0 family iso
set interfaces xe-48/0/0 unit 0 family mpls filter input filter_4

```

```
set interfaces xe-56/0/0 mtu 9192
set interfaces xe-56/0/0 unit 0 family inet address 14.15.1.2/30
set interfaces xe-56/0/0 unit 0 family iso
set interfaces xe-56/0/0 unit 0 family mpls filter input filter_5
set interfaces lo0 unit 0 family inet address 127.0.0.1/32
set interfaces lo0 unit 0 family inet address 10.255.77.158/32 primary
set interfaces lo0 unit 0 family inet6 address
    47.0005.80ff.f800.0000.0108.0001.0102.5507.0158.00
set interfaces lo0 unit 0 family inet6 address 2001:db8::10:255:77:158/32 primary
set protocols mpls interface xe-8/0/0
set protocols isis interface xe-8/0/0
set protocols ldp interface xe-8/0/0
set protocols mpls interface xe-16/0/0
set protocols isis interface xe-16/0/0
set protocols ldp interface xe-16/0/0
set protocols mpls interface xe-32/0/0
set protocols isis interface xe-32/0/0
set protocols ldp interface xe-32/0/0
set protocols mpls interface xe-48/0/0
set protocols isis interface xe-48/0/0
set protocols ldp interface xe-48/0/0
set protocols mpls interface xe-56/0/0
set protocols isis interface xe-56/0/0
set protocols ldp interface xe-56/0/0
set firewall family mpls filter filter_1 term plp0 from exp [ 0 2 4 6 ]
set firewall family mpls filter filter_1 term plp0 then count LOW loss-priority low
set firewall family mpls filter filter_1 term plp1 from exp [ 1 3 5 7 ]
set firewall family mpls filter filter_1 term plp1 then count HIGH loss-priority high
set firewall family mpls filter filter_2 term plp2 from exp [ 0 2 4 6 ]
set firewall family mpls filter filter_2 term plp2 then count LOW loss-priority medium-low
set firewall family mpls filter filter_2 term plp3 from exp [ 1 3 5 7 ]
set firewall family mpls filter filter_2 term plp3 then count HIGH loss-priority medium-high
set firewall family mpls filter filter_3 term plp4 from exp [ 1 3 5 7 ]
set firewall family mpls filter filter_3 term plp4 then count LOW loss-priority low
set firewall family mpls filter filter_3 term plp5 from exp [ 0 2 4 6 ]
set firewall family mpls filter filter_3 term plp5 then count HIGH loss-priority high
set firewall family mpls filter filter_4 term plp6 from exp [ 0 1 2 3 ]
set firewall family mpls filter filter_4 term plp6 then count LOW loss-priority low
set firewall family mpls filter filter_4 term plp7 from exp [ 4 5 6 7 ]
set firewall family mpls filter filter_4 term plp7 then count HIGH loss-priority high
set firewall family mpls filter filter_5 term plp8 from exp [ 0 2 4 6 ]
set firewall family mpls filter filter_5 term plp8 then count LOW loss-priority medium-low
set firewall family mpls filter filter_5 term plp9 from exp [ 1 3 5 7 ]
set firewall family mpls filter filter_5 term plp9 then count HIGH loss-priority medium-high
```

## Configuring LCC Mode

### Step-by-Step Procedure

A routing matrix with a TX Matrix Plus router and 3D SIBs supports a combination of T1600 and T4000 LCCs, which is also known as the TXP-Mixed-LCC-3D configuration. To enable the TXP-Mixed-LCC-3D configuration, you must configure the LCC mode on the TX Matrix Plus router. In this example, LCC 0, LCC 2, and LCC 4 are configured as T4000 LCCs and LCC 6 and LCC 7 are configured as T1600 LCCs.



#### NOTE:

- By default, the LCC mode is configured to **t1600**.
- The LCC mode **t4000** is supported only on the even-numbered LCCs LCC 0, LCC 2, LCC 4, and LCC 6.
- When you set the LCC mode as **t4000**, you must set the LCC mode for the next (odd-numbered) LCC as **empty**. For example, if you set the LCC mode **t4000** on LCC 2, then you must set the mode for LCC 3 as **empty**. Otherwise, the commit operation fails. Setting the LCC mode for an LCC as **empty** disables the control plane and data plane connections between that LCC and the SFC, so the LCC does not come online.

To configure LCC mode:

1. Configure the LCC mode **t4000** for LCC 0, LCC 2, and LCC 4 and the LCC mode **empty** for the odd-numbered LCCs ( LCC 1, LCC 3, and LCC 5) next to the T4000 LCCs.

```
[edit chassis]
user@sfc0# set lcc-mode lcc 0 t4000
user@sfc0# set lcc-mode lcc 1 empty
user@sfc0# set lcc-mode lcc 2 t4000
user@sfc0# set lcc-mode lcc 3 empty
user@sfc0# set lcc-mode lcc 4 t4000
user@sfc0# set lcc-mode lcc 5 empty
```

2. (Optional) Configure the LCC mode as **t1600** on LCC 6 and LCC 7.

```
[edit chassis]
user@sfc0# set lcc-mode lcc 6 t1600
user@sfc0# set lcc-mode lcc 7 t1600
```



**NOTE:** By default, the LCC mode is set to **t1600**. However, if the LCC mode is set to **t4000** or **empty** due to a previous configuration, then you need to configure the LCC mode as **t1600**. You can verify the LCC mode by using the **show chassis lcc-mode operational mode** command.

## Creating Special Configuration Groups

---

### Step-by-Step Procedure

The configuration groups featured in Junos OS enable you to create a group containing configuration statements and to direct the inheritance of that group's statements in the rest of the configuration.

Using special configuration group names for all Routing Engines in the routing matrix allows you to configure the individual Routing Engines in each router differently. Because the configuration statements in the special configuration groups for Routing Engines apply to specific Routing Engines in the routing matrix, you can create a single configuration for all of the routers, with each Routing Engine using only the configuration statements that apply to it. For example, the configuration specified in group **re0** is applied only if the current Routing Engine is in slot 0; likewise, the configuration specified in group **re1** is applied only if the current Routing Engine is in slot 1. Therefore, both Routing Engines can use the same configuration file, each using only the configuration statements that apply to it.

To create and apply special configuration groups:

1. Create special groups for the master and the backup Routing Engines on the SFC.

In this example, **re0** and **re1** are the special group names for the master and backup Routing Engines of the SFC.

```
[edit groups]
user@sfc0# set re0 system host-name sfc0
user@sfc0# set re1 system host-name sfc0_alt_re
```

2. Create special groups for the master and the backup Routing Engines on the LCCs.

In this example, **lcc0-re0**, **lcc2-re0**, **lcc4-re0**, **lcc6-re0**, and **lcc7-re0** are the special group names for the master Routing Engines in the LCCs and **lcc0-re1**, **lcc2-re1**, **lcc4-re1**, **lcc6-re1**, and **lcc7-re1** are the special group names for the backup Routing Engines in the LCCs.

```
[edit groups]
user@sfc0# set lcc0-re0 system host-name lcc0
user@sfc0# set lcc0-re1 system host-name lcc0_alt_re
user@sfc0# set lcc2-re0 system host-name lcc2
user@sfc0# set lcc2-re1 system host-name lcc2_alt_re
user@sfc0# set lcc4-re0 system host-name lcc4
user@sfc0# set lcc4-re1 system host-name lcc4_alt_re
user@sfc0# set lcc6-re0 system host-name lcc6
user@sfc0# set lcc6-re1 system host-name lcc6_alt_re
user@sfc0# set lcc7-re0 system host-name lcc7
user@sfc0# set lcc7-re1 system host-name lcc7_alt_re
```

3. Set a default router for the master and backup Routing Engines in the SFC and the LCCs.

```
[edit groups]
user@sfc0# set re0 system backup-router 10.216.63.254
user@sfc0# set re1 system backup-router 10.216.63.254
```



```

user@sfc0# set lcc0-re0 system backup-router 10.216.63.254
user@sfc0# set lcc0-re1 system backup-router 10.216.63.254
user@sfc0# set lcc2-re0 system backup-router 10.216.63.254
user@sfc0# set lcc2-re1 system backup-router 10.216.63.254
user@sfc0# set lcc4-re0 system backup-router 10.216.63.254
user@sfc0# set lcc4-re1 system backup-router 10.216.63.254
user@sfc0# set lcc6-re0 system backup-router 10.216.63.254
user@sfc0# set lcc6-re1 system backup-router 10.216.63.254
user@sfc0# set lcc7-re0 system backup-router 10.216.63.254
user@sfc0# set lcc7-re1 system backup-router 10.216.63.254

```

4. Configure an IP address for the management interface logical port for the SFC and for each LCC.

```

[edit groups]
user@sfc0#set re0 interfaces em0 unit 0 family inet address 10.216.49.204/20
user@sfc0#set lcc0-re0 interfaces em0 unit 0 family inet address 10.216.49.205/20
user@sfc0#set lcc2-re0 interfaces em0 unit 0 family inet address 10.216.49.206/20
user@sfc0#set lcc4-re0 interfaces em0 unit 0 family inet address 10.216.49.207/20
user@sfc0#set lcc6-re0 interfaces em0 unit 0 family inet address 10.216.49.208/20
user@sfc0#set lcc7-re0 interfaces em0 unit 0 family inet address 10.216.49.209/20
user@sfc0#set re1 interfaces em0 unit 0 family inet address 10.216.49.210/20
user@sfc0#set lcc0-re1 interfaces em0 unit 0 family inet address 10.216.49.211/20
user@sfc0#set lcc2-re1 interfaces em0 unit 0 family inet address 10.216.49.212/20
user@sfc0#set lcc4-re1 interfaces em0 unit 0 family inet address 10.216.49.213/20
user@sfc0#set lcc6-re1 interfaces em0 unit 0 family inet address 10.216.49.214/20
user@sfc0#set lcc7-re1 interfaces em0 unit 0 family inet address 10.216.49.215/20

```

5. Enable inheritance to ensure that the group's statements are inherited in the rest of the configuration.

```

[edit]
user@sfc0# set apply-groups [ re0 re1 lcc0-re0 lcc0-re1 lcc2-re0 lcc2-re1 lcc4-re0
lcc4-re1 lcc6-re0 lcc6-re1 lcc7-re0 lcc7-re1 ]

```

## Configuring Interfaces

**Step-by-Step Procedure** Ethernet interfaces xe-1/0/0 on LCC 0, xe-16/0/0 on LCC 2, xe-32/0/0 on LCC 4, xe-48/0/0 on LCC 6, and xe-56/0/0 on LCC 7 connect to an IP/MPLS core network.

To configure the interfaces:

1. Configure the Ethernet interfaces and interface properties.

```

[edit]
user@sfc0# set interfaces xe-1/0/0 mtu 9192
user@sfc0# set interfaces xe-1/0/0 unit 0 family inet address 10.15.1.2/30
user@sfc0# set interfaces xe-1/0/0 unit 0 family iso
user@sfc0# set interfaces xe-8/0/0 mtu 9192
user@sfc0# set interfaces xe-8/0/0 unit 0 family inet address 11.15.1.2/30
user@sfc0# set interfaces xe-8/0/0 unit 0 family iso
user@sfc0# set interfaces xe-32/0/0 mtu 9192
user@sfc0# set interfaces xe-32/0/0 unit 0 family inet address 12.15.1.2/30
user@sfc0# set interfaces xe-32/0/0 unit 0 family iso

```

```
user@sfc0# set interfaces xe-48/0/0 mtu 9192
user@sfc0# set interfaces xe-48/0/0 unit 0 family inet address 13.15.1.2/30
user@sfc0# set interfaces xe-48/0/0 unit 0 family iso
user@sfc0# set interfaces xe-56/0/0 mtu 9192
user@sfc0# set interfaces xe-56/0/0 unit 0 family inet address 14.15.1.2/30
user@sfc0# set interfaces xe-56/0/0 unit 0 family iso
```

2. Configure the loopback interface properties.

You can configure the loopback interface on the routing matrix as usual. In this example, IP and IPv6 addresses are configured on the loopback interface with subnetwork routes.

```
[edit]
user@sfc0# set interfaces lo0 unit 0 family inet address 127.0.0.1/32
user@sfc0# set interfaces lo0 unit 0 family inet address 10.255.77.158/32 primary
user@sfc0# set interfaces lo0 unit 0 family inet6 address
47.0005.80ff.f800.0000.0108.0001.0102.5507.0158.00
user@sfc0# set interfaces lo0 unit 0 family inet6 address 2001:db8::10:255:77:158/32
primary
```

---

## Configuring Protocols

### Step-by-Step Procedure

You can configure the protocols as usual. In this example, MPLS, IS-IS, and LDP protocols are configured on the SFC.

To configure the protocols:

- Configure protocols on the configured interfaces in the routing matrix.

```
[edit]
user@sfc0# set protocols mpls interface xe-8/0/0
user@sfc0# set protocols isis interface xe-8/0/0
user@sfc0# set protocols ldp interface xe-8/0/0
user@sfc0# set protocols mpls interface xe-16/0/0
user@sfc0# set protocols isis interface xe-16/0/0
user@sfc0# set protocols ldp interface xe-16/0/0
user@sfc0# set protocols mpls interface xe-32/0/0
user@sfc0# set protocols isis interface xe-32/0/0
user@sfc0# set protocols ldp interface xe-32/0/0
user@sfc0# set protocols mpls interface xe-48/0/0
user@sfc0# set protocols isis interface xe-48/0/0
user@sfc0# set protocols ldp interface xe-48/0/0
user@sfc0# set protocols mpls interface xe-56/0/0
user@sfc0# set protocols isis interface xe-56/0/0
user@sfc0# set protocols ldp interface xe-56/0/0
```

## Configuring Firewall Filters

### Step-by-Step Procedure

Firewall filters are configured to protect your router and network from excessive incoming traffic or hostile attacks that can disrupt network service, and to control which packets are forwarded from which router interfaces.

In this example, MPLS firewall filters **filter\_1**, **filter\_2**, **filter\_3**, **filter\_4**, and **filter\_5** are configured to count packets based on the EXP bits for the MPLS label in a packet.

To configure firewall filters:

1. Configure firewall filters in the routing matrix.

```
[edit]
user@sfc0# set firewall family mpls filter filter_1 term plp0 from exp [ 0 2 4 6 ]
user@sfc0# set firewall family mpls filter filter_1 term plp0 then count LOW
loss-priority low
user@sfc0# set firewall family mpls filter filter_1 term plp1 from exp [ 1 3 5 7 ]
user@sfc0# set firewall family mpls filter filter_1 term plp1 then count HIGH
loss-priority high
user@sfc0# set firewall family mpls filter filter_2 term plp2 from exp [ 0 2 4 6 ]
user@sfc0# set firewall family mpls filter filter_2 term plp2 then count LOW
loss-priority medium-low
user@sfc0# set firewall family mpls filter filter_2 term plp3 from exp [ 1 3 5 7 ]
user@sfc0# set firewall family mpls filter filter_2 term plp3 then count HIGH
loss-priority medium-high
user@sfc0# set firewall family mpls filter filter_3 term plp4 from exp [ 1 3 5 7 ]
user@sfc0# set firewall family mpls filter filter_3 term plp4 then count LOW
loss-priority low
user@sfc0# set firewall family mpls filter filter_3 term plp5 from exp [ 0 2 4 6 ]
user@sfc0# set firewall family mpls filter filter_3 term plp5 then count HIGH
loss-priority high
user@sfc0# set firewall family mpls filter filter_4 term plp6 from exp [ 0 1 2 3 ]
user@sfc0# set firewall family mpls filter filter_4 term plp6 then count LOW
loss-priority low
user@sfc0# set firewall family mpls filter filter_4 term plp7 from exp [ 4 5 6 7 ]
user@sfc0# set firewall family mpls filter filter_4 term plp7 then count HIGH
loss-priority high
user@sfc0# set firewall family mpls filter filter_5 term plp8 from exp [ 0 2 4 6 ]
user@sfc0# set firewall family mpls filter filter_5 term plp8 then count LOW
loss-priority medium-low
user@sfc0# set firewall family mpls filter filter_5 term plp9 from exp [ 1 3 5 7 ]
user@sfc0# set firewall family mpls filter filter_5 term plp9 then count HIGH
loss-priority medium-high
```

2. Apply the MPLS firewall filters to interfaces.

```
[edit]
user@sfc0# set interfaces xe-1/0/0 unit 0 family mpls filter input filter_1
user@sfc0# set interfaces xe-8/0/0 unit 0 family mpls filter input filter_2
user@sfc0# set interfaces xe-32/0/0 unit 0 family mpls filter input filter_3
user@sfc0# set interfaces xe-48/0/0 unit 0 family mpls filter input filter_4
user@sfc0# set interfaces xe-56/0/0 unit 0 family mpls filter input filter_5
```

## Verification

Confirm that the configuration is working properly.

- [Verifying LCC Mode on page 82](#)
- [Verifying LCC Information on page 82](#)
- [Verifying Junos OS Versions for All Routers on page 83](#)
- [Verifying the Configured Interfaces on page 87](#)
- [Verifying the Route Information on page 87](#)
- [Verifying System Uptime on page 88](#)
- [Verifying the Craft Interface Messages on page 89](#)
- [Verifying the Chassis Alarms on page 95](#)

---

### Verifying LCC Mode

**Purpose** Confirm that the LCC mode is working properly.

**Action** In operational mode, enter the **show chassis lcc-mode** command.

```
[edit]
user@sfc0# show chassis lcc-mode
```

Slot	LCC-mode
0	T4000
1	EMPTY
2	T4000
3	EMPTY
4	T4000
5	EMPTY
6	T1600
7	T1600

**Meaning** The LCC mode is displayed as **T4000** for LCC 0, LCC 2, and LCC 4. The LCC mode is shown as **T1600** for LCC 6 and LCC 7. The LCC mode for the odd-numbered LCCs (LCC 1, LCC 3, and LCC 5) is shown as **empty**.

This means the LCC mode is configured correctly for the TXP-Mixed-LCC-3D configuration.

---

### Verifying LCC Information

**Purpose** Verify that the TX Matrix Plus router and the connected LCCs are communicating properly within the routing matrix.

**Action** In operational mode, enter the **show chassis lccs** command.

```
[edit]
user@sfc0# show chassis lccs
```

Slot	State	Uptime
0	Online	59 minutes, 41 seconds
1	Empty	
2	Online	59 minutes, 41 seconds
3	Empty	
4	Online	59 minutes, 41 seconds
5	Empty	
6	Online	59 minutes, 41 seconds
7	Online	59 minutes, 41 seconds

**Meaning** The display output includes the following information about the LCCs:

- The **Slot** field displays the LCC slot number in the SFC.
- The **State** field displays the LCC state information.
  - **Online**—The LCC connected to a TX Matrix Plus router with 3D SIBs is online and communicating properly.
  - **Offline**—The LCC is powered down.
  - **Uptime**—The duration since the LCC is online.

**Related Documentation**

- [Troubleshooting: Offline LCCs in a Routing Matrix with a TX Matrix Plus Router](#)

### Verifying Junos OS Versions for All Routers

**Purpose** Verify that the correct version of Junos OS is running for all routing matrix components.

**Action** In operational mode, enter the **show version** command.

```
user@sfc0> show version
sfc0-re0:
-----
Hostname: sfc0
Model: txp
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services AACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
```

JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
JUNOS Services NAT [13.1R1.0]  
JUNOS Services PTSP Container package [13.1R1.0]  
JUNOS Services RPM [13.1R1.0]  
JUNOS Services Stateful Firewall [13.1R1.0]  
JUNOS Voice Services Container package [13.1R1.0]  
JUNOS Services Example Container package [13.1R1.0]  
JUNOS Services Crypto [13.1R1.0]  
JUNOS Services SSL [13.1R1.0]  
JUNOS Services IPSec [13.1R1.0]  
JUNOS Runtime Software Suite [13.1R1.0]  
JUNOS Routing Software Suite [13.1R1.0]  
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

**lcc0-re0:**

-----  
Hostname: lcc0  
Model: t4000  
JUNOS Base OS boot [13.1R1.0]  
JUNOS Base OS Software Suite [13.1R1.0]  
JUNOS 64-bit Kernel Software Suite [13.1R1.0]  
JUNOS Crypto Software Suite [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]  
JUNOS Online Documentation [13.1R1.0]  
JUNOS Services ACL Container package [13.1R1.0]  
JUNOS Services Application Level Gateways [13.1R1.0]  
JUNOS AppId Services [13.1R1.0]  
JUNOS Border Gateway Function package [13.1R1.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]  
JUNOS Services HTTP Content Management package [13.1R1.0]  
JUNOS IDP Services [13.1R1.0]  
JUNOS Services Jflow Container package [13.1R1.0]  
JUNOS Services LL-PDF Container package [13.1R1.0]  
JUNOS Services MobileNext Software package [13.1R1.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
JUNOS Services NAT [13.1R1.0]  
JUNOS Services PTSP Container package [13.1R1.0]  
JUNOS Services RPM [13.1R1.0]  
JUNOS Services Stateful Firewall [13.1R1.0]  
JUNOS Voice Services Container package [13.1R1.0]  
JUNOS Services Example Container package [13.1R1.0]  
JUNOS Services Crypto [13.1R1.0]  
JUNOS Services SSL [13.1R1.0]  
JUNOS Services IPSec [13.1R1.0]  
JUNOS Runtime Software Suite [13.1R1.0]  
JUNOS Routing Software Suite [13.1R1.0]  
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

**lcc2-re0:**

-----  
Hostname: lcc2  
Model: t4000  
JUNOS Base OS boot [13.1R1.0]  
JUNOS Base OS Software Suite [13.1R1.0]  
JUNOS 64-bit Kernel Software Suite [13.1R1.0]  
JUNOS Crypto Software Suite [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]  
JUNOS Online Documentation [13.1R1.0]  
JUNOS Services ACL Container package [13.1R1.0]

```

JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

```

#### lcc4-re0:

```

-----
Hostname: lcc4
Model: t4000
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services ACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

```

#### lcc6-re0:

```

-----
Hostname: lcc6

```

Model: t1600

JUNOS Base OS boot [13.1R1.0]  
JUNOS Base OS Software Suite [13.1R1.0]  
JUNOS 64-bit Kernel Software Suite [13.1R1.0]  
JUNOS Crypto Software Suite [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]  
JUNOS Online Documentation [13.1R1.0]  
JUNOS Services AACL Container package [13.1R1.0]  
JUNOS Services Application Level Gateways [13.1R1.0]  
JUNOS AppId Services [13.1R1.0]  
JUNOS Border Gateway Function package [13.1R1.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]  
JUNOS Services HTTP Content Management package [13.1R1.0]  
JUNOS IDP Services [13.1R1.0]  
JUNOS Services Jflow Container package [13.1R1.0]  
JUNOS Services LL-PDF Container package [13.1R1.0]  
JUNOS Services MobileNext Software package [13.1R1.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
JUNOS Services NAT [13.1R1.0]  
JUNOS Services PTSP Container package [13.1R1.0]  
JUNOS Services RPM [13.1R1.0]  
JUNOS Services Stateful Firewall [13.1R1.0]  
JUNOS Voice Services Container package [13.1R1.0]  
JUNOS Services Example Container package [13.1R1.0]  
JUNOS Services Crypto [13.1R1.0]  
JUNOS Services SSL [13.1R1.0]  
JUNOS Services IPSec [13.1R1.0]  
JUNOS Runtime Software Suite [13.1R1.0]  
JUNOS Routing Software Suite [13.1R1.0]  
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

lcc7-re0:

-----  
Hostname: lcc7  
Model: t1600

JUNOS Base OS boot [13.1R1.0]  
JUNOS Base OS Software Suite [13.1R1.0]  
JUNOS 64-bit Kernel Software Suite [13.1R1.0]  
JUNOS Crypto Software Suite [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]  
JUNOS Online Documentation [13.1R1.0]  
JUNOS Services AACL Container package [13.1R1.0]  
JUNOS Services Application Level Gateways [13.1R1.0]  
JUNOS AppId Services [13.1R1.0]  
JUNOS Border Gateway Function package [13.1R1.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]  
JUNOS Services HTTP Content Management package [13.1R1.0]  
JUNOS IDP Services [13.1R1.0]  
JUNOS Services Jflow Container package [13.1R1.0]  
JUNOS Services LL-PDF Container package [13.1R1.0]  
JUNOS Services MobileNext Software package [13.1R1.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
JUNOS Services NAT [13.1R1.0]  
JUNOS Services PTSP Container package [13.1R1.0]  
JUNOS Services RPM [13.1R1.0]  
JUNOS Services Stateful Firewall [13.1R1.0]  
JUNOS Voice Services Container package [13.1R1.0]



```
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]
```

**Meaning** In this example, all the routers have the same software revision [13.1R1.0]. It indicates that all the routers are running the same 64-bit Junos OS.

Verifying the Configured Interfaces

**Purpose** Verify that all available interfaces in the routing matrix are up.

**Action** In operational mode, enter the **show interfaces terse** command.

```
user@sfc0> show interfaces terse
```

Interface	Admin	Link	Proto	Local	Remote
xe-1/0/0	up	up			
xe-1/0/0.0	up	up	inet iso mpls	10.15.1.2/30	
xe-8/0/0.0	up	up	inet iso mpls	11.15.1.2/30	
xe-32/0/0					
xe-32/0/0.0	up	up	inet iso mpls	12.15.1.2/30	
xe-48/0/0					
xe-48/0/0.0	up	up	inet iso mpls	13.15.1.2/30	
xe-56/0/0					
xe-56/0/0.0	up	up	inet iso mpls	14.15.1.2/30	
em0.0	up	up	inet	10.216.49.205/20	

**Meaning** The **Admin** and the **Link** status are shown as **up**, which means that the interfaces are configured and working properly.

Verifying the Route Information

**Purpose** Verify the route information for the routing matrix.

**Action** In operational mode, enter the **show route summary** command.

```
user@sfc0> show route summary
Router ID: 10.255.77.158
inet.0: 13 destinations, 14 routes (12 active, 0 holddown, 1 hidden)
    Direct:    4 routes,      3 active
    Local:     2 routes,      2 active
    Static:    6 routes,      6 active
    IS-IS:     2 routes,      1 active
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
    Direct:    1 routes,      1 active
mpls.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
    MPLS:      3 routes,      3 active
inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
    Direct:    2 routes,      2 active
__juniper_private1__.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0
hidden)
    Direct:    1 routes,      1 active
```

**Meaning** The summary statistics about the entries in the routing table are shown based on the configuration.

---

### Verifying System Uptime

---

**Purpose** Verify the amount of time the routing matrix components have been in operation.

**Action** In operational mode, enter the **show system uptime** command.

```
user@sfc0> show system uptime
sfc0-re0:
-----
Current time: 2012-12-02 21:16:07 PST
System booted: 2012-12-02 20:03:18 PST (01:12:49 ago)
Protocols started: 2012-12-02 20:53:12 PST (00:22:55 ago)
Last configured: 2012-12-02 20:41:01 PST (00:35:06 ago) by user
 9:16PM up 1:13, 2 users, load averages: 0.06, 0.01, 0.00

lcc0-re0:
-----
Current time: 2012-12-02 21:16:07 PST
System booted: 2012-12-02 20:25:06 PST (00:51:01 ago)
Last configured: 2012-12-02 20:40:51 PST (00:35:16 ago) by user
 9:16PM up 51 mins, 1 user, load averages: 0.02, 0.06, 0.03

lcc2-re0:
-----
Current time: 2012-12-02 21:16:07 PST
System booted: 2012-12-02 20:04:48 PST (01:11:19 ago)
Last configured: 2012-12-02 20:40:53 PST (00:35:14 ago) by user
 9:16PM up 1:11, 0 users, load averages: 0.00, 0.02, 0.01

lcc4-re0:
-----
Current time: 2012-12-02 21:16:07 PST
System booted: 2012-12-02 20:03:35 PST (01:12:32 ago)
Last configured: 2012-12-02 20:40:53 PST (00:35:14 ago) by user
```

```
9:16PM up 1:13, 0 users, load averages: 0.01, 0.06, 0.07
```

```
lcc6-re0:
```

```
-----
Current time: 2012-12-02 21:16:07 PST
System booted: 2012-12-02 20:03:30 PST (01:12:37 ago)
Last configured: 2012-12-02 20:40:53 PST (00:35:14 ago) by user
9:16PM up 1:13, 0 users, load averages: 0.06, 0.03, 0.00
```

```
lcc7-re0:
```

```
-----
Current time: 2012-12-02 21:16:07 PST
System booted: 2012-12-02 20:05:11 PST (01:10:56 ago)
Last configured: 2012-12-02 20:40:53 PST (00:35:14 ago) by user
9:16PM up 1:11, 0 users, load averages: 0.00, 0.00, 0.00
```

**Meaning** The output shows the following information:

- **Current time**—Current system time in UTC.
- **System booted**—Date and time when the Routing Engine on the router was last booted and how long it has been running.
- **Protocols started**—Date and time when the routing protocols were last started and how long they have been running.
- **Last configured**—Date and time when a configuration was last committed. Also shows the name of the user who issued the last commit command.
- **time and up**—Current time, in the local time zone, and how long the router has been operational.
- **users**—Number of users logged in to the router.
- **load averages**—Load averages for the last 1 minute, 5 minutes, and 15 minutes.

### Verifying the Craft Interface Messages

**Purpose** Verify the information on the craft interface. The craft interface allows you to view status and troubleshooting information at a glance and to perform many system control functions.

**Action** In operational mode, enter the **show chassis craft-interface** command.

```
user@sfc0> show chassis craft-interface
sfc0-re0:
```

```
-----
FPM Display Contents:
```

```
+-----+
|sfc0      |
|Up 0 + 01:12 |
|          |
|Power OK   |
+-----+
```

```

+-----+

SFC Front Panel Switch Settings:
SFC Chassis Number : 00
Config Size       : 3

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    .
Master            *    .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED       .
Major relay       .
Minor relay       .

Front Panel F13 SIB LEDs:
SIB    0    1    2    3    4    5    6    7    8    9    10   11   12   13   14   15
-----
Fail    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
OK       *    *    .    *    *    .    *    *    *    *    .    .    .    .    .    .
Active  *    *    .    *    *    .    *    *    *    *    .    .    .    .    .    .

PS LEDs:
PS      0    1
-----
Red     .    .
Green   *    .

Fan Tray LEDs:
FT      0    1    2    3    4    5
-----
Red     .    .    .    .    .    .
Green   *    *    *    *    *    *

CB LEDs:
CB      0    1
-----
Amber   .    .
Green   *    .
Blue    *    .

1cc0-re0:
-----
FPM Display contents:
+-----+
|1cc0          |
|Up 0 + 51:01  |
|              |
|Power OK      |
+-----+

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    .

```

```

Master          *      .

Front Panel Alarm Indicators:
-----
Red LED        .
Yellow LED     .
Major relay    .
Minor relay    .

Front Panel FPC LEDs:
FPC   0   1   2   3   4   5   6   7
-----
Red    .   .   .   .   .   .   .   .
Green  .   *   .   .   .   .   .   .

CB LEDs:
CB    0   1
-----
Amber  .   .
Green  *   .
Blue   *   .

SCG LEDs:
SCG   0   1
-----
Amber  .   .
Green  *   *
Blue   *   .

SIB LEDs:
SIB   0   1   2   3   4
-----
Red    .   .   .   .   .
Green  *   *   *   *   .

lcc2-re0:
-----
FPM Display contents:
+-----+
|lcc2      |
|Up 0 + 01:11|
|          |
|Power OK  |
+-----+

Front Panel System LEDs:
Routing Engine  0   1
-----
OK              *   .
Fail            .   .
Master          *   .

Front Panel Alarm Indicators:
-----
Red LED        .
Yellow LED     .
Major relay    .
Minor relay    .

Front Panel FPC LEDs:
FPC   0   1   2   3   4   5   6   7

```

```

-----
Red      .   .   .   .   .   .   .   .
Green    .   *   *   .   .   .   .   .

```

## CB LEDs:

```

CB      0   1

```

```

-----
Amber    .   .
Green    *   .
Blue     *   .

```

## SCG LEDs:

```

SCG     0   1

```

```

-----
Amber    .   .
Green    *   *
Blue     *   .

```

## SIB LEDs:

```

SIB     0   1   2   3   4

```

```

-----
Red      .   .   .   .   .
Green    *   *   *   *   .

```

## lcc4-re0:

## FPM Display contents:

```

+-----+
|lcc4      |
|Up 0 + 01:12|
|          |
|Power OK  |
+-----+

```

## Front Panel System LEDs:

```

Routing Engine    0   1

```

```

-----
OK                *   .
Fail              .   .
Master            *   .

```

## Front Panel Alarm Indicators:

```

-----
Red LED           .
Yellow LED        .
Major relay       .
Minor relay       .

```

## Front Panel FPC LEDs:

```

FPC      0   1   2   3   4   5   6   7

```

```

-----
Red      .   .   .   .   .   .   .   .
Green    .   *   *   .   .   .   .   .

```

## CB LEDs:

```

CB      0   1

```

```

-----
Amber    .   .
Green    *   .
Blue     *   .

```

## SCG LEDs:

SCG	0	1
-----	---	---

-----

Amber	.	.
-------	---	---

Green	*	*
-------	---	---

Blue	*	.
------	---	---

## SIB LEDs:

SIB	0	1	2	3	4
-----	---	---	---	---	---

-----

Red	.	.	.	.	.
-----	---	---	---	---	---

Green	*	*	*	*	.
-------	---	---	---	---	---

## lcc6-re0:

-----

## FPM Display contents:

```

+-----+
|lcc6    |
|Up 0 + 01:12|
|        |
|Power OK|
+-----+

```

## Front Panel System LEDs:

Routing Engine	0	1
----------------	---	---

-----

OK	.	*
----	---	---

Fail	.	.
------	---	---

Master	.	*
--------	---	---

## Front Panel Alarm Indicators:

-----

Red LED	.
---------	---

Yellow LED	.
------------	---

Major relay	.
-------------	---

Minor relay	.
-------------	---

## Front Panel FPC LEDs:

FPC	0	1	2	3	4	5	6	7
-----	---	---	---	---	---	---	---	---

-----

Red	.	.	.	.	.	.	.	.
-----	---	---	---	---	---	---	---	---

Green	*	*	.	.	.	.	.	*
-------	---	---	---	---	---	---	---	---

## CB LEDs:

CB	0	1
----	---	---

-----

Amber	.	.
-------	---	---

Green	*	.
-------	---	---

Blue	*	.
------	---	---

## SCG LEDs:

SCG	0	1
-----	---	---

-----

Amber	.	.
-------	---	---

Green	*	*
-------	---	---

Blue	*	.
------	---	---

## SIB LEDs:

SIB	0	1	2	3	4
-----	---	---	---	---	---

-----

Red	.	.	.	.	.
-----	---	---	---	---	---

Green \* \* \* \* .

lcc7-re0:

-----  
FPM Display contents:

```
+-----+
|lcc7      |
|Up 0 + 01:10|
|          |
|Power OK  |
+-----+
```

Front Panel System LEDs:

Routing Engine    0    1

```
-----
OK                *   .
Fail              .   .
Master            *   .
```

Front Panel Alarm Indicators:

```
-----
Red LED          .
Yellow LED       .
Major relay      .
Minor relay      .
```

Front Panel FPC LEDs:

FPC    0    1    2    3    4    5    6    7

```
-----
Red   .   .   .   .   .   .   .   .
Green *   *   .   .   .   .   .   *
```

CB LEDs:

CB    0    1

```
-----
Amber .   .
Green *   .
Blue  *   .
```

SCG LEDs:

SCG   0    1

```
-----
Amber .   .
Green *   *
Blue  *   .
```

SIB LEDs:

SIB   0    1    2    3    4

```
-----
Red   .   .   .   .   .
Green *   *   *   *   .
```

**Meaning** The output shows the information of the craft interface.

- The **FPM Display Contents** field displays the following contents of the Front Panel Module:



- First line—TX Matrix Plus router name.
- Second line—Length of time the TX Matrix Plus router has been running, reported in the following form:

*Up days + hours:minutes*



**NOTE:** During an alarm condition, the second line displays the number of active alarms in the following form:

*alarm-count Alarms active*

- Third and fourth lines—Information about the router traffic load, the power supply status, the fan status, and the temperature status.



**NOTE:** During an alarm condition, the third and fourth lines display individual alarm messages, with the most severe condition shown first. The prefix on each line indicates whether the alarm is a red or yellow alarm. R indicates a major alarm and Y indicates a minor alarm. You can view more information about the error messages associated with the alarm LEDs and the craft interface LCD by issuing the `show chassis alarms` operational mode command.

- The **SFC Chassis Number** field displays **00** and the **Config Size** field displays **3**.
- Status of the **Front Panel System LEDs**, **Front Panel F13 SIB LEDs**, **PS LEDs**, **Fan Tray LEDs**, **CB LEDs**, **SIB LEDs**, and **SCG LEDs**. A dot (.) indicates that the LED is not lit. An asterisk (\*) indicates that the LED is lit. For more details on the LEDs and troubleshooting information, see [TX Matrix Plus LED Overview](#).
- Status of the **Front Panel Alarm Indicators**. A dot (.) indicates that the relay is off. An asterisk (\*) indicates that the relay is active.

### Verifying the Chassis Alarms

**Purpose** Verify the information about chassis alarms.

**Action** In operational mode, enter the `show chassis alarms` command.

```
user@sfc0> show chassis alarms
sfc0-re0:
```

```
-----
Alarm time      Class  Description
2012-07-19 10:07:32 UTC Minor  SIB F13 0 Temperature Warm
2012-07-19 10:07:07 UTC Minor  SIB F2S 0/6 Temperature Warm
2012-07-19 10:07:07 UTC Minor  SIB F2S 0/4 Temperature Warm
2012-07-19 10:07:07 UTC Minor  SIB F2S 0/2 Temperature Warm
2012-07-19 10:07:07 UTC Minor  SIB F2S 0/0 Temperature Warm
2012-07-19 10:07:07 UTC Minor  SIB F13 6 Temperature Warm
```

```

2012-07-19 10:06:42 UTC Minor SIB F2S 2/6 Temperature Warm
2012-07-19 10:06:42 UTC Minor SIB F2S 2/4 Temperature Warm
2012-07-19 10:06:42 UTC Minor SIB F2S 2/2 Temperature Warm
2012-07-19 10:06:42 UTC Minor SIB F2S 2/0 Temperature Warm
2012-07-19 10:06:42 UTC Minor SIB F13 3 Temperature Warm
2012-07-19 10:06:17 UTC Minor SIB F2S 1/6 Temperature Warm
2012-07-19 10:06:17 UTC Minor SIB F2S 1/4 Temperature Warm
2012-07-19 10:06:17 UTC Minor SIB F2S 1/2 Temperature Warm
2012-07-19 10:06:17 UTC Minor SIB F2S 1/0 Temperature Warm

```

lcc0-re0:

```

-----
Alarm time          Class  Description
2012-07-19 10:04:13 UTC Minor SIB 2 Temperature Warm
2012-07-19 10:04:13 UTC Minor SIB 1 Temperature Warm
2012-07-19 10:04:13 UTC Minor SIB 0 Temperature Warm

```

lcc2-re0:

```

-----
Alarm time          Class  Description
2012-07-19 10:04:18 UTC Minor SIB 2 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 1 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 0 Temperature Warm

```

lcc4-re0:

```

-----
Alarm time          Class  Description
2012-07-19 10:04:18 UTC Minor SIB 2 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 1 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 0 Temperature Warm

```

lcc6-re0:

```

-----
Alarm time          Class  Description
2012-07-19 10:04:18 UTC Minor SIB 2 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 1 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 0 Temperature Warm

```

lcc7-re0:

```

-----
Alarm time          Class  Description
2012-07-19 10:04:18 UTC Minor SIB 2 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 1 Temperature Warm
2012-07-19 10:04:18 UTC Minor SIB 0 Temperature Warm

```

**Meaning** The output shows information about the chassis alarms that are active. Verify the following information:

- Date and time the alarm was first recorded.
- Severity class for this alarm: **Minor** or **Major**.
- The **Description** field displays information about chassis components such as the cooling system or power supplies. For example, **Temperature Warm** indicates that the chassis temperature exceeded the warm-temperature threshold, and you must ensure to provide sufficient cooling for the component. For more details on alarm information and actions to be taken, see the [Troubleshooting the TX Matrix Plus Cooling System](#).

- Related Documentation**
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
  - [FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration on page 26](#)
  - [Displaying TX Matrix Plus SFC and LCC Alarm Messages Information](#)
  - [Connecting the TX Matrix Plus Router to a Network Device](#)

## Verifying the Configuration of a Routing Matrix with a TX Matrix Plus Router

In general, when you issue standard operational commands on a TX Matrix Plus router, you receive output from the master Routing Engines of all components in the routing matrix. To display information for the TX Matrix Plus router only, include the **sfc sfc-number** option. To limit the output of information for a specific T1600 router within the routing matrix, include the **lcc lcc-number** option. To display information for all T1600 routers within the routing matrix (selected commands only), include the **all-lcc** option. Any exceptions to this general rule are mentioned next to the appropriate commands.

The following sections contain examples of specific **show** operational commands you can use to verify the configuration of the example **Routing Matrix A**, described in “[Example Configuration for a Routing Matrix with a TX Matrix Plus Router](#)” on page 48:

- [Displaying Junos OS Versions on page 97](#)
- [Displaying Configured Interfaces on page 101](#)
- [Displaying Available Routes on page 102](#)
- [Displaying Alarms and System Uptime on page 102](#)
- [Displaying Craft Interface Messages on page 103](#)
- [Displaying System Uptime on page 105](#)
- [Displaying Chassis Hardware and Status on page 106](#)

### Displaying Junos OS Versions

The **show version** command provides an excellent example of how you can select output for various components of the routing matrix with a TX Matrix Plus router. If the TX Matrix Plus router (**sfc sfc-number**) or a T1600 router (**lcc lcc-number**) is not specified in the command, the command displays output for all components.

```
user@host> show version ?
Possible completions:
  <[Enter]>      Execute this command
  brief         Display brief output
  detail        Display detailed output
  invoke-on     Remote command execution
  lcc           Show software version on specific LCC (0..3)
  sfc           Show software version on SFC (0..0)
  |            Pipe through a command
```

You can display information about individual software components in the TX Matrix Plus router, in a specific T1600 router, or the entire routing matrix:

- [Displaying Junos OS Versions for All Routers on page 98](#)
- [Displaying Junos OS Version for the SFC Only on page 99](#)
- [Displaying Junos OS Version for a Specific LCC on page 99](#)
- [Displaying Junos OS Versions for All LCCs on page 100](#)

---

### Displaying Junos OS Versions for All Routers

---

To display the software version for all routing matrix components, issue the **show version** command on the TX Matrix Plus router:

```
user@sfc0> show version
sfc0-re0:
```

```
-----
Hostname: sfc0
Model: txp
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

lcc0-re0:

```
-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

lcc2-re0:

```
-----
Hostname: mylcc2
Model: t1600
```

```

JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]

```

### Displaying Junos OS Version for the SFC Only

To display the software version for the TX Matrix Plus router only, include the **sfc number** option:

```

user@mysfc> show version sfc 0
sfc0-re0
-----
Hostname: sfc0
Model: txp
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]

```

### Displaying Junos OS Version for a Specific LCC

To display the software version for a specific T1600 router, include the **lcc** option:

```

user@host> show version lcc 0
lcc0-re0:
-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]

```

```
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

---

### Displaying Junos OS Versions for All LCCs

To display the software versions for all T1600 routers, include the **all-lcc** option:

```
user@host> show version all-lcc
lcc0-re0:
```

```
-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

**lcc2-re0**

```
-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.1]
JUNOS Base OS Software Suite [9.6-20090713.1]
JUNOS Kernel Software Suite [9.6-20090713.1]
JUNOS Crypto Software Suite [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.1]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.1]
JUNOS Online Documentation [9.6-20090713.1]
JUNOS Voice Services Container package [9.6-20090713.1]
JUNOS Border Gateway Function package [9.6-20090713.1]
JUNOS Services AACL Container package [9.6-20090713.1]
JUNOS Services LL-PDF Container package [9.6-20090713.1]
JUNOS Services Stateful Firewall [9.6-20090713.1]
JUNOS AppId Services [9.6-20090713.1]
JUNOS IDP Services [9.6-20090713.1]
JUNOS Routing Software Suite [9.6-20090713.1]
```

## Displaying Configured Interfaces

Although individual FPCs are installed in each of the T1600 routers, the routing matrix is designed to collect interface information centrally at the TX Matrix Plus router. To display available interfaces in the routing matrix, issue a **show interfaces** command on the TX Matrix Plus router:

```
user@host> show interfaces terse
```

Interface	Admin	Link	Proto	Local	Remote
so-1/0/0	up	up			
so-1/1/0	up	up			
so-1/1/0.0	up	up	inet	10.15.1.1	--> 10.15.1.2
			iso		
			mpls		
so-1/3/0	up	down			
at-2/1/0	up	up			
ge-2/2/0	up	up			
so-3/3/0	up	up			
so-3/3/1	up	up			
so-3/3/2	up	down			
so-3/3/3	up	down			
so-16/0/0	up	down			
so-16/0/1	up	down			
so-16/0/2	up	down			
so-16/0/3	up	up			
ge-16/1/0	up	down			
so-17/0/0	up	down			
at-17/1/0	up	up			
at-17/1/0.0	up	up	ccc		
at-17/1/0.1	up	up	ccc		
at-17/1/0.2	up	up	ccc		
at-17/1/0.3	up	up	ccc		
at-17/1/1	up	up			
ge-17/2/0	up	up			
ge-17/2/1	up	up			
so-17/3/0	up	down			
so-19/0/0	up	down			
so-19/1/0	up	down			
so-19/2/0	up	down			
so-19/3/0	up	down			
bcm0	up	up			
bcm0.0	up	up	tnp	4	
dsc	up	up			
em0	up	up			
em0.0	up	up	tnp	4	
fxp0	up	up			
fxp0.0	up	up	inet	192.168.77.158/21	
gre	up	up			
ipip	up	up			
lo0	up	up			
lo0.0	up	up	inet	10.255.70.158	--> 0/0
				127.0.0.1	--> 0/0
			iso		
				47.0005.80ff.f800.0000.0108.0001.0102.5507.0158.00	
			inet6	2001:db8::10:255:70:158	
				fe80::280:42ff:fe13:269d	
lo0.16385	up	up	inet		
			inet6	fe80::280:42ff:fe13:269d	
lsi	up	up			

mtun	up	up
pimd	up	up
pime	up	up
tap	up	up

## Displaying Available Routes

When you need to verify route information for a routing matrix, you must issue operational commands on the TX Matrix Plus router. To display available routes for the routing matrix, issue a **show route** command:

```
user@host> show route summary
Router ID: 10.255.77.158
inet.0: 13 destinations, 14 routes (12 active, 0 holddown, 1 hidden)
    Direct: 4 routes, 3 active
    Local: 2 routes, 2 active
    Static: 6 routes, 6 active
    IS-IS: 2 routes, 1 active
inet.3: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
    LDP: 1 routes, 1 active
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
    Direct: 1 routes, 1 active
mpls.0: 7 destinations, 7 routes (7 active, 0 holddown, 0 hidden)
    MPLS: 3 routes, 3 active
    LDP: 2 routes, 2 active
    L2CKT: 2 routes, 2 active
inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
    Direct: 2 routes, 2 active
__juniper_private1__.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0
hidden)
    Direct: 1 routes, 1 active
l2circuit.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
    LDP: 1 routes, 1 active
    L2CKT: 4 routes, 4 active
```

## Displaying Alarms and System Uptime

To display alarms for all routing matrix components, issue the **show chassis alarms** command at the TX Matrix Plus router:

```
user@host> show chassis alarms
sfc0-re0:
-----
2 alarms currently active
Alarm time          Class  Description
2009-07-10 02:27:46 PDT  Minor  LCC 0 Minor Errors
2009-07-09 17:12:29 PDT  Major  LCC 2 Major Errors

lcc0-re0:
-----
1 alarms currently active
Alarm time          Class  Description
2009-07-10 02:27:46 PDT  Minor  PEM 1 Absent

lcc2-re0:
-----
1 alarms currently active
```



Alarm time	Class	Description
2009-07-09 17:12:29 PDT	Major	PEM 1 Not OK

Displaying Craft Interface Messages

To display the messages that are currently displayed on the craft interface for all routing matrix components, issue the **show chassis craft-interface** command at the master Routing Engine of the TX Matrix Plus router:

```
user@host> show chassis craft-interface
sfc0-re0:
-----
FPM Display Contents:
+-----+
|sfc0           |
|2 Alarms active |
|R: LCC 0 Minor Error|
|R: LCC 2 Major Error|
+-----+

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    *
Fail              .    .
Master            *    .

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       *
Major relay       *
Minor relay       *

Front Panel F13 SIB LEDs:
SIB   0    1    2    3    4    5    6    7    8    9   10  11  12  13  14  15
-----
Fail   .    .    .    .    .    .    *    *    .    .    .    .    .    .    .
OK     *    *    .    *    *    .    .    .    *    *    .    *    *    .    .
Active *    *    .    *    *    .    .    .    *    *    .    *    *    .    .

PS LEDs:
PS    0    1
-----
Red   .    .
Green .    *

Fan Tray LEDs:
FT    0    1    2    3    4    5
-----
Red   .    .    .    .    .    .
Green *    *    *    *    *    *

CB LEDs:
CB    0    1
-----
Amber .    .
Green *    *
Blue  *    .
```

## lcc0-re0:

-----  
FPM Display contents:

```

+-----+
|mylcc0|
|1 Alarms active|
|R: PEM 1 Absent|
+-----+

```

## Front Panel System LEDs:

Routing Engine	0	1
----------------	---	---

```

-----
OK                *    *
Fail              .    .
Master            *    .

```

## Front Panel Alarm Indicators:

```

-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

```

## Front Panel FPC LEDs:

FPC	0	1	2	3	4	5	6	7
-----	---	---	---	---	---	---	---	---

```

-----
Red   .   .   .   .   .   .   .   .
Green .   .   .   .   .   .   .   *

```

## CB LEDs:

CB	0	1
----	---	---

```

-----
Amber .   .
Green *   *
Blue  *   .

```

## SCG LEDs:

SCG	0	1
-----	---	---

```

-----
Amber .   .
Green *   *
Blue  *   .

```

## SIB LEDs:

SIB	0	1	2	3	4
-----	---	---	---	---	---

```

-----
Red   .   .   *   .   .
Green .   *   .   *   *

```

## lcc2-re0:

-----  
FPM Display contents:

```

+-----+
|mylcc2|
|1 Alarms active|
|R: PEM 1 Not OK|
+-----+

```

## Front Panel System LEDs:

Routing Engine	0	1
----------------	---	---

```

OK                *      *
Fail              .      .
Master            *      .

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

Front Panel FPC LEDs:
FPC   0   1   2   3   4   5   6   7
-----
Red    .   .   .   .   .   .   .   .
Green  *   *   *   .   .   .   .   .

CB LEDs:
  CB   0   1
-----
Amber  .   .
Green  *   *
Blue   *   .

SCG LEDs:
  SCG  0   1
-----
Amber  .   .
Green  *   .
Blue   *   .

SIB LEDs:
  SIB  0   1   2   3   4
-----
Red    .   .   .   .   .
Green  *   *   *   *   *

```

## Displaying System Uptime

To display the amount of time the routing matrix components have been in operation, issue the **show system uptime** command on the TX Matrix Plus router:

```

user@host> show system uptime
sfc0-re0:
-----
Current time: 2009-07-10 07:55:56 PDT
System booted: 2009-07-09 17:08:41 PDT (14:47:15 ago)
Protocols started: 2009-07-09 17:09:22 PDT (14:46:34 ago)
Last configured: 2009-07-09 17:08:28 PDT (14:47:28 ago) by root
7:55AM up 14:47, 1 user, load averages: 0.00, 0.00, 0.00

lcc0-re0:
-----
Current time: 2009-07-10 07:55:56 PDT
System booted: 2009-07-09 17:07:40 PDT (14:48:16 ago)
Last configured: 2009-07-09 17:08:43 PDT (14:47:13 ago) by root
7:55AM up 14:48, 0 users, load averages: 0.07, 0.02, 0.01

lcc2-re0:
-----

```

```

Current time: 2009-07-10 07:55:56 PDT
System booted: 2009-07-09 17:07:33 PDT (14:48:23 ago)
Last configured: 2009-07-09 17:08:47 PDT (14:47:09 ago) by root
7:55AM up 14:48, 0 users, load averages: 0.00, 0.00, 0.00

```

## Displaying Chassis Hardware and Status

To display the hardware inventory for a routing matrix with a TX Matrix Plus router, you can select output for the TX Matrix Plus router only, a specific T1600 router, or all components. If a specific component (**sfc** or **lcc**) is not specified as an option in the command, the default output displays information for the entire routing matrix.

```
user@host> show chassis hardware ?
```

Possible completions:

<[Enter]>	Execute this command
clei-models	Display CLEI barcode and model number for orderable FRUs
detail	Include RAM and disk information in output
extensive	Display ID EEPROM information
lcc	Display chassis-specific information (0..3)
models	Display serial number and model number for orderable FRUs
sfc	Display chassis-specific information (0..0)
	Pipe through a command

You can display information about individual hardware components in the TX Matrix Plus router, in a specific T1600 router, or the entire routing matrix:

- [Displaying Information About All Hardware Components on page 106](#)
- [Displaying Information About SIBs on page 109](#)
- [Displaying Information About Routing Engines on page 110](#)
- [Displaying Information About FPCs on page 113](#)
- [Displaying Information About LCCs on page 113](#)

## Displaying Information About All Hardware Components

To display all hardware components in a routing matrix, issue the **show chassis hardware** command on the TX Matrix Plus router:

```
user@host> show chassis hardware
```

**sfc0-re0:**

-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1131103AHB	TXP
Midplane	REV 05	710-022574	TS4035	SFC Midplane
FPM Display	REV 01	710-024027	DR4982	TXP FPM Display
CIP 0	REV 02	710-023792	DS4568	TXP CIP
CIP 1	REV 02	710-023792	DS4562	TXP CIP
PEM 1	VER 01	740-027463	123456	Power Entry Module
Routing Engine 0	REV 01	740-026942	737A-1024	RE-DUO-2600
Routing Engine 1	REV 01	740-026942	737A-1008	RE-DUO-2600
CB 0	REV 01	710-022606	DP8889	SFC Control Board
CB 1	REV 05	710-022606	DW1103	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU

SIB F13 0	REV 03	750-024564	DT9486	F13 SIB
B Board	REV 02	710-023431	DT6550	F13 SIB Mezz
SIB F13 1	REV 03	750-024564	DT9456	F13 SIB
B Board	REV 02	710-023431	DT6562	F13 SIB
SIB F13 3	REV 04	710-022600	DX0900	F13 SIB
B Board	REV 03	710-023431	DX0957	F13 SIB Mezz
SIB F13 4	REV 04	750-024564	DW5753	F13 SIB
B Board	REV 03	710-023431	DW9034	F13 SIB Mezz
SIB F13 6	REV 03	750-024564	DT9483	F13 SIB
B Board	REV 02	710-023431	DT6558	F13 SIB Mezz
SIB F13 7	REV 04	750-024564	DW5790	F13 SIB
B Board	REV 03	710-023431	DW9072	F13 SIB Mezz
SIB F13 8	REV 04	710-022600	DX0833	F13 SIB
B Board	REV 03	710-023431	DX0938	F13 SIB Mezz
SIB F13 9	REV 03	750-024564	DT9465	F13 SIB
B Board	REV 02	710-023431	DT6574	F13 SIB Mezz
SIB F13 11	REV 04	750-024564	DW5756	F13 SIB
B Board	REV 03	710-023431	DW9072	F13 SIB Mezz
SIB F13 12	REV 04	750-024564	DW5749	F13 SIB
B Board	REV 03	710-023431	DW9050	F13 SIB Mezz
SIB F2S 0/0	REV 03	710-022603	DV0063	F2S SIB
B Board	REV 03	710-023787	DT9917	F2S SIB Mezz
SIB F2S 0/2	REV 03	710-022603	DV0090	F2S SIB
B Board	REV 03	710-023787	DT9994	F2S SIB Mezz
SIB F2S 0/4	REV 03	710-022603	DV0076	F2S SIB
B Board	REV 03	710-023787	DT9930	F2S SIB Mezz
SIB F2S 0/6	REV 03	710-022603	DV0035	F2S SIB
B Board	REV 03	710-023787	DT9951	F2S SIB Mezz
SIB F2S 1/0	REV 03	710-022603	DV0067	F2S SIB
B Board	REV 03	710-023787	DT9922	F2S SIB Mezz
SIB F2S 1/2	REV 03	710-022603	DV0036	F2S SIB
B Board	REV 03	710-023787	DT9950	F2S SIB Mezz
SIB F2S 1/4	REV 03	710-022603	DV0085	F2S SIB
B Board	REV 03	710-023787	DT9935	F2S SIB Mezz
SIB F2S 1/6	REV 03	710-022603	DV0028	F2S SIB
B Board	REV 03	710-023787	DT9960	F2S SIB Mezz
SIB F2S 2/0	REV 03	710-022603	DV0047	F2S SIB
B Board	REV 03	710-023787	DT9965	F2S SIB Mezz
SIB F2S 2/2	REV 03	710-022603	DV0023	F2S SIB
B Board	REV 03	710-023787	DT9927	F2S SIB Mezz
SIB F2S 2/4	REV 03	710-022603	DV0046	F2S SIB
B Board	REV 03	710-023787	DT9946	F2S SIB Mezz
SIB F2S 2/6	REV 03	710-022603	DV0025	F2S SIB
B Board	REV 03	710-023787	DT9914	F2S SIB Mezz
SIB F2S 3/0	REV 03	710-022603	DV0110	F2S SIB
B Board	REV 03	710-023787	DT9944	F2S SIB Mezz
SIB F2S 3/2	REV 03	710-022603	DV0056	F2S SIB
B Board	REV 03	710-023787	DT9979	F2S SIB Mezz
SIB F2S 3/4	REV 03	710-022603	DV0024	F2S SIB
B Board	REV 03	710-023787	DT9920	F2S SIB Mezz
SIB F2S 3/6	REV 03	710-022603	DV0108	F2S SIB
B Board	REV 03	710-023787	DT9989	F2S SIB Mezz
SIB F2S 4/0	REV 02	710-022603	DT2821	F2S SIB
B Board	REV 02	710-023787	DT1719	F2S SIB Mezz
SIB F2S 4/2	REV 03	710-022603	DV0031	F2S SIB
B Board	REV 03	710-023787	DT9953	F2S SIB Mezz
SIB F2S 4/4	REV 03	710-022603	DV0094	F2S SIB
B Board	REV 03	710-023787	DT9918	F2S SIB Mezz
SIB F2S 4/6	REV 03	710-022603	DV0022	F2S SIB
B Board	REV 03	710-023787	DT9943	F2S SIB Mezz
Fan Tray 0	REV 02	710-024029	DP5653	Front Fan Tray

Fan Tray 1	REV 02	760-024497	DP5661	Front Fan Tray
Fan Tray 2	REV 02	760-024502	DP5660	Rear Fan Tray
Fan Tray 3	REV 02	760-024502	DR8267	Rear Fan Tray
Fan Tray 4	REV 02	760-024502	DR8265	Rear Fan Tray
Fan Tray 5	REV 02	760-024502	DR8272	Rear Fan Tray

**lcc0-re0:**-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1090A04AHA	T1600
Midplane	REV 01	710-017247	RB8601	T-series Backplane
FPM GBUS	REV 09	710-002901	JW7364	T640 FPM Board
FPM Display	REV 05	710-002897	JY6782	FPM Display
CIP	REV 06	710-002895	JW7565	T-series CIP
PEM 0	Rev 14	740-002595	SL26454	Power Entry Module
PEM 1	Rev 15	740-002595	SM30230	Power Entry Module
SCG 0	REV 03	710-003423	HA4517	T640 Sonet Clock Gen.
SCG 1	REV 04	710-003423	HF6049	T640 Sonet Clock Gen.
Routing Engine 0	REV 00	740-026941	737F-1051	RE-DUO-1800
Routing Engine 1	REV 01	740-026941	737F-1095	RE-DUO-1800
CB 0	REV 05	710-022597	DV4262	LCC Control Board
CB 1	REV 06	710-022597	DX4009	LCC Control Board
FPC 7	REV 01	710-010845	JB7158	FPC Type 4
CPU	REV 02	710-011481	JB6048	FPC CPU-Enhanced
MMB 0	REV 06	710-010842	JP1703	ST-MMB
SPMB 0	REV 04	710-023321	DV3863	LCC Switch CPU
SPMB 1	REV 04	710-023321	DW3634	LCC Switch CPU
SIB 1	REV 07	710-022594	DW4208	LCC SIB
B Board	REV 07	710-023185	DW3944	LCC SIB Mezz
SIB 2	REV 07	710-022594	DW4205	LCC SIB
B Board	REV 07	710-023185	DW3945	LCC SIB Mezz
SIB 3	REV 07	710-022594	DW4218	LCC SIB
B Board	REV 07	710-023185	DW3931	LCC SIB Mezz
SIB 4	REV 07	710-022594	DW4183	LCC SIB
B Board	REV 07	710-023185	DW3936	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

**lcc2-re0:**-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1102900AHA	T1600
Midplane	REV 03	710-017247	RC3766	T-series Backplane
FPM GBUS	REV 10	710-002901	DR1415	T640 FPM Board
FPM Display	REV 01	710-021387	DN7019	T1600 FPM Display
CIP	REV 06	710-002895	DP6012	T-series CIP
PEM 0	Rev 07	740-017906	UC26613	Power Entry Module 3x80
PEM 1	Rev 07	740-017906	UC26544	Power Entry Module 3x80
SCG 0	REV 15	710-003423	DR0914	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-026941	737F-1032	RE-DUO-1800
Routing Engine 1	REV 01	740-026941	737F-1024	RE-DUO-1800
CB 0	REV 05	710-022597	DV4260	LCC Control Board
CB 1	REV 01	710-022597	DM1159	LCC Control Board
FPC 0	REV 12	710-013037	DR1172	FPC Type 4-ES
CPU	REV 08	710-016744	DR0997	ST-PMB2
PIC 0	REV 11	750-017405	DP8833	4x 10GE (LAN/WAN) XFP
Xcvr 0		NON-JNPR	344512071800039	XFP-10G-SR
MMB 0	REV 04	710-016036	DR0651	ST-MMB2

MMB 1	REV 04	710-016036	DR0803	ST-MMB2
FPC 1	REV 07	710-013560	DP9980	E2-FPC Type 3
CPU	REV 05	710-013563	DR0088	FPC CPU-Enhanced
PIC 0	REV 22	750-007141	DR1955	10x 1GE(LAN), 1000 BASE
PIC 1	REV 22	750-007141	DR1944	10x 1GE(LAN), 1000 BASE
PIC 2	REV 22	750-007141	DR1963	10x 1GE(LAN), 1000 BASE
PIC 3	REV 07	750-015217	DN4835	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	P9F1AQL	SFP-SX
MMB 0	REV 07	710-010171	DP1350	MMB-5M3-288mbit
MMB 1	REV 07	710-010171	DP1386	MMB-5M3-288mbit
FPC 2	REV 14	710-010845	DN1255	FPC Type 4
CPU	REV 06	710-011481	DM9414	FPC CPU-Enhanced
MMB 0	REV 01	710-016606	DP1869	ST-MMB
SPMB 0	REV 04	710-023321	DV3859	LCC Switch CPU
SPMB 1	REV 01	710-023321	DM1161	LCC Switch CPU
SIB 0	REV 07	710-022594	DW4197	LCC SIB
B Board	REV 07	710-023185	DW3916	LCC SIB Mezz
SIB 1	REV 06	710-022594	DT8266	LCC SIB
B Board	REV 06	710-023185	DT5793	LCC SIB Mezz
SIB 2	REV 07	710-022594	DW4184	LCC SIB
B Board	REV 07	710-023185	DW3915	LCC SIB Mezz
SIB 3	REV 06	710-022594	DT8271	LCC SIB
B Board	REV 04	710-023185	DS2323	LCC SIB Mezz
SIB 4	REV 06	710-022594	DT8238	LCC SIB
B Board	REV 06	710-023185	DT5783	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 2

### Displaying Information About SIBs

To display all the SIBs in the entire routing matrix, issue the **show chassis sibs** command on the TX Matrix Plus router.

```
user@host> show chassis sibs
sfc0-re0:
```

Slot	State	Type	Uptime
0	Online	SIB F13	1 hour, 27 minutes, 13 seconds
1	Online	SIB F13	1 hour, 26 minutes, 56 seconds
2	Invalid		
3	Online	SIB F13	1 hour, 28 minutes, 23 seconds
4	Online	SIB F13	1 hour, 28 minutes, 20 seconds
5	Invalid		
6	Fault	SIB F13	
7	Online	SIB F13	1 hour, 27 minutes, 56 seconds
8	Online	SIB F13	1 hour, 27 minutes, 48 seconds
9	Online	SIB F13	1 hour, 27 minutes, 31 seconds
10	Invalid		
11	Online	SIB F13	1 hour, 27 minutes, 24 seconds
12	Online	SIB F13	1 hour, 27 minutes, 21 seconds
13	Invalid		
14	Invalid		
15	Invalid		
0/0	Online	SIB F2S	1 hour, 27 minutes, 20 seconds
0/2	Online	SIB F2S	1 hour, 27 minutes, 19 seconds

0/4	Online	SIB F2S	1 hour, 27 minutes, 17 seconds
0/6	Online	SIB F2S	1 hour, 27 minutes, 16 seconds
1/0	Online	SIB F2S	1 hour, 28 minutes, 30 seconds
1/2	Online	SIB F2S	1 hour, 28 minutes, 28 seconds
1/4	Online	SIB F2S	1 hour, 28 minutes, 27 seconds
1/6	Online	SIB F2S	1 hour, 28 minutes, 26 seconds
2/0	Online	SIB F2S	1 hour, 28 minutes, 19 seconds
2/2	Online	SIB F2S	1 hour, 28 minutes, 18 seconds
2/4	Online	SIB F2S	1 hour, 28 minutes, 17 seconds
2/6	Online	SIB F2S	1 hour, 28 minutes, 16 seconds
3/0	Online	SIB F2S	1 hour, 27 minutes, 55 seconds
3/2	Online	SIB F2S	1 hour, 27 minutes, 53 seconds
3/4	Online	SIB F2S	1 hour, 27 minutes, 52 seconds
3/6	Online	SIB F2S	1 hour, 27 minutes, 51 seconds
4/0	Online	SIB F2S	1 hour, 27 minutes, 31 seconds
4/2	Online	SIB F2S	1 hour, 27 minutes, 29 seconds
4/4	Online	SIB F2S	1 hour, 27 minutes, 28 seconds
4/6	Online	SIB F2S	1 hour, 27 minutes, 27 seconds

**lcc0-re0:**

Slot	State	Uptime
0	Empty	
1	Online	1 hour, 1 minute, 55 seconds
2	Fault	
3	Online	1 hour, 1 minute, 51 seconds
4	Online	1 hour, 1 minute, 49 seconds

**lcc2-re0:**

Slot	State	Uptime
0	Online	1 hour, 1 minute, 2 seconds
1	Online	1 hour, 1 minute, 17 seconds
2	Check	1 hour, 1 minute, 15 seconds
3	Online	1 hour, 1 minute, 6 seconds
4	Online	1 hour, 1 minute, 4 seconds

**Displaying Information About Routing Engines**

To display information about all master Routing Engines in the routing matrix, issue the **show chassis routing-engine** command on the TX Matrix Plus router:

```
user@host> show chassis routing-engine
```

**sfc0-re0:****Routing Engine status:****Slot 0:**

Current state	Master
Election priority	Master (default)
Temperature	28 degrees C / 82 degrees F
CPU temperature	42 degrees C / 107 degrees F
DRAM	3327 MB
Memory utilization	13 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent



Model	RE-TXP-SFC
Serial ID	737A-1024
Start time	2009-07-09 17:08:13 PDT
Uptime	14 hours, 55 minutes, 39 seconds
Last reboot reason	Router rebooted after a normal shutdown.
Load averages:	1 minute 5 minute 15 minute
	0.00 0.00 0.00

**Routing Engine status:****Slot 1:**

Current state	Backup
Election priority	Backup (default)
Temperature	29 degrees C / 84 degrees F
CPU temperature	45 degrees C / 113 degrees F
DRAM	3327 MB
Memory utilization	11 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-SFC
Serial ID	737A-1008
Start time	2009-07-08 12:38:29 PDT
Uptime	1 day, 19 hours, 25 minutes, 35 seconds
Last reboot reason	Router rebooted after a normal shutdown.

**lcc0-re0:****Routing Engine status:****Slot 0:**

Current state	Master
Election priority	Master (default)
Temperature	33 degrees C / 91 degrees F
CPU temperature	47 degrees C / 116 degrees F
DRAM	3327 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-TXP-LCC
Serial ID	737F-1051
Start time	2009-07-09 17:06:52 PDT
Uptime	14 hours, 56 minutes, 37 seconds
Last reboot reason	Router rebooted after a normal shutdown.
Load averages:	1 minute 5 minute 15 minute
	0.00 0.02 0.00

**Routing Engine status:****Slot 1:**

Current state	Backup
Election priority	Backup (default)
Temperature	33 degrees C / 91 degrees F
CPU temperature	47 degrees C / 116 degrees F
DRAM	3327 MB
Memory utilization	9 percent
CPU utilization:	
User	0 percent
Background	0 percent

Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-LCC
Serial ID	737F-1095
Start time	2009-07-08 12:40:14 PDT
Uptime	1 day, 19 hours, 24 minutes, 1 second
Last reboot reason	Router rebooted after a normal shutdown.

**lcc2-re0:****Routing Engine status:****Slot 0:**

Current state	Master
Election priority	Master (default)
Temperature	30 degrees C / 86 degrees F
CPU temperature	45 degrees C / 113 degrees F
DRAM	3327 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-TXP-LCC
Serial ID	737F-1032
Start time	2009-07-09 17:06:53 PDT
Uptime	14 hours, 56 minutes, 48 seconds
Last reboot reason	Router rebooted after a normal shutdown.
Load averages:	1 minute    5 minute    15 minute
	0.01            0.01            0.00

**Routing Engine status:****Slot 1:**

Current state	Backup
Election priority	Backup (default)
Temperature	30 degrees C / 86 degrees F
CPU temperature	44 degrees C / 111 degrees F
DRAM	3327 MB
Memory utilization	9 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-LCC
Serial ID	737F-1024
Start time	2009-07-08 12:37:52 PDT
Uptime	1 day, 19 hours, 26 minutes, 22 seconds
Last reboot reason	Router rebooted after a normal shutdown.

### Displaying Information About FPCs

To display information about FPCs in a routing matrix, issue the **show chassis fpc** command. Because there are no FPCs in a TX Matrix Plus router, there is no **sfc** option available for this command.

```
user@host> show chassis fpc
```

```
lcc0-re0:
```

Slot	State	Temp	CPU Utilization (%)		Memory	Utilization (%)	
		(C)	Total	Interrupt	DRAM (MB)	Heap	Buffer
0	Empty						
1	Empty						
2	Empty						
3	Empty						
4	Empty						
5	Empty						
6	Empty						
7	Online	49	4	0	1024	7	49

```
lcc2-re0:
```

Slot	State	Temp	CPU Utilization (%)		Memory	Utilization (%)	
		(C)	Total	Interrupt	DRAM (MB)	Heap	Buffer
0	Online	47	8	0	2048	6	24
1	Online	28	4	0	1024	4	49
2	Online	39	5	0	1024	7	49
3	Empty						
4	Empty						
5	Empty						
6	Empty						
7	Empty						

### Displaying Information About LCCs

You can also check to see if the TX Matrix Plus router and T1600 routers are communicating correctly within the routing matrix. To verify that the T1600 routers have proper connectivity to the routing matrix, issue the **show chassis lccs** command. In this example, there are two T1600 routers in the routing matrix.

```
user@host> show chassis lccs
```

Slot	State	Uptime
0	Online	15 hours, 5 minutes, 58 seconds
1	Empty	
2	Online	15 hours, 5 minutes, 58 seconds
3	Empty	

#### Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Deployment Guide](#)
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)

- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## PART 3

# Administering and Troubleshooting a Routing Matrix with a TX Matrix Plus Router

- [Administering Hardware Components of a Routing Matrix with a TX Matrix Plus Router on page 117](#)
- [Administering Files and Processes of a Routing Matrix with a TX Matrix Plus Router on page 129](#)
- [Upgrading Software on a Routing Matrix with a TX Matrix Plus Router on page 133](#)
- [Troubleshooting a Routing Matrix with a TX Matrix Plus Router on page 177](#)



## CHAPTER 5

# Administering Hardware Components of a Routing Matrix with a TX Matrix Plus Router

- Enabling and Disabling Hardware Components of a Routing Matrix with a TX Matrix Plus Router on page 117
- Displaying the Status of the Switching Fabric Topology of a Routing Matrix with a TX Matrix Plus Router on page 120
- Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router on page 121
- Displaying the Status of Control Board Ethernet Switch Ports in a Routing Matrix with a TX Matrix Plus Router on page 122
- Displaying Internal Ethernet Interfaces for a Routing Matrix with a TX Matrix Plus Router on page 126
- Rebooting and Halting Hardware Components of the Routing Matrix with a TX Matrix Plus Router on page 128

## Enabling and Disabling Hardware Components of a Routing Matrix with a TX Matrix Plus Router

---

You can temporarily disable certain hardware components (such as FPCs, PICs, and SIBs) that belong to the TX Matrix Plus router and T1600 or T4000 routers in the routing matrix. To do so, issue the appropriate **request chassis** command and include the **sfc** or **lcc** option as needed.



**NOTE:** If you issue a chassis-related command that references FPCs, we recommend that you use the FPC hardware slot number (0 through 7) of the specific T1600 router and specify its corresponding LCC number.

```
user@host> request chassis ?
```

```
Possible completions:
```

cb	Change Control Board status
cip	Change Connector Interface Panel status
fpc	Change Flexible PIC Concentrator status

fpm	Change craft interface status
lcc	Change LCC status
pic	Change Physical Interface Card status
routing-engine	Change Routing Engine status
scg	Change SONET Clock Generator status
sib	Change Switch Interface Board status
spmb	Change Switch Processor Mezzanine Board status

The routing matrix extends the concept of taking specific hardware components offline or online to include an entire T1600 or T4000 router in a routing matrix. To enable or disable a T1600 or T4000 router in a routing matrix, issue the **request chassis lcc slot lcc-number (offline | online)** command:

Although you can enter the routing matrix-based slot number when you issue the **request chassis fpc** command, output from **show chassis** commands always references the FPC hardware slot number of the specific T1600 or T4000 router and its corresponding LCC number. As a result, we recommend that you include the FPC hardware slot number when you issue **request chassis** or **show chassis** commands, as shown in the following example.

First, issue the **request chassis fpc** command with the routing matrix-based FPC slot number of **19**:

```
user@host> request chassis fpc offline slot 19
lcc2-re0:
```

```
-----
Offline initiated, use "show chassis fpc" to verify
```

However, when you issue the **show chassis fpc** command to check the result, the output displays the change using node-centric terminology: FPC slot number **3** on T1600 router **LCC2** (the equivalent of routing matrix slot **19**).

```
user@host> show chassis fpc
lcc0-re0:
```

```
-----
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
              (C)   Total  Interrupt          DRAM (MB) Heap    Buffer
0 Empty
1 Online        31     2         0       256        7      44
2 Online        28     1         0       256        7      44
3 Online        31     2         0       256       14      44
4 Empty
5 Empty
6 Empty
7 Empty
```

```
lcc2-re0:
```

```
-----
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
              (C)   Total  Interrupt          DRAM (MB) Heap    Buffer
0 Online        31     2         0       256       14      44
1 Online        30     2         0       256        7      44
2 Empty
3 Offline      --- Offlined by cli command ---
4 Empty
5 Empty
```



```
6 Empty
7 Empty
```

To bring the same FPC back online, use the slot number and LCC number from the previous command output:

```
user@host> request chassis fpc online lcc 2 slot 3
lcc2-re0:
```

-----  
Online initiated, use "show chassis fpc" to verify

Once you bring the FPC back online, reissue the **show chassis fpc** command to see that the FPC slot and LCC number you used in the last command now matches the command output:

```
user@host> show chassis fpc
lcc0-re0:
```

```
-----
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
              (C)  Total  Interrupt          DRAM (MB) Heap      Buffer
0 Empty
1 Online        31    1      0          256      7      44
2 Online        28    1      0          256      7      44
3 Online        31    3      0          256     14      44
4 Empty
5 Empty
6 Empty
7 Empty
```

```
lcc2-re0:
```

```
-----
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
              (C)  Total  Interrupt          DRAM (MB) Heap      Buffer
0 Online        31    3      0          256     14      44
1 Online        30    1      0          256      7      44
2 Empty
3 Present        0    0      0           0       0       0
4 Empty
5 Empty
6 Empty
7 Empty
```

For more information about converting FPC hardware slot numbers on a T1600 or T4000 router to the global FPC numbers used in a routing matrix and vice versa, see [“FPC Numbering for Interfaces in TXP-T1600 Configuration” on page 13](#), [“FPC Numbering for Interfaces in TXP-T1600-3D Configuration” on page 16](#), [“FPC Numbering for Interfaces in TXP-T4000-3D Configuration” on page 20](#), [“FPC Numbering for Interfaces in TXP-Mixed-LCC-3D Configuration” on page 26](#), [“Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router” on page 121](#).

#### Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Deployment Guide](#)
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)

- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Displaying the Status of the Switching Fabric Topology of a Routing Matrix with a TX Matrix Plus Router

---

In a routing matrix with a TX Matrix Plus router, each of the five control planes contains various types of Switch Interface Boards (SIBs) that forward packets from a source Packet Forwarding Engine to a destination Packet Forwarding Engine.

You can use the [show chassis fabric topology](#) operational command to check the status of the SIB connections between the TX Matrix Plus router and the connected T1600 or T4000 routers:

- To display the fabric topology states for the entire routing matrix, issue the **show chassis fabric topology** command. To limit the command output to a particular SIB, also include the SIB slot number as a command option.
- To display the fabric topology states for the TX Matrix Plus router, include the **sfc number** option. To further limit the command output to a particular SIB, also include the SIB slot number as a command option.
- To display the fabric topology states for a particular T1600 or T4000 router, include the **lcc lcc-number** option. To further limit the command output to a particular SIB, also include the SIB slot number as a command option.

To display the fabric topology state for the TX Matrix Plus router only, issue the **show fabric topology** command with the **sfc** option. The command output displays the fabric link status for transmit-side links and receive-side links for each of the SIB slots in the TX Matrix Plus router.

### Related Documentation

- [show chassis fabric topology on page 771](#)
- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router

In a routing matrix with a TX Matrix Plus router, you can use the `show chassis location` operational command to display the physical locations of hardware components in the routing matrix:

- To display the router physical location descriptions defined in the `location` configuration statement at the `[edit system]` hierarchy level, issue the `show chassis location` operational command. To limit the command output to the `location` configuration settings for the TX Matrix Plus router (SFC) only, include the `sfc 0` option. To limit the command output to the `location` configuration settings for a particular T1600 or T4000 router (LCC), include the `lcc lcc-number` option. For example:

```
user@host> show chassis location sfc 0
sfc0-re0:
```

```
-----
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```

- To display the numbers of the connected Flexible PIC Concentrators (FPCs) in both routing matrix “global numbering” mode (0 through 31, as used to specify an interface name in a routing matrix) and associated “local numbering” mode (LCC number and FPC slot number), include the `fpc` option. Example:

```
user@host> show chassis location fpc
Global FPC      LCC      Local FPC
    1           0         1
    2           0         2
    3           0         3
   16           2         6
   17           2         1
   19           2         3
```

- To display the LCC number and FPC number associated with a particular interface name, include the `interface by-name interface-name` option. For example:

```
user@host> show chassis location interface by-name ge-16/3/7.1
Interface Name: ge-16/3/7.0, LCC: 2, FPC: 6
```

- To display the interface name associated with a particular FPC, include the `interface by-slot lcc lcc-number fpc fpc-slot-number` option. For example:

```
user@host> show chassis location interface by-slot lcc 2 fpc 6
Global FPC: 16
```

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)

- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Displaying the Status of Control Board Ethernet Switch Ports in a Routing Matrix with a TX Matrix Plus Router

---

The following sections describe the Ethernet switches on the Control Boards in a routing matrix with a TX Matrix Plus router and how you can use the [show chassis ethernet-switch](#) operational command to display information about the ports on Control Board Ethernet switches:

- [Ethernet Switches on Control Boards in the Routing Matrix on page 122](#)
- [Status of Ports on Control Board Ethernet Switches on page 124](#)
- [Error Statistics for Ports on Control Board Ethernet Switches on page 124](#)
- [Traffic Statistics for Ports on Control Board Ethernet Switches on page 125](#)

### Ethernet Switches on Control Boards in the Routing Matrix

In a routing matrix with a TX Matrix Plus router, the SFC and all connected LCCs contain redundant host subsystems. For each host subsystem in a T1600 or T4000 router in a routing matrix, the Control Board (LCC-CB) contains a Gigabit Ethernet switch. For each host subsystem in a TX Matrix Plus router, the Control Board (TXP-CB) contains a 10-Gigabit Ethernet switch and a Gigabit Ethernet switch, which are connected.

These switches support the following connectivity between Routing Engines in the routing matrix:

- [Connectivity Between SFC and LCC Routing Engines on page 122](#)
- [Connectivity Between SFC Master and Backup Routing Engines on page 123](#)
- [Connectivity Between LCC Master and Backup Routing Engines on page 123](#)

#### Connectivity Between SFC and LCC Routing Engines

---

In a routing matrix with a TX Matrix Plus router, the SFC master Routing Engine and every LCC master Routing Engine are connected, enabling the multi-chassis system to operate as a single routing system. The SFC backup Routing Engine and every LCC backup Routing Engine are likewise connected.

This connectivity entails the 10-Gigabit and Gigabit Ethernet switches on the TXP-CB and the Gigabit Ethernet switch on the LCC-CB:

1. The 10-Gigabit Ethernet port on the SFC Routing Engine (automatically configured at the **ixgbe0** internal Ethernet interface) connects to the 10-Gigabit Ethernet switch on the *local Control Board*.
2. On the SFC local Control Board, the 10-Gigabit Ethernet switch connects to the Gigabit Ethernet switch.
3. The Gigabit Ethernet switch on the SFC Control Board connects to the Gigabit Ethernet switch of every LCC Control Board.
4. On every LCC Routing Engine, the Gigabit Ethernet port (automatically configured at the **bcm0** internal Ethernet interface) connects to the Gigabit Ethernet switch on the *local Control Board*.

### Connectivity Between SFC Master and Backup Routing Engines

---

In a routing matrix with a TX Matrix Plus router, the independent control planes of an SFC are connected by two physical links between the two 10-Gigabit Ethernet ports on their respective Routing Engines.

This connectivity entails the 10-Gigabit Ethernet switches on the local and remote TXP-CBs:

- The primary link to the remote Routing Engine is at the **ixgbe0** interface on the SFC Routing Engine. The **ixgbe0** interface—in addition to connecting the SFC Routing Engine to the Routing Engines of the connected LCCs—also connects the SFC Routing Engine to the 10-Gigabit Ethernet port accessed by the **ixgbe1** interface on the *remote Routing Engine*.
- The alternate link to the remote Routing Engine is the 10-Gigabit Ethernet port at the **ixgbe1** interface on the Routing Engine. This second port connects the Routing Engine to the 10-Gigabit Ethernet switch on the *remote Control Board*, which in turn connects to the 10-Gigabit Ethernet port at the **ixgbe0** interface on the *remote Routing Engine*.

If one of the two links between the host subsystems fails, both Routing Engines can use the other link for IP communication.

### Connectivity Between LCC Master and Backup Routing Engines

---

In a routing matrix with a TX Matrix Plus router, the independent control planes of an LCC are connected by two physical links between the two Gigabit Ethernet ports on their respective Routing Engines.

This connectivity entails the Gigabit Ethernet switches on the local and remote LCC-CBs:

- The primary link to the remote Routing Engine is at the **bcm0** interface on the LCC Routing Engine. The **bcm0** interface—in addition to connecting the LCC Routing Engine to the SFC Routing Engine—also connects the LCC Routing Engine to the Gigabit Ethernet port accessed by the **em1** interface on the *remote Routing Engine*.

- The alternate link to the remote Routing Engine is at the Gigabit Ethernet port at the **em1** interface on the local Routing Engine. This second port connects the local Routing Engine to the Gigabit Ethernet switch on the *remote Control Board*, which in turn connects to the Gigabit Ethernet port at the **bcm0** interface on the *remote Routing Engine*.

If one of the two links between the host subsystems fails, both Routing Engines can use the other link for IP communication.

## Status of Ports on Control Board Ethernet Switches

To display port status information for the ports on the Control Board Ethernet switches in the routing matrix, use the following form of the **show chassis ethernet-switch** operational command:

```
show chassis ethernet-switch <sfc sfc-number | lcc lcc-number>
```

You can control the scope of the command output as follows:

- To display the status of the switch ports on the Control Boards in every router in the routing matrix, issue the **show chassis ethernet-switch** command without any command options.
- To limit the output to the status of the ports on the 10-Gigabit Ethernet switch and the Gigabit Ethernet switch on the two Control Boards in the SFC, issue the **show chassis ethernet-switch** command with the **sfc sfc-number** option, where **sfc-number** is 0.
- To limit the output to the status of the ports on the Gigabit Ethernet switch in the two Control Boards in a specific LCC, issue the **show chassis ethernet-switch** operational command with the **lcc lcc-number** option, where **lcc-number** is a value from 0 through 3.

## Error Statistics for Ports on Control Board Ethernet Switches

To display the numbers and types of errors accumulated on the connected ports of Control Board Ethernet switches in the routing matrix, use the following form of the **show chassis ethernet-switch** operational command:

```
show chassis ethernet-switch errors <sfc sfc-number | lcc lcc-number>  
<switch switch-type-number> <switch-port-number>
```

You can control the scope of the command output as follows:

- To display error information for ports on Control Board Ethernet switches in every router in the routing matrix, issue the **show chassis ethernet-switch errors** command (applying only the **errors** command option).
- To limit the command output, you add any combination of the following command options:
  - Chassis—To filter the output on a specific chassis, you can include either the **sfc sfc-number** option (where **sfc-number** is 0) or the **lcc lcc-number** option.
  - SFC Control Board Ethernet Switch Type—If the command output includes information for Control Board Ethernet switches in an SFC (that is, if you applied

either the **errors** option alone or the **errors sfc sfc-number** option), you can filter the SFC portion of the output on a specific switch type. To limit SFC Control Board Ethernet switch port error information, include the **switch switch-type-number** option. The **switch-type-number** value can be **0** (the 10-Gigabit Ethernet switch type) or **1** (the Gigabit Ethernet switch type). The **switch-type-number 2** is reserved for future use.

- Control Board Ethernet Switch Port Number—To filter the output on a specific switch port number, include the **switch-port-number** option, where **switch-port-number** is a value from **0** through **27**.

Related Documentation • [show chassis ethernet-switch on page 586](#)

## Traffic Statistics for Ports on Control Board Ethernet Switches

To display the traffic statistics accumulated on the connected ports of Control Board Ethernet switches in the routing matrix, use the following form of the **show chassis ethernet-switch** operational command:

```
show chassis ethernet-switch statistics <sfc sfc-number | lcc lcc-number>
<switch switch-type-number> <switch-port-number>
```

You can control the scope of the command output as follows:

- To display traffic statistics for Ethernet ports on Control Board switches in every router in the routing matrix, issue the **show chassis ethernet-switch statistics** command (applying only the **statistics** command option).
- To limit the command output, you can add any combination of the following command options:
  - Chassis—To filter the output on a specific chassis, you can include either the **sfc sfc-number** option (where **sfc-number** is **0**) or the **lcc lcc-number** option.
  - SFC Control Board Ethernet Switch Type—If the command output includes information for Control Board Ethernet switches in an SFC (that is, if you applied either the **statistics** option alone or the **statistics sfc sfc-number** option), you can filter the SFC portion of the output on a specific switch type. To limit SFC Control Board Ethernet switch port error information, include the **switch switch-type-number** option. The **switch-type-number** value can be **0** (the 10-Gigabit Ethernet switch type) or **1** (the Gigabit Ethernet switch type). The **switch-type-number 2** is reserved for future use.
  - Control Board Ethernet Switch Port Number—To filter the output on a specific switch port number, include the **switch-port-number** option, where **switch-port-number** is a value from **0** through **27**.

Related Documentation • [show chassis ethernet-switch on page 586](#)  
 • [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)

- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## Displaying Internal Ethernet Interfaces for a Routing Matrix with a TX Matrix Plus Router

The router internal Ethernet interface connects the Routing Engine with the router's packet forwarding components. The Junos OS automatically configures internal Ethernet interfaces. For TX Matrix Plus routers, the internal Ethernet interfaces are **ixgbe0** and **ixgbe1**. For T1600 routers configured in a routing matrix, the internal Ethernet interfaces are **bcm0** and **em1**. For more information about internal Ethernet interfaces, see *Understanding Internal Ethernet Interfaces*.



**NOTE:** Do not modify or remove the configuration for the internal Ethernet interface that the Junos OS automatically configures. If you do, the router will stop functioning.

The following example is a sequence of **show interfaces** commands issued in a Junos OS command-line interface (CLI) session with a TX Matrix Plus router in a routing matrix. In the example, the TX Matrix Plus router, which is also called the switch-fabric chassis (SFC), is known by the IP host name **host-sfc-0** and contains redundant Routing Engines. The commands display information about the management Ethernet interface and both internal Ethernet interfaces configured on the Routing Engine to which you are currently logged in:

```
user@host-sfc-0> show interfaces em0 terse
```

Interface	Admin	Link	Proto	Local	Remote
em0	up	up			
em0.0	up	up	inet	192.168.35.95/24	

```
user@host-sfc-0> show interfaces ixgbe0 terse
```

Interface	Admin	Link	Proto	Local	Remote
ixgbe0	up	up			
ixgbe0.0	up	up	inet	10.34.0.4/8	
				162.0.0.4/2	
			inet6	fe80::200:ff:fe22:4/64	
				fec0::a:22:0:4/64	
			tnp	0x22000004	

```
user@host-sfc-0> show interfaces ixgbe1 terse
```

Interface	Admin	Link	Proto	Local	Remote
ixgbe1	up	up			
ixgbe1.0	up	up	inet	10.34.0.4/8	
				162.0.0.4/2	
			inet6	fe80::200:1ff:fe22:4/64	
				fec0::a:22:0:4/64	
			tnp	0x22000004	



The following example is a sequence of **show interfaces** commands issued in a CLI session with a T1600 router in a routing matrix. In the example, the T1600 router, which is also called the line-card chassis (LCC), is known by the IP host name **host-sfc-0-lcc-2** and contains redundant Routing Engines.

This T1600 router is connected to the routing matrix through a connection in the TXP-SIB-F13 in slot 2 of the SCC. The commands display information about the management Ethernet interface and both internal Ethernet interfaces configured on the Routing Engine to which you are currently logged in:



**NOTE:** In a routing matrix, the **show interfaces** command displays information about the current router only. If you are logged in to the TX Matrix Plus router, the **show interfaces** command output does not include information about any of the attached T1600 routers. To display interface information about a specific T1600 router in the routing matrix, you must first log in to that router.

The previous example shows a CLI session with the TX Matrix Plus router. To display interface information about the T1600 router known as **host-sfc-0-lcc-2**, first use the **request routing-engine login** command to log in to that LCC.

```
user@host-sfc-0> request routing-engine login lcc 2
--- JUNOS 9.6I built 2009-06-22 18:13:04 UTC
% cli
warning: This chassis is a Line Card Chassis (LCC) in a multichassis system.
warning: Use of interactive commands should be limited to debugging.
warning: Normal CLI access is provided by the Switch Fabric Chassis (SFC).
warning: Please logout and log into the SFC to use CLI.
```

```
user@host-sfc-0-lcc-2> show interfaces em0 terse
Interface      Admin Link Proto  Local          Remote
em0            up    up
em0.0          up    up   inet    192.168.35.117/24
```

```
user@host-sfc-0-lcc-2> show interfaces bcm0 terse
Interface      Admin Link Proto  Local          Remote
bcm0           up    up
bcm0.0         up    up   inet    10.1.0.5/8
                                   129.0.0.5/2
                                   inet6   fe80::201:ff:fe01:5/64
                                   fec0::a:1:0:5/64
                                   tnp     0x1000005
```

```
user@host-sfc-0-lcc-2> show interfaces em1 terse
Interface      Admin Link Proto  Local          Remote
em1            up    up
em1.0          up    up   inet    10.1.0.5/8
                                   129.0.0.5/2
                                   inet6   fe80::201:1ff:fe01:5/64
                                   fec0::a:1:0:5/64
                                   tnp     0x1000005
```

**Related Documentation** • [Understanding Internal Ethernet Interfaces](#)

## Rebooting and Halting Hardware Components of the Routing Matrix with a TX Matrix Plus Router

---

In a routing matrix with a TX Matrix Plus router, you can control which hardware component is rebooted or halted. If you reboot or halt the TX Matrix Plus router, by default you also reboot or halt the master Routing Engines on all T1600 or T4000 routers. To reboot a specific component, issue the **request system reboot** command with the **all-lcc**, **lcc**, or **sfc** option.

```
user@host> request system reboot
Reboot the system ? [yes,no] (no) yes
Rebooting lcc0-re0
Rebooting lcc1-re0
```

To halt a specific component in a routing matrix, issue the **request system halt** command with the **all-lcc**, **lcc**, or **sfc** option.



.....

**CAUTION:** Before entering this command, you must have access to the TX Matrix Plus console port and the console ports of all of the LCCs in order to bring up the Routing Engines.

.....

Issuing the **request system halt both-routing-engines** command on a TX Matrix Plus router halts both Routing Engines in the TX Matrix Plus router and both Routing Engines in all T1600 or T4000 routers in the routing matrix. To reboot a Routing Engine that has been halted, you must connect through the console.

**Related Documentation** • [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)  
• [Roadmap for Configuring the Routing Matrix on page 33](#)  
• [Example Configuration for the Routing Matrix on page 48](#)  
• [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## CHAPTER 6

# Administering Files and Processes of a Routing Matrix with a TX Matrix Plus Router

- [Managing Files on Routing Engines in a Routing Matrix with a TX Matrix Plus Router on page 129](#)
- [Managing System Processes in a Routing Matrix with a TX Matrix Plus Router on page 132](#)

## Managing Files on Routing Engines in a Routing Matrix with a TX Matrix Plus Router

This topic summarizes key file management issues useful in operating a routing matrix with a TX Matrix Plus router:

- [Displaying a List of Files on page 129](#)
- [Displaying the Contents of a File on page 130](#)
- [Copying Files on page 131](#)
- [Renaming Files on page 131](#)
- [Deleting Files on page 131](#)

### Displaying a List of Files

To display a list of files on a Routing Engine in a routing matrix with a TX Matrix Plus router, issue the **file list** operational management command.

- To display a list of files on a different chassis, include the LCC chassis number in the directory or file pathname.
- To display a list of files on a different Routing Engine, include the Routing Engine specifier (**re0** or **re1**) in the directory or file pathname.

The following sample command displays the list of files in the **/var/tmp** directory on Routing Engine **re0** in the line-card chassis **lcc0**:

```
user@host> file list lcc0-re0:/var/tmp
lcc0-re0:
-----
/var/tmp/:
.gdbinit
```

```
.pccardd
Test/
chassisd*
chassisd.nathan*
check_time*
cores/
diagTestPrep*
diagtest*
diagtest.user*
do_switchovers*
dump_test*
err.manoj.log
esw_clearstats*
esw_counter*
esw_debug*
esw_debug_ge*
esw_filt_test*
esw_filter_tnp_addr*
esw_getstats*
esw_phy*
esw_stats*
```

## Displaying the Contents of a File

To display the contents of a file, issue the **file show** operational command. To specify a file that is not local to the Routing Engine from which the command is issued, include chassis and Routing Engine information in the filename.

The following sample command displays the contents of the **.gdbinit** file in the **/var/tmp** directory on the master Routing Engine of the T1600 router **lcc0**:

```
user@host> file show lcc0-re0:/var/tmp/.gdbinit
lcc0-re0:
-----
#####
# Settings
#####

set print pretty

#####
# Basic stuff
#####

define msgbuf
    printf "%s", msgbufp->msg_ptr
end
# hex dump of a block of memory
# usage: dump address length
define dump
    p $arg0, $arg1
    set $ch = $arg0
    set $j = 0
    set $n = $arg1
    while ($j < $n)
        #printf "%x %x ",&$ch[$j],$ch[$j]
        printf "%x ",$ch[$j]
        set $j = $j + 1
    end
end
```

```
        if (!($j % 16))
            printf "\n"
        end
    end
end
```

## Copying Files

To copy files from one place to another on the same router or between different routers in the routing matrix, use the **file copy** operational management command. To specify a file that is not local to the Routing Engine from which the command is issued, include chassis and Routing Engine information in the filename.

The following sample command is used to copy the file **sample.txt** from the **/tmp** directory on **sfc0-re1** (the backup Routing Engine in the TX Matrix Plus router) to the **/var/tmp** directory on **lcc0-re1** (the backup Routing Engine in one of the connected routers):

```
user@host> file copy sfc0-re1:/tmp/sample.txt lcc0-re1:/var/tmp
```

## Renaming Files

To rename a file, use the **file rename** operational management command. To specify a file that is not local to the Routing Engine from which the command is issued, include chassis and Routing Engine information in the filename.

The following sequence of sample commands lists the files in the **/var/tmp** directory on **sfc0-re0** (the master Routing Engine of the TX Matrix Plus router), renames one of the files (changing **dcd.core** to **dcd.core.990415**), and then lists the files in the **/var/tmp** directory again to show the newly named file:

```
user@host> file list sfc0-re0:/var/tmp
dcd.core
rpd.core
snmpd.core

user@host> file rename sfc0-re0:/var/tmp/dcd.core /var/tmp/dcd.core.990413

user@host> file list sfc0-re0:/var/tmp
dcd.core.990413
rpd.core
snmpd.core
```

## Deleting Files

To delete a file, use the **file delete** operational management command. To specify a file that is not local to the Routing Engine from which the command is issued, include chassis and Routing Engine information in the filename.

The following sequence of sample command lists the files in the **/var/tmp** directory on **sfc0-re0** (the master Routing Engine on the TX Matrix Plus router), deletes the file **snmpd.core** from that directory, and then lists the files in the directory again:

```
user@host> file list lcc0-re0:/var/tmp
```

```
dcd.core
rpd.core
snmpd.core

user@host> file delete lcc0-re0:/var/tmp/snmpd.core

user@host> file list /var/tmp
dcd.core
rpd.core
```

**Related  
Documentation**

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

---

## Managing System Processes in a Routing Matrix with a TX Matrix Plus Router

Some system processes in a routing matrix with a TX Matrix Plus router run on the SFC and some run on the LCCs. For example, the routing protocol process (rpd) runs exclusively on the SFC. To restart the routing protocol process for the entire routing matrix, issue the **restart routing** command on the SFC:

```
user@host> restart routing ?
Possible completions:
<[Enter]>          Execute this command
gracefully         Gracefully restart the process
immediately        Immediately restart (SIGKILL) the process
logical-system     Name of logical system
soft               Soft reset (SIGHUP) the process
|                 Pipe through a command
```

Other processes run on both the SFC and the LCCs. To restart the chassis process that manages PICs, FPCs, and other hardware components, issue the **restart chassis-control** command on the SFC and select the **all**, **all-lcc**, or **lcc lcc-number** option:

To restart the SNMP process, issue the **restart snmp** command on the SFC and select the **all**, **all-lcc**, or **lcc lcc-number** option:

**Related  
Documentation**

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)

## CHAPTER 7

# Upgrading Software on a Routing Matrix with a TX Matrix Plus Router

- [Upgrading the Junos OS on a Routing Matrix with a TX Matrix Plus Router on page 133](#)
- [Troubleshooting a Software Upgrade Failure Due to Insufficient Free Disk Space on a Routing Matrix with a TX Matrix Plus Router on page 165](#)
- [Troubleshooting a Software Upgrade Failure Due to Insufficient Available DRAM on a Routing Matrix with a TX Matrix Plus Router on page 172](#)
- [Troubleshooting a Software Upgrade Failure Due to Mixed Software Versions on a Routing Matrix with a TX Matrix Plus Router on page 173](#)

## Upgrading the Junos OS on a Routing Matrix with a TX Matrix Plus Router

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When you upgrade the Junos OS on a routing matrix with a TX Matrix Plus router, the new image is loaded onto the TX Matrix Plus router (**sfc 0**) and distributed to all of the connected routers based on the line-card chassis (LCC) configuration.



**NOTE:** Throughout this task description, the term *switch-fabric chassis (SFC)* refers to the TX Matrix Plus router in the routing matrix, and the term *line-card chassis (LCC)* refers to a T1600 or T4000 router connected to the SFC in the routing matrix.

Before you begin upgrading the Junos OS on a routing matrix, be sure that the following requirements are met:

- Sufficient free disk space on each Routing Engine in the routing matrix. To determine the amount of disk space currently available on all Routing Engines in the routing matrix, issue the **show system storage** operational command.
- Sufficient DRAM on each Routing Engine in the routing matrix. To determine the amount of DRAM currently available on all the Routing Engines in the routing matrix, issue the **show chassis routing-engine** operational command.
- Both Routing Engines on the SFC must have the same model number. Each LCC must contain two Routing Engines. The Routing Engines on all LCCs must have the same model number.

For more information about which Routing Engines are supported for the TX Matrix Plus router, T1600 router, and T4000 router, see [Supported Routing Engines by Chassis](#).

- For the TXP-T1600 configuration, you must upgrade the router to Junos OS Release 9.6R2 or later. TX Matrix Plus routers in the TXP-T1600 configuration support 32-bit and 64-bit Junos OS. However, the SFC and LCC must run either 32-bit Junos or 64-bit Junos.
- Starting with Junos OS Release 13.1, the TX Matrix Plus routers with 3D SIBs (for the TXP-T1600-3D, TXP-T4000-3D, and TXP-Mixed-LCC-3D configurations) support 64-bit Junos OS.
- The same version of Junos OS must be running on all Routing Engines in the routing matrix.



**NOTE:** The routing matrix does not operate properly unless all master Routing Engines are running the same version of Junos OS.

---

Different versions of the Junos OS can use different message formats that might be incompatible, particularly when graceful Routing Engine switchover (GRES) is enabled. For more information about GRES, see “*Understanding Graceful Routing Engine Switchover*” and “*Configuring Graceful Routing Engine Switchover*” in the *Junos OS High Availability Library for Routing Devices*.

Because the procedure for upgrading the Junos OS includes switching of the Routing Engine mastership, we recommend that the same version of Junos OS be running on all Routing Engines in the routing matrix. To determine the versions of Junos OS running on the Routing Engines in a routing matrix, issue the [show version invoke-on](#) operational command.



**BEST PRACTICE:** By default, the Routing Engine in slot 0 (re0) is the master and the one in slot 1 (re1) is the backup. You can modify the default Routing Engine mastership by including the `routing-engine slot-number (master | backup | disabled)` statement at the `[edit chassis redundancy]` hierarchy level. However, it is considered best practice to make sure that all master Routing Engines are re0 and all backup Routing Engines are re1 (or vice versa). Throughout this task description, the master Routing Engine is re0 and the backup Routing Engine is re1 in all routers in the routing matrix.

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This topic includes the following tasks:

1. [Logging In to the Master Routing Engine on the TX Matrix Plus Router on page 135](#)
2. [Disabling Routing Engine Redundancy and GRES on the Routing Matrix on page 136](#)
3. [Installing Junos OS on the Backup Routing Engines on page 137](#)
4. [Loading Software on the Backup Routing Engines on page 145](#)
5. [Switching Routing Engine Mastership to the Backup Routing Engines on page 149](#)
6. [Installing Software on the New Default Master Routing Engines on page 152](#)



7. [Loading Software on the New Default Master Routing Engines on page 153](#)
8. [Optional: Switching Routing Engine Mastership Back to the Default Master Routing Engines on page 158](#)
9. [Restoring the Original Configuration on page 160](#)
10. [Backing Up the Routing Engines on page 161](#)

## Logging In to the Master Routing Engine on the TX Matrix Plus Router

Log in to the master Routing Engine on the SFC.



**NOTE:** During the upgrade process, in-band management connections to the routing matrix are lost each time you reboot the system (first, to load the new software onto the backup Routing Engines and later, to load the new software onto the master Routing Engines). Therefore, we recommend that you perform the software upgrade procedure out-of-band, over a direct console connection to the TX Matrix Plus router using Secure Shell (SSH) or Telnet. Connect the system console device to the asynchronous serial port (labeled **CONSOLE**) on the Control Board (CB) associated with the master Routing Engine.

To log in to the master Routing Engine on the SFC and start the Junos OS CLI:

1. At a management console attached to the master Routing Engine (**re0**) on the TX Matrix Plus router, log in to the Junos OS CLI using a root administration account:

```
login: root
Password: ••••••••

--- JUNOS 13.1-R1.0 built 2012-11-30 05:40:54 UTC
```



**NOTE:** From the factory, the root administration user account is not associated with a password.

```
Amnesiac (ttyd0)
```

```
login: root
```

However, you must add a password to the root administration account before you can successfully commit a configuration.

2. At the shell prompt (%), start the Junos OS CLI:

```
{master}
root@sfc0-re0>
```

## Disabling Routing Engine Redundancy and GRES on the Routing Matrix

By default, graceful Routing Engine switchover (GRES) is disabled. To enable GRES on a router, you can include the **graceful-switchover** statement at the **[edit chassis redundancy]** hierarchy level:

```
[edit]
chassis {
  redundancy { # This enables Routing Engine redundancy on the router
    graceful-switchover; # This enables GRES on the router
  }
}
```

The procedure for upgrading the Junos OS on a routing matrix with a TX Matrix Plus router includes tasks that entail disruption of traffic processing by the affected Routing Engines:

- Upgrading the software on all the backup Routing Engines.
- Switching the Routing Engine mastership to the backup Routing Engines.
- Upgrading the software on all the master Routing Engines.
- Switching the Routing Engine mastership back to the master Routing Engines.

If GRES is enabled on any routers in the routing matrix, disable this feature.

To disable GRES on all routers in the routing matrix:

1. Enter configuration mode:

```
{master}
root@sfc0-re0> configure
Entering configuration mode
```



**NOTE:** In the example shown in this step, the form of CLI prompt (beginning with either {master} or {backup} and displaying either -re0 or -re1 in the hostname portion of the prompt) indicates that GRES is enabled on that router.

2. Display the Routing Engine redundancy stanza:

```
{master}
[edit]
root@sfc0-re0# show chassis
...
  redundancy {
    graceful-switchover;
  }
...
```

3. Disable Routing Engine redundancy in the candidate configuration. If GRES is enabled, it is removed with the **redundancy** stanza:

```
{master}
[edit]
root@sfc0-re0# delete chassis redundancy
```

4. Verify that the **graceful-routing** statement has been removed (if it was previously enabled) with the **redundancy** stanza from the **[edit chassis]** hierarchy level of the candidate configuration:

```
[edit]
root@sfc0# show chassis
```



**NOTE:** You can also issue the **show system switchover all-chassis** operational command to display Routing Engine graceful switchover information

5. Commit the configuration on all Routing Engines in the routing matrix by using the **commit synchronize and-quit** statement at the **[edit]** hierarchy. If the configuration contains no errors and the commit succeeds, exit CLI configuration mode:

## Installing Junos OS on the Backup Routing Engines

Install the new version of Junos OS on the backup Routing Engines (**re1**) of all the routers in the routing matrix while leaving the currently running version of Junos OS running on the master Routing Engines (**re0**). This allows the master Routing Engines to continue operations, minimizing the disruption to the routing matrix and your network.

To install the new version of Junos OS on all backup Routing Engines in the routing matrix:

1. At a management console attached to the backup Routing Engine (**re1**) on the SFC, log in to the Junos OS CLI using a root administration account:

```
login: root
Password: ••••••••

--- JUNOS 13.1-R1.0 built 2012-11-30 05:40:54 UTC
```

2. At the shell prompt (**%**), start the Junos OS CLI:

```
root@sfc0-alt-re>
```

3. To install the new Junos OS on the backup Routing Engines (**re1**) in the routing matrix, issue the **request system software add** operational command at the SFC, and specify the new Junos OS image file.

The following example shows sample output for the **request system software add** command:

The following example shows a sample output for the **request system software add** command for a routing matrix with a combination of three T1600 routers and two T4000 routers.

```
root@sfc0_alt_re> request system software add
/var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz
Pushing bundle to lcc0-re1
Pushing bundle to lcc2-re1
Pushing bundle to lcc4-re1
Pushing bundle to lcc6-re1
Pushing bundle to lcc7-re1

Validating on lcc0-re1
Checking compatibility with configuration
Initializing...
Using jbase-13.1R1.0
Verified manifest signed by PackageProduction_13_1_0
Using /var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Using jinstall64-13.1R1.0-domestic.tgz
Using jbundle64-13.1R1.0-domestic.tgz
Checking jbundle requirements on /
Using jbase-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jbase-13.1R1.0 signed by PackageProduction_13_1_0
Using /var/validate/chroot/tmp/jbundle/jboot-13.1R1.0.tgz
Using jcrypto64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jcrypto64-13.1R1.0 signed by PackageProduction_13_1_0
Using jdocs-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jdocs-13.1R1.0 signed by PackageProduction_13_1_0
Using jkernel64-13.1R1.0.tgz
Using jpfe-13.1R1.0.tgz
Using jroute-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jroute-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime64-13.1R1.0 signed by PackageProduction_13_1_0
Using jservices-13.1R1.0.tgz
Using jservices-crypto-13.1R1.0.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded

Validating on lcc2-re1
Checking compatibility with configuration
Initializing...
Using jbase-13.1-20121123_ib_13_1_psd.0
Verified manifest signed by PackageProduction_13_1_0
Using /var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Using jinstall64-13.1R1.0-domestic.tgz
Using jbundle64-13.1R1.0-domestic.tgz
Checking jbundle requirements on /
Using jbase-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jbase-13.1R1.0 signed by PackageProduction_13_1_0
Using /var/validate/chroot/tmp/jbundle/jboot-13.1R1.0.tgz
Using jcrypto64-13.1R1.0.tgz
```

```
Verified manifest signed by PackageProduction_13_1_0
Verified jcrypto64-13.1R1.0 signed by PackageProduction_13_1_0
Using jdocs-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jdocs-13.1R1.0 signed by PackageProduction_13_1_0
Using jkernel64-13.1R1.0.tgz
Using jpfe-13.1R1.0.tgz
Using jroute-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jroute-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime64-13.1R1.0 signed by PackageProduction_13_1_0
Using jservices-13.1R1.0.tgz
Using jservices-crypto-13.1R1.0.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded

Validating on lcc4-re1
Checking compatibility with configuration
Initializing...
Using jbase-13.1-20121128_ib_13_1_psd.1
Verified manifest signed by PackageProduction_13_1_0
Using /var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Using jinstall64-13.1R1.0-domestic.tgz
Using jbundle64-13.1R1.0-domestic.tgz
Checking jbundle requirements on /
Using jbase-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jbase-13.1R1.0 signed by PackageProduction_13_1_0
Using /var/validate/chroot/tmp/jbundle/jboot-13.1R1.0.tgz
Using jcrypto64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jcrypto64-13.1R1.0 signed by PackageProduction_13_1_0
Using jdocs-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jdocs-13.1R1.0 signed by PackageProduction_13_1_0
Using jkernel64-13.1R1.0.tgz
Using jpfe-13.1R1.0.tgz
Using jroute-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jroute-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime64-13.1R1.0 signed by PackageProduction_13_1_0
Using jservices-13.1R1.0.tgz
Using jservices-crypto-13.1R1.0.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded
```

```
Validating on lcc6-re1
Checking compatibility with configuration
Initializing...
Using jbase-13.1-20121123_ib_13_1_psd.0
Verified manifest signed by PackageProduction_13_1_0
Using /var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Using jinstall64-13.1R1.0-domestic.tgz
Using jbundle64-13.1R1.0-domestic.tgz
Checking jbundle requirements on /
Using jbase-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jbase-13.1R1.0 signed by PackageProduction_13_1_0
Using /var/validate/chroot/tmp/jbundle/jboot-13.1R1.0.tgz
Using jcrypto64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jcrypto64-13.1R1.0 signed by PackageProduction_13_1_0
Using jdocs-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jdocs-13.1R1.0 signed by PackageProduction_13_1_0
Using jkernel64-13.1R1.0.tgz
Using jpfe-13.1R1.0.tgz
Using jroute-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jroute-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime64-13.1R1.0 signed by PackageProduction_13_1_0
Using jservices-13.1R1.0.tgz
Using jservices-crypto-13.1R1.0.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded
```

```
Validating on lcc7-re1
Checking compatibility with configuration
Initializing...
Using jbase-13.1-20121123_ib_13_1_psd.0
Verified manifest signed by PackageProduction_13_1_0
Using /var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Using jinstall64-13.1R1.0-domestic.tgz
Using jbundle64-13.1R1.0-domestic.tgz
Checking jbundle requirements on /
Using jbase-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jbase-13.1R1.0 signed by PackageProduction_13_1_0
Using /var/validate/chroot/tmp/jbundle/jboot-13.1R1.0.tgz
Using jcrypto64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jcrypto64-13.1R1.0 signed by PackageProduction_13_1_0
Using jdocs-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jdocs-13.1R1.0 signed by PackageProduction_13_1_0
Using jkernel64-13.1R1.0.tgz
Using jpfe-13.1R1.0.tgz
Using jroute-13.1R1.0.tgz
```

```

Verified manifest signed by PackageProduction_13_1_0
Verified jroute-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime64-13.1R1.0 signed by PackageProduction_13_1_0
Using jservices-13.1R1.0.tgz
Using jservices-crypto-13.1R1.0.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded

Validating on sfc0-re1
Checking compatibility with configuration
Initializing...
Using jbase-13.1-20121123_ib_13_1_psd.0
Verified manifest signed by PackageProduction_13_1_0
Using /var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Using jinstall64-13.1R1.0-domestic.tgz
Using jbundle64-13.1R1.0-domestic.tgz
Checking jbundle requirements on /
Using jbase-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jbase-13.1R1.0 signed by PackageProduction_13_1_0
Using /var/validate/chroot/tmp/jbundle/jboot-13.1R1.0.tgz
Using jcrypto64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jcrypto64-13.1R1.0 signed by PackageProduction_13_1_0
Using jdocs-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jdocs-13.1R1.0 signed by PackageProduction_13_1_0
Using jkernel64-13.1R1.0.tgz
Using jpfe-13.1R1.0.tgz
Using jroute-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jroute-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime-13.1R1.0 signed by PackageProduction_13_1_0
Using jruntime64-13.1R1.0.tgz
Verified manifest signed by PackageProduction_13_1_0
Verified jruntime64-13.1R1.0 signed by PackageProduction_13_1_0
Using jservices-13.1R1.0.tgz
Using jservices-crypto-13.1R1.0.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded
Done with validate on all chassis

lcc0-re1:
Installing package '/var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz' ...
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Adding jinstall64...

WARNING: The software that is being installed has limited support.
WARNING: Run 'file show /etc/notices/unsupported.txt' for details.

```

Verified manifest signed by PackageProduction\_13\_1\_0

WARNING: This package will load JUNOS 13.1R1.0 software.  
WARNING: It will save JUNOS configuration files, and SSH keys  
WARNING: (if configured), but erase all other files and information  
WARNING: stored on this machine. It will attempt to preserve dumps  
WARNING: and log files, but this can not be guaranteed. This is the  
WARNING: pre-installation stage and all the software is loaded when  
WARNING: you reboot the system.

Saving the config files ...

NOTICE: uncommitted changes have been saved in

/var/db/config/juniper.conf.pre-install

Installing the bootstrap installer ...

WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the  
WARNING: 'request system reboot' command when software installation is  
WARNING: complete. To abort the installation, do not reboot your system,  
WARNING: instead use the 'request system software delete jinstall64'  
WARNING: command as soon as this operation completes.

Saving package file in /var/sw/pkg/jinstall64-13.1R1.0-domestic-signed.tgz ...

Saving state for rollback ...

lcc2-re1:

Installing package '/var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz' ...

Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction\_13\_1\_0

Adding jinstall64...

WARNING: The software that is being installed has limited support.  
WARNING: Run 'file show /etc/notices/unsupported.txt' for details.

Verified manifest signed by PackageProduction\_13\_1\_0

WARNING: This package will load JUNOS 13.1R1.0 software.  
WARNING: It will save JUNOS configuration files, and SSH keys  
WARNING: (if configured), but erase all other files and information  
WARNING: stored on this machine. It will attempt to preserve dumps  
WARNING: and log files, but this can not be guaranteed. This is the  
WARNING: pre-installation stage and all the software is loaded when  
WARNING: you reboot the system.

Saving the config files ...

NOTICE: uncommitted changes have been saved in

/var/db/config/juniper.conf.pre-install

Installing the bootstrap installer ...

WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the  
WARNING: 'request system reboot' command when software installation is  
WARNING: complete. To abort the installation, do not reboot your system,  
WARNING: instead use the 'request system software delete jinstall'  
WARNING: command as soon as this operation completes.

Saving package file in /var/sw/pkg/jinstall64-13.1R1.0-domestic-signed.tgz ...

Saving state for rollback ...

lcc4-re1:

Installing package '/var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz' ...

Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction\_13\_1\_0

Adding jinstall64...



```
WARNING: The software that is being installed has limited support.
WARNING: Run 'file show /etc/notices/unsupported.txt' for details.
```

```
Verified manifest signed by PackageProduction_13_1_0
```

```
WARNING: This package will load JUNOS 13.1R1.0 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.
```

```
Saving the config files ...
```

```
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...
```

```
WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
WARNING: command as soon as this operation completes.
```

```
Saving package file in /var/sw/pkg/jinstall64-13.1R1.0-domestic-signed.tgz ...
Saving state for rollback ...
```

```
lcc6-re1:
```

```
Installing package '/var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz' ...
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Adding jinstall64...
```

```
WARNING: The software that is being installed has limited support.
WARNING: Run 'file show /etc/notices/unsupported.txt' for details.
```

```
Verified manifest signed by PackageProduction_13_1_0
```

```
WARNING: This package will load JUNOS 13.1R1.0 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.
```

```
Saving the config files ...
```

```
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...
```

```
WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
WARNING: command as soon as this operation completes.
```

```
Saving package file in /var/sw/pkg/jinstall64-13.1R1.0-domestic-signed.tgz ...
Saving state for rollback ...
```

```
lcc7-re1:
```

```
Installing package '/var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz' ...
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Adding jinstall64...
```

```
WARNING: The software that is being installed has limited support.
WARNING: Run 'file show /etc/notices/unsupported.txt' for details.
```

```
Verified manifest signed by PackageProduction_13_1_0
```

```
WARNING: This package will load JUNOS 13.1R1.0 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.
```

```
Saving the config files ...
```

```
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...
```

```
WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
WARNING: command as soon as this operation completes.
```

```
Saving package file in /var/sw/pkg/jinstall64-13.1R1.0-domestic-signed.tgz ...
Saving state for rollback ...
```

```
sfc0-re1:
```

```
Installing package '/var/tmp/jinstall64-13.1R1.0-domestic-signed.tgz' ...
Verified jinstall64-13.1R1.0-domestic.tgz signed by PackageProduction_13_1_0
Adding jinstall64...
```

```
WARNING: The software that is being installed has limited support.
WARNING: Run 'file show /etc/notices/unsupported.txt' for details.
```

```
Verified manifest signed by PackageProduction_13_1_0
```

```
WARNING: This package will load JUNOS 13.1R1.0 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.
```

```
Saving the config files ...
```

```
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...
```

```
WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
WARNING: command as soon as this operation completes.
```

Saving package file in /var/sw/pkg/jinstall64-13.1R1.0-domestic-signed.tgz ...  
 Saving state for rollback ...

For more information on the **request system software add** command, see the [CLI Explorer](#).

## Loading Software on the Backup Routing Engines

To start running the newly installed Junos OS on all the backup Routing Engines in the routing matrix, you must reboot those Routing Engines. The Routing Engines reboot from the boot device on which the software was just installed. Each reboot operation can take between 5 and 10 minutes to complete.



**NOTE:** This is your last chance to abort the upgrade of the Junos OS on the backup Routing Engines. If you want to abort the software upgrade, do not reboot the backup Routing Engines.

If you choose to abort the software upgrade, you can remove the new Junos OS package or bundle from the router by issuing the [request system software delete](#) operational command and specifying the `jinstall` command.

To start running the new Junos OS on the backup Routing Engines:

1. To reboot all the backup Routing Engines (**re1**), issue the [request system reboot](#) operational command at the backup Routing Engine one the SFC. At the warning message and prompt, type **yes** to allow the command to proceed:

```
root@sfc0_alt_ret> request system reboot

Reboot the system ? [yes,no] (no) yes

Rebooting 1cc0-re1

Rebooting 1cc2-re1

Rebooting 1cc4-re1

Rebooting 1cc6-re1

Rebooting 1cc7-re1
*** FINAL System shutdown message from root@sankhye1 ***
System going down IMMEDIATELY
Shutdown NOW!
Reboot consistency check bypassed - jinstall 13.1R1.0 will complete installation
upon reboot
[pid 43031]

root@sfc0_alt_ret
```

All of the backup Routing Engines (**re1**) in the routing matrix reboot from the boot devices on which the software was just installed, which loads the new Junos OS. Each reboot operation can take between 5 and 10 minutes to complete.

When the backup Routing Engine on the SFC (**sfc0-re1**) finishes rebooting, the management console attached to the backup Routing Engine on the TX Matrix Plus router displays the login prompt.

2. Log in to the SFC backup Routing Engine (**sfc0-re1**) and issue the **show version** command to verify the version of the software installed:

```
root@sfc0_alt_re> show version
```

**sfc0-re1:**

```
-----
Hostname: sfc0_alt_re
Model: txp
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services AACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]
```

**lcc0-re1:**

```
-----
Hostname: mylcc0_alt_re
Model: t4000
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services AACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
```

```

JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

```

#### lcc2-rel:

```

-----
Hostname: mylcc2_alt_re
Model: t1600
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services ACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

```

#### lcc4-rel:

```

-----
Hostname: mylcc4_alt_re
Model: t4000

JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]

```

JUNOS 64-bit Kernel Software Suite [13.1R1.0]  
 JUNOS Crypto Software Suite [13.1R1.0]  
 JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]  
 JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]  
 JUNOS Online Documentation [13.1R1.0]  
 JUNOS Services AACL Container package [13.1R1.0]  
 JUNOS Services Application Level Gateways [13.1R1.0]  
 JUNOS AppId Services [13.1R1.0]  
 JUNOS Border Gateway Function package [13.1R1.0]  
 JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]  
 JUNOS Services HTTP Content Management package [13.1R1.0]  
 JUNOS IDP Services [13.1R1.0]  
 JUNOS Services Jflow Container package [13.1R1.0]  
 JUNOS Services LL-PDF Container package [13.1R1.0]  
 JUNOS Services MobileNext Software package [13.1R1.0]  
 JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
 JUNOS Services NAT [13.1R1.0]  
 JUNOS Services PTSP Container package [13.1R1.0]  
 JUNOS Services RPM [13.1R1.0]  
 JUNOS Services Stateful Firewall [13.1R1.0]  
 JUNOS Voice Services Container package [13.1R1.0]  
 JUNOS Services Example Container package [13.1R1.0]  
 JUNOS Services Crypto [13.1R1.0]  
 JUNOS Services SSL [13.1R1.0]  
 JUNOS Services IPSec [13.1R1.0]  
 JUNOS Runtime Software Suite [13.1R1.0]  
 JUNOS Routing Software Suite [13.1R1.0]  
 JUNOS 64-bit Runtime Software Suite [13.1R1.0]

**lcc6-rel:**

-----  
 Hostname: mylcc6\_alt\_re  
 Model: t1600

JUNOS Base OS boot [13.1R1.0]  
 JUNOS Base OS Software Suite [13.1R1.0]  
 JUNOS 64-bit Kernel Software Suite [13.1R1.0]  
 JUNOS Crypto Software Suite [13.1R1.0]  
 JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]  
 JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]  
 JUNOS Online Documentation [13.1R1.0]  
 JUNOS Services AACL Container package [13.1R1.0]  
 JUNOS Services Application Level Gateways [13.1R1.0]  
 JUNOS AppId Services [13.1R1.0]  
 JUNOS Border Gateway Function package [13.1R1.0]  
 JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]  
 JUNOS Services HTTP Content Management package [13.1R1.0]  
 JUNOS IDP Services [13.1R1.0]  
 JUNOS Services Jflow Container package [13.1R1.0]  
 JUNOS Services LL-PDF Container package [13.1R1.0]  
 JUNOS Services MobileNext Software package [13.1R1.0]  
 JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
 JUNOS Services NAT [13.1R1.0]  
 JUNOS Services PTSP Container package [13.1R1.0]  
 JUNOS Services RPM [13.1R1.0]  
 JUNOS Services Stateful Firewall [13.1R1.0]  
 JUNOS Voice Services Container package [13.1R1.0]  
 JUNOS Services Example Container package [13.1R1.0]  
 JUNOS Services Crypto [13.1R1.0]  
 JUNOS Services SSL [13.1R1.0]

```
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]
```

```
lcc7-re1:
```

```
-----
Hostname: mylcc7_alt_re
Model: t1600
```

```
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services AACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]
```

## Switching Routing Engine Mastership to the Backup Routing Engines

The new Junos OS is now running on all the backup Routing Engines (**re1**) in the routing matrix. Next, you must install and load the same new software on the master Routing Engines (**re0**) of the routing matrix.

While the Junos OS is being upgraded (installed and then loaded), the Routing Engine on which you are performing the software upgrade does not route traffic. Therefore, to minimize disruption to network operation, you need to temporarily switch Routing Engine mastership over to the backup Routing Engines (**re1**), which are now running the new version of Junos OS.

To switch Routing Engine mastership over to the backup Routing Engines:

1. At a management console attached to the master Routing Engine (**re0**) on the SFC, log in to the Junos OS CLI using a root administration account:

```
login: root
Password: ••••••••
```

```
--- JUNOS 13.1R1.0 built 2012-11-28 20:11:58 UTC
```

2. At the shell prompt (%), start the Junos OS CLI:

```
root@sfc0>
```

3. To transfer Routing Engine mastership to the backup Routing Engine (**re1**) for all routers in the routing matrix, issue the **request chassis routing-engine master** command with the **switch** and **all-chassis** options.



**CAUTION:** Switching Routing Engine mastership causes traffic to be disrupted.

At the warning message and prompt, type **yes** to allow the command to proceed:

```
root@sfc0> request chassis routing-engine master switch all-chassis
```

```
warning: Traffic will be interrupted while the PFE is re-initialized
Toggle mastership between routing engines ? [yes,no] (no) yes
```

```
lcc0-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc2-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc4-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc6-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc7-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Resolving mastership...
Complete. The other routing engine becomes the master.
```



sfc0-re0:

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Resolving mastership...
Complete. The other routing engine becomes the master.
```

4. To verify that the *default* backup Routing Engines (installed in slot1) are now operating the *elected* master Routing Engines, issue the `show chassis routing-engine` command at the TX Matrix Plus router:

```
root@sfc0> show chassis routing-engine
sfc0-re0:
```

```
-----
Routing Engine status:
```

Slot 0:

Current state	Backup
Election priority	Master (default)
...output_truncated...	

```
Routing Engine status:
```

Slot 1:

Current state	Master
Election priority	Backup (default)
...output_truncated...	

lcc0-re0:

```
-----
Routing Engine status:
```

Slot 0:

Current state	Backup
Election priority	Master (default)
...output_truncated...	

0.02      0.07      0.11

```
Routing Engine status:
```

Slot 1:

Current state	Master
Election priority	Backup (default)
...output_truncated...	

lcc2-re0:

```
-----
Routing Engine status:
```

Slot 0:

Current state	Backup
Election priority	Master (default)
...output_truncated...	

```
Routing Engine status:
```

Slot 1:

Current state	Master
Election priority	Backup (default)
...output_truncated...	

lcc4-re0:

```
-----
Routing Engine status:
```

Slot 0:

Current state	Backup
Election priority	Master (default)

...output\_truncated...

Routing Engine status:

Slot1:

Current state	Master
Election priority	Backup (default)
...output_truncated...	

lcc6-re0:

Routing Engine status:

Slot0:

Current state	Backup
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

Slot1:

Current state	Master
Election priority	Backup (default)
...output_truncated...	

lcc7-re0:

Routing Engine status:

Slot0:

Current state	Backup
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

Slot1:

Current state	Master
Election priority	Backup (default)
...output_truncated...	

The default backup Routing Engines (re1), which are now running the new version of Junos OS, are temporarily operating as the elected master Routing Engines. This enables you to avoid disruption to network operation while you install and load the new version of Junos OS on the default master Routing Engines (re0).

## Installing Software on the New Default Master Routing Engines

To install the new version of Junos OS on the new default master Routing Engines (re0) in the routing matrix, issue the [request system software add](#) operational command at the default master Routing Engine (re0 in this procedure) of the SFC, and specify the new Junos OS image file.



**NOTE:** The default backup Routing Engines (re1), which are now running the new version of Junos OS, are operating as the elected master Routing Engines. This enables you to avoid disruption to network operation while you install and load the new version of Junos OS on the default master Routing Engines (re0).

The following example of the **request system software add** command is truncated, but the command output is similar to the output displayed when you installed the new software on the default backup Routing Engines:

```
root@sfc0> request system software add /var/tmp/jinstall64-13.1R1.1-domestic-signed.tgz

Pushing bundle to 1cc0-re0
Pushing bundle to 1cc2-re0
Pushing bundle to 1cc4-re0
Pushing bundle to 1cc6-re0
Pushing bundle to 1cc7-re0
...output_truncated...
```

## Loading Software on the New Default Master Routing Engines

To start running the newly installed Junos OS on all the default master Routing Engines in the routing matrix, you must reboot those Routing Engines. The Routing Engines reboot from the boot device on which the software was just installed. Each reboot operation can take between 5 and 10 minutes to complete.



**NOTE:** This is your last chance to abort the upgrade of the Junos OS on the default master Routing Engines. If you want to abort the software upgrade, do not reboot the default master Routing Engines. However, aborting the software upgrade procedure at this point is not recommended, because the default backup routing Engines are already running the new Junos OS.

If you choose to abort the software upgrade, you can remove the new Junos OS package or bundle from the router by issuing the **request system software delete** operational command and specifying the **jinstall** command.

To start running the new Junos OS on the default master Routing Engines:

1. To reboot all the default master Routing Engines (**re0**), issue the **request system reboot** operational command at the TX Matrix Plus router.

At the warning message and prompt, type **yes** to allow the command to proceed:

```
root@sfc0> request system reboot
Reboot the system ? [yes,no] (no) yes

Rebooting 1cc0-re0
Rebooting 1cc2-re0
Rebooting 1cc4-re0
Rebooting 1cc6-re0
Rebooting 1cc7-re0
*** FINAL System shutdown message from root@sankhye ***
System going down IMMEDIATELY
Shutdown NOW!
Reboot consistency check bypassed - jinstall64 13.1R1.0 will complete
installation upon reboot
[pid 43105]
```

All of the default master Routing Engines (**re0**) in the routing matrix reboot from the boot devices on which the software was just installed, which loads the new Junos OS. Each reboot operation can take between 5 and 10 minutes to complete.

...router\_boot\_sequence...

When the default master Routing Engine on the TX Matrix Plus router (**sfc0-re0**) finishes rebooting, the management console attached to the default master Routing Engine on the TX Matrix Plus router displays the login prompt.

```
var/pdb/profile_db initialized
```

```
Profile database initialized
Local package initialization:.
kern.securelevel: -1 -> 1
starting local daemons:.
Fri Nov 30 14:11:00 PDT 2012
```

```
login:
```

The new version of Junos OS is loaded and running on the new default master Routing Engines

2. At a management console attached to the new default master Routing Engine (**re1**) on the SFC, log in to the Junos OS CLI using a root administration account:

```
Fri Nov 30 14:11:00 PDT 2012
```

```
login: root
Password: .....
```

```
--- JUNOS 13.1R1.2 built 2012-11-30 14:11:54 UTC
```

3. Issue the **show version** command to verify the version of the software installed:

```
root@sfc0> show version
sfc0-re0:
```

```
-----
Hostname: sfc0
Model: tpx
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services AACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
```

```

JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

```

#### lcc0-re0:

```

-----
Hostname: mylcc0
Model: t4000
JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services ACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

```

#### lcc2-re0:

```

-----
Hostname: mylcc2
Model: t1600JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services ACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]

```

JUNOS Border Gateway Function package [13.1R1.0]  
 JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]  
 JUNOS Services HTTP Content Management package [13.1R1.0]  
 JUNOS IDP Services [13.1R1.0]  
 JUNOS Services Jflow Container package [13.1R1.0]  
 JUNOS Services LL-PDF Container package [13.1R1.0]  
 JUNOS Services MobileNext Software package [13.1R1.0]  
 JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
 JUNOS Services NAT [13.1R1.0]  
 JUNOS Services PTSP Container package [13.1R1.0]  
 JUNOS Services RPM [13.1R1.0]  
 JUNOS Services Stateful Firewall [13.1R1.0]  
 JUNOS Voice Services Container package [13.1R1.0]  
 JUNOS Services Example Container package [13.1R1.0]  
 JUNOS Services Crypto [13.1R1.0]  
 JUNOS Services SSL [13.1R1.0]  
 JUNOS Services IPSec [13.1R1.0]  
 JUNOS Runtime Software Suite [13.1R1.0]  
 JUNOS Routing Software Suite [13.1R1.0]  
 JUNOS 64-bit Runtime Software Suite [13.1R1.0]

**lcc4-re0:**

-----

Hostname: mylcc4  
 Model: t4000  
 JUNOS Base OS boot [13.1R1.0]  
 JUNOS Base OS Software Suite [13.1R1.0]  
 JUNOS 64-bit Kernel Software Suite [13.1R1.0]  
 JUNOS Crypto Software Suite [13.1R1.0]  
 JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]  
 JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]  
 JUNOS Online Documentation [13.1R1.0]  
 JUNOS Services AACL Container package [13.1R1.0]  
 JUNOS Services Application Level Gateways [13.1R1.0]  
 JUNOS AppId Services [13.1R1.0]  
 JUNOS Border Gateway Function package [13.1R1.0]  
 JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]  
 JUNOS Services HTTP Content Management package [13.1R1.0]  
 JUNOS IDP Services [13.1R1.0]  
 JUNOS Services Jflow Container package [13.1R1.0]  
 JUNOS Services LL-PDF Container package [13.1R1.0]  
 JUNOS Services MobileNext Software package [13.1R1.0]  
 JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]  
 JUNOS Services NAT [13.1R1.0]  
 JUNOS Services PTSP Container package [13.1R1.0]  
 JUNOS Services RPM [13.1R1.0]  
 JUNOS Services Stateful Firewall [13.1R1.0]  
 JUNOS Voice Services Container package [13.1R1.0]  
 JUNOS Services Example Container package [13.1R1.0]  
 JUNOS Services Crypto [13.1R1.0]  
 JUNOS Services SSL [13.1R1.0]  
 JUNOS Services IPSec [13.1R1.0]  
 JUNOS Runtime Software Suite [13.1R1.0]  
 JUNOS Routing Software Suite [13.1R1.0]  
 JUNOS 64-bit Runtime Software Suite [13.1R1.0]

**lcc6-re0:**

-----

Hostname: mylcc6  
 Model: t1600

```

JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services AACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]
JUNOS Services SSL [13.1R1.0]
JUNOS Services IPSec [13.1R1.0]
JUNOS Runtime Software Suite [13.1R1.0]
JUNOS Routing Software Suite [13.1R1.0]
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

```

lcc7-re0:

```

-----
Hostname: mylcc7
Model: t1600

```

```

JUNOS Base OS boot [13.1R1.0]
JUNOS Base OS Software Suite [13.1R1.0]
JUNOS 64-bit Kernel Software Suite [13.1R1.0]
JUNOS Crypto Software Suite [13.1R1.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1R1.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1R1.0]
JUNOS Online Documentation [13.1R1.0]
JUNOS Services AACL Container package [13.1R1.0]
JUNOS Services Application Level Gateways [13.1R1.0]
JUNOS AppId Services [13.1R1.0]
JUNOS Border Gateway Function package [13.1R1.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1R1.0]
JUNOS Services HTTP Content Management package [13.1R1.0]
JUNOS IDP Services [13.1R1.0]
JUNOS Services Jflow Container package [13.1R1.0]
JUNOS Services LL-PDF Container package [13.1R1.0]
JUNOS Services MobileNext Software package [13.1R1.0]
JUNOS Services Mobile Subscriber Service Container package [13.1R1.0]
JUNOS Services NAT [13.1R1.0]
JUNOS Services PTSP Container package [13.1R1.0]
JUNOS Services RPM [13.1R1.0]
JUNOS Services Stateful Firewall [13.1R1.0]
JUNOS Voice Services Container package [13.1R1.0]
JUNOS Services Example Container package [13.1R1.0]
JUNOS Services Crypto [13.1R1.0]

```

JUNOS Services SSL [13.1R1.0]  
JUNOS Services IPSec [13.1R1.0]  
JUNOS Runtime Software Suite [13.1R1.0]  
JUNOS Routing Software Suite [13.1R1.0]  
JUNOS 64-bit Runtime Software Suite [13.1R1.0]

## Optional: Switching Routing Engine Mastership Back to the Default Master Routing Engines

The *default backup* Routing Engines (**re1**) are still operating as the *elected master* Routing Engines while the default master Routing Engines (**re0**) are operating as the elected backup Routing Engines.

To avoid confusion about which Routing Engine in any router is the master and which is the backup, you should switch the Routing Engine mastership assignment back to the original designations (with the **re0** Routing Engines operating as the master Routing Engines and the **re1** Routing Engines operating as the backup Routing Engines).



**NOTE:** Switching Routing Engine mastership causes traffic to be disrupted.

However, if you need to avoid another disruption to traffic while the Routing Engine mastership is switched on all the routers, you can skip this task.

To switch Routing Engine mastership back to the default master Routing Engine (**re0**) on all routers in the routing matrix:

1. Transfer Routing Engine mastership to the backup Routing Engine (**re1**) for all routers in the routing matrix. To do this, issue the **request chassis routing-engine master** command and specify the **switch** and **all-chassis** options.

At the warning message and prompt, type **yes** to allow the command to proceed:

```
root@sfc0> request chassis routing-engine master switch all-chassis
warning: Traffic will be interrupted while the PFE is re-initialized
Toggle mastership between routing engines ? [yes,no] (no) yes
```

```
lcc0-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Resolving mastership...
Complete. The local routing engine becomes the master.
```

```
lcc2-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Command aborted. Not ready for mastership switch, try after 47 secs.
```

```
lcc4-re0:
```

```
-----
warning: Traffic will be interrupted while the PFE is re-initialized
Command aborted. Not ready for mastership switch, try after 19 secs.
```

```
lcc6-re0:
```



warning: Traffic will be interrupted while the PFE is re-initialized  
Command aborted. Not ready for mastership switch, try after 53 secs.

lcc7-re0:

warning: Traffic will be interrupted while the PFE is re-initialized  
Command aborted. Not ready for mastership switch, try after 45 secs.

sfc0-re0:

warning: Traffic will be interrupted while the PFE is re-initialized  
Command aborted. Not ready for mastership switch, try after 97 secs.

2. Verify that Routing Engine mastership has indeed switched back to the default master Routing Engines (**re0**) in the routing matrix. To display Routing Engine mastership information, issue the `show chassis routing-engine` command at the SFC:

```
root@sfc0> show chassis routing-engine
```

sfc0-re0:

Routing Engine status:

Slot0:

Current state	Master
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

Slot1:

Current state	Backup
Election priority	Backup (default)
...output_truncated...	

lcc0-re0:

Routing Engine status:

Slot0:

Current state	Master
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

Slot1:

Current state	Backup
Election priority	Backup (default)
...output_truncated...	

lcc2-re0:

Routing Engine status:

Slot0:

Current state	Master
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

Slot1:

Current state	Backup
Election priority	Backup (default)
...output_truncated...	

**lcc4-re0:**-----  
Routing Engine status:**Slot 0:**

Current state	Master
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

**Slot 1:**

Current state	Backup
Election priority	Backup (default)
...output_truncated...	

**lcc6-re0:**-----  
Routing Engine status:**Slot 0:**

Current state	Master
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

**Slot 1:**

Current state	Backup
Election priority	Backup (default)
...output_truncated...	

**lcc7-re0:**-----  
Routing Engine status:**Slot 0:**

Current state	Master
Election priority	Master (default)
...output_truncated...	

Routing Engine status:

**Slot 1:**

Current state	Backup
Election priority	Backup (default)
...output_truncated...	

## Restoring the Original Configuration

After you have installed the new Junos OS and are satisfied that it is running properly on all Routing Engines, restore the routing matrix to the original configuration (that existed before you deleted it at the beginning of this procedure) and then back up the configuration change.

To restore the previous configuration and then create a configuration backup, perform the following steps at the master Routing Engine of the SFC:

1. Restore the routing matrix configuration that existed before you deleted it at the start of this procedure:

```
{master}  
root@sfc0-re0> configure
```

Entering configuration mode

```
{master}
root@sfc0# rollback 1
load complete
```

2. Commit the configuration changes on all Routing Engines, which activates the original configuration, and then return to operational mode:

```
{master}
root@sfc0-re0# commit synchronize and-quit
sfc0-re0:
configuration check succeeds
lcc0-re0:
commit complete
lcc0-re1:
commit complete
lcc2-re1:
commit complete
lcc2-re0:
commit complete
lcc4-re1:
commit complete
lcc4-re0:
commit complete
lcc6-re1:
commit complete
lcc6-re0:
commit complete
lcc7-re1:
commit complete
lcc7-re0:
commit complete
sfc0-re1:
commit complete
sfc0-re0:
commit complete

{master}
root@sfc0-re0>
```

## Backing Up the Routing Engines

Back up the currently running and active file system partitions on each Routing Engine to standby partitions that are not running. Specifically, the root file system (/) is backed up to **/altroot**, and **/config** is backed up to **/altconfig**. The root and **/config** file systems are on each Routing Engine's flash drive, and the **/altroot** and **/altconfig** file systems are on Routing Engine's hard drive.



**CAUTION:** After you run the **request system snapshot** command, you cannot return to the previous version of the software, because the running and backup copies of the software are identical.

To back up the Routing Engines of the routing matrix:

1. To back up the master Routing Engines (**re0**) in the routing matrix, issue the **request system snapshot** command.

The following example shows sample output for backing up the master Routing Engines:

```
{master}
root@sfc0-re0> request system snapshot
sfc0-re0:
-----
Verifying compatibility of destination media partitions...
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)
The following filesystems were archived: / /config

lcc0-re0:
-----
Verifying compatibility of destination media partitions...
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)
The following filesystems were archived: / /config

lcc2-re0:
-----
Verifying compatibility of destination media partitions...
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)
The following filesystems were archived: / /config

lcc4-re0:
-----
Verifying compatibility of destination media partitions...
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)
The following filesystems were archived: / /config

---(more)---

lcc6-re0:
-----
Verifying compatibility of destination media partitions...
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)
The following filesystems were archived: / /config

lcc7-re0:
-----
Verifying compatibility of destination media partitions...
```

```
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)
The following filesystems were archived: / /config
```

- To transfer Routing Engine mastership back to the default backup Routing Engines, issue the **request chassis routing-engine** command with the **switch** and **all-chassis** options.



**CAUTION:** Switching Routing Engine mastership causes traffic to be disrupted.

At the warning message and prompt, type **yes** to allow the operation to proceed

```
{master}
root@sfc0-re0> request chassis routing-engine master switch all-chassis
Toggle mastership between routing engines ? [yes,no] (no) yes
```

```
lcc0-re0:
```

```
-----
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc2-re0:
```

```
-----
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc4-re0:
```

```
-----
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc6-re0:
```

```
-----
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
lcc7-re0:
```

```
-----
Resolving mastership...
Complete. The other routing engine becomes the master.
```

```
sfc0-re0:
```

```
-----
Resolving mastership...
Complete. The other routing engine becomes the master.
```

- To back up the backup Routing Engines (**re1**), issue the **request system snapshot** operational command at the backup Routing Engine on the TX Matrix Plus router.

The following examples shows sample command output for backing up the backup Routing Engines:

```
{master}
root@sfc0-re1> request system snapshot
```

lcc0-re1:

```
-----  
Verifying compatibility of destination media partitions...  
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...  
Running newfs (381MB) on hard-disk media /config partition (ad1s1e)...  
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)  
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)  
The following filesystems were archived: / /config
```

lcc2-re1:

```
-----  
Verifying compatibility of destination media partitions...  
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...  
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...  
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)  
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)  
The following filesystems were archived: / /config
```

lcc4-re1:

```
-----  
Verifying compatibility of destination media partitions...  
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...  
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...  
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)  
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)  
The following filesystems were archived: / /config
```

---(more)---

lcc6-re1:

```
-----  
Verifying compatibility of destination media partitions...  
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...  
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...  
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)  
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)  
The following filesystems were archived: / /config
```

lcc7-re1:

```
-----  
Verifying compatibility of destination media partitions...  
Running newfs (3GB) on hard-disk media / partition (ad1s1a)...  
Running newfs (382MB) on hard-disk media /config partition (ad1s1e)...  
Copying '/dev/ad0s1a' to '/dev/ad1s1a' .. (this may take a few minutes)  
Copying '/dev/ad0s1e' to '/dev/ad1s1e' .. (this may take a few minutes)  
The following filesystems were archived: / /config
```

**Related  
Documentation**

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Troubleshooting: Upgrade Failure Due to Insufficient Disk Space on page 165](#)
- [Troubleshooting: Upgrade Failure Due to Insufficient DRAM on page 172](#)
- [Troubleshooting: Upgrade Failure Due to Mixed Software on page 173](#)

## Troubleshooting a Software Upgrade Failure Due to Insufficient Free Disk Space on a Routing Matrix with a TX Matrix Plus Router

**Problem Description:** In a routing matrix with a TX Matrix Plus router, a successful upgrade of the Junos OS requires sufficient free disk space on all Routing Engines of the TX Matrix Plus router and connected T1600 or T4000 routers.

**Symptoms:** If the amount of free disk space on a Routing Engine is insufficient to install the Junos OS, you might receive a warning that the `/var` filesystem is low on free disk space, similar to the following message:

```
WARNING: The /var filesystem is low on free disk space.
WARNING: This package requires 1075136k free, but there
WARNING: is only 666502k available.
```

**Cause** The amount of free disk space necessary to upgrade a Routing Engine with a new version of the Junos OS can vary from one release to another. Check the *Junos OS Release Notes* for the software version you are installing.

To determine the amount of free disk space on each Routing Engine in the routing matrix, issue the `show system storage` command on the master Routing Engine and also on the backup Routing Engine on the TX Matrix Plus router.



**NOTE:** When you issue the `show system storage` command on a master Routing Engine of a TX Matrix Plus router, the command is broadcast to the master Routing Engines (only) on all T1600 or T4000 routers in the routing matrix. Similarly, when you issue the `show system storage` command on a backup Routing Engine of a TX Matrix Plus router, the command is broadcast to the backup Routing Engines (only) on all T1600 or T4000 routers in the routing matrix.

The following example shows sample output for the `show system storage` command when it is issued on the master Routing Engine in slot 0 on the TX Matrix Plus router:

```
root@sfc0> show system storage
sfc0-re0:
```

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/ad0s1a	3.3G	370M	2.7G	12%	/
devfs	1.0K	1.0K	0B	100%	/dev
/dev/md0	65M	65M	0B	100%	/packages/mnt/jbase
/dev/md1	41M	41M	0B	100%	
/packages/mnt/jkernel64-13.1R1.0					
/dev/md2	147M	147M	0B	100%	
/packages/mnt/jpfe-T-13.1R1.0					
/dev/md3	5.3M	5.3M	0B	100%	
/packages/mnt/jdocs-13.1R1.0					
/dev/md4	115M	115M	0B	100%	
/packages/mnt/jroute-13.1R1.0					

/dev/md5	29M	29M	0B	100%	
/packages/mnt/jcrypto64-13.1R1.0					
/dev/md6	65M	65M	0B	100%	
/packages/mnt/jpfe-common-13.1R1.0					
/dev/md7	428M	428M	0B	100%	
/packages/mnt/jruntime-13.1R1.0					
/dev/md8	24M	24M	0B	100%	
/packages/mnt/jruntime64-13.1R1.0					
/dev/md9	2.0G	8.0K	1.8G	0%	/tmp
/dev/md10	2.0G	11M	1.8G	1%	/mfs
/dev/ad0s1e	376M	26K	346M	0%	/config
procfs	4.0K	4.0K	0B	100%	/proc
/dev/ad1s1f	55G	27G	23G	54%	/var

lcc0-re0:

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/ad0s1a	3.3G	370M	2.7G	12%	/
devfs	1.0K	1.0K	0B	100%	/dev
/dev/md0	65M	65M	0B	100%	/packages/mnt/jbase
/dev/md1	41M	41M	0B	100%	
/packages/mnt/jkernel64-13.1R1.0					
/dev/md2	147M	147M	0B	100%	
/packages/mnt/jpfe-T-13.1R1.0					
/dev/md3	5.3M	5.3M	0B	100%	
/packages/mnt/jdocs-13.1R1.0					
/dev/md4	115M	115M	0B	100%	
/packages/mnt/jroute-13.1R1.0					
/dev/md5	29M	29M	0B	100%	
/packages/mnt/jcrypto64-13.1R1.0					
/dev/md6	65M	65M	0B	100%	
/packages/mnt/jpfe-common-13.1R1.0					
/dev/md7	428M	428M	0B	100%	
/packages/mnt/jruntime-13.1R1.0					
/dev/md8	24M	24M	0B	100%	
/packages/mnt/jruntime64-13.1R1.0					
/dev/md9	3.2G	14K	2.9G	0%	/tmp
/dev/md10	3.2G	438K	2.9G	0%	/mfs
---					
/dev/ad0s1e	375M	3.9M	341M	1%	/config
procfs	4.0K	4.0K	0B	100%	/proc
/dev/ad1s1f	52G	30G	18G	63%	/var

lcc2-re0:

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/ad0s1a	3.3G	370M	2.7G	12%	/
devfs	1.0K	1.0K	0B	100%	/dev
/dev/md0	65M	65M	0B	100%	/packages/mnt/jbase
/dev/md1	41M	41M	0B	100%	
/packages/mnt/jkernel64-13.1R1.0					
/dev/md2	147M	147M	0B	100%	
/packages/mnt/jpfe-T-13.1R1.0					
/dev/md3	5.3M	5.3M	0B	100%	
/packages/mnt/jdocs-13.1R1.0					
/dev/md4	115M	115M	0B	100%	
/packages/mnt/jroute-13.1R1.0					
/dev/md5	29M	29M	0B	100%	
/packages/mnt/jcrypto64-13.1R1.0					
/dev/md6	65M	65M	0B	100%	



```

/packages/mnt/jpfe-common-13.1R1.0
/dev/md7          428M      428M      0B      100%
/packages/mnt/jruntime-13.1R1.0
/dev/md8          24M       24M      0B      100%
/packages/mnt/jruntime64-13.1R1.0
/dev/md9          3.2G      14K      2.9G     0% /tmp
/dev/md10         3.2G     432K     2.9G     0% /mfs
/dev/ad0s1e       376M      14K     346M     0% /config
procfs           4.0K     4.0K      0B     100% /proc
/dev/ad1s1f      53G       27G     22G     56% /var

```

lcc4-re0:

```

-----
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a     3.3G     370M     2.7G    12%      /
devfs           1.0K     1.0K      0B    100%    /dev
/dev/md0        65M     65M      0B    100%    /packages/mnt/jbase
/dev/md1        41M     41M      0B    100%
/packages/mnt/jkernel64-13.1R1.0
/dev/md2       147M    147M      0B    100%
/packages/mnt/jpfe-T-13.1R1.0
/dev/md3       5.3M     5.3M      0B    100%
/packages/mnt/jdocs-13.1R1.0
/dev/md4       115M    115M      0B    100%
/packages/mnt/jroute-13.1R1.0
/dev/md5       29M     29M      0B    100%
/packages/mnt/jcrypto64-13.1R1.0
/dev/md6       65M     65M      0B    100%
/packages/mnt/jpfe-common-13.1R1.0
---(more 60%)---
/dev/md7          428M      428M      0B      100%
/packages/mnt/jruntime-13.1R1.0
/dev/md8          24M       24M      0B      100%
/packages/mnt/jruntime64-13.1R1.0
/dev/md9          2.0G      14K      1.8G     0% /tmp
/dev/md10         2.0G     432K     1.8G     0% /mfs
/dev/ad0s1e       376M      14K     346M     0% /config
procfs           4.0K     4.0K      0B    100% /proc
/dev/ad1s1f      55G       27G     23G     54% /var

```

lcc6-re0:

```

-----
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a     3.3G     370M     2.7G    12%      /
devfs           1.0K     1.0K      0B    100%    /dev
/dev/md0        65M     65M      0B    100%    /packages/mnt/jbase
/dev/md1        41M     41M      0B    100%
/packages/mnt/jkernel64-13.1R1.0
/dev/md2       147M    147M      0B    100%
/packages/mnt/jpfe-T-13.1R1.0
/dev/md3       5.3M     5.3M      0B    100%
/packages/mnt/jdocs-13.1R1.0
/dev/md4       115M    115M      0B    100%
/packages/mnt/jroute-13.1R1.0
/dev/md5       29M     29M      0B    100%
/packages/mnt/jcrypto64-13.1R1.0
/dev/md6       65M     65M      0B    100%
/packages/mnt/jpfe-common-13.1R1.0
/dev/md7          428M      428M      0B      100%
/packages/mnt/jruntime-13.1R1.0

```

```

/dev/md8                24M      24M      0B      100%
/packages/mnt/jruntime64-13.1R1.0
/dev/md9                2.0G      14K      1.8G      0% /tmp
/dev/md10               2.0G     432K      1.8G      0% /mfs
/dev/ad0s1e             376M      14K      346M      0% /config
procfs                 4.0K      4.0K      0B      100% /proc
/dev/ad1s1f             55G      25G      25G      50% /var

lcc7-re0:
-----
Filesystem              Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a             3.3G      370M      2.7G      12% /
devfs                  1.0K      1.0K      0B      100% /dev
/dev/md0                65M      65M      0B      100% /packages/mnt/jbase
/dev/md1                41M      41M      0B      100%
/packages/mnt/jkernel64-13.1R1.0
/dev/md2                147M     147M      0B      100%
/packages/mnt/jpfe-T-13.1R1.0
---(more 90%)---

/dev/md3                5.3M      5.3M      0B      100%
/packages/mnt/jdocs-13.1R1.0
/dev/md4                115M     115M      0B      100%
/packages/mnt/jroute-13.1R1.0
/dev/md5                29M      29M      0B      100%
/packages/mnt/jcrypto64-13.1R1.0
/dev/md6                65M      65M      0B      100%
/packages/mnt/jpfe-common-13.1R1.0
/dev/md7                428M     428M      0B      100%
/packages/mnt/jruntime-13.1R1.0
/dev/md8                24M      24M      0B      100%
/packages/mnt/jruntime64-13.1R1.0
/dev/md9                2.0G      14K      1.8G      0% /tmp
/dev/md10               2.0G     438K      1.8G      0% /mfs
/dev/ad0s1e             376M      14K      346M      0% /config
procfs                 4.0K      4.0K      0B      100% /proc
/dev/ad1s1f             55G      26G      25G      51% /var

```

**Solution** To resolve the issue of insufficient free disk space on a Routing Engine to perform a Junos OS upgrade on that router, perform the following steps:

1. To free up space in the file system, you can log in to a particular Routing Engine and then issue the **request system storage cleanup** command. This command deletes rotating log files in **/var/log** that are not current, temporary files in **/var/tmp** that have not been modified within the last two days, and all crash files in **/var/crash**. The command output first lists the files proposed for deletion and then prompts you to proceed to delete these storage cleanup candidates.



**NOTE:** Although the command prompts you before deleting files, you can issue the command with the **dry-run** option, which causes the command to only list the cleanup candidates without offering to remove them.

The following example shows sample output for the **request system storage cleanup** command with the **dry-run** option included:

```
root@sfc0> request system storage cleanup dry-run
Currently rotating log files, please wait.
This operation can take up to a minute.
```

List of files to delete:

Size	Date	Name
1287.5K	Nov 21 23:57	/var/log/bgp.0.gz
1060.6K	Nov 21 23:37	/var/log/bgp.1.gz
1061.9K	Nov 21 23:37	/var/log/bgp.2.gz
1053.0K	Nov 21 23:10	/var/log/bgp.3.gz
152.5K	Dec 2 20:37	/var/log/chassisd.0.gz
164.0K	Nov 29 22:27	/var/log/chassisd.1.gz
169.4K	Nov 27 20:07	/var/log/chassisd.2.gz
167.0K	Nov 26 22:45	/var/log/chassisd.3.gz
39.8K	Dec 2 20:39	/var/log/dcd.0.gz
47.4K	Nov 24 19:27	/var/log/dcd.1.gz
46.9K	Jun 9 22:15	/var/log/filter.0.gz
54.4K	Jun 9 18:00	/var/log/filter.1.gz
56.6K	Jun 9 17:15	/var/log/filter.2.gz
56.2K	Jun 9 16:30	/var/log/filter.3.gz
53.4K	Jun 9 15:45	/var/log/filter.4.gz
53.8K	Jun 9 15:00	/var/log/filter.5.gz
55.9K	Jun 9 14:15	/var/log/filter.6.gz
56.0K	Jun 9 13:30	/var/log/filter.7.gz
56.7K	Jun 9 12:45	/var/log/filter.8.gz
55.6K	Jun 9 12:00	/var/log/filter.9.gz
794B	Nov 26 01:10	/var/log/install.0.gz
786B	Nov 25 02:27	/var/log/install.1.gz
775B	Oct 30 20:02	/var/log/install.10.gz
790B	Oct 30 08:02	/var/log/install.11.gz
785B	Oct 28 21:06	/var/log/install.12.gz
775B	Oct 26 10:30	/var/log/install.13.gz
789B	Oct 26 04:35	/var/log/install.14.gz
786B	Oct 19 07:32	/var/log/install.15.gz
821B	Oct 19 02:41	/var/log/install.16.gz
887B	Oct 18 07:27	/var/log/install.17.gz
791B	Oct 17 07:26	/var/log/install.18.gz
791B	Nov 22 19:18	/var/log/install.2.gz

...output\_truncated...

```
7157B May 31 2012
/var/tmp/pa4746.01/jinstall64-12.2-20120607.0-domestic-signed.x4746/jinstall64_pkg/packages/certs.pem
231B Jun 7 15:01
/var/tmp/pa4746.01/jinstall64-12.2R1.0-domestic-signed.x4746/jinstall64_pkg/pkg/manifest
7157B Jun 7 12:21
/var/tmp/pa4746.01/jinstall64-12.2-20120607.0-domestic-signed.x4746/jinstall64_pkg/pkg/manifest.certs
41B Jun 7 15:01
/var/tmp/pa4746.01/jinstall64-12.2-20120607.0-domestic-signed.x4746/jinstall64_pkg/pkg/manifest.sha1
11.4M Jun 7 17:19
/var/tmp/pa4746.01/jinstall64-12.2-20120607.0-domestic-signed.x4746/jinstall64_pkg/bootstrap-install-12.2-20120607.0.tar
Delete these files ? [yes,no] (no)
```

2. You can use the following file management operational commands to display information about the directories and files on a Routing Engine, but you must include the chassis and Routing Engine specifiers in the pathname:
  - To display detailed information about a file or directory contents, issue the **file list** command with the **detail** option.
  - To display the contents of a file, issue the **file show** command.
  - To compare the contents of two files, issue the **file compare** command.
3. In addition to or instead of using the **request system storage cleanup** command to delete unnecessary files, you can use the following file management commands to delete or move files on a Routing Engine, but you must include the chassis and Routing Engine specifiers in the pathname:
  - To delete files, issue the **file delete** command.
  - To copy files, issue the **file copy** command.
  - To rename files, issue the **file rename** command.

If you elect to use the **request system storage cleanup** command to automatically delete files, issue the command without the **dry-run** option, and then type **yes** when the CLI prompts to proceed with deleting the candidate files. The following truncated example shows sample output for the **request system storage cleanup** command:

4. After sufficient free disk space is available on the Routing Engines on which you are upgrading the Junos OS, attempt the upgrade procedure again.

#### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)
- [Troubleshooting: Upgrade Failure Due to Insufficient DRAM on page 172](#)

- [Troubleshooting: Upgrade Failure Due to Mixed Software on page 173](#)

## Troubleshooting a Software Upgrade Failure Due to Insufficient Available DRAM on a Routing Matrix with a TX Matrix Plus Router

---

**Problem**    **Description:** In a routing matrix with a TX Matrix Plus router, a successful upgrade of the Junos OS requires sufficient available DRAM on all Routing Engines of the TX Matrix Plus router and connected T1600 routers.

**Cause**    Failure of a Junos OS upgrade due to insufficient available DRAM on a Routing Engine occurs infrequently. When it does occur, there are various causes and therefore various solutions to the issue.

If you suspect that insufficient available DRAM is preventing a successful upgrade of the Junos OS, contact your technical support representative.

**Solution**    If you suspect that insufficient available DRAM is preventing a successful upgrade of the Junos OS, contact your technical support representative.



**NOTE:** It can be useful to issue the [request support information](#) command before contacting technical support. The command runs several Junos operational commands to obtain detailed information about the system hardware and software. Because the amount of command output is quite large, we recommend that you save the output to a file.

---

In some cases of insufficient available DRAM, a different or upgraded Routing Engine with a larger amount of DRAM is required. However, most DRAM issues that prevent a successful upgrade can be resolved by removing any superfluous files from the `/root` and `/tmp` directories.

### Related Documentation

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)
- [Troubleshooting: Upgrade Failure Due to Insufficient Disk Space on page 165](#)
- [Troubleshooting: Upgrade Failure Due to Mixed Software on page 173](#)

## Troubleshooting a Software Upgrade Failure Due to Mixed Software Versions on a Routing Matrix with a TX Matrix Plus Router

**Problem Description:** In a routing matrix with a TX Matrix Plus router, a successful upgrade of the Junos OS requires that all Routing Engines of the SFC and connected LCCs are running the same version of software.

**Symptoms:** If the software versions on the Routing Engines are not aligned, the software upgrade process will return an error.

**Cause** Different versions of the Junos OS can have incompatible message formats, particularly if graceful routing engine switchover (GRES) is enabled. Because the steps in the upgrade process include changing Routing Engine mastership, running the same version of software is recommended.

To display the hostname and version information about the software running on all routers in a routing matrix, issue the **show version** command with the **invoke-on all-routing-engines** option.

In the following example, a routing matrix consists of a TX Matrix Plus router (**sfc0**) and two connected T1600 routers (**lcc0** and **lcc2**), with all three routers containing redundant host subsystems. The sample output from the **show version** command shows that a different version of the Junos OS is installed on the TX Matrix Plus router's backup Routing Engine (**sfc0-re1**), while all the other Routing Engines have Junos OS Release **9.6R1.0** installed.

In the following sample output, the backup Routing Engine on the TX Matrix Plus router is running a version of Junos OS that is different from the software on the other Routing Engines:

```
root@sfc0> show version invoke-on all-routing-engines
sfc0-re0:
```

```
-----
Hostname: sfc0
Model: txp
JUNOS Base OS boot [9.6-20090713.0]
JUNOS Base OS Software Suite [9.6-20090713.0]
JUNOS Kernel Software Suite [9.6-20090713.0]
JUNOS Crypto Software Suite [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.0]
JUNOS Online Documentation [9.6-20090713.0]
JUNOS Voice Services Container package [9.6-20090713.0]
JUNOS Border Gateway Function package [9.6-20090713.0]
JUNOS Services ACL Container package [9.6-20090713.0]
JUNOS Services LL-PDF Container package [9.6-20090713.0]
JUNOS Services Stateful Firewall [9.6-20090713.0]
JUNOS AppId Services [9.6-20090713.0]
JUNOS IDP Services [9.6-20090713.0]
JUNOS Routing Software Suite [9.6-20090713.0]
```

```
lcc0-re0:
```

```
-----
Hostname: mylcc0
Model: t1600
JUNOS Base OS boot [9.6-20090713.0]
JUNOS Base OS Software Suite [9.6-20090713.0]
JUNOS Kernel Software Suite [9.6-20090713.0]
JUNOS Crypto Software Suite [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.0]
JUNOS Online Documentation [9.6-20090713.0]
JUNOS Voice Services Container package [9.6-20090713.0]
JUNOS Border Gateway Function package [9.6-20090713.0]
JUNOS Services AACL Container package [9.6-20090713.0]
JUNOS Services LL-PDF Container package [9.6-20090713.0]
JUNOS Services Stateful Firewall [9.6-20090713.0]
JUNOS AppId Services [9.6-20090713.0]
JUNOS IDP Services [9.6-20090713.0]
JUNOS Routing Software Suite [9.6-20090713.0]
```

**lcc2-re0:**

```
-----
Hostname: mylcc2
Model: t1600
JUNOS Base OS boot [9.6-20090713.0]
JUNOS Base OS Software Suite [9.6-20090713.0]
JUNOS Kernel Software Suite [9.6-20090713.0]
JUNOS Crypto Software Suite [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.0]
JUNOS Online Documentation [9.6-20090713.0]
JUNOS Voice Services Container package [9.6-20090713.0]
JUNOS Border Gateway Function package [9.6-20090713.0]
JUNOS Services AACL Container package [9.6-20090713.0]
JUNOS Services LL-PDF Container package [9.6-20090713.0]
JUNOS Services Stateful Firewall [9.6-20090713.0]
JUNOS AppId Services [9.6-20090713.0]
JUNOS IDP Services [9.6-20090713.0]
JUNOS Routing Software Suite [9.6-20090713.0]
```

**sfc0-rel:**

```
-----
Hostname: sfc0_alt_re
Model: txp
JUNOS Base OS boot [1.1-1111111.1]
JUNOS Base OS Software Suite [1.1-1111111.1]
JUNOS Kernel Software Suite [1.1-1111111.1]
JUNOS Crypto Software Suite [1.1-1111111.1]
JUNOS Packet Forwarding Engine Support (M/T Common) [1.1-1111111.1]
JUNOS Packet Forwarding Engine Support (T-Series) [1.1-1111111.1]
JUNOS Online Documentation [1.1-1111111.1]
JUNOS Voice Services Container package [1.1-1111111.1]
JUNOS Border Gateway Function package [1.1-1111111.1]
JUNOS Services AACL Container package [1.1-1111111.1]
JUNOS Services LL-PDF Container package [1.1-1111111.1]
JUNOS Services Stateful Firewall [1.1-1111111.1]
JUNOS AppId Services [1.1-1111111.1]
JUNOS IDP Services [1.1-1111111.1]
JUNOS Routing Software Suite [1.1-1111111.1]
```

**lcc0-rel:**



```
Hostname: mylcc0_alt_re
Model: t1600
JUNOS Base OS boot [9.6-20090713.0]
JUNOS Base OS Software Suite [9.6-20090713.0]
JUNOS Kernel Software Suite [9.6-20090713.0]
JUNOS Crypto Software Suite [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.0]
JUNOS Online Documentation [9.6-20090713.0]
JUNOS Voice Services Container package [9.6-20090713.0]
JUNOS Border Gateway Function package [9.6-20090713.0]
JUNOS Services AACL Container package [9.6-20090713.0]
JUNOS Services LL-PDF Container package [9.6-20090713.0]
JUNOS Services Stateful Firewall [9.6-20090713.0]
JUNOS AppId Services [9.6-20090713.0]
JUNOS IDP Services [9.6-20090713.0]
JUNOS Routing Software Suite [9.6-20090713.0]
```

**lcc2-rel:**

```
-----
Hostname: mylcc2_alt_re
Model: t1600
JUNOS Base OS boot [9.6-20090713.0]
JUNOS Base OS Software Suite [9.6-20090713.0]
JUNOS Kernel Software Suite [9.6-20090713.0]
JUNOS Crypto Software Suite [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090713.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090713.0]
JUNOS Online Documentation [9.6-20090713.0]
JUNOS Voice Services Container package [9.6-20090713.0]
JUNOS Border Gateway Function package [9.6-20090713.0]
JUNOS Services AACL Container package [9.6-20090713.0]
JUNOS Services LL-PDF Container package [9.6-20090713.0]
JUNOS Services Stateful Firewall [9.6-20090713.0]
JUNOS AppId Services [9.6-20090713.0]
JUNOS IDP Services [9.6-20090713.0]
JUNOS Routing Software Suite [9.6-20090713.0]
```

**Solution** To synchronize the Junos OS versions running on the Routing Engines in a routing matrix, perform the following steps on each Routing Engine that has an incorrect version of Junos OS installed:

1. Log in to the Routing Engine that has the incorrect version of Junos OS installed. To log in to a Routing Engine, issue the [request routing-engine login](#) command.

In the example scenario, the backup Routing Engine on the TX Matrix Plus router is running an incorrect version of software. To log in to that Routing Engine, you would enter the following command:

```
root@sfc0> request routing-engine login other-routing-engine

--- JUNOS 1.1-1111111.1 built 1111-11-11 11:11:11 UTC
root@sfc0_alt_re>
```



**NOTE:** Throughout the software upgrade procedure instructions, we assume that the master Routing Engines are in slot 0 and the backup Routing Engines are in slot 1, which is the recommended installation. Therefore, we could issue the [request routing-engine login](#) command with the [re1](#) option (instead of the [other-routing-engine](#) option) and obtain the same results.

---

2. If the appropriate software package or bundle is not already present on the Routing Engine that has the incorrect version of Junos OS installed, copy the software onto the Routing Engine.

For more information, see the *Junos OS Release Notes* and the *Installation and Upgrade Guide*.

3. To install a software package or bundle on the Routing Engine that has the incorrect version of Junos OS installed, use the [request system software add](#) command.
4. When all the Routing Engines in the routing matrix are running the same version of the Junos OS, try the software upgrade procedure again.

**Related  
Documentation**

- [Overview of a Routing Matrix with a TX Matrix Plus Router on page 3](#)
- [Roadmap for Configuring the Routing Matrix on page 33](#)
- [Example Configuration for the Routing Matrix on page 48](#)
- [Upgrading the Junos OS on the Routing Matrix on page 133](#)
- [Troubleshooting: Upgrade Failure Due to Insufficient Disk Space on page 165](#)
- [Troubleshooting: Upgrade Failure Due to Insufficient DRAM on page 172](#)

## CHAPTER 8

# Troubleshooting a Routing Matrix with a TX Matrix Plus Router

- [Degraded Fabric Alarms on TX Matrix Plus Router with 3D SIBs on page 177](#)
- [Troubleshooting: Offline SIBs on TX Matrix Plus Router on page 178](#)
- [Troubleshooting: Offline LCCs in a Routing Matrix with a TX Matrix Plus Router on page 193](#)
- [Troubleshooting: LCC in Amnesiac Mode on page 198](#)

### Degraded Fabric Alarms on TX Matrix Plus Router with 3D SIBs

In a routing matrix with a TX Matrix Plus router and 3D SIBs, each FPC (installed on the T1600 or T4000 LCC) contains one or two Packet Forwarding Engines that receive incoming packets from the PICs installed on the FPC and forward them to other FPCs through the switching planes.

The degraded fabric alarm is raised on the source FPC if both the following conditions are met:

- The active Packet Forwarding Engine destinations are reachable on one or no active switching planes.
- At least one of the inactive switching planes has a fault that causes the destination Packet Forwarding Engine to become unreachable.

The alarm indicates that the source FPC is running with a degraded fabric condition. This alarm is an early warning of a possible fabric black-hole condition. When the degraded fabric alarm is raised on the source FPC, you can take remedial action to avoid a fabric black-hole condition.



---

**NOTE:**

- By default, the degraded fabric alarm is enabled.
  - The degraded fabric alarm is not raised for the user-initiated events such as:
    - System reboot
    - Destination FPC taken offline
    - LCC taken offline
    - Switch Processor Mezzanine Board restart
- 

- Related Documentation**
- [show system alarms on page 1344](#)
  - [clear chassis alarms fabric degraded on page 261](#)

---

## Troubleshooting: Offline SIBs on TX Matrix Plus Router

---

On a TX Matrix Plus router, none of the 3D SIBs are online. The problem might have occurred because of any of the following reasons:

- [Incorrect Software Version Installed on the TX Matrix Plus Router on page 178](#)
- [Incorrect Front Panel Switch Setting on page 179](#)
- [SIB Hardware Failure on page 190](#)
- [Unsupported Hardware or Hardware Fault Alarms on page 192](#)

### Incorrect Software Version Installed on the TX Matrix Plus Router

**Problem**    **Description:** On a TX Matrix Plus router, none of the 3D SIBs are online.

**Cause**        The software version installed on the TX Matrix Plus router (or the switch-fabric chassis (SFC)) is earlier than Junos OS Release 13.1

**Solution**     Check whether the software version installed on the SFC is earlier than Junos OS Release 13.1:

1. Execute the **show version** command.

```
user@host> show version
sfc0-re0:
```

```
-----
Hostname: SFC
sfModel: txp
JUNOS Base OS boot [13.1-20130210.0]
JUNOS Base OS Software Suite [13.1-20130210.0]
JUNOS 64-bit Kernel Software Suite [13.1-20130210.0]
JUNOS Crypto Software Suite [13.1-20130210.0]
```

```
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130210.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130210.0]
[Output Truncated]
JUNOS Services SSL [13.1-20130210.0]
JUNOS Services IPSec [13.1-20130210.0]
JUNOS Runtime Software Suite [13.1-20130210.0]
JUNOS Routing Software Suite [13.1-20130210.0]
JUNOS 64-bit Runtime Software Suite [13.1-20130210.0]
```

```
lcc0-re0:
```

```
-----
Hostname: LCC0
Model: t4000
JUNOS Base OS boot [13.1-20130210.0]
JUNOS Base OS Software Suite [13.1-20130210.0]
JUNOS 64-bit Kernel Software Suite [13.1-20130210.0]
JUNOS Crypto Software Suite [13.1-20130210.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130210.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130210.0]
[Output Truncated]
JUNOS Services Stateful Firewall [13.1-20130210.0]
JUNOS Voice Services Container package [13.1-20130210.0]
JUNOS Services Example Container package [13.1-20130210.0]
JUNOS Services Crypto [13.1-20130210.0]
JUNOS Services SSL [13.1-20130210.0]
JUNOS Services IPSec [13.1-20130210.0]
JUNOS Runtime Software Suite [13.1-20130210.0]
JUNOS Routing Software Suite [13.1-20130210.0]
JUNOS 64-bit Runtime Software Suite [13.1-20130210.0]
```

```
lcc4-re0:
```

```
-----
Hostname: LCC4
Model: t4000
JUNOS Base OS boot [13.1-20130210.0]
JUNOS Base OS Software Suite [13.1-20130210.0]
JUNOS 64-bit Kernel Software Suite [13.1-20130210.0]
JUNOS Crypto Software Suite [13.1-20130210.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130210.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130210.0]
JUNOS Online Documentation [13.1-20130210.0]
[Output Truncated]
JUNOS Services IPSec [13.1-20130210.0]
JUNOS Runtime Software Suite [13.1-20130210.0]
JUNOS Routing Software Suite [13.1-20130210.0]
JUNOS 64-bit Runtime Software Suite [13.1-20130210.0]
```

2. If the software version is incorrect, then you must install the correct version of Junos OS. For information about downloading the correct version of the software, see *Downloading Software*.

## Incorrect Front Panel Switch Setting

**Problem Description:** On a TX Matrix Plus router, none of the 3D SIBs are online.

**Cause** The front panel switch of the TX Matrix Plus router (or the SFC) is configured incorrectly and the SFC was not rebooted after the configuration of the front panel switch.

**Solution** 1. Check the configuration of the SFC front panel switch by executing the **show chassis craft-interface** command.

```
user@host show chassis craft-interface
sfc0-re0:
```

```
-----
FPM Display Contents:
```

```
+-----+
|SFC           |
|9 Alarms active|
|R: LCC 4 Major Error|
|R: LCC 0 Major Error|
+-----+
```

```
SFC Front Panel Switch Settings:
```

```
SFC Chassis Number : 00
Config Size       : 3
```

```
Front Panel System LEDs:
```

```
Routing Engine  0  1
-----
OK               *  *
Fail             .  .
Master          *  .
```

```
Front Panel Alarm Indicators:
```

```
-----
Red LED         *
Yellow LED      *
Major relay     *
Minor relay     *
```

```
Front Panel F13 SIB LEDs:
```

```
SIB  0  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15
-----
Fail  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
OK    *  *  .  *  *  .  *  *  *  *  .  *  *  .  .  .
Active .  .  .  *  *  .  *  *  *  *  .  *  *  .  .  .
```

```
PS LEDs:
```

```
PS  0  1
-----
Red  .  .
Green *  .
```

```
Fan Tray LEDs:
```

```
FT  0  1  2  3  4  5
-----
Red  .  .  .  .  .  .
Green *  *  *  *  *  *
```

```
CB LEDs:
```

```
CB  0  1
-----
Amber .  .
Green *  *
```

```
Blue * .
[Output Truncated]
```

2. If the switch setting is incorrect, then refer to *Setting the Configuration Size and Switch-Fabric Chassis Number* to correct the switch settings.
3. Reboot the SFC after configuring the front panel switch.
4. Execute the **show chassis hardware** command to check whether the TXP-F13-3D SIB and the TXP-F2-3D SIB are seen in the output of the command.

```
user@host> show chassis hardware
sfc0-re0:
```

```
-----
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               JN11D2556AHB  TXP
Midplane          REV 05   710-022574   ABAC5888      SFC Midplane
FPM Display       REV 09   710-024027   EJ8765        TXP FPM Display
CIP 0             REV 12   710-023792   EJ6448        TXP CIP
CIP 1             REV 12   710-023792   EJ6486        TXP CIP
PEM 0             Rev 06   740-027463   XB13490       Power Entry Module
PEM 1             Rev 06   740-027463   XL37611       Power Entry Module
Routing Engine 0  REV 07   740-026942   P737A-002619  RE-DUO-2600
Routing Engine 1 REV 07   740-026942   P737A-002620  RE-DUO-2600
CB 0              REV 15   710-022606   EJ3364        SFC Control Board
CB 1              REV 15   710-022606   EJ3365        SFC Control Board
SPMB 0            BUILTIN  BUILTIN       SFC Switch CPU
SPMB 1            BUILTIN  BUILTIN       SFC Switch CPU
SIB F13 0         REV 16   750-035002   EN5467        F13 SIB 3D
  B Board         REV 06   711-035082   EM9666        F13 SIB 3D Mezz
  P Board         REV 06   711-043544   EN5379        F13 SIB 3D Power
  Xcvr 9          REV 01   740-047547   XB47FB024     CXP Module
  Xcvr 10         REV 01   740-047547   XB34FB03D     CXP Module
  Xcvr 15         REV 01   740-047547   XC18FB06L     CXP Module
SIB F13 1         REV 14   750-035002   EN1982        F13 SIB 3D
  B Board         REV 06   711-035082   EN1417        F13 SIB 3D Mezz
  P Board         REV 05   711-043544   EN1577        F13 SIB 3D Power
  Xcvr 0          REV 01   740-047547   XB47FB02S     CXP Module
  Xcvr 1          REV 01   740-047547   XC12FB01K     CXP Module
  Xcvr 2          REV 01   740-047547   XC02FB047     CXP Module
  Xcvr 3          REV 01   740-047547   XB48FB04W     CXP Module
  Xcvr 4          REV 01   740-047547   XB47FB02B     CXP Module
  Xcvr 5          REV 01   740-047547   XC02FB03X     CXP Module
  Xcvr 6          REV 01   740-047547   XC02FB026     CXP Module
  Xcvr 7          REV 01   740-047547   XC02FB04T     CXP Module
  Xcvr 8          REV 01   740-047547   XC02FB04N     CXP Module
  Xcvr 9          REV 01   740-047547   XC02FB02C     CXP Module
  Xcvr 10         REV 01   740-047547   XC02FB02X     CXP Module
  Xcvr 11         REV 01   740-047547   XC02FB049     CXP Module
  Xcvr 12         REV 01   740-047547   XB47FB03C     CXP Module
  Xcvr 13         REV 01   740-047547   XB47FB02L     CXP Module
  Xcvr 14         REV 01   740-047547   XB42FB08BZ    CXP Module
  Xcvr 15         REV 01   740-047547   XB47FB01F     CXP Module
SIB F13 3         REV 07   710-035001   EM9338        F13 SIB 3D
  B Board         REV 06   711-035082   EM9647        F13 SIB 3D Mezz
  P Board         REV 05   711-043544   EM9700        F13 SIB 3D Power
  Xcvr 9          REV 01   740-047547   XC12FB01A     CXP Module
  Xcvr 10         REV 01   740-047547   XC12FB01B     CXP Module
  Xcvr 14         REV 01   740-047547   XC09FB01C     CXP Module
  Xcvr 15         REV 01   740-047547   XC13FB04Z     CXP Module
```

SIB F13 4	REV 14	750-035002	EN1984	F13 SIB 3D
B Board	REV 06	711-035082	EN1418	F13 SIB 3D Mezz
P Board	REV 05	711-043544	EN1563	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XC08FB00C	CXP Module
Xcvr 1	REV 01	740-047547	XC12FB00Z	CXP Module
---(more)---				
Xcvr 2	REV 01	740-047547	XC12FB015	CXP Module
Xcvr 3	REV 01	740-047547	XC12FB02A	CXP Module
Xcvr 4	REV 01	740-047547	XC08FB012	CXP Module
Xcvr 5	REV 01	740-047547	XC13FB04X	CXP Module
Xcvr 6	REV 01	740-047547	XC12FB00L	CXP Module
Xcvr 7	REV 01	740-047547	XC13FB021	CXP Module
Xcvr 8	REV 01	740-047547	XC12FB01T	CXP Module
Xcvr 9	REV 01	740-047547	XC12FB01Z	CXP Module
Xcvr 10	REV 01	740-047547	XC12FB006	CXP Module
Xcvr 11	REV 01	740-047547	XC12FB01V	CXP Module
Xcvr 12	REV 01	740-047547	XC12FB028	CXP Module
Xcvr 13	REV 01	740-047547	XB47FB031	CXP Module
Xcvr 14	REV 01	740-047547	XC13FB05E	CXP Module
Xcvr 15	REV 01	740-047547	XB48FB049	CXP Module
SIB F13 6	REV 10	750-035002	EM6721	F13 SIB 3D
B Board	REV 06	711-035082	EM5982	F13 SIB 3D Mezz
P Board	REV 05	711-043544	EM4965	F13 SIB 3D Power
Xcvr 9	REV 01	740-047547	XB48FB05W	CXP Module
Xcvr 10	REV 01	740-047547	XC02FB042	CXP Module
Xcvr 14	REV 01	740-047547	XC20FB06N	CXP Module
Xcvr 15	REV 01	740-047547	XC20FB05Z	CXP Module
SIB F13 7	REV 16	750-035002	EN5499	F13 SIB 3D
B Board	REV 07	711-035082	EN5094	F13 SIB 3D Mezz
P Board	REV 06	711-043544	EN5359	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XC02FB04A	CXP Module
Xcvr 1	REV 01	740-047547	XC08FB00D	CXP Module
Xcvr 2	REV 01	740-047547	XB34FB02P	CXP Module
Xcvr 3	REV 01	740-047547	XC02FB035	CXP Module
Xcvr 5	REV 01	740-047547	XC02FB05B	CXP Module
Xcvr 7	REV 01	740-047547	XB34FB029	CXP Module
Xcvr 8	REV 01	740-047547	XC02FB03A	CXP Module
Xcvr 11	REV 01	740-047547	XC18FB03Z	CXP Module
Xcvr 15	REV 01	740-047547	XC18FB05K	CXP Module
SIB F13 8	REV 10	750-035002	EM6720	F13 SIB 3D
B Board	REV 06	711-035082	EM5984	F13 SIB 3D Mezz
P Board	REV 05	711-043544	EM4980	F13 SIB 3D Power
Xcvr 9	REV 01	740-047547	XC13FB04W	CXP Module
Xcvr 10	REV 01	740-047547	XC13FB05H	CXP Module
Xcvr 14	REV 01	740-047547	XC18FB01K	CXP Module
Xcvr 15	REV 01	740-047547	XC18FB060	CXP Module
SIB F13 9	REV 16	750-035002	EN5463	F13 SIB 3D
B Board	REV 07	711-035082	EN5114	F13 SIB 3D Mezz
P Board	REV 06	711-043544	EN5384	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XC13FB02P	CXP Module
Xcvr 1	REV 01	740-047547	XC08FB01J	CXP Module
Xcvr 2	REV 01	740-047547	XB42FB03S	CXP Module
Xcvr 3	REV 01	740-047547	XB42FB03V	CXP Module
Xcvr 4	REV 01	740-047547	XC09FB02A	CXP Module
Xcvr 5	REV 01	740-047547	XB47FB02D	CXP Module
Xcvr 6	REV 01	740-047547	XB47FB02V	CXP Module
Xcvr 7	REV 01	740-047547	XB42FB06Z	CXP Module
Xcvr 8	REV 01	740-047547	XB42FB0C3	CXP Module
Xcvr 9	REV 01	740-047547	XB47FB01J	CXP Module
Xcvr 10	REV 01	740-047547	XB48FB05F	CXP Module
---(more 20%)---				



Xcvr 11	REV 01	740-047547	XB47FB02W	CXP Module
Xcvr 12	REV 01	740-047547	XB42FB09H	CXP Module
Xcvr 13	REV 01	740-047547	XB42FB03W	CXP Module
Xcvr 14	REV 01	740-047547	XC02FB02V	CXP Module
Xcvr 15	REV 01	740-047547	XB42FB06Y	CXP Module
SIB F13 11	REV 10	750-035002	EM6725	F13 SIB 3D
B Board	REV 06	711-035082	EM5986	F13 SIB 3D Mezz
P Board	REV 05	711-043544	EM4981	F13 SIB 3D Power
Xcvr 9	REV 01	740-047547	XC02FB037	CXP Module
Xcvr 10	REV 01	740-047547	XC18FB05H	CXP Module
Xcvr 14	REV 01	740-047547	XC18FB052	CXP Module
Xcvr 15	REV 01	740-047547	XC02FB04Y	CXP Module
SIB F13 12	REV 07	750-035002	EK8246	F13 SIB 3D
B Board	REV 04	711-035082	EK9514	F13 SIB 3D Mezz
P Board	REV 04	711-043544	EK8769	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XC02FB043	CXP Module
Xcvr 1	REV 01	740-047547	XC09FB00M	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB09J	CXP Module
Xcvr 3	REV 01	740-047547	XC02FB01R	CXP Module
Xcvr 5	REV 01	740-047547	XC02FB02U	CXP Module
Xcvr 6	REV 01	740-047547	XB34FB00D	CXP Module
Xcvr 7	REV 01	740-047547	XC18FB04M	CXP Module
Xcvr 8	REV 01	740-047547	XC02FB02H	CXP Module
Xcvr 11	REV 01	740-047547	XB48FB011	CXP Module
Xcvr 12	REV 01	740-047547	XC18FB06W	CXP Module
Xcvr 15	REV 01	740-047547	XC02FB01Y	CXP Module
SIB F2S 0/0	REV 06	750-034978	EM5268	F2S SIB 3D
B Board	REV 02	711-034979	EM5315	F2S SIB 3D Mezz
SIB F2S 0/2	REV 06	750-034978	EM5267	F2S SIB 3D
B Board	REV 02	711-034979	EM5319	F2S SIB 3D Mezz
SIB F2S 0/4	REV 06	750-034978	EM5250	F2S SIB 3D
B Board	REV 02	711-034979	EM5325	F2S SIB 3D Mezz
SIB F2S 0/6	REV 06	750-034978	EM5248	F2S SIB 3D
B Board	REV 02	711-034979	EM5331	F2S SIB 3D Mezz
SIB F2S 1/0	REV 06	750-034978	EM5235	F2S SIB 3D
B Board	REV 02	711-034979	EM5312	F2S SIB 3D Mezz
SIB F2S 1/2	REV 06	750-034978	EM5269	F2S SIB 3D
B Board	REV 02	711-034979	EM5317	F2S SIB 3D Mezz
SIB F2S 1/4	REV 06	750-034978	EM5265	F2S SIB 3D
B Board	REV 02	711-034979	EM5333	F2S SIB 3D Mezz
SIB F2S 1/6	REV 07	750-034978	EM8245	F2S SIB 3D
B Board	REV 02	711-034979	EM7083	F2S SIB 3D Mezz
SIB F2S 2/0	REV 06	750-034978	EM5270	F2S SIB 3D
B Board	REV 02	711-034979	EM5324	F2S SIB 3D Mezz
SIB F2S 2/2	REV 06	750-034978	EM5258	F2S SIB 3D
B Board	REV 02	711-034979	EM5318	F2S SIB 3D Mezz
SIB F2S 2/4	REV 06	750-034978	EM5263	F2S SIB 3D
B Board	REV 02	711-034979	EM5299	F2S SIB 3D Mezz
SIB F2S 2/6	REV 06	750-034978	EM5245	F2S SIB 3D
B Board	REV 02	711-034979	EM5330	F2S SIB 3D Mezz
SIB F2S 3/0	REV 06	750-034978	EM5266	F2S SIB 3D
B Board	REV 02	711-034979	EM5292	F2S SIB 3D Mezz
SIB F2S 3/2	REV 06	750-034978	EM5261	F2S SIB 3D
B Board	REV 02	711-034979	EM5322	F2S SIB 3D Mezz
---(more 31%)---				
SIB F2S 3/4	REV 06	750-034978	EM5246	F2S SIB 3D
B Board	REV 02	711-034979	EM5326	F2S SIB 3D Mezz
SIB F2S 3/6	REV 03	750-034978	EK7394	F2S SIB 3D
B Board	REV 01	711-034979	EK7242	F2S SIB 3D Mezz
SIB F2S 4/0	REV 06	750-034978	EM5277	F2S SIB 3D
B Board	REV 02	711-034979	EM5320	F2S SIB 3D Mezz

SIB F2S 4/2	REV 06	750-034978	EM5243	F2S SIB 3D
B Board	REV 02	711-034979	EM5307	F2S SIB 3D Mezz
SIB F2S 4/4	REV 07	750-034978	EM8232	F2S SIB 3D
B Board	REV 02	711-034979	EM7070	F2S SIB 3D Mezz
SIB F2S 4/6	REV 07	750-034978	EM8185	F2S SIB 3D
B Board	REV 02	711-034979	EM7084	F2S SIB 3D Mezz
Fan Tray 0	REV 10	760-024497	EJ0192	Front Fan Tray
Fan Tray 1	REV 10	760-024497	EJ0128	Front Fan Tray
Fan Tray 2	REV 10	760-024502	EJ0141	Rear Fan Tray
Fan Tray 3	REV 10	760-024502	EJ0142	Rear Fan Tray
Fan Tray 4	REV 10	760-024502	EJ0154	Rear Fan Tray
Fan Tray 5	REV 10	760-024502	EK1120	Rear Fan Tray

1cc0-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11B92A4AHA	T4000
Midplane	REV 01	710-027486	ACAJ0296	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAV7082	T640 FPM Board
FPM Display	REV 06	711-034244	BBAV7104	T4000 FPM Display
CIP	REV 06	710-002895	BBAT3196	T-series CIP
PEM 0	REV 05	740-036442	1G022060132	Power Entry Module
6x60				
SCG 0	REV 08	710-027617	BBAN4344	T640 Sonet Clock Gen.
SCG 1	REV 08	710-027617	BBAP5208	T640 Sonet Clock Gen.
Routing Engine 0	REV 10	740-026941	P737F-004500	RE-DUO-1800
Routing Engine 1	REV 10	740-026941	P737F-004318	RE-DUO-1800
CB 0	REV 11	710-022597	EK9478	LCC Control Board
CB 1	REV 11	710-022597	EK9462	LCC Control Board
FPC 0	REV 05	710-033871	BBAP9425	FPC Type 4-ES
CPU	REV 11	710-016744	BBAP8735	ST-PMB2
PIC 0	REV 17	750-017405	BBAC7298	4x 10GE (LAN/WAN) XFP
Xcvr 1		NON-JNPR	A8603H9	XFP-10G-SR
PIC 1	REV 17	750-026962	EK7579	10x10GE(LAN/WAN) SFPP
Xcvr 1	REV 01	740-031980	1X3363A01383	SFP+-10G-SR
MMB 0	REV 07	710-025563	BBAT0023	ST-MMB2
MMB 1	REV 07	710-025563	BBAT0034	ST-MMB2
FPC 5	REV 30	750-045173	EK1167	FPC Type 5-3D
CPU	REV 12	711-030686	EJ8594	SNG PMB
PIC 0	REV 10	750-034624	BBAN4101	12x10GE (LAN/WAN)
SFPP				
Xcvr 1	REV 01	740-031981	AMDOW90	SFP+-10G-LR
Xcvr 5	REV 01	740-031980	AJJ01NB	SFP+-10G-SR
LMB 0	REV 05	711-034381	EG6351	Type-0 LMB
LMB 1	REV 04	711-035774	EJ8508	Type-1 LMB
LMB 2	REV 05	711-034381	EG6372	Type-0 LMB
FPC 6	REV 05	750-010153	EF4932	FPC Type 5-3D
CPU	REV 06	711-030686	EF4180	SNG PMB
PIC 1	REV 10	750-034624	EF6820	12x10GE (LAN/WAN)
SFPP				
Xcvr 1	REV 01	740-031980	B11B03860	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3758	Type-0 LMB
LMB 1	REV 03	711-035774	EF3811	Type-1 LMB
LMB 2	REV 04	711-034381	EF3790	Type-0 LMB
SPMB 0	REV 05	710-023321	EK5745	LCC Switch CPU
SPMB 1	REV 05	710-023321	EK5703	LCC Switch CPU
SIB 0	REV 06	750-041657	EM8085	LCC SIB 3D

B Board	REV 03	711-042424	EM7223	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC08FB002	CXP Module
Xcvr 2	REV 01	740-047547	XC09FB01R	CXP Module
Xcvr 7	REV 01	740-047547	XC08FB057	CXP Module
SIB 1	REV 12	750-041657	EN4519	LCC SIB 3D
B Board	REV 05	711-042424	EN4179	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC02FB045	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB03R	CXP Module
Xcvr 6	REV 01	740-047547	XC18FB04U	CXP Module
Xcvr 7	REV 01	740-047547	XC02FB01V	CXP Module
SIB 2	REV 06	750-041657	EM5518	LCC SIB 3D
B Board	REV 03	711-042424	EM4677	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC08FB01H	CXP Module
Xcvr 2	REV 01	740-047547	XC09FB09X	CXP Module
Xcvr 6	REV 01	740-047547	XC13FB06F	CXP Module
Xcvr 7	REV 01	740-047547	XC13FB013	CXP Module
SIB 3	REV 10	750-041657	EN1178	LCC SIB 3D
B Board	REV 04	711-042424	EN1147	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC13FB01V	CXP Module
Xcvr 2	REV 01	740-047547	XC13FB01D	CXP Module
Xcvr 6	REV 01	740-047547	XC08FB025	CXP Module
Xcvr 7	REV 01	740-047547	XC13FB011	CXP Module
SIB 4	REV 10	750-041657	EN1180	LCC SIB 3D
B Board	REV 04	711-042424	EN1149	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC02FB02P	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB04D	CXP Module
Xcvr 6	REV 01	740-047547	XC20FB023	CXP Module
Xcvr 7	REV 01	740-047547	XC20FB07F	CXP Module
Fan Tray 0				Front Top Fan Tray
-- Rev 2				
Fan Tray 1				Front Bottom Fan Tray
-- Rev 2				
Fan Tray 2				Rear Fan Tray -- Rev
4				

lcc2-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11B92A4AHA	T4000
Midplane	REV 01	710-027486	ACAJ0296	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAV7082	T640 FPM Board
FPM Display	REV 06	711-034244	BBAV7104	T4000 FPM Display
CIP	REV 06	710-002895	BBAT3196	T-series CIP
PEM 0	REV 05	740-036442	1G022060132	Power Entry Module
6x60				
SCG 0	REV 08	710-027617	BBAN4344	T640 Sonet Clock Gen.
SCG 1	REV 08	710-027617	BBAP5208	T640 Sonet Clock Gen.
Routing Engine 0	REV 10	740-026941	P737F-004500	RE-DUO-1800
Routing Engine 1	REV 10	740-026941	P737F-004318	RE-DUO-1800
CB 0	REV 11	710-022597	EK9478	LCC Control Board
CB 1	REV 11	710-022597	EK9462	LCC Control Board
FPC 0	REV 05	710-033871	BBAP9425	FPC Type 4-ES
CPU	REV 11	710-016744	BBAP8735	ST-PMB2
PIC 0	REV 17	750-017405	BBAC7298	4x 10GE (LAN/WAN) XFP
Xcvr 1		NON-JNPR	A8603H9	XFP-10G-SR
PIC 1	REV 17	750-026962	EK7579	10x10GE(LAN/WAN) SFPP
Xcvr 1	REV 01	740-031980	1X3363A01383	SFP+-10G-SR

MMB 0	REV 07	710-025563	BBAT0023	ST-MMB2
MMB 1	REV 07	710-025563	BBAT0034	ST-MMB2
FPC 5	REV 30	750-045173	EK1167	FPC Type 5-3D
CPU	REV 12	711-030686	EJ8594	SNG PMB
PIC 0	REV 10	750-034624	BBAN4101	12x10GE (LAN/WAN)
SFPP				
Xcvr 1	REV 01	740-031981	AMDOW90	SFP+-10G-LR
Xcvr 5	REV 01	740-031980	AJJ01NB	SFP+-10G-SR
LMB 0	REV 05	711-034381	EG6351	Type-0 LMB
LMB 1	REV 04	711-035774	EJ8508	Type-1 LMB
LMB 2	REV 05	711-034381	EG6372	Type-0 LMB
FPC 6	REV 05	750-010153	EF4932	FPC Type 5-3D
CPU	REV 06	711-030686	EF4180	SNG PMB
PIC 1	REV 10	750-034624	EF6820	12x10GE (LAN/WAN)
SFPP				
Xcvr 1	REV 01	740-031980	B11B03860	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3758	Type-0 LMB
LMB 1	REV 03	711-035774	EF3811	Type-1 LMB
LMB 2	REV 04	711-034381	EF3790	Type-0 LMB
SPMB 0	REV 05	710-023321	EK5745	LCC Switch CPU
SPMB 1	REV 05	710-023321	EK5703	LCC Switch CPU
SIB 0	REV 06	750-041657	EM8085	LCC SIB 3D
B Board	REV 03	711-042424	EM7223	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC08FB002	CXP Module
Xcvr 2	REV 01	740-047547	XC09FB01R	CXP Module
Xcvr 7	REV 01	740-047547	XC08FB057	CXP Module
SIB 1	REV 12	750-041657	EN4519	LCC SIB 3D
B Board	REV 05	711-042424	EN4179	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC02FB045	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB03R	CXP Module
Xcvr 6	REV 01	740-047547	XC18FB04U	CXP Module
Xcvr 7	REV 01	740-047547	XC02FB01V	CXP Module
SIB 2	REV 06	750-041657	EM5518	LCC SIB 3D
B Board	REV 03	711-042424	EM4677	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC08FB01H	CXP Module
Xcvr 2	REV 01	740-047547	XC09FB09X	CXP Module
Xcvr 6	REV 01	740-047547	XC13FB06F	CXP Module
Xcvr 7	REV 01	740-047547	XC13FB013	CXP Module
SIB 3	REV 10	750-041657	EN1178	LCC SIB 3D
B Board	REV 04	711-042424	EN1147	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC13FB01V	CXP Module
Xcvr 2	REV 01	740-047547	XC13FB01D	CXP Module
Xcvr 6	REV 01	740-047547	XC08FB025	CXP Module
Xcvr 7	REV 01	740-047547	XC13FB011	CXP Module
SIB 4	REV 10	750-041657	EN1180	LCC SIB 3D
B Board	REV 04	711-042424	EN1149	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC02FB02P	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB04D	CXP Module
Xcvr 6	REV 01	740-047547	XC20FB023	CXP Module
Xcvr 7	REV 01	740-047547	XC20FB07F	CXP Module
Fan Tray 0				Front Top Fan Tray
-- Rev 2				
Fan Tray 1				Front Bottom Fan Tray
-- Rev 2				
Fan Tray 2				Rear Fan Tray -- Rev
4				

1cc4-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11B92A4AHA	T4000
Midplane	REV 01	710-027486	ACAJ0296	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAV7082	T640 FPM Board
FPM Display	REV 06	711-034244	BBAV7104	T4000 FPM Display
CIP	REV 06	710-002895	BBAT3196	T-series CIP
PEM 0	REV 05	740-036442	1G022060132	Power Entry Module
6x60				
SCG 0	REV 08	710-027617	BBAN4344	T640 Sonet Clock Gen.
SCG 1	REV 08	710-027617	BBAP5208	T640 Sonet Clock Gen.
Routing Engine 0	REV 10	740-026941	P737F-004500	RE-DUO-1800
Routing Engine 1	REV 10	740-026941	P737F-004318	RE-DUO-1800
CB 0	REV 11	710-022597	EK9478	LCC Control Board
CB 1	REV 11	710-022597	EK9462	LCC Control Board
FPC 0	REV 05	710-033871	BBAP9425	FPC Type 4-ES
CPU	REV 11	710-016744	BBAP8735	ST-PMB2
PIC 0	REV 17	750-017405	BBAC7298	4x 10GE (LAN/WAN) XFP
Xcvr 1		NON-JNPR	A8603H9	XFP-10G-SR
PIC 1	REV 17	750-026962	EK7579	10x10GE(LAN/WAN) SFPP
Xcvr 1	REV 01	740-031980	1X3363A01383	SFP+-10G-SR
MMB 0	REV 07	710-025563	BBAT0023	ST-MMB2
MMB 1	REV 07	710-025563	BBAT0034	ST-MMB2
FPC 5	REV 30	750-045173	EK1167	FPC Type 5-3D
CPU	REV 12	711-030686	EJ8594	SNG PMB
PIC 0	REV 10	750-034624	BBAN4101	12x10GE (LAN/WAN)
SFPP				
Xcvr 1	REV 01	740-031981	AMDOW90	SFP+-10G-LR
Xcvr 5	REV 01	740-031980	AJJ01NB	SFP+-10G-SR
LMB 0	REV 05	711-034381	EG6351	Type-0 LMB
LMB 1	REV 04	711-035774	EJ8508	Type-1 LMB
LMB 2	REV 05	711-034381	EG6372	Type-0 LMB
FPC 6	REV 05	750-010153	EF4932	FPC Type 5-3D
CPU	REV 06	711-030686	EF4180	SNG PMB
PIC 1	REV 10	750-034624	EF6820	12x10GE (LAN/WAN)
SFPP				
Xcvr 1	REV 01	740-031980	B11B03860	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3758	Type-0 LMB
LMB 1	REV 03	711-035774	EF3811	Type-1 LMB
LMB 2	REV 04	711-034381	EF3790	Type-0 LMB
SPMB 0	REV 05	710-023321	EK5745	LCC Switch CPU
SPMB 1	REV 05	710-023321	EK5703	LCC Switch CPU
SIB 0	REV 06	750-041657	EM8085	LCC SIB 3D
B Board	REV 03	711-042424	EM7223	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC08FB002	CXP Module
Xcvr 2	REV 01	740-047547	XC09FB01R	CXP Module
Xcvr 7	REV 01	740-047547	XC08FB057	CXP Module
SIB 1	REV 12	750-041657	EN4519	LCC SIB 3D
B Board	REV 05	711-042424	EN4179	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC02FB045	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB03R	CXP Module
Xcvr 6	REV 01	740-047547	XC18FB04U	CXP Module
Xcvr 7	REV 01	740-047547	XC02FB01V	CXP Module
SIB 2	REV 06	750-041657	EM5518	LCC SIB 3D
B Board	REV 03	711-042424	EM4677	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC08FB01H	CXP Module
Xcvr 2	REV 01	740-047547	XC09FB09X	CXP Module
Xcvr 6	REV 01	740-047547	XC13FB06F	CXP Module
Xcvr 7	REV 01	740-047547	XC13FB013	CXP Module

SIB 3	REV 10	750-041657	EN1178	LCC SIB 3D
B Board	REV 04	711-042424	EN1147	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC13FB01V	CXP Module
Xcvr 2	REV 01	740-047547	XC13FB01D	CXP Module
Xcvr 6	REV 01	740-047547	XC08FB025	CXP Module
Xcvr 7	REV 01	740-047547	XC13FB011	CXP Module
SIB 4	REV 10	750-041657	EN1180	LCC SIB 3D
B Board	REV 04	711-042424	EN1149	LCC SIB 3D Mezz
Xcvr 1	REV 01	740-047547	XC02FB02P	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB04D	CXP Module
Xcvr 6	REV 01	740-047547	XC20FB023	CXP Module
Xcvr 7	REV 01	740-047547	XC20FB07F	CXP Module
Fan Tray 0				Front Top Fan Tray
-- Rev 2				
Fan Tray 1				Front Bottom Fan Tray
-- Rev 2				
Fan Tray 2				Rear Fan Tray -- Rev
4				

lcc6-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11BD4ECAHA	T1600
Midplane	REV 01	710-027486	ACAJ1216	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAT0376	T640 FPM Board
FPM Display	REV 04	710-021387	BBAP7634	T1600 FPM Display
CIP	REV 06	710-002895	BBAP7917	T-series CIP
PEM 0	REV 04	740-036442	1G021480073	Power Entry Module
6x60				
SCG 0	REV 18	710-003423	BBAP9086	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAT3108	T640 Sonet Clock Gen.
Routing Engine 0	REV 08	740-026941	P737F-003986	RE-DUO-1800
Routing Engine 1	REV 08	740-026941	P737F-003993	RE-DUO-1800
CB 0	REV 11	710-022597	EK6760	LCC Control Board
CB 1	REV 11	710-022597	EK6758	LCC Control Board
FPC 1	REV 04	710-021534	DR1742	FPC Type 1-ES
CPU	REV 08	710-016744	DP9421	ST-PMB2
PIC 0	REV 08	750-005395	JP3156	1x Tunnel
PIC 1	REV 13	750-012266	WS9451	4x 1GE(LAN), IQ2
PIC 2	REV 06	750-003872	JL5745	4x E1, RJ48
PIC 3	REV 10	750-001895	WA3041	1x OC-12 SONET, MM
MMB 0	REV 04	710-016036	DR0624	ST-MMB2
FPC 2	REV 10	710-021540	DZ4209	FPC Type 2-ES
CPU	REV 10	710-016744	DZ4594	ST-PMB2
PIC 1	REV 13	750-011800	ZN2255	8x 1GE(LAN), IQ2
MMB 0	REV 07	710-025563	BBAM9086	ST-MMB2
FPC 3	REV 05	710-033871	BBAP9390	FPC Type 4-ES
CPU	REV 11	710-016744	BBAP9850	ST-PMB2
PIC 0	REV 17	750-026962	EJ8842	10x10GE(LAN/WAN) SFP
Xcvr 0	REV 01	740-031980	B11J04058	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	123363A01245	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	UE401TG	SFP+-10G-SR
MMB 0	REV 07	710-025563	BBAT0048	ST-MMB2
MMB 1	REV 07	710-025563	BBAT2408	ST-MMB2
FPC 4	REV 05	710-033873	EK5114	FPC Type 3-ES
CPU	REV 11	710-016744	EK0348	ST-PMB2
PIC 1	REV 09	750-024784	BBAP2509	1x 10GE(LAN/WAN) IQ2E

Xcvr 0		NON-JNPR	CB42BK05S	XFP-10G-SR
MMB 0	REV 07	710-025563	EK6128	ST-MMB2
SPMB 0	REV 05	710-023321	EK8679	LCC Switch CPU
SPMB 1	REV 05	710-023321	EK8616	LCC Switch CPU
SIB 0	REV 06	750-041657	EM5548	LCC SIB 3D
B Board	REV 03	711-042424	EM4691	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XC02FB01L	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB06V	CXP Module
Xcvr 4	REV 01	740-047547	XB47FB03J	CXP Module
Xcvr 6	REV 01	740-047547	XB44FB00H	CXP Module
SIB 1	REV 06	750-041657	EM5523	LCC SIB 3D
B Board	REV 03	711-042424	EM4721	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XC12FB025	CXP Module
Xcvr 2	REV 01	740-047547	XC13FB04P	CXP Module
Xcvr 4	REV 01	740-047547	XC08FB02T	CXP Module
Xcvr 6	REV 01	740-047547	XC08FB010	CXP Module
SIB 2	REV 06	750-041657	EM5514	LCC SIB 3D
B Board	REV 03	711-042424	EM4689	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XC08FB01N	CXP Module
Xcvr 2	REV 01	740-047547	XC02FB059	CXP Module
Xcvr 4	REV 01	740-047547	XC02FB029	CXP Module
Xcvr 6	REV 01	740-047547	XC18FB063	CXP Module
SIB 3	REV 06	750-041657	EM5554	LCC SIB 3D
B Board	REV 03	711-042424	EM4717	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XC09FB004	CXP Module
Xcvr 2	REV 01	740-047547	XC08FB01U	CXP Module
Xcvr 4	REV 01	740-047547	XC02FB027	CXP Module
Xcvr 6	REV 01	740-047547	XB42FB028	CXP Module
SIB 4	REV 10	750-041657	EN1184	LCC SIB 3D
B Board	REV 04	711-042424	EN1151	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XC08FB05Y	CXP Module
Xcvr 2	REV 01	740-047547	XC02FB038	CXP Module
Xcvr 4	REV 01	740-047547	XC18FB042	CXP Module
Xcvr 6	REV 01	740-047547	XC18FB044	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev
4				

lcc7-re0:

-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11BE104AHA	T1600
Midplane	REV 01	710-027486	ACAJ1225	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAP6481	T640 FPM Board
FPM Display	REV 04	710-021387	BBAP8115	T1600 FPM Display
CIP	REV 06	710-002895	BBAP7925	T-series CIP
PEM 0	REV 05	740-036442	1G022010091	Power Entry Module
6x60				
PEM 1	REV 05	740-036442	1G022120574	Power Entry Module
6x60				
SCG 0	REV 18	710-003423	BBAP9102	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAT3106	T640 Sonet Clock Gen.
Routing Engine 0	REV 07	740-026941	P737F-003338	RE-DUO-1800
Routing Engine 1	REV 07	740-026941	P737F-003406	RE-DUO-1800
CB 0	REV 11	710-022597	EJ1564	LCC Control Board
CB 1	REV 11	710-022597	EJ7748	LCC Control Board
FPC 1	REV 05	710-033871	BBAT0361	FPC Type 4-ES

CPU	REV 11	710-016744	BBAT2798	ST-PMB2
PIC 0	REV 17	750-026962	EK3263	10x10GE(LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	123363A01119	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ032U	SFP+-10G-SR
MMB 0	REV 07	710-025563	BBAP8489	ST-MMB2
MMB 1	REV 07	710-025563	BBAP8488	ST-MMB2
FPC 4	REV 05	710-033873	EK5027	FPC Type 3-ES
CPU	REV 11	710-016744	EK4660	ST-PMB2
PIC 0	REV 08	750-024784	BBAE5895	1x 10GE(LAN/WAN) IQ2E
Xcvr 0		NON-JNPR	CB01BK01G	XFP-10G-SR
MMB 0	REV 07	710-025563	EK2855	ST-MMB2
SPMB 0	REV 05	710-023321	EH9178	LCC Switch CPU
SPMB 1	REV 05	710-023321	EJ7689	LCC Switch CPU
SIB 0	REV 06	750-041657	EM5567	LCC SIB 3D
B Board	REV 03	711-042424	EM4680	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB47FB01H	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB06U	CXP Module
Xcvr 4	REV 01	740-047547	XB42FB0A1	CXP Module
Xcvr 6	REV 01	740-047547	XB47FB012	CXP Module
SIB 1	REV 06	750-041657	EM5565	LCC SIB 3D
B Board	REV 03	711-042424	EM4698	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XC08FB055	CXP Module
Xcvr 2	REV 01	740-047547	XC08FB03T	CXP Module
Xcvr 4	REV 01	740-047547	XC13FB05K	CXP Module
Xcvr 6	REV 01	740-047547	XB42FB06D	CXP Module
SIB 2	REV 06	750-041657	EM5533	LCC SIB 3D
B Board	REV 03	711-042424	EM4722	LCC SIB 3D Mezz
Xcvr 2	REV 01	740-047547	XC02FB046	CXP Module
Xcvr 6	REV 01	740-047547	XC18FB06N	CXP Module
SIB 3	REV 06	750-041657	EM5559	LCC SIB 3D
B Board	REV 03	711-042424	EM4686	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB47FB03L	CXP Module
Xcvr 2	REV 01	740-047547	XB42FB02N	CXP Module
Xcvr 4	REV 01	740-047547	XC12FB00W	CXP Module
Xcvr 6	REV 01	740-047547	XC13FB06E	CXP Module
SIB 4	REV 06	750-041657	EM5527	LCC SIB 3D
B Board	REV 03	711-042424	EM4675	LCC SIB 3D Mezz
Xcvr 2	REV 01	740-047547	XC02FB053	CXP Module
Xcvr 6	REV 01	740-047547	XC02FB030	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev
4				

## SIB Hardware Failure

**Problem**    **Description:** On a TX Matrix Plus router, none of the 3D SIBs are online.

**Cause**      A 3D SIB hardware failure can cause the 3D SIBs on a TX Matrix Plus router to go offline.

**Solution**    An error LED glows to indicate that a SIB is offline because of a hardware fault.

1. To view the state of the SIB, execute the **show chassis sibs** command.



```
user@host> show chassis sibs
sfc0-re0:
```

```
-----
Slot State      Type      Cable errors Link errors Destination
  errors Uptime
0   Spare      SIB F13   NONE       NONE       NONE
1   Spare      SIB F13   NONE       NONE       NONE
2   Invalid
3   Online      SIB F13   NONE       NONE       NONE
    2 hours, 26 minutes, 29 seconds
4   Online      SIB F13   NONE       NONE       NONE
    2 hours, 26 minutes, 12 seconds
5   Invalid
6   Online      SIB F13   NONE       NONE       NONE
    2 hours, 25 minutes, 35 seconds
7   Online      SIB F13   NONE       NONE       NONE
    2 hours, 25 minutes, 18 seconds
8   Online      SIB F13   NONE       NONE       NONE
    2 hours, 24 minutes, 40 seconds
9   Online      SIB F13   NONE       NONE       NONE
    2 hours, 24 minutes, 22 seconds
10  Invalid
11  Online      SIB F13   NONE       NONE       NONE
    2 hours, 23 minutes, 46 seconds
12  Online      SIB F13   NONE       NONE       NONE
    2 hours, 23 minutes, 29 seconds
13  Invalid
14  Invalid
15  Invalid
0/0 Spare      SIB F2S   -n/a-     NONE       NONE
0/2 Spare      SIB F2S   -n/a-     NONE       NONE
0/4 Spare      SIB F2S   -n/a-     NONE       NONE
0/6 Spare      SIB F2S   -n/a-     NONE       NONE
1/0 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 27 minutes, 3 seconds
1/2 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 27 minutes, 1 second
1/4 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 26 minutes, 59 seconds
1/6 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 26 minutes, 57 seconds
2/0 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 26 minutes, 10 seconds
2/2 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 26 minutes, 8 seconds
2/4 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 26 minutes, 6 seconds
2/6 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 26 minutes, 4 seconds
3/0 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 25 minutes, 16 seconds
3/2 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 25 minutes, 14 seconds
3/4 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 25 minutes, 12 seconds
3/6 Online      SIB F2S   -n/a-     NONE       NONE
    2 hours, 25 minutes, 10 seconds
```

```

4/0  Online          SIB F2S          -n/a-          NONE          NONE
      2 hours, 24 minutes, 21 seconds
4/2  Online          SIB F2S          -n/a-          NONE          NONE
      2 hours, 24 minutes, 19 seconds
4/4  Online          SIB F2S          -n/a-          NONE          NONE
      2 hours, 24 minutes, 17 seconds
4/6  Online          SIB F2S          -n/a-          NONE          NONE
      2 hours, 24 minutes, 15 seconds

```

```
lcc0-re0:
```

```

-----
Slot  State          Cable errors  Link errors  Destination errors  Uptime
0     Spare          NONE         NONE         NONE                2 hours,
1     Online          NONE         NONE         NONE                26 minutes, 58 seconds
2     Online          NONE         NONE         NONE                2 hours,
3     Online          NONE         NONE         NONE                26 minutes, 51 seconds
4     Online          NONE         NONE         NONE                2 hours,
5     Online          NONE         NONE         NONE                26 minutes, 43 seconds
6     Online          NONE         NONE         NONE                2 hours,
7     Online          NONE         NONE         NONE                26 minutes, 36 seconds

```

[Output Truncated]

```
lcc4-re0:
```

```

-----
Slot  State          Cable errors  Link errors  Destination errors  Uptime
0     Spare          NONE         NONE         NONE                2 hours,
1     Online          NONE         2           NONE                26 minutes, 58 seconds
2     Online          NONE         NONE         NONE                2 hours,
3     Online          NONE         NONE         NONE                26 minutes, 50 seconds
4     Online          NONE         NONE         NONE                2 hours,
5     Online          NONE         NONE         NONE                26 minutes, 42 seconds
6     Online          NONE         NONE         NONE                2 hours,
7     Online          NONE         NONE         NONE                26 minutes, 35 seconds

```

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

2. To rectify any hardware fault, remove and reinsert the SIB and then execute the **request chassis sib online lcc *number* slot *slot-number*** command to bring the SIB online.
3. If the problem persists even after reinserting the SIB, then isolate the SIB and contact JTAC. For more information, refer to [TX Matrix Plus Router Hardware Guide](#)

## Unsupported Hardware or Hardware Fault Alarms

**Problem**    **Description:** On a TX Matrix Plus router, none of the 3D SIBs are online.

**Cause**      The 3D SIBs on a TX Matrix Plus router can go offline if there are any unsupported hardware or a hardware fault.

**Solution**    Check whether the output lists any unsupported hardware or hardware fault alarms.

1. To view alarms, execute the **show chassis alarms** command.

```
user@host> show chassis alarms
sfc0-re0:
```

```
-----
9 alarms currently active
Alarm time      Class  Description
2013-02-17 21:29:36 PST  Minor  Check SIB F13 1 CXP 14 Fbr Cbl
2013-02-17 21:29:36 PST  Minor  Check SIB F13 1 CXP 12 Fbr Cbl
2013-02-17 21:29:36 PST  Minor  Check SIB F13 1 CXP 10 Fbr Cbl
2013-02-17 21:29:36 PST  Minor  Check SIB F13 1 CXP 8 Fbr Cbl
2013-02-17 21:21:41 PST  Minor  SIB F13 0 CXP 11 Unsupported Optics
2013-02-17 21:16:58 PST  Major  LCC 4 Major Errors
2013-02-17 21:16:58 PST  Major  LCC 0 Major Errors
2013-02-17 21:16:48 PST  Minor  LCC 4 Minor Errors
2013-02-17 21:16:45 PST  Minor  PEM 1 Absent
```

[Output Truncated]

```
lcc4-re0:
```

```
-----
4 alarms currently active
Alarm time      Class  Description
2013-02-17 21:22:52 PST  Minor  SIB 1 XC HSL Link Error
2013-02-17 21:17:34 PST  Major  Front Bottom Fan Tray Improper for Platform
2013-02-17 21:17:34 PST  Major  Front Top Fan Tray Improper for Platform
2013-02-17 21:16:58 PST  Major  PEM 0 Not OK
```

2. To solve the errors listed in the output, refer to *TX Matrix Plus Alarm Messages Overview*.

#### Related Documentation

- [show version](#)
- [show chassis craft-interface on page 336](#)
- [show chassis hardware on page 870](#)
- [show chassis alarms on page 315](#)
- [show chassis sibs on page 1185](#)
- [request chassis sib on page 303](#)

## Troubleshooting: Offline LCCs in a Routing Matrix with a TX Matrix Plus Router

The LCCs connected to a TX Matrix Plus router with 3D SIBs can be offline because of the following reasons:

- [Faulty Connection Between LCC Control Plane and the CIP on page 194](#)
- [LCCs Configured in Single-Chassis Mode on page 194](#)
- [LCC Mode Set to empty on page 195](#)
- [LCC Configured Offline on page 195](#)
- [LCC Routing Engine or CB Incompatible with the TX Matrix Plus SFC on page 196](#)
- [Unsupported Hardware or Hardware Fault Alarms on page 197](#)

## Faulty Connection Between LCC Control Plane and the CIP

**Problem**    **Description:** In a routing matrix, the LCCs connected to a TX Matrix Plus router with 3D SIBs are offline.

**Cause**      The connection between the LCC control planes and the Connector Interface Panels (CIPs) is faulty, which results in offline LCCs.

**Solution**    Check whether the connection between the LCCs' control planes and the CIPs is all right.

1. To check the connection between the LCCs' control planes and the CIPs, execute the **show chassis cip** command.

```
user@host> show chassis cip
sfc0-cip0
Eswitch Port Type Connected-to Link Speed Duplex Auto-Neg
0        5    XE   SFC0          Down 0      Full Off
1        0    GE   LCC0          Up   1000Mbps Full On
1        2    GE   LCC1          Down 0      Half On
1        4    GE   LCC2          Up   1000Mbps Full On
1        6    GE   LCC3          Down 0      Half On
1        8    GE   LCC4          Up   1000Mbps Full On
1       10    GE   LCC5          Down 0      Half On
1       12    GE   LCC6          Down 0      Half On
1       14    GE   LCC7          Up   1000Mbps Full On
1       16    GE   GE17          Down 0      Half On
1       17    GE   GE16          Down 0      Half On
```

2. If the output displays that the LCC Ethernet cable is not connected, then check the cable connection between the LCC CB SFC 0 slot and SFC CIP LCC *number*. If the cable is not connected, then connect the cable. If the cables are connected, then check the link LEDs. If the link LEDs are not glowing, then replace the Ethernet cable.

## LCCs Configured in Single-Chassis Mode

**Problem**    **Description:** In a routing matrix, the LCCs connected to a TX Matrix Plus router with 3D SIBs are offline.

**Cause**      The LCCs might be offline if they are configured in single-chassis mode.

**Solution**    Check the LCC Control Board (LCC-CB) switch setting.

1. Check whether the switch on the LCC-CB is set to **M** (multichassis mode). If the switch is set to **S** (single-chassis mode), then change the switch setting to **M**.



**NOTE:** You must set the switch on both the Control Boards (CB-0 and CB-1) to **M**.

2. After changing the switch setting, reboot the LCC.
3. To set the LCC mode for the LCCs, refer to [lcc-mode](#).



**NOTE:** After you set the `lcc-mode`, there will be a few seconds' delay before the LCC state changes to online.

## LCC Mode Set to empty

**Problem Description:** In a routing matrix, the LCCs connected to a TX Matrix Plus router with 3D SIBs are offline.

**Cause** When the value of `lcc-mode` for an LCC is set to `empty`, that LCC is in offline state.

**Solution** Check whether the LCC mode is configured as `empty`.

1. To verify the LCC mode, execute the `show chassis lcc-mode` command.

```
user@host> show chassis lcc-mode
```

Slot	LCC-mode
0	T4000
1	EMPTY
2	T1600
3	T1600
4	EMPTY
5	EMPTY
6	T1600
7	T1600

2. To set the LCC mode for the LCCs that display the mode as `EMPTY` in the output with an appropriate value (`T1600` or `T4000`), see [lcc-mode](#).

## LCC Configured Offline

**Problem Description:** In a routing matrix, the LCCs connected to a TX Matrix Plus router with 3D SIBs are offline.

**Cause** An LCC appears offline when its state is configured as `offline`.

**Solution** Check the state of the LCC.

1. To view the state, execute the `show chassis lccs` command.

```
user@host> show chassis lccs
```

Slot	State	Uptime
0	Online	1 hour, 8 minutes, 24 seconds
1	Empty	
2	Online	1 hour, 8 minutes, 24 seconds
3	Empty	
4	Online	1 hour, 8 minutes, 26 seconds
5	Empty	
6	Empty	
7	Online	1 hour, 8 minutes, 24 seconds

- If the state of the LCC is **offline**, then log in to the LCC in configuration mode and set the state to **online-expected**. For more information, see [online-expected](#).

## LCC Routing Engine or CB Incompatible with the TX Matrix Plus SFC

**Problem** **Description:** In a routing matrix, the LCCs connected to a TX Matrix Plus router with 3D SIBs are offline.

**Cause** The LCC Routing Engine or Control Board (CB) is not compatible with the TX Matrix Plus switch-fabric chassis (SFC).

**Solution** Check whether the LCC Routing Engine or Control Board is compatible with the TX Matrix Plus router (SFC).

- To verify the compatibility between the LCC Routing Engine or Control Board and the TX Matrix Plus router, execute the **show chassis hardware** command on the LCC Routing Engine.

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11BDF86AHA	T4000
Midplane	REV 01	710-027486	ACAJ0790	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAN4957	T640 FPM Board
FPM Display	REV 04	710-021387	BBAN9086	T1600 FPM Display
CIP	REV 06	710-002895	BBAP4614	T-series CIP
PEM 0 6x60	REV 05	740-036442	1G022010126	Power Entry Module
PEM 1 6x60	REV 05	740-036442	1G022060157	Power Entry Module
SCG 0	REV 18	710-003423	BBAP5981	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAP6026	T640 Sonet Clock Gen.
Routing Engine 0	REV 10	740-026941	P737F-004540	RE-DUO-1800
Routing Engine 1	REV 07	740-026941	P737F-003165	RE-DUO-1800
CB 0	REV 11	710-022597	EJ6396	LCC Control Board
CB 1	REV 11	710-022597	EJ6436	LCC Control Board
FPC 0	REV 01	750-045173	BBAV1252	FPC Type 5-3D
CPU	REV 10	711-030686	BBAN6642	SNG PMB
PIC 0	REV 17	750-034624	BBAT9952	12x10GE (LAN/WAN)
SFPP				
Xcvr 0	REV 01	740-031980	ALM0A6Q	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A01440	SFP+-10G-SR

Xcvr 2	REV 01	740-031980	ALM0H52	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	1X3363A01231	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJJ0388	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A01229	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	ALM09H1	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	1X3363A01358	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B11J04894	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	193363A01282	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJD0QCR	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	ALM09BC	SFP+-10G-SR
[Output Truncated]				
SIB 3	REV 07	750-041657	EM8020	LCC SIB 3D
B Board	REV 03	711-042424	EM7199	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-048813	XC48FE000	CXP Module
Xcvr 1	REV 01	740-048813	XC48FE00H	CXP Module
Xcvr 2	REV 01	740-048813	XC46FE064	CXP Module
Xcvr 3	REV 01	740-048813	XC48FE00N	CXP Module
Xcvr 4	REV 01	740-048813	XC48FE00A	CXP Module
Xcvr 5	REV 01	740-048813	XC48FE00K	CXP Module
Xcvr 6	REV 01	740-048813	XC48FE02F	CXP Module
Xcvr 7	REV 01	740-048813	XC48FE00G	CXP Module
SIB 4	REV 06	750-041657	EM5515	LCC SIB 3D
B Board	REV 03	711-042424	EM4697	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-048813	XC46FE04V	CXP Module
Xcvr 1	REV 01	740-048813	XC46FE05U	CXP Module
Xcvr 2	REV 01	740-048813	XC46FE059	CXP Module
Xcvr 3	REV 01	740-048813	XC48FE01T	CXP Module
Xcvr 4	REV 01	740-048813	XC48FE01Y	CXP Module
Xcvr 5	REV 01	740-048813	XC46FE062	CXP Module
Xcvr 6	REV 01	740-048813	XC48FE01S	CXP Module
Xcvr 7	REV 01	740-048813	XC46FE06H	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev
4				

2. When upgrading a T640 LCC to a T1600 LCC or a T4000 LCC, you might have an error and the values for the following output parameter might differ from the sample shown above:

- Routing Engine 0
- Routing Engine 1
- CB 0
- CB 1

If the values differ, then to rectify the error, refer to the *T1600 Router Upgrade Guide* or the *T4000 Router Upgrade Guide*.

## Unsupported Hardware or Hardware Fault Alarms

**Problem Description:** In a routing matrix, the LCCs connected to a TX Matrix Plus router with 3D SIBs are offline.

**Cause** If there are any unsupported hardware or there is a hardware fault, then the LCC can go offline.

**Solution** Check whether the output lists any unsupported hardware or hardware fault alarms.

1. To view alarms, execute the **show chassis alarms** command.

```
user@host> show chassis alarms
sfc0-re0:
```

```
-----
9 alarms currently active
Alarm time      Class Description
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 14 Fbr Cbl
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 12 Fbr Cbl
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 10 Fbr Cbl
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 8 Fbr Cbl
2013-02-17 21:21:41 PST Minor SIB F13 0 CXP 11 Unsupported Optics
2013-02-17 21:16:58 PST Major LCC 4 Major Errors
2013-02-17 21:16:58 PST Major LCC 0 Major Errors
2013-02-17 21:16:48 PST Minor LCC 4 Minor Errors
2013-02-17 21:16:45 PST Minor PEM 1 Absent
```

[Output Truncated]

```
lcc4-re0:
```

```
-----
4 alarms currently active
Alarm time      Class Description
2013-02-17 21:22:52 PST Minor SIB 1 XC HSL Link Error
2013-02-17 21:17:34 PST Major Front Bottom Fan Tray Improper for Platform
2013-02-17 21:17:34 PST Major Front Top Fan Tray Improper for Platform
2013-02-17 21:16:58 PST Major PEM 0 Not OK
```

2. To solve the errors listed in the output, refer to *TX Matrix Plus Alarm Messages Overview*.

- Related Documentation**
- [show chassis cip on page 334](#)
  - [show chassis cip on page 334](#)
  - [show chassis hardware on page 870](#)
  - [show chassis alarms on page 315](#)
  - *Setting the Chassis ID and M/S Switch on the LCC-CB*

---

## Troubleshooting: LCC in Amnesiac Mode

In a routing matrix with a TX Matrix Plus router and 3D SIBs, one or more LCCs are in amnesiac mode. LCCs can be in amnesiac mode because of the following reasons:

- [LCC Groups lcc number-re0 and lcc number-re1 Not Configured on page 199](#)
- [SFC Configuration Not Synchronized with LCC Configuration on page 200](#)



- [Incompatibility Between LCC Routing Engine or Control Board and the TX Matrix Plus Router \(SFC\) on page 200](#)
- [Unsupported Hardware or Hardware Fault Alarms on page 202](#)

## LCC Groups lcc number-re0 and lcc number-re1 Not Configured

**Problem**    **Description:** In a routing matrix with a TX Matrix Plus router (or the switch-fabric chassis (SFC)) and 3D SIBs, one or more LCCs are in amnesiac mode.

**Cause**      The LCC groups **lcc number-re0** and **lcc number-re1** are not configured at the **[edit groups]** hierarchy level.

**Solution**    Check whether the LCC groups are listed in the existing configuration.

1. Execute the **show configuration groups** command to see whether the LCC groups are listed in the existing configuration.

```
user@host> show configuration groups ?
Possible completions:
<[Enter]>           Execute this command
<group_name>       Group name
global             Group name
lcc0-re0           Group name
lcc0-re1           Group name
lcc2-re0           Group name
lcc2-re1           Group name
lcc3-re0           Group name
lcc3-re1           Group name
lcc4-re0           Group name
lcc4-re1           Group name
lcc5-re0           Group name
lcc5-re1           Group name
lcc6-re0           Group name
lcc6-re1           Group name
lcc7-re0           Group name
lcc7-re1           Group name
maximum-MTU       Group name
mtu                Group name
re0                Group name
re1                Group name
|                  Pipe through a command
```

2. If an LCC group is missing, then configure the group in configuration mode and perform the other required configurations.

```
[edit]
user@host# set groups lcc7-re1
```

3. Commit the configuration.

```
[edit]
user@host# commit
```

4. Exit configuration mode.

```
[edit]
```

```
user@host# exit
```

## SFC Configuration Not Synchronized with LCC Configuration

**Problem**    **Description:** In a routing matrix with a TX Matrix Plus router and 3D SIBs, one or more LCCs are in amnesiac mode.

**Cause**      If the SFC configuration is not synchronized with the LCC configuration, then the LCCs can be in amnesiac mode.

**Solution**    Check whether the SFC and LCC configurations are synchronized.

1. To check whether the configurations are synchronized between the SFC and the LCCs, execute the **show configuration version** command on both the SFC and the LCCs. If the commit time is the same in both the output, then the configurations are synchronized.

```
user@host> show configuration version
## Last commit: 2013-02-19 10:03:37 PST by userid
version "13.1I20130125_0953_xxx [xxx]";
```

```
user@host> show configuration version
## Last commit: 2013-02-19 10:03:37 PST by userid
version "13.2I20130218_1838_xxx [xxx]";
```

2. If the commit time in the output of the LCCs is different from that in the output of the SFC, then log in to the SFC Routing Engine in configuration mode and execute the **commit synchronize** statement to synchronize the configuration on the SFC and the LCCs.

## Incompatibility Between LCC Routing Engine or Control Board and the TX Matrix Plus Router (SFC)

**Problem**    **Description:** In a routing matrix with a TX Matrix Plus router and 3D SIBs, one or more LCCs are in amnesiac mode.

**Cause**      LCC Routing Engines or Control Boards (CBs) are not compatible with the SFC.

**Solution**    Check whether the LCC Routing Engines or Control Boards are compatible with the TX Matrix Plus router (SFC).

1. To verify the compatibility between an LCC Routing Engine or Control Board and the TX Matrix Plus router, execute the **show chassis hardware** command on the LCC Routing Engine.

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN11BDF86AHA	T4000
Midplane	REV 01	710-027486	ACAJ0790	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAN4957	T640 FPM Board
FPM Display	REV 04	710-021387	BBAN9086	T1600 FPM Display
CIP	REV 06	710-002895	BBAP4614	T-series CIP
PEM 0 6x60	REV 05	740-036442	1G022010126	Power Entry Module
PEM 1 6x60	REV 05	740-036442	1G022060157	Power Entry Module
SCG 0	REV 18	710-003423	BBAP5981	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAP6026	T640 Sonet Clock Gen.
Routing Engine 0	REV 10	740-026941	P737F-004540	RE-DUO-1800
Routing Engine 1	REV 07	740-026941	P737F-003165	RE-DUO-1800
CB 0	REV 11	710-022597	EJ6396	LCC Control Board
CB 1	REV 11	710-022597	EJ6436	LCC Control Board
FPC 0	REV 01	750-045173	BBAV1252	FPC Type 5-3D
CPU	REV 10	711-030686	BBAN6642	SNG PMB
PIC 0	REV 17	750-034624	BBAT9952	12x10GE (LAN/WAN)
SFPP				
Xcvr 0	REV 01	740-031980	ALMOA6Q	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A01440	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	ALMOH52	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	1X3363A01231	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJJ0388	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A01229	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	ALMO9H1	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	1X3363A01358	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B11J04894	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	193363A01282	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJDOQCR	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	ALMO9BC	SFP+-10G-SR
[Output Truncated]				
SIB 3	REV 07	750-041657	EM8020	LCC SIB 3D
B Board	REV 03	711-042424	EM7199	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-048813	XC48FE000	CXP Module
Xcvr 1	REV 01	740-048813	XC48FE00H	CXP Module
Xcvr 2	REV 01	740-048813	XC46FE064	CXP Module
Xcvr 3	REV 01	740-048813	XC48FE00N	CXP Module
Xcvr 4	REV 01	740-048813	XC48FE00A	CXP Module
Xcvr 5	REV 01	740-048813	XC48FE00K	CXP Module
Xcvr 6	REV 01	740-048813	XC48FE02F	CXP Module
Xcvr 7	REV 01	740-048813	XC48FE00G	CXP Module
SIB 4	REV 06	750-041657	EM5515	LCC SIB 3D
B Board	REV 03	711-042424	EM4697	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-048813	XC46FE04V	CXP Module
Xcvr 1	REV 01	740-048813	XC46FE05U	CXP Module
Xcvr 2	REV 01	740-048813	XC46FE059	CXP Module
Xcvr 3	REV 01	740-048813	XC48FE01T	CXP Module
Xcvr 4	REV 01	740-048813	XC48FE01Y	CXP Module
Xcvr 5	REV 01	740-048813	XC46FE062	CXP Module
Xcvr 6	REV 01	740-048813	XC48FE01S	CXP Module
Xcvr 7	REV 01	740-048813	XC46FE06H	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev

- When upgrading a T640 LCC to a T1600 LCC or T4000 LCC, you might observe an error and the values for the following output parameters might differ from the sample shown above:

- Routing Engine 0
- Routing Engine 1
- CB 0
- CB 1

If the values differ, then refer to the *T1600 Router Upgrade Guide* or *T4000 Router Upgrade Guide* to rectify the error.

## Unsupported Hardware or Hardware Fault Alarms

**Problem** **Description:** In a routing matrix with a TX Matrix Plus router and 3D SIBs, one or more LCCs are in amnesiac mode.

**Cause** If there are any unsupported hardware or there is a hardware fault in the routing matrix, then the LCCs can be in amnesiac mode.

**Solution** Check whether the output lists any unsupported hardware or hardware fault alarms.

- To view alarms, execute the **show chassis alarms** command.

```
user@host> show chassis alarms
sfc0-re0:
```

```
-----
9 alarms currently active
Alarm time      Class Description
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 14 Fbr Cbl
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 12 Fbr Cbl
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 10 Fbr Cbl
2013-02-17 21:29:36 PST Minor Check SIB F13 1 CXP 8 Fbr Cbl
2013-02-17 21:21:41 PST Minor SIB F13 0 CXP 11 Unsupported Optics
2013-02-17 21:16:58 PST Major LCC 4 Major Errors
2013-02-17 21:16:58 PST Major LCC 0 Major Errors
2013-02-17 21:16:48 PST Minor LCC 4 Minor Errors
2013-02-17 21:16:45 PST Minor PEM 1 Absent
```

[Output Truncated]

```
lcc4-re0:
```

```
-----
4 alarms currently active
Alarm time      Class Description
2013-02-17 21:22:52 PST Minor SIB 1 XC HSL Link Error
2013-02-17 21:17:34 PST Major Front Bottom Fan Tray Improper for Platform
2013-02-17 21:17:34 PST Major Front Top Fan Tray Improper for Platform
2013-02-17 21:16:58 PST Major PEM 0 Not OK
```

- To solve the errors listed in the output, refer to *TX Matrix Plus Alarm Messages Overview*.

- Related Documentation**
- *show configuration*
  - *groups*
  - [show chassis hardware on page 870](#)
  - [show chassis alarms on page 315](#)
  - [show system core-dumps on page 1386](#)



## PART 4

# Configuration Statements and Operational Commands

- [Configuration Statements: Chassis-Specific on page 207](#)
- [Configuration Statements: LCC-Specific on page 215](#)
- [Configuration Statements: FPC-Specific on page 219](#)
- [Configuration Statements: PIC-Specific on page 223](#)
- [Configuration Statements: System-Specific on page 239](#)
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- [Operational Commands: Chassis-Specific on page 259](#)
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## CHAPTER 9

# Configuration Statements: Chassis-Specific

- [alarm \(chassis\) on page 208](#)
- [lcc on page 209](#)
- [lcc-mode on page 211](#)
- [redundancy on page 212](#)
- [routing-engine \(Chassis\) on page 213](#)

## alarm (chassis)

---

Syntax	<pre>alarm {     interface-type {         alarm-name (ignore   red   yellow);     } }</pre>
Hierarchy Level	[edit chassis], [edit chassis interconnect-device <i>name</i> ], [edit chassis node-group <i>name</i> ]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 11.1 for the QFX Series. Statement introduced in Junos OS Release 12.2 for the ACX Series. Statement introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
Description	<p>Configure the chassis alarms and whether they trigger a red or yellow alarm, or whether they are ignored. Red alarm conditions light the <b>RED ALARM</b> LED on either the router's craft interface or the switch's LCD screen and trigger an audible alarm if one is connected to the contact on the craft interface or LCD screen. Yellow alarm conditions light the <b>YELLOW ALARM</b> LED on either the router's craft interface or the switch's LCD screen and trigger an audible alarm if one is connected to the craft interface or LCD screen.</p> <p>To configure more than one alarm, include multiple <i>alarm-name</i> lines.</p>
Options	<p><i>alarm-name</i>—Alarm condition. For a list of conditions, see <i>Configurable PIC Alarm Conditions</i>.</p> <p><i>ignore</i>—The specified alarm condition does not set off any alarm.</p> <p><i>interface-type</i>—Type of interface on which you are configuring the alarm: <b>atm</b>, <b>ethernet</b>, <b>sonet</b>, or <b>t3</b>.</p> <p><b>red</b>—The specified alarm condition sets off a red alarm.</p> <p><b>yellow</b>—The specified alarm condition sets off a yellow alarm.</p>
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"><li>• <i>Understanding Alarms</i></li><li>• <i>Chassis Conditions That Trigger Alarms</i></li><li>• <i>Chassis Alarm Messages on a QFX3500 Device</i></li><li>• <i>Interface Alarm Messages</i></li></ul>

## lcc

<b>Syntax</b>	<pre> lcc number {   fpc slot-number {     pic pic-number {       atm-cell-relay-accumulation;       atm-l2circuit-mode (cell   aal5   trunk <i>trunk</i>);       framing (sdh   sonet);       idle-cell-format {         itu-t;         payload-pattern <i>payload-pattern-byte</i>;       }       max-queues-per-interface (8   4);       no-concatenate;       no-mcast-replication;     }   }   online-expected;   offline; } q-pic-large-buffer {   large-scale; } </pre>
<b>Hierarchy Level</b>	[edit chassis]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	Configure a T640 router (on a routing matrix based on a TX Matrix router) or a T1600 router (on a routing matrix based on a TX Matrix Plus router) or a T4000 router (on a routing matrix based on a TX Matrix Plus router).
<b>Options</b>	<p><b>number</b>—Specify a T640 router or a T1600 router or a T4000 router on a routing matrix.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul> <p>The remaining statements are explained separately.</p>
<b>Required Privilege Level</b>	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>

**Related  
Documentation**

- *TX Matrix Router and T640 Router Configuration Overview*
- *Using the Junos OS to Configure a T640 Router Within a Routing Matrix*
- *TX Matrix Plus Router Configuration Overview*
- *Using the Junos OS to Configure a T1600 or T4000 Router Within a Routing Matrix*
- *TX Matrix Router Hardware Guide*
- *TX Matrix Plus Router Hardware Guide*

## lcc-mode

<b>Syntax</b>	<pre>lcc-mode {     lcc <i>lcc_number</i>{         mode <i>mode</i>;     } }</pre>
<b>Hierarchy Level</b>	[edit chassis]
<b>Release Information</b>	Statement introduced in Junos OS Release 13.1 for TX Matrix Plus routers with 3D SIBs.
<b>Description</b>	Set the line-card chassis (LCC) in a routing matrix to function as a T1600 router or a T4000 router. If you set the value of the <b>mode</b> variable as <b>empty</b> , then the line-card chassis goes offline. If the <b>mode</b> statement is not configured, then by default the LCC functions as a T1600 router.
<b>Default</b>	If you do not include the <b>lcc-mode</b> statement, the LCC functions as a T1600 router.
<b>Options</b>	<p><b>lcc <i>number</i></b>—On a TX Matrix Plus router, display hardware information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul> <p><b>mode <i>mode</i></b>—Configure the LCC to function as a T1600 or a T4000 router. The value of the <i>mode</i> variable can be set as <b>t1600</b>, <b>t4000</b>, or <b>empty</b>.</p>
<b>Required Privilege Level</b>	interface-control
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">Overview of a Routing Matrix with a TX Matrix Plus Router on page 3</a></li> <li>• <a href="#">Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode on page 72</a></li> </ul>

## redundancy

---

**Syntax**

```
redundancy {  
  cfeb slot (always | preferred);  
  failover {  
    on-disk-failure;  
    on-loss-of-keepalives;  
    on-re-to-fpc-stale;  
  }  
  feb {  
    redundancy-group group-name {  
      description description;  
      feb slot-number (backup | primary);  
      no-auto-failover;  
    }  
  }  
  graceful-switchover;  
  keepalive-time seconds;  
  routing-engine slot-number (backup | disabled | master);  
  sfm slot-number (always | preferred);  
  ssb slot-number (always | preferred);  
}
```

**Hierarchy Level** [edit chassis]

**Release Information** Statement introduced before Junos OS Release 7.4.

**Description** Configure redundancy options.

**Options** The remaining statements are explained separately. See [CLI Explorer](#).

**Required Privilege Level** interface—To view this statement in the configuration.  
interface-control—To add this statement to the configuration.

**Related Documentation**

- *Configuring Routing Engine Redundancy*
- *Configuring CFEB Redundancy on the M10i Router*
- *Configuring FEB Redundancy on the M120 Router*
- *Configuring SFM Redundancy on M40e and M160 Routers*
- *Configuring SSB Redundancy on the M20 Router*

## routing-engine (Chassis)

<b>Syntax</b>	<pre> routing-engine {   on-disk-failure {     disk-failure-action (halt   reboot);   } } </pre>
<b>Hierarchy Level</b>	[edit chassis]
<b>Release Information</b>	<p>Statement introduced before Junos OS Release 7.4.</p> <p>The <b>disk-failure-action</b> statement added in Junos OS Release 9.0.</p>
<b>Description</b>	<p>Configure a Routing Engine to halt or reboot automatically when a hard disk error occurs. A hard disk error may cause a Routing Engine to enter a state in which it responds to local pings and interfaces remain up, but no other processes are responding. Rebooting or halting prevents this.</p>
<b>Required Privilege Level</b>	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <i>Configuring the Junos OS to Enable a Routing Engine to Reboot on Hard Disk Errors</i></li> </ul>





## CHAPTER 10

# Configuration Statements: LCC-Specific

- `fpc` (TX Matrix and TX Matrix Plus Routers) on page 216
- `offline` on page 217
- `online-expected` on page 218

## fpc (TX Matrix and TX Matrix Plus Routers)

---

<b>Syntax</b>	<pre>fpc slot-number {   pic pic-number {     atm-cell-relay-accumulation;     atm-l2circuit-mode (cell   aal5   trunk <i>trunk</i>);     framing (sdh   sonet);     idle-cell-format {       itu-t;       payload-pattern <i>payload-pattern-byte</i>;     }     max-queues-per-interface (8   4);     no-concatenate;     no-mcast-replication;     q-pic-large-buffer (large-scale   small-scale);   } }</pre>
<b>Hierarchy Level</b>	[edit chassis <i>lcc number</i> ]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	On a TX Matrix or TX Matrix Plus router, configure properties for the PICs in individual FPCs.
<b>Options</b>	<p><i>slot-number</i>—Slot number in which the FPC is installed.</p> <p><b>Range:</b> 0 through 7</p> <p>The remaining statements are explained separately.</p>
<b>Required Privilege Level</b>	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>TX Matrix Router and T640 Router Configuration Overview</i></li><li>• <i>TX Matrix Plus Router Configuration Overview</i></li><li>• <i>Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs</i></li><li>• <i>TX Matrix Router Chassis and Interface Names</i></li><li>• <i>TX Matrix Plus Router Chassis and Interface Names</i></li></ul>

## offline

---

<b>Syntax</b>	offline;
<b>Hierarchy Level</b>	[edit chassis <i>lcc number</i> ]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	(Routing matrix based on the TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, configure a T640 router so that it is not part of the routing matrix. On a TX Matrix Plus router, configure a T1600 or T4000 router so that it is not part of the routing matrix.
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">online-expected on page 218</a></li> <li>• <i>TX Matrix Router and T640 Router Configuration Overview</i></li> <li>• <i>TX Matrix Plus Router Configuration Overview</i></li> <li>• <i>Configuring Junos OS to Enable the TX Matrix Router to Generate an Alarm If a T640 Router Stays Offline</i></li> <li>• <i>Configuring Junos OS to Enable the TX Matrix Plus Router to Generate an Alarm If a T1600 or T4000 Router Stays Offline</i></li> </ul>

## online-expected

---

<b>Syntax</b>	online-expected;
<b>Hierarchy Level</b>	[edit chassis <i>lcc number</i> ]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	(TX Matrix and TX Matrix Plus routing matrix only) On a TX Matrix router, configure a T640 router so that if it does not come online, an alarm is sent to the TX Matrix router. On a TX Matrix Plus router, configure a T1600 or a T4000 router so that if it does not come online, an alarm is sent to the TX Matrix Plus router.
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>TX Matrix Router and T640 Router Configuration Overview</i></li><li>• <i>TX Matrix Plus Router Configuration Overview</i></li><li>• <i>Configuring Junos OS to Enable the TX Matrix Router to Generate an Alarm If a T640 Router Stays Offline</i></li><li>• <i>Configuring Junos OS to Enable the TX Matrix Plus Router to Generate an Alarm If a T1600 or T4000 Router Stays Offline</i></li><li>• <a href="#">offline on page 217</a></li></ul>

## CHAPTER 11

# Configuration Statements: FPC-Specific

- [pic \(TX Matrix and TX Matrix Plus Routers\)](#) on page 220
- [power](#) on page 221

## pic (TX Matrix and TX Matrix Plus Routers)

---

<b>Syntax</b>	<pre>pic <i>pic-number</i> {     aggregate-ports;     atm-cell-relay-accumulation;     atm-l2circuit-mode (cell   aal5   trunk <i>trunk</i>);     egress-policer-overhead (<i>count</i>);     framing (sdh   sonet);     idle-cell-format {         itu-t;         payload-pattern <i>payload-pattern-byte</i>;     }     ingress-policer-overhead (<i>count</i>);     max-queues-per-interface (8   4);     no-concatenate;     no-mcast-replication;     q-pic-large-buffer (large-scale   small-scale); }</pre>
<b>Hierarchy Level</b>	[edit chassis lcc <i>number</i> fpc <i>slot-number</i> ]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	On a TX Matrix or TX Matrix Plus router, configure properties for an individual PIC.
<b>Options</b>	<p><b><i>pic-number</i></b>—Slot number in which the PIC is installed.</p> <p><b>Range:</b> 0 through 3</p> <p>The remaining statements are explained separately.</p>
<b>Required Privilege Level</b>	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>TX Matrix Router and T640 Router Configuration Overview</i></li><li>• <i>TX Matrix Plus Router Configuration Overview</i></li><li>• <i>Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs</i></li></ul>

## power

**Syntax** `power (off | on);`

**Hierarchy Level** `[edit chassis fpc slot-number]`  
`[edit chassis fpc name pic],`  
`[edit chassis lcc name fpc name pic name],`  
`[edit chassis member name fpc name pic]`

**Release Information** The `edit chassis fpc slot-number` statement introduced before Junos OS Release 7.4.  
 The `edit chassis fpc slot-number pic pic-number power off` introduced in Junos OS Release 13.3R2.  
 Statement introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.

**Description** The `edit chassis fpc slot-number` command configures the Flexible PIC Concentrator (FPC) to stay offline or to come online automatically.



**NOTE:** In a node slicing context, issuing the command `set chassis fpc slot-number power off` on the BSYS (base system) powers off even those FPCs that are assigned to the Guest Network Functions (GNFs) in which unified in-service software upgrade (ISSU) is in progress. Learn more about [Junos Node Slicing](#).

The `edit chassis fpc slot-number pic pic-number power off` command turns off the power to the PIC in the specified FPC.



**NOTE:** `power off` command is applicable only to the fixed-configuration MPC with six 40-Gigabit Ethernet ports and twenty-four 10-Gigabit Ethernet ports (MPC5E-40G10G). For other PICs, it is ignored with a syslog message.

**Default** `on`

**Options** `off`—Take the FPC offline, and configure it to stay offline, as, for example, after a system reboot.

`on`—Bring the FPC online, and configure it to come online automatically, as, for example, after a system reboot.

`off`—Take the PIC in the specified FPC offline, and configure it to stay offline, as, for example, after a system reboot.

`on`—Bring the PIC in the specified FPC online, and configure it to come online automatically, as, for example, after a system reboot.

<b>Required Privilege</b>	interface—To view this statement in the configuration.
<b>Level</b>	interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Configuring the Junos OS to Make a Flexible PIC Concentrator Stay Offline</i></li></ul>



## CHAPTER 12

# Configuration Statements: PIC-Specific

- [aggregate-ports on page 223](#)
- [atm-cell-relay-accumulation on page 224](#)
- [atm-l2circuit-mode on page 225](#)
- [framing on page 226](#)
- [idle-cell-format on page 227](#)
- [max-queues-per-interface on page 228](#)
- [no-concatenate on page 229](#)
- [port \(Chassis\) on page 230](#)
- [q-pic-large-buffer on page 231](#)
- [red-buffer-occupancy on page 232](#)
- [traffic-manager on page 234](#)

### aggregate-ports

---


<b>Syntax</b>	<code>aggregate-ports;</code>
<b>Hierarchy Level</b>	<code>[edit chassis fpc slot-number pic pic-number]</code>
<b>Release Information</b>	Statement introduced in Junos OS Release 8.1.
<b>Description</b>	For T Series routers only, specify OC768-over-OC192 mode on the 4-port OC192C PIC. Four OC192 links are aggregated into one OC768 link with one logical interface.
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Configuring 4-Port OC192 PIC to Operate in OC768-over-OC192 Mode</i></li></ul>

## atm-cell-relay-accumulation

---

<b>Syntax</b>	atm-cell-relay-accumulation;
<b>Hierarchy Level</b>	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> ] (Routing Matrix)
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	Configure an Asynchronous Transfer Mode (ATM) Physical Interface Card (PIC) in cell-relay accumulation mode.
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Configuring the Junos OS to Use ATM Cell-Relay Accumulation Mode on an ATM1 PIC</i></li></ul>

## atm-l2circuit-mode

<b>Syntax</b>	atm-l2circuit-mode (cell   aal5   trunk <i>trunk</i> );
<b>Hierarchy Level</b>	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> ] (Routing Matrix)
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	Configure the ATM2 intelligent queuing (IQ) Layer 2 circuit transport mode.
<b>Default</b>	aal5
<b>Options</b>	<p><b>aal5</b>—Tunnel a stream of ATM cells encoded with ATM Adaptation Layer (AAL5) over an IP Multiprotocol Label Switching (MPLS) backbone.</p> <p><b>cell</b>—Tunnel a stream of ATM cells over an IP MPLS backbone.</p> <p><b>trunk <i>trunk</i></b>—Transport ATM cells over an MPLS core network that is implemented on some other vendor switches. Trunk mode can be <b>UNI</b> or <b>NNI</b>.</p>
<div>  <p><b>NOTE:</b> To determine which vendors support Layer 2 circuit trunk mode, contact Juniper Networks Customer Support.</p> </div>	
<b>Required Privilege Level</b>	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><i>Configuring the Junos OS to Enable ATM2 Intelligent Queuing Layer 2 Circuit Transport Mode</i></li> </ul>

## framing

---

<b>Syntax</b>	framing (sdh   sonet);
<b>Hierarchy Level</b>	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> ] (Routing Matrix)
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	On SONET/SDH PICs only, configure the framing type.
<b>Default</b>	sonet
<b>Options</b>	sdh—SDH framing.  sonet—SONET framing.
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs</i></li></ul>

## idle-cell-format

<b>Syntax</b>	<pre>idle-cell-format {     itu-t;     payload-pattern <i>payload-pattern-byte</i>; }</pre>
<b>Hierarchy Level</b>	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> idle-cell-format], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> idle-cell-format] (Routing Matrix)
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	For ATM2 PICs only, configure the format of the idle cell header and payload bytes.
<b>Options</b>	<p><b>itu-t</b>—Configure the idle cell header to use the International Telecommunications Union (ITU-T) standard of 0x00000001.</p> <p><b>Default:</b> (4 bytes): 0x00000000</p> <p><b><i>payload-pattern-byte</i></b>—Configure the idle cell payload pattern. The payload pattern byte can range from 0x00 through 0xff.</p> <p><b>Default:</b> cell payload (48 bytes)</p>
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>Configuring the Junos OS to Enable Idle Cell Format and Payload Patterns for ATM Devices</li> </ul>

## max-queues-per-interface

---

<b>Syntax</b>	max-queues-per-interface (8   4);
<b>Hierarchy Level</b>	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> ] (Routing Matrix)
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4. Support for TX Matrix and TX Matrix Plus added in Junos OS Release 9.6. On MIC or MPC interfaces on MX Series routers, configure eight egress queues.
<b>Description</b>	On IQ, MPC, and DPC interfaces on M120, T320, T640, T1600, TX Matrix, and TX Matrix Plus routers, or on MIC or MPC interfaces on MX Series routers, configure eight egress queues.
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Configuring the Junos OS to Support Eight Queues on IQ Interfaces for T Series and M320 Routers</i></li><li>• <i>Configuring Up to 16 Custom Forwarding Classes</i></li><li>• <i>Enabling Eight Queues on ATM Interfaces</i></li><li>• <i>Configuring the Maximum Number of Queues for Trio MPC/MIC Interfaces</i></li><li>• <i>Example: Configuring CoS on SRX5000 Devices with an MPC</i></li><li>• <i>Example: Enabling Eight-Queue Class of Service on Redundant Ethernet Interfaces on SRX Series Devices in a Chassis Cluster</i></li></ul>

## no-concatenate

<b>Syntax</b>	no-concatenate;
<b>Hierarchy Level</b>	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> ] (Routing Matrix)
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	<p>Do not concatenate (multiplex) the output of a SONET/SDH PIC (an interface with a name <i>so-fpc/pic/port</i>).</p> <p>When configuring and displaying information about interfaces that are operating in channelized mode, you must specify the channel number in the interface name (<i>physical:channel</i>); for example, <i>so-2/2/0:0</i> and <i>so-2/2/0:1</i>.</p> <p>On SONET OC48 interfaces that are configured for channelized (multiplexed) mode, the <b>bytes e1-quiet</b> and <b>bytes f1</b> options in the <b>sonet-options</b> statement have no effect. The <b>bytes f2</b>, <b>bytes z3</b>, <b>bytes z4</b>, and <b>path-trace</b> options work correctly on channel 0. They work in the transmit direction only on channels 1, 2, and 3.</p>
<b>Default</b>	Output is concatenated (multiplexed).
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><i>Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized (Multiplexed) Mode</i></li> </ul>



## port (Chassis)

---

<b>Syntax</b>	<code>port <i>port-number</i>;</code>
<b>Hierarchy Level</b>	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ct3]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	Configure the channelized T3 port number on the PIC.
<b>Options</b>	<i>port-number</i> —Port number. <b>Range:</b> 0 through 1
<b>Required Privilege Level</b>	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots</i></li></ul>




## q-pic-large-buffer

<b>Syntax</b>	q-pic-large-buffer (large-scale   small-scale);
<b>Hierarchy Level</b>	[edit chassis fpc slot-number pic pic-number] [edit chassis lcc number fpc slot-number pic pic-number (Routing Matrix)]
<b>Release Information</b>	Statement introduced in Junos OS Release 7.4. Support for TX Matrix and TX Matrix Plus hierarchy added in Junos OS Release 9.6.
<b>Description</b>	Configure delay buffers.
<div>  <p><b>NOTE:</b> When you commit the configuration after including the <b>q-pic-large-buffer</b> statement for a PIC, the Junos OS temporarily takes the PIC offline and brings it back online before the new configuration is activated and becomes the current operational configuration.</p> </div>	
<b>Default</b>	small-scale
<b>Options</b>	<p><b>large-scale</b>—(Optional) Set the average packet size used to calculate the number of notification queue entries in the IQ PIC to 256 bytes. Useful for slower interfaces (T1, E1, and NxDS0 interfaces configured on Channelized IQ PICs and Gigabit Ethernet VLANs configured on Gigabit Ethernet IQ PICs).</p> <p><b>small-scale</b>—(Optional) Set the average packet size used to calculate the number of notification queue entries in the IQ PIC to 40 bytes.</p>
<div>  <p><b>NOTE:</b> You cannot configure the <b>large-scale</b> and the <b>small-scale</b> options on MX Series routers. Include only the <b>q-pic-large-buffer</b> statement to enable the large delay buffer size on Enhanced Queuing DPCs on MX Series routers.</p> </div>	
<b>Required Privilege Level</b>	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>Configuring the Junos OS to Enable Larger Delay Buffers for T1, E1, and DS0 Interfaces Configured on Channelized IQ PICs</li> <li>Configuring Schedulers</li> </ul>

## red-buffer-occupancy

---

Syntax	<pre>red-buffer-occupancy {     weighted-averaged [ instant-usage-weight-exponent <i>exponent-value</i> ]; }</pre>
Hierarchy Level	[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> ]
Release Information	Statement introduced in Junos OS Release 8.3.
Description	<p>Configure the IQ PIC to base random early detection (RED) queue management on a <i>simple moving average</i> buffer occupancy calculation. If you do not include this statement, the IQ PIC bases RED on an <i>instantaneous</i> buffer occupancy value. As an option, you can specify that the IQ PIC bases RED on a <i>weighted moving average</i> of buffer occupancy values.</p> <p>If you configure this feature on a channelized OC12 intelligent queuing (IQ) PIC, the PIC reboots.</p>
Options	<p><b>weighted-averaged</b>—Configure the IQ PIC to base RED processing on a simple moving average of instantaneous buffer occupancy values instead of an instantaneous buffer occupancy.</p> <p><b>instant-usage-weight-exponent <i>exponent-value</i></b>—(Optional) Specify the integer to be used as the negative exponent of 2 to express a weight value. The PIC performs weighted RED (WRED) by based on a calculation of average buffer occupancy that applies the specified weight value to the instantaneous buffer occupancy and then factors the weighted value into the calculation of average buffer occupancy. Valid exponent range is from 1 through 31 (weight values from <math>2^{-1}</math> through <math>2^{-31}</math>). If you do not specify this option, the default exponent value is 0, which results in a weight value of <math>2^0 = 1</math>. With a weight value of 1, the calculation of weighted average buffer occupancy yields the same value as the simple average buffer occupancy.</p>
<div> <b>NOTE:</b> You can specify an exponent value greater than 31, and the value displays in the output of show commands. However, the PIC replaces the out-of-range value with the <i>operational</i> value of 31, which results in a weight value of <math>2^{-31} = 1 / 2^{31} = 0.0000000004656612873077392578125</math>.</div>	
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"><li>Managing Transient Traffic Bursts by Configuring Weighted RED Buffer Occupancy</li></ul>

- *Example: Managing Transient Traffic Bursts by Configuring Weighted RED Buffer Occupancy*

## traffic-manager

---

**List of Syntax**    [Syntax \(MX Series\) Configure Queue Monitoring on page 234](#)  
[Syntax \(MX Series, T Series\) on page 234](#)  
[Syntax \(M Series\) on page 234](#)  
[Syntax \(vSRX\) on page 234](#)

**Syntax (MX Series)  
Configure Queue  
Monitoring**

```
traffic-manager {  
  egress-shaping-overhead number;  
  ingress-shaping-overhead number;  
  mode {  
    egress-only;  
    ingress-and-egress;  
    session-shaping;  
  }  
  packet-timestamp {  
    enable;  
  }  
  queue-threshold {  
    fabric-queue {  
      priority high/low {  
        threshold threshold-percentage;  
      }  
    }  
    wan-queue {  
      priority high/medium-high/medium-low/low {  
        threshold threshold-percentage;  
      }  
    }  
  }  
}
```

**Syntax (MX Series, T  
Series)**

```
traffic-manager {  
  egress-shaping-overhead number;  
  ingress-shaping-overhead number;  
  mode {  
    egress-only;  
    ingress-and-egress;  
  }  
}
```

**Syntax (M Series)**

```
traffic-manager {  
  egress-shaping-overhead number;  
  ingress-shaping-overhead number;  
  mode {  
    egress-only;  
    ingress-and-egress;  
    session-shaping;  
  }  
}
```

**Syntax (vSRX)**    traffic-manager {

```

    egress-shaping-overhead number;
}

```

**Hierarchy Level** [edit chassis fpc *slot-number*],  
 [edit chassis fpc *slot-number* pic *pic-number*],  
 [edit chassis lcc *number* fpc *slot-number* pic *pic-number*] (Routing Matrix)

**Release Information** Statement introduced in Junos OS Release 8.3.

**Description** Enable CoS queuing, scheduling, and shaping on an L2TP session.



**NOTE:** Committing changes to `traffic-manager` automatically restarts any necessary components (PICs, DPCs, or FPCs).

**Options** **queue-threshold**—Enable monitoring of Fabric and WAN queues. When the **fabric-queue** statement is configured, an SNMP trap is generated whenever the fabric power utilization exceeds the configured threshold value.

When **wan-queue** is configured, an SNMP trap is generated whenever the WAN queue depth exceeds the configured threshold value.

**egress-shaping-overhead number**—When traffic management (queueing and scheduling) is configured on the egress side, the number of CoS shaping overhead bytes to add to the packets on the egress interface.

Replace **number** with a value from **-63** through **192** bytes.

For vSRX, replace **number** with a value from **-62** through **192** bytes.



**NOTE:** The L2 headers (DA/SA + VLAN tags) are automatically a part of the shaping calculation.

---

**ingress-shaping-overhead number**—When L2TP session shaping is configured, the number of CoS shaping overhead bytes to add to the packets on the ingress side of the L2TP tunnel to determine the shaped session packet length.

When session shaping is not configured and traffic management (queueing and scheduling) is configured on the ingress side, the number of CoS shaping overhead bytes to add to the packets on the ingress interface.

Replace **number** with a value from **-63** through **192** bytes.

**mode**—Configure CoS traffic manager mode of operation. This option has the following suboptions:

- **egress-only**—Enable CoS queueing and scheduling on the egress side for the PIC that houses the interface. This is the default mode for an Enhanced Queueing (EQ) DPC on MX Series routers.



**NOTE:** If ingress packet drops are observed at a high rate for an IQ2 or IQ2E PIC, configure the **traffic-manager** statement to work in the **egress-only** mode.

---

- **ingress-and-egress**—Enable CoS queueing and scheduling on both the egress and ingress sides for the PIC. This is the default mode for IQ2 and IQ2E PICs on M Series and T Series routers.



**NOTE:**

- For EQ DPCs, you must configure the **traffic-manager** statement with **ingress-and-egress** mode to enable ingress CoS on the EQ DPC.

- EQ DPCs have 250 ms of buffering, with only egress queueing (default mode). When `ingress-and-egress` is configured, the buffer is partitioned as 50 ms for the ingress direction and 200 ms for the egress direction.

- 
- **session-shaping**—(M Series routers only) Configure the IQ2 PIC mode for session-aware traffic shaping to enable L2TP session shaping.

**Required Privilege** interface—To view this statement in the configuration.  
**Level** interface-control—To add this statement to the configuration.

**Related Documentation**

- *Configuring CoS for L2TP Tunnels on ATM Interfaces*
- *Enabling a Timestamp for Ingress and Egress Queue Packets*
- *show interfaces queue*





## CHAPTER 13

# Configuration Statements: System-Specific

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- [host-name](#) on page 241
- [location \(System\)](#) on page 242
- [scripts](#) on page 244
- [syslog \(System\)](#) on page 247
- [time-zone](#) on page 249

## backup-router

---

<b>Syntax</b>	<code>backup-router address &lt;destination destination-address&gt;;</code>
<b>Hierarchy Level</b>	[edit system]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4.
<b>Description</b>	Set a default router (running IP version 4 [IPv4]) to use while the local router (running IPv4) is booting and if the routing protocol processes fail to start. The Junos OS removes the route to this router as soon as the software starts.
<b>Options</b>	<p><b>address</b>—Address of the default router.</p> <p><b>destination destination-address</b>—(Optional) Destination address that is reachable through the backup router. You can include this option to achieve network reachability while loading, configuring, and recovering the router, but without the risk of installing a default route in the forwarding table.</p> <p><b>Default:</b> All hosts (default route) are reachable through the backup router.</p>
<b>Required Privilege Level</b>	<p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Configuring a Backup Router</i></li></ul>

---

## host-name

---

<b>Syntax</b>	<code>host-name <i>hostname</i>;</code>
<b>Hierarchy Level</b>	[edit system]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Set the hostname of the router or switch.
<b>Options</b>	<b><i>hostname</i></b> —Name of the router or switch. The hostname can contain any combination of alphabetic characters, numbers, dashes, and underscores, and can include up to 255 characters. No other special characters are allowed.
<b>Required Privilege Level</b>	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Understanding Hostnames</i></li><li>• <i>Configuring the Hostname of a Router or Switch by Using a Configuration Group</i></li></ul>

## location (System)

---

<b>Syntax</b>	<pre>location {     altitude <i>feet</i>;     building <i>name</i>;     country-code <i>code</i>;     floor <i>number</i>;     hcoord <i>horizontal-coordinate</i>;     lata <i>transport-area</i>;     latitude <i>degrees</i>;     longitude <i>degrees</i>;     npa-nxx <i>number</i>;     postal-code <i>postal-code</i>;     rack <i>number</i>;     vcoord <i>vertical-coordinate</i>; }</pre>
<b>Hierarchy Level</b>	[edit system]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Configure the system location in various formats.
<b>Options</b>	<p><b>altitude <i>feet</i></b>—Number of feet above sea level.</p> <p><b>building <i>name</i></b>—Name of building. The name of the building can be 1 to 28 characters in length. If the string contains spaces, enclose it in quotation marks (" ").</p> <p><b>country-code <i>code</i></b>—Two-letter country code.</p> <p><b>floor <i>number</i></b>—Floor in the building.</p> <p><b>hcoord <i>horizontal-coordinate</i></b>—Bellcore Horizontal Coordinate.</p> <p><b>lata <i>transport-area</i></b>—Local Access Transport Area.</p> <p><b>latitude <i>degrees</i></b>—Latitude in degree format.</p> <p><b>longitude <i>degrees</i></b>—Longitude in degree format.</p> <p><b>npa-nxx <i>number</i></b>—First six digits of the phone number (area code and exchange).</p> <p><b>postal-code <i>postal-code</i></b>—Postal code.</p> <p><b>rack <i>number</i></b>—Rack number.</p> <p><b>vcoord <i>vertical-coordinate</i></b>—Bellcore Vertical Coordinate.</p>
<b>Required Privilege Level</b>	system—To view this statement in the configuration. system-control—To add this statement to the configuration.

- Related Documentation**
- *Specifying the Physical Location of the Router or Switch*

## scripts

---

**Syntax** `scripts {`

```
    commit {
        allow-transients;
        dampen {
            dampen-options {
                cpu-factor cpu-factor;
                line-interval line-interval;
                time-interval time-interval;
            }
        }
    }
    direct-access;
    file filename {
        checksum (md5 | sha-256 | sha1) hash;
        optional;
        refresh;
        refresh-from url;
        routing-instance routing-instance-name;
        source url;
    }
    max-datasize size;
    refresh;
    refresh-from url;
    traceoptions {
        file <filename> <files number> <size size> <world-readable | no-world-readable>;
        flag flag;
        no-remote-trace;
    }
}
language python;
load-scripts-from-flash;
op {
    allow-url-for-python;
    dampen {
        dampen-options {
            cpu-factor cpu-factor;
            line-interval line-interval;
            time-interval time-interval;
        }
    }
}
file filename {
    allow-commands "regular-expression";
    arguments {
        argument-name {
            description descriptive-text;
        }
    }
    checksum (md5 | sha-256 | sha1) hash;
    command filename-alias;
    dampen {
        dampen-options {
            cpu-factor cpu-factor;
            line-interval line-interval;
```

```

        time-interval time-interval;
    }
}
description descriptive-text;
refresh;
refresh-from url;
routing-instance routing-instance-name;
source url;
}
max-datasize size;
no-allow-url
refresh;
refresh-from url;
traceoptions {
    file <filename> <files number> <size size> <world-readable | no-world-readable>;
    flag flag;
    no-remote-trace;
}
}
snmp {
    file filename {
        checksum (md5 | sha-256 | sha1) hash;
        oid id {
            priority;
        }
        python-script-user username;
        refresh;
        refresh-from;
        routing-instance routing-instance-name;
        source;
    }
    max-datasize size;
    refresh;
    refresh-from;
    traceoptions {
        file <filename> <files number> <size size> <world-readable | no-world-readable>;
        flag flag;
        no-remote-trace;
    }
}
synchronize;
}

```

**Hierarchy Level** [edit system]

**Release Information** Statement introduced in Junos OS Release 7.4.  
Statement introduced in Junos OS Release 11.1 for the QFX Series.  
Statement introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

**Description** Configure scripting mechanisms for Junos OS commit, op, or SNMP scripts.



**NOTE:** The traceoptions statement is not supported on QFabric systems.

**Options** The remaining statements are explained separately. See [CLI Explorer](#).

**Required Privilege** maintenance—To view this statement in the configuration.  
**Level** maintenance-control—To add this statement to the configuration.

**Related Documentation**

- *Commit Script Overview*
- *Op Script Overview*
- *Storing and Enabling Scripts*



## syslog (System)

```

Syntax  syslog {
        allow-duplicates;
        archive {
            (binary-data| no-binary-data);
            files number;
            size maximum-file-size;
            start-time "YYYY-MM-DD.hh:mm";
            transfer-interval minutes;
            (world-readable | no-world-readable);
        }
        console {
            facility severity;
        }
        file filename {
            facility severity;
            explicit-priority;
            match "regular-expression";
            archive {
                (binary-data| no-binary-data);
                files number;
                size maximum-file-size;
                start-time "YYYY-MM-DD.hh:mm";
                transfer-interval minutes;
                (world-readable | no-world-readable);
            }
            structured-data {
                brief;
            }
        }
        host (hostname | other-routing-engine | scc-master) {
            facility severity;
            explicit-priority;
            facility-override facility;
            log-prefix string;
            match "regular-expression";
            source-address source-address;
            structured-data {
                brief;
            }
            port port number;
        }
        log-rotate-frequency frequency;
        server {
            routing-instances (routing-instance-name | all | default) {
                disable;
            }
            source-address source-address;
            time-format (millisecond | year | year millisecond);
            user (username | *) {
                facility severity;
                match "regular-expression";
            }
        }
    }

```

<b>Hierarchy Level</b>	[edit system]
<b>Release Information</b>	<p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Statement introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Statement introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>IPv6 addresses using dedicated management instance <code>mgmt_junos</code> supported in Junos OS Release 18.1R1.</p>
<b>Description</b>	<p>Configure the types of system log messages to send to files, to a remote destination, to user terminals, or to the system console.</p> <p>The remaining statements are explained separately.</p>
<b>Options</b>	<p><b>archive</b>—Define parameters for archiving log messages. As of Junos OS 18.1R1, supports IPv6 addresses using dedicated management instance <code>mgmt_junos</code>.</p> <p><b>console</b>—Send log messages of a specified class and severity to the console.</p> <p><b>file</b>—Send log messages to a named file. As of Junos OS 18.1R1, supports IPv6 addresses using dedicated management instance <code>mgmt_junos</code>.</p> <p><b>host</b> —Remote location to be notified of specific log messages. As of Junos OS 18.1R1, supports IPv6 addresses using dedicated management instance <code>mgmt_junos</code>.</p> <p><b>log-rotate-frequency</b>—Configure the interval for checking logfile size and archiving messages.</p> <p><b>server</b>—Enable a syslog server for compute nodes and VMs in an App Engine.</p> <p><b>source-address</b>—Include a specified address as the source address for log messages. As of Junos OS 18.1R1, supports IPv6 addresses using dedicated management instance <code>mgmt_junos</code>.</p> <p><b>time-format</b>—Additional information to include in the system log time stamp.</p> <p><b>user</b>—Notify a specific user of the log event.</p>
<b>Required Privilege Level</b>	<p><b>system</b>—To view this statement in the configuration.</p> <p><b>system-control</b>—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Junos OS System Log Overview</i></li><li>• <a href="#">System Log Explorer</a></li></ul>

## time-zone

<b>Syntax</b>	<code>time-zone (GMT <i>hour-offset</i>   <i>time-zone</i>);</code>
<b>Hierarchy Level</b>	[edit system]
<b>Release Information</b>	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. <b>GMT <i>hour-offset</i></b> option added in Junos OS Release 7.4.
<b>Description</b>	Set the local time zone. To have the time zone change take effect for all processes running on the router or switch, you must reboot the router or switch.
<b>Default</b>	UTC
<b>Options</b>	<p><b>GMT <i>hour-offset</i></b>—Set the time zone relative to UTC time.  <b>Range:</b> -14 through +12  <b>Default:</b> 0</p> <p><b><i>time-zone</i></b>—Specify the time zone as <b>UTC</b>, which is the default time zone, or as a string such as PDT (Pacific Daylight Time), or use one of the following continents and major cities:</p> <p>Africa/Abidjan, Africa/Accra, Africa/Addis_Ababa, Africa/Algiers, Africa/Asmera, Africa/Bamako, Africa/Bangui, Africa/Banjul, Africa/Bissau, Africa/Blantyre, Africa/Brazzaville, Africa/Bujumbura, Africa/Cairo, Africa/Casablanca, Africa/Ceuta, Africa/Conakry, Africa/Dakar, Africa/Dar_es_Salaam, Africa/Djibouti, Africa/Douala, Africa/El_Aaiun, Africa/Freetown, Africa/Gaborone, Africa/Harare, Africa/Johannesburg, Africa/Kampala, Africa/Khartoum, Africa/Kigali, Africa/Kinshasa, Africa/Lagos, Africa/Libreville, Africa/Lome, Africa/Luanda, Africa/Lubumbashi, Africa/Lusaka, Africa/Malabo, Africa/Maputo, Africa/Maseru, Africa/Mbabane, Africa/Mogadishu, Africa/Monrovia, Africa/Nairobi, Africa/Ndjamena, Africa/Niamey, Africa/Nouakchott, Africa/Ouagadougou, Africa/Porto-Novo, Africa/Sao_Tome, Africa/Timbuktu, Africa/Tripoli, Africa/Tunis, Africa/Windhoek</p> <p>America/Adak, America/Anchorage, America/Anguilla, America/Antigua, America/Aruba, America/Asuncion, America/Barbados, America/Belize, America/Bogota, America/Boise, America/Buenos_Aires, America/Caracas, America/Catamarca, America/Cayenne, America/Cayman, America/Chicago, America/Cordoba, America/Costa_Rica, America/Cuiaba, America/Curacao, America/Dawson, America/Dawson_Creek, America/Denver, America/Detroit, America/Dominica, America/Edmonton, America/EL_Salvador, America/Ensenada, America/Fortaleza, America/Glace_Bay, America/Godthab, America/Goose_Bay, America/Grand_Turk, America/Grenada, America/Guadeloupe, America/Guatemala, America/Guayaquil, America/Guyana, America/Halifax, America/Havana, America/Indiana/Knox, America/Indiana/Marengo, America/Indiana/Vevay, America/Indianapolis, America/Inuvik, America/Iqaluit, America/Jamaica, America/Jujuy, America/Juneau, America/La_Paz, America/Lima, America/Los_Angeles, America/Louisville, America/Maceio, America/Managua, America/Manaus, America/Martinique, America/Mazatlan, America/Mendoza, America/Menominee, America/Mexico_City, America/Miquelon, America/Montevideo, America/Montreal, America/Montserrat, America/Nassau, America/New_York,</p>

America/Nipigon, America/Nome, America/Noronha, America/Panama,  
 America/Pangnirtung, America/Paramaribo, America/Phoenix, America/Port-au-Prince,  
 America/Port\_of\_Spain, America/Porto\_Acre, America/Puerto\_Rico, America/Rainy\_River,  
 America/Rankin\_Inlet, America/Regina, America/Rosario, America/Santiago,  
 America/Santo\_Domingo, America/Sao\_Paulo, America/Scoresbysund,  
 America/Shiprock, America/St\_Johns, America/St\_Kitts, America/St\_Lucia,  
 America/St\_Thomas, America/St\_Vincent, America/Swift\_Current, America/Tegucigalpa,  
 America/Thule, America/Thunder\_Bay, America/Tijuana, America/Tortola,  
 America/Vancouver, America/Whitehorse, America/Winnipeg, America/Yakutat,  
 America/Yellowknife  
 Antarctica/Casey, Antarctica/DumontDURville, Antarctica/Mawson, Antarctica/McMurdo,  
 Antarctica/Palmer, Antarctica/South\_Pole  
 Arctic/Longyearbyen  
 Asia/Aden, Asia/Alma-Ata, Asia/Amman, Asia/Anadyr, Asia/Aqtau, Asia/Aqtobe,  
 Asia/Ashkhabad, Asia/Baghdad, Asia/Bahrain, Asia/Baku, Asia/Bangkok, Asia/Beirut,  
 Asia/Bishkek, Asia/Brunei, Asia/Chungking, Asia/Colombo, Asia/Dacca, Asia/Damascus,  
 Asia/Dubai, Asia/Dushanbe, Asia/Gaza, Asia/Harbin, Asia/Hong\_Kong, Asia/Irkutsk,  
 Asia/Ishigaki, Asia/Jakarta, Asia/Jayapura, Asia/Jerusalem, Asia/Kabul, Asia/Kamchatka,  
 Asia/Karachi, Asia/Kashgar, Asia/Katmandu, Asia/Kolkata , Asia/Krasnoyarsk,  
 Asia/Kuala\_Lumpur, Asia/Kuching, Asia/Kuwait, Asia/Macao, Asia/Magadan, Asia/Manila,  
 Asia/Muscat, Asia/Nicosia, Asia/Novosibirsk, Asia/Omsk, Asia/Phnom\_Penh,  
 Asia/Pyongyang, Asia/Qatar, Asia/Rangoon, Asia/Riyadh, Asia/Saigon, Asia/Seoul,  
 Asia/Shanghai, Asia/Singapore, Asia/Taipei, Asia/Tashkent, Asia/Tbilisi, Asia/Tehran,  
 Asia/Thimbu, Asia/Tokyo, Asia/Ujung\_Pandang, Asia/Ulan\_Bator, Asia/Urumqi,  
 Asia/Vientiane, Asia/Vladivostok, Asia/Yakutsk, Asia/Yekaterinburg, Asia/Yerevan  
 Atlantic/Azores, Atlantic/Bermuda, Atlantic/Canary, Atlantic/Cape\_Verde, Atlantic/Faeroe,  
 Atlantic/Jan\_Mayen, Atlantic/Madeira, Atlantic/Reykjavik, Atlantic/South\_Georgia,  
 Atlantic/St\_Helena, Atlantic/Stanley  
 Australia/Adelaide, Australia/Brisbane, Australia/Broken\_Hill, Australia/Darwin,  
 Australia/Hobart, Australia/Lindeman, Australia/Lord\_Howe, Australia/Melbourne,  
 Australia/Perth, Australia/Sydney  
 Europe/Amsterdam, Europe/Andorra, Europe/Athens, Europe/Belfast, Europe/Belgrade,  
 Europe/Berlin, Europe/Bratislava, Europe/Brussels, Europe/Bucharest, Europe/Budapest,  
 Europe/Chisinau, Europe/Copenhagen, Europe/Dublin, Europe/Gibraltar, Europe/Helsinki,  
 Europe/Istanbul, Europe/Kaliningrad, Europe/Kiev, Europe/Lisbon, Europe/Ljubljana,  
 Europe/London, Europe/Luxembourg, Europe/Madrid, Europe/Malta, Europe/Minsk,  
 Europe/Monaco, Europe/Moscow, Europe/Oslo, Europe/Paris, Europe/Prague,  
 Europe/Riga, Europe/Rome, Europe/Samara, Europe/San\_Marino, Europe/Sarajevo,  
 Europe/Simferopol, Europe/Skopje, Europe/Sofia, Europe/Stockholm, Europe/Tallinn,  
 Europe/Tirane, Europe/Vaduz, Europe/Vatican, Europe/Vienna, Europe/Vilnius,  
 Europe/Warsaw, Europe/Zagreb, Europe/Zurich  
 Indian/Antananarivo, Indian/Chagos, Indian/Christmas, Indian/Cocos, Indian/Comoro,  
 Indian/Kerguelen, Indian/Mahe, Indian/Maldives, Indian/Mauritius, Indian/Mayotte,  
 Indian/Reunion  
 Pacific/Apia, Pacific/Auckland, Pacific/Chatham, Pacific/Easter, Pacific/Efate,  
 Pacific/Enderbury, Pacific/Fakaofo, Pacific/Fiji, Pacific/Funafuti, Pacific/Galapagos,  
 Pacific/Gambier, Pacific/Guadacanal, Pacific/Guam, Pacific/Honolulu, Pacific/Johnston,  
 Pacific/Kiritimati, Pacific/Kosrae, Pacific/Kwajalein, Pacific/Majuro, Pacific/Marquesas,  
 Pacific/Midway, Pacific/Nauru, Pacific/Niue, Pacific/Norfolk, Pacific/Noumea,  
 Pacific/Pago\_Pago, Pacific/Palau, Pacific/Pitcairn, Pacific/Ponape, Pacific/Port\_Moresby,  
 Pacific/Rarotonga, Pacific/Saipan, Pacific/Tahiti, Pacific/Tarawa, Pacific/Tongatapu,  
 Pacific/Truk, Pacific/Wake, Pacific/Wallis, Pacific/Yap

<b>Required Privilege</b>	system—To view this statement in the configuration.
<b>Level</b>	system-control—To add this statement to the configuration.

- Related Documentation**
- *Modifying the Default Time Zone for a Router or Switch Running Junos OS*
  - *System Management Configuration Statements*



## CHAPTER 14

# Configuration Statements: Syslog-Specific

- `file` (System Logging) on page 254
- `host` (System) on page 255
- `source-address` (NTP, RADIUS, System Logging, or TACACS+) on page 257

## file (System Logging)


---

Syntax	<pre>file <i>filename</i> {     <i>facility severity</i>;     archive {         files <i>number</i>;         size <i>size</i>;         (no-world-readable   world-readable);     }     explicit-priority;     match "<i>regular-expression</i>";     match-string <i>string-name</i>;     structured-data {         brief;     } }</pre>
Hierarchy Level	[edit system syslog]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 11.1 for the QFX Series.
Description	Configure the logging of system messages to a file.
Options	<p><b>facility</b>—Class of messages to log. To specify multiple classes, include multiple <b>facility severity</b> statements. For a list of the facilities, see <i>Junos OS System Logging Facilities</i>.</p> <p><b>file filename</b>—File in the <b>/var/log</b> directory in which to log messages from the specified facility. To log messages to more than one file, include more than one <b>file</b> statement.</p> <p><b>severity</b>—Severity of the messages that belong to the facility specified by the paired <b>facility</b> name. Messages with severities of the specified level and higher are logged. For a list of the severities, see <i>System Log Message Severity Levels</i>.</p> <p>The remaining statements are explained separately. See <a href="#">CLI Explorer</a>.</p>
Required Privilege Level	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"><li>• <i>Directing System Log Messages to a Log File</i></li><li>• <i>Junos OS System Log Reference for Security Devices</i></li></ul>




## host (System)

Syntax	<pre> host (hostname   other-routing-engine) {     facility severity;     exclude-hostname     explicit-priority;     facility-override facility;     log-prefix string;     match "regular-expression";     match-string string-name;     source-address source-address;     structured-data {         brief;     } } </pre>
QFX Series and OCX Series	<pre> host (hostname {     facility severity;     explicit-priority;     facility-override facility;     log-prefix string;     match "regular-expression";     match-string string-name;     port;     source-address source-address; } </pre>
TX Matrix Router and EX Series Switches	<pre> host (hostname   other-routing-engine   scc-master) {     facility severity;     explicit-priority;     facility-override facility;     log-prefix string;     match "regular-expression";     match-string string-name;     port;     source-address source-address; } </pre>
TX Matrix Plus Router	<pre> host (hostname   other-routing-engine   sfc0-master) {     facility severity;     allow-duplicates;     explicit-priority;     facility-override facility;     log-prefix (System) string;     match "regular-expression";     match-string string-name;     port;     source-address source-address; } </pre>
Hierarchy Level	<pre> [edit logical-systems logical-system-name system syslog], [edit system syslog] </pre>

<b>Release Information</b>	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 11.1 for the QFX Series. Statement introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Configure the logging of system messages to a remote destination.
<b>Options</b>	<p><b>facility</b>—Class of messages to log. To specify multiple classes, include multiple <b>facility severity</b> statements. For a list of the facilities, see <i>Junos OS System Logging Facilities</i>.</p> <p><b>hostname</b>—IPv4 address, IPv6 address, or fully qualified hostname of the remote machine to which to direct messages. To direct messages to multiple remote machines, include a <b>host</b> statement for each one.</p> <p><b>other-routing-engine</b>—Direct messages to the other Routing Engine on a router or switch with two Routing Engines installed and operational.</p> <div> <b>NOTE:</b> The <b>other-routing-engine</b> option is not applicable to the QFX Series and OCX Series.</div> <p><b>port</b>—Port number of the remote syslog server that can be modified.</p> <p><b>scc-master</b>—(TX Matrix routers only) On a T640 router that is part of a routing matrix, direct messages to the TX Matrix router.</p> <p><b>severity</b>—Severity of the messages that belong to the facility specified by the paired <b>facility</b> name. Messages with severities of the specified level and higher are logged. For a list of the severities, see <i>System Log Message Severity Levels</i>.</p> <p><b>sfc0-master</b>—(TX Matrix Plus routers only) On a T1600 or T4000 router that is part of a routing matrix, direct messages to the TX Matrix Plus router.</p> <p>The remaining statements are explained separately. See <a href="#">CLI Explorer</a>.</p>
<b>Required Privilege Level</b>	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Directing System Log Messages to a Remote Machine or the Other Routing Engine</i></li><li>• <i>Directing Messages to a Remote Destination from the Routing Matrix Based on the TX Matrix Router</i></li><li>• <i>Directing Messages to a Remote Destination from the Routing Matrix Based on a TX Matrix Plus Router</i></li><li>• <i>Junos OS System Log Reference</i></li></ul>

## source-address (NTP, RADIUS, System Logging, or TACACS+)

<b>Syntax</b>	<code>source-address <i>source-address</i> routing-instance &lt;<i>routing-instance-name</i>&gt;;</code>
<b>Hierarchy Level</b>	<p>[edit system accounting destination radius server <i>server-address</i>],          [edit system accounting destination tacplus server <i>server-address</i>],          [edit system ntp],          [edit system radius-server <i>server-address</i>],          [edit system <a href="#">syslog</a>],          [edit system tacplus-server <i>server-address</i>]</p>
<b>Release Information</b>	<p>Statement introduced before Junos OS Release 7.4.          Statement introduced in Junos OS Release 9.0 for EX Series switches.  <b>routing-instance</b> option added in Junos OS Release 14.1</p>
<b>Description</b>	Specify a source address for each configured IPv4 or IPv6 TACACS+ server, RADIUS server, NTP server, or the source address to record in system log messages that are directed to a remote machine.
<b>Options</b>	<p><b><i>source-address</i></b>—A valid IP address configured on one of the router or switch interfaces. For system logging, the address is recorded as the message source in messages sent to the remote machines specified in all <b>host <i>hostname</i></b> statements at the [edit system <b>syslog</b>] hierarchy level, but not for messages directed to the other Routing Engine or to the TX Matrix router or TX Matrix Plus router in a routing matrix based on a TX Matrix router or TX Matrix Plus router.</p> <p><b>routing-instance <i>routing-instance-name</i></b>—(Optional) The routing instance name in which the source address is defined. (Not supported on EX series platforms)</p>
<div>  <p><b>NOTE:</b> On MX Series platforms, this option is supported only under [edit system ntp] hierarchy level.</p> </div>	
<b>Default:</b>	The primary address of the interface
<b>Required Privilege Level</b>	<p>system—To view this statement in the configuration.          system-control—To add this statement to the configuration.</p>
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>Configuring RADIUS Server Authentication</li> <li>Synchronizing and Coordinating Time Distribution Using NTP</li> <li>Specifying an Alternative Source Address for System Log Messages</li> </ul>



## CHAPTER 15

# Operational Commands: Chassis-Specific

- clear chassis alarms fabric degraded
- clear chassis display message
- clear system reboot
- request chassis cb
- request chassis cip
- request chassis fabric guided-cabling disable
- request chassis fabric guided-cabling enable
- request chassis fpc
- request chassis fpm resync
- request chassis lcc
- request chassis pic
- request chassis routing-engine master
- request chassis scg
- request chassis sib
- request chassis sib train-link-transmit slot
- request chassis sib train-link-receive slot
- request chassis sib f13 train-link-transmit slot
- request chassis sib f13 train-link-receive slot
- request chassis spmb restart
- set chassis display message
- show chassis alarms
- show chassis cip
- show chassis craft-interface
- show chassis environment
- show chassis environment cb
- show chassis environment cip
- show chassis environment fpc
- show chassis environment fpm

- `show chassis environment lcc`
- `show chassis environment pem`
- `show chassis environment routing-engine`
- `show chassis environment scg`
- `show chassis environment sfc`
- `show chassis environment sib`
- `show chassis ethernet-switch`
- `show chassis fabric errors`
- `show chassis fabric fpcs`
- `show chassis fabric optics`
- `show chassis fabric optical-links`
- `show chassis fabric plane`
- `show chassis fabric plane-location`
- `show chassis fabric topology`
- `show chassis firmware`
- `show chassis fpc`
- `show chassis hardware`
- `show chassis lccs`
- `show chassis lcc-mode`
- `show chassis location`
- `show chassis mac-addresses`
- `show chassis psd`
- `show chassis pic`
- `show chassis routing-engine`
- `show chassis sibs`
- `show chassis spmb`
- `show chassis spmb sibs`

## clear chassis alarms fabric degraded

<b>Syntax (TX Matrix Plus Router with 3D SIBs)</b>	clear chassis alarms fabric degraded lcc <i>number</i> fpc <i>number</i>
<b>Release Information</b>	Command introduced in Junos OS Release 13.2 for a routing matrix with a TX Matrix Plus routers and 3D SIBs.
<b>Description</b>	Clear the fabric degraded alarm for an FPC.
<b>Options</b>	<p><b>lcc <i>number</i></b>—Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul> <p><b>fpc <i>number</i></b>—Flexible PIC Concentrator (FPC) slot number. On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, specify the number of a T1600 or T4000 router by using the <b>lcc <i>number</i></b> option and replace <b>fpc <i>number</i></b> with a value from 0 through 7.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show system alarms on page 1344</a></li> </ul>

## Sample Output

### show system alarms (TX Matrix Plus router with 3D SIBs)

```

user@host> show system alarms

sfc0-re0:
-----
2 alarms currently active
Alarm time           Class  Description
2013-05-08 18:13:58 UTC Major  LCC 0 Major Errors
2013-05-08 17:48:46 UTC Major  LCC 7 Major Errors

lcc0-re1:
-----
3 alarms currently active
Alarm time           Class  Description
2013-05-08 17:35:34 UTC Minor  SIB 3 Not Online
2013-05-08 17:35:34 UTC Minor  SIB 2 Not Online
2013-05-08 18:19:24 UTC Major  FPC 5 degraded fabric condition detected

```

```
user@host> clear chassis alarms fabric degraded lcc 0 fpc 5
lcc0-re1:
```

```
-----
user@host> show system alarms
```

```
sfc0-re0:
```

```
-----
2 alarms currently active
```

Alarm time	Class	Description
2013-05-08 18:13:58 UTC	Major	LCC 0 Major Errors
2013-05-08 17:48:46 UTC	Major	LCC 7 Major Errors

```
lcc0-re1:
```

```
-----
2 alarm currently active
```

Alarm time	Class	Description
2013-05-08 17:36:34 UTC	Minor	SIB 3 Not Online
2013-05-08 17:36:34 UTC	Minor	SIB 2 Not Online



## clear chassis display message

<b>List of Syntax</b>	<a href="#">Syntax on page 263</a> <a href="#">Syntax (TX Matrix Router) on page 263</a> <a href="#">Syntax (TX Matrix Plus Router) on page 263</a> <a href="#">Syntax (QFabric Systems) on page 263</a>
<b>Syntax</b>	clear chassis display message
<b>Syntax (TX Matrix Router)</b>	clear chassis display message <lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	clear chassis display message <lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (QFabric Systems)</b>	clear chassis display message <node-device <i>name</i>   interconnect-device <i>name</i> >
<b>Release Information</b>	<p>Command introduced in Junos OS Release 7.5.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option for the TX Matrix Plus routers introduced in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
<b>Description</b>	<p>(M40e, M160, M320, T Series routers, EX Series, and QFabric systems only) Clear or stop a text message on the craft interface display, which is on the front of the router or switch or on the LCD panel display on the router or switch. The craft interface alternates the display of text messages with standard craft interface messages, switching between messages every 2 seconds. By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.</p>
<b>Options</b>	<p><b>none</b>—Clear or stop a text message on the craft interface display.</p> <p><b>interconnect-device <i>name</i></b>—(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Interconnect device.</p> <p><b>lcc <i>number</i></b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**node-device *name***—(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Node device in a Node group.

**scc**—(TX Matrix routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**Required Privilege Level**

clear

**Related Documentation**

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\)](#)
- [set chassis display message on page 312](#)
- [show chassis craft-interface on page 336](#)

**List of Sample Output**

[clear chassis display message on page 264](#)

**Output Fields**

See [show chassis craft-interface](#) for an explanation of output fields.

## Sample Output

### clear chassis display message

The following example displays and then clears the text message on the craft interface display:

```
user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
-----
```

```

Green .. *.. * *.
Red .....
LCD screen:
+-----+
|NOC contact Dusty |
|(888) 526-1234    |
+-----+

user@host> clear chassis display message

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0 1 2 3 4 5 6 7
-----
Green .. *.. * *.
Red .....
LCD screen:
+-----+
|host             |
|Up: 0+17:05:47   |
|                 |
|Temperature OK   |
+-----+

```

## clear system reboot

---

<b>List of Syntax</b>	<a href="#">Syntax on page 266</a>
	<a href="#">Syntax (EX Series Switches) on page 266</a>
	<a href="#">Syntax (TX Matrix Router) on page 266</a>
	<a href="#">Syntax (TX Matrix Plus Router) on page 266</a>
	<a href="#">Syntax (QFX Series) on page 266</a>
<b>Syntax</b>	<code>clear system reboot</code> <code>&lt;both-routing-engines&gt;</code>
<b>Syntax (EX Series Switches)</b>	<code>clear system reboot</code> <code>&lt;all-members&gt;</code> <code>&lt;both-routing-engines&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>clear system reboot</code> <code>&lt;both-routing-engines&gt;</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>clear system reboot</code> <code>&lt;both-routing-engines&gt;</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</code>
<b>Syntax (QFX Series)</b>	<code>clear system reboot</code> <code>&lt;infrastructure <i>name</i>&gt;</code> <code>&lt;interconnect-device <i>name</i>&gt;</code> <code>&lt;node-group <i>name</i>&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Clear any pending system software reboots or halts. When issued on a TX Matrix router without any options, the default behavior clears all pending system software reboots or halts on all T640 routers connected to the TX Matrix router. When issued on a TX Matrix Plus router without any options, the default behavior clears all pending system software reboots or halts on all T1600 or T4000 routers connected to the TX Matrix Plus router.
<b>Options</b>	<b>none</b> —Clear all pending system software reboots or halts.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Clear all halt or reboot requests for all the Routing Engines in the chassis.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, clear all halt or reboot requests for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, clear all halt or reboot requests on the l connected T1600 or T4000 LCCs.

**all-members**—(EX4200 switches only) (Optional) Clear all halt or reboot requests on all members of the Virtual Chassis configuration.

**both-routing-engines**—(Systems with multiple Routing Engines) (Optional) Clear all halt or reboot requests on both Routing Engines. On a TX Matrix router, clear both Routing Engines on all chassis connected to the TX Matrix router. Likewise, on a TX Matrix Plus router, clear both Routing Engines on all chassis connected to the TX Matrix Plus router.

**infrastructure *name***—(QFabric systems) (Optional) Clear all halt or reboot requests on the fabric control Routing Engines or fabric manager Routing Engines.

**interconnect-device *name***—(QFabric systems) (Optional) Clear all halt or reboot requests on the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, clear all halt or reboot requests for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, clear all halt or reboot requests for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Clear all halt or reboot requests on the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Clear all halt or reboot requests on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**node-group *name***—(QFabric systems) (Optional) Clear all halt or reboot requests on the Node group.

**scc**—(TX Matrix routers only) (Optional) Clear all halt or reboot requests for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Clear all halt or reboot requests for the TX Matrix Plus router. Replace ***number*** with 0.

**Required Privilege Level** maintenance

**Related Documentation**

- [request system reboot on page 1234](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

- [clear system reboot on page 269](#)
- [clear system reboot \(TX Matrix Router\) on page 269](#)
- [clear system reboot \(QFX Series\) on page 269](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### clear system reboot

```
user@host> clear system reboot
reboot requested by root at Sat Dec 12 19:37:34 1998
[process id 17855]
Terminating...
```

### clear system reboot (TX Matrix Router)

```
user@host> clear system reboot
scc-re0:
-----
No shutdown/reboot scheduled.
lcc0-re0:
-----
No shutdown/reboot scheduled.
lcc2-re0:
-----
No shutdown/reboot scheduled.
```

### clear system reboot (QFX Series)

```
user@switch> clear system reboot node-group node1
No shutdown/reboot scheduled.
```

## request chassis cb

<b>List of Syntax</b>	<a href="#">Syntax on page 270</a> <a href="#">Syntax (TX Matrix Router) on page 270</a> <a href="#">Syntax (TX Matrix Plus Router) on page 270</a> <a href="#">Syntax (QFabric System) on page 270</a> <a href="#">Syntax (EX9253 Switches) on page 270</a>
<b>Syntax</b>	<code>request chassis cb (offline   online) slot <i>slot-number</i></code>
<b>Syntax (TX Matrix Router)</b>	<code>request chassis cb (offline   online) &lt;slot <i>slot-number</i>   lcc <i>number</i> slot <i>cb-slot-number</i>   scc <i>number</i> slot <i>cb-slot-number</i>&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>request chassis cb (offline   online) &lt;slot <i>slot-number</i>   lcc <i>number</i> slot <i>cb-slot-number</i>   sfc <i>number</i> slot <i>cb-slot-number</i>&gt;</code>
<b>Syntax (QFabric System)</b>	<code>request chassis cb (offline   online) interconnect-device <i>name</i> slot <i>slot-number</i></code> <code>&lt;interconnect-device <i>name</i> slot <i>slot-number</i> (offline   online)&gt;</code>
<b>Syntax (EX9253 Switches)</b>	<code>request chassis cb (offline   online) <i>name</i> slot <i>slot-number</i></code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS 9.4 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS 11.3 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Series Switches.</p>
<b>Description</b>	(M120, M320, and MX Series routers and T Series routers, QFabric systems, and EX8200 switches only) Control the operation of the Control Board (CB).
<b>Options</b>	<b>offline</b> —Take the Control Board offline.



**NOTE:** On a QFabric system, to bring the backup Control Board on a QFX3008-I Interconnect device offline, issue the `request chassis cb slot backup-slot-number offline` command.





**NOTE:** Only backup Control Board can be turned offline or online. To turn a Control Board offline or to bring it back online, the Routing Engine should be turned offline first.

**online**—Bring the Control Board online.

**interconnect-device *name***—(QFabric systems only) (Optional) Bring the QFX3008-I Interconnect device Control Board either offline or online:

**slot *slot-number***—Control Board slot number:

- (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, if you specify the number of the T640 router by using the *lcc number* option (the recommended method), replace *cb-slot-number* with a value from 0 through 1.  
Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 or T4000 router by using the *lcc number* option (the recommended method), replace *cb-slot-number* with a value from 0 through 1.
- M320 router—Replace *slot-number* with a value from 0 through 1.
- MX480/MX240 routers—Replace *slot-number* with a value from 0 through 1.
- MX960 router—Replace *slot-number* with a value from 0 through 2.
- MX2020, MX2010, and MX2008 routers—Replace *slot-number* with 0 or 1.
- EX8208 switch—Replace *slot-number* with a value from 0 through 2.
- EX8216 switch—Replace *slot-number* with a value from 0 through 1.
- QFabric System—Replace *slot-number* with a value from 0 through 1.

**lcc *number***—(TX Matrix, TX Matrix Plus routers only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**sfc *number***—(TX Matrix Plus routers only) (Optional) Change the CB status for the TX Matrix Plus router (switch-fabric chassis). Replace *number* with 0.

**Required Privilege Level** maintenance

**Related Documentation**

- [show chassis environment cb on page 433](#)
- *Understanding Switching Control Board Redundancy*

**List of Sample Output**

- [request chassis cb on page 272](#)
- [request chassis cb interconnect-device \(QFabric System\) on page 272](#)
- [request chassis cb \(MX2020 Router\) on page 272](#)
- [request chassis cb \(MX2010 Router\) on page 272](#)
- [request chassis cb \(MX2008 Router\) on page 272](#)
- [request chassis cb \(MX10003 Router\) on page 272](#)
- [request chassis cb \(EX9253 Switch\) on page 272](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### [request chassis cb](#)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

### [request chassis cb interconnect-device \(QFabric System\)](#)

```
user@switch> request chassis cb interconnect-device interconnect1 offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

### [request chassis cb \(MX2020 Router\)](#)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

### [request chassis cb \(MX2010 Router\)](#)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

### [request chassis cb \(MX2008 Router\)](#)

```
user@host>request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

### [request chassis cb \(MX10003 Router\)](#)

```
user@host>request chassis cb online slot 1
CB 1 appears to be online already
```

### [request chassis cb \(EX9253 Switch\)](#)

```
user@switch>request chassis cb offline slot 1
Offline initiated, use "show chassis environment cb" to verify
```



## request chassis cip

---

<b>Syntax</b>	<code>request chassis cip (offline   online) slot <i>slot-number</i></code>
<b>Release Information</b>	Command introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	(TX Matrix Plus routers only) Control the operation of the Connector Interface Panel (CIP).
<b>Options</b>	<p><b>offline</b>—Take the CIP offline.</p> <p><b>online</b>—Bring the CIP online.</p> <p><b>slot <i>slot-number</i></b>—CIP slot number. Replace <i>slot-number</i> with a value ranging from 0 through 1.</p>
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show chassis cip on page 334</a></li><li>• <i>Installing a T1600 CIP</i></li><li>• <i>Installing a T640 CIP</i></li><li>• <i>Installing a TX-CIP</i></li><li>• <i>Installing an M320 CIP</i></li><li>• <i>Installing the M40e CIP</i></li><li>• <i>Installing the T320 CIP</i></li><li>• <i>CIP Overview</i></li></ul>
<b>List of Sample Output</b>	<a href="#">request chassis cip offline slot (TX Matrix Plus Router) on page 274</a> <a href="#">request chassis cip offline slot (TX Matrix Plus Router) on page 274</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request chassis cip offline slot (TX Matrix Plus Router)

```
user@host > request chassis cip offline slot 0
CIP 0 offline done
```

### request chassis cip offline slot (TX Matrix Plus Router)

```
user@host > request chassis cip online slot 0
CIP 0 online done
```



## request chassis fabric guided-cabling disable

---

<b>Syntax</b>	request chassis fabric guided-cabling disable (all-lcc   lcc <i>lcc-number</i> )
<b>Release Information</b>	Command introduced in Junos OS Release 14.1 for TX Matrix Plus routers with 3D SIBs.
<b>Description</b>	Disable the guided cabling operation.
<b>Options</b>	<b>all-lcc</b> —Disable the guided cabling operation for all the LCCs. <b>lcc <i>lcc-number</i></b> —Disable the guided cabling operation for the specified LCC.
<b>Required Privilege Level</b>	admin
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">request chassis fabric guided-cabling enable on page 277</a></li></ul>
<b>List of Sample Output</b>	<a href="#">request chassis fabric guided-cabling disable all-lcc on page 276</a> <a href="#">request chassis fabric guided-cabling disable lcc 7 on page 276</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request chassis fabric guided-cabling disable all-lcc

```
user@host> request chassis fabric guided-cabling disable all-lcc
Guided Cabling disable initiated
```

### request chassis fabric guided-cabling disable lcc 7

```
user@host> request chassis fabric guided-cabling disable lcc 7
Guided Cabling disable initiated
```

## request chassis fabric guided-cabling enable

<b>Syntax</b>	<code>request chassis fabric guided-cabling enable (plane-by-plane   port-by-port) (all-lcc   lcc <i>lcc-number</i>)</code>
<b>Release Information</b>	Command introduced in Junos OS Release 14.1 for TX Matrix Plus routers with 3D SIBs.
<b>Description</b>	Enable the guided cabling operation by using blinking LEDs on the ports to be connected on the LCC and the SFC.
<b>Options</b>	<p><b>plane-by-plane</b>—Enable blinking of <b>CBL</b> LEDs for all the unconnected ports on a TXP-F13-3D SIB and a TXP-LCC-3D SIB for a particular fabric plane. After you connect all the cables on a TXP-F13-3D SIB and a TXP-LCC-3D SIB, all <b>CBL</b> LEDs blink on the fabric plane that need to be subsequently connected. The operation continues until all the cables are connected for all available fabric planes.</p> <p><b>port-by-port</b>—Enable blinking of the <b>CBL</b> LED for an unconnected port on a TXP-F13-3D SIB and a TXP-LCC-3D SIB. After you connect the cable to a port on a TXP-F13-3D SIB and a TXP-LCC-3D SIB, the <b>CBL</b> LED blinks on the next unconnected port on a TXP-F13-3D SIB and a TXP-LCC-3D SIB.</p> <p><b>all-lcc</b>—Enable the guided cabling operation for all the LCCs.</p> <p><b>lcc <i>lcc-number</i></b>—Enable the guided cabling operation for the specified LCC.</p>
<b>Required Privilege Level</b>	admin
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">request chassis fabric guided-cabling disable on page 276</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">request chassis fabric guided-cabling enable plane-by-plane all-lcc on page 277</a> <a href="#">request chassis fabric guided-cabling enable port-by-port all-lcc on page 277</a> <a href="#">request chassis fabric guided-cabling enable plane-by-plane lcc 7 on page 278</a> <a href="#">request chassis fabric guided-cabling enable port-by-port lcc 7 on page 278</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request chassis fabric guided-cabling enable plane-by-plane all-lcc

```
user@host> request chassis fabric guided-cabling enable plane-by-plane all-lcc
Guided Cabling enable initiated
```

### request chassis fabric guided-cabling enable port-by-port all-lcc

```
user@host> request chassis fabric guided-cabling enable port-by-port all-lcc
Guided Cabling enable initiated
```

**request chassis fabric guided-cabling enable plane-by-plane lcc 7**

```
user@host> request chassis fabric guided-cabling enable plane-by-plane lcc 7
Guided Cabling enable initiated
```

**request chassis fabric guided-cabling enable port-by-port lcc 7**

```
user@host> request chassis fabric guided-cabling enable port-by-port lcc 7
Guided Cabling enable initiated
```



## request chassis fpc

<b>List of Syntax</b>	<a href="#">Syntax on page 279</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 279</a> <a href="#">Syntax (MX Series Routers) on page 279</a> <a href="#">Syntax (MX2020 3D Universal Edge Routers) on page 279</a> <a href="#">Syntax (MX204, MX2010, MX2008, and MX10003 3D Universal Edge Routers) on page 279</a> <a href="#">Syntax (EX9200, EX9251, EX9253 Switches) on page 279</a> <a href="#">Syntax (QFabric System) on page 279</a> <a href="#">Syntax (PTX Series Packet Transport Routers) on page 279</a>
<b>Syntax</b>	<code>request chassis fpc (offline   online   restart) slot <i>slot-number</i></code>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	<code>request chassis fpc (offline   online   restart) slot <i>slot-number</i> &lt;lcc <i>number</i>&gt;</code>
<b>Syntax (MX Series Routers)</b>	<code>request chassis fpc (offline   online   restart) slot <i>slot-number</i> &lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (MX2020 3D Universal Edge Routers)</b>	<code>request chassis fpc (offline   online   restart) slot <i>slot-number</i></code>
<b>Syntax (MX204, MX2010, MX2008, and MX10003 3D Universal Edge Routers)</b>	<code>request chassis fpc (offline   online   restart) slot <i>slot-number</i></code>
<b>Syntax (EX9200, EX9251, EX9253 Switches)</b>	<code>request chassis fpc (offline   online   restart) slot <i>slot-number</i></code>
<b>Syntax (QFabric System)</b>	<code>request chassis fpc</code> <code>&lt;interconnect-device <i>name</i> slot <i>slot-number</i> (offline   online)&gt;</code> <code>&lt;(offline   online) interconnect-device <i>name</i> slot <i>slot-number</i>&gt;</code> <code>&lt;slot <i>slot-number</i> interconnect-device <i>name</i> (offline   online)&gt;</code>
<b>Syntax (PTX Series Packet Transport Routers)</b>	<code>request chassis fpc (offline   online   restart) slot <i>slot-number</i></code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS 11.3 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p>

Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.  
Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.  
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.  
Command introduced in Junos OS Release 16.1R1 for EX9200 switches.  
Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.  
Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.  
Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.  
Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.  
Command introduced in Junos OS Release 18.2 for EX9253 Switches.

**Description** (M20, M40, M40e, M120, M160, M320, MX Series, and T Series routers, QFabric systems, EX Series switches, and PTX Series Packet Transport Routers only) Control the operation of the Flexible PIC Concentrator (FPC).



**NOTE:** Starting with Junos OS Release 12.3, it is possible that FPCs brought offline by using the `request chassis fpc slot fpc-slot offline operational-mode` CLI command can come online during a configuration commit or power-supply replacement procedure. As an alternative, use the `set fpc fpc-slot power off configuration-mode` command at the `[edit chassis]` hierarchy level to ensure that the FPCs remain offline.



**NOTE:** In releases earlier than Junos OS Release 15.1F3 and Junos OS Release 16.1, offline FPCs in the PTX5000 router might be powered on by the router during a reboot, or when triggered by other power management events on the router, such as when you take another FPC offline.

Starting with Junos OS Release 15.1F3 and Junos OS Release 16.1, offline FPCs do not come online during reboots or other power management events. To bring such an FPC online:

1. Delete the `fpc fpc-slot power off` statement from the `[edit chassis]` hierarchy level, if that statement is configured, and commit the configuration.
2. Either issue the `request chassis fpc online slot fpc-slot operational-mode` CLI command or press and hold the FPC ONLINE/OFFLINE button for about 5 seconds until the green OK LED next to the button lights steadily.



**NOTE:** If a CLI-based firmware upgrade is in progress, the specified FPC does not restart. Starting with Junos OS Release 15.1, the following message is displayed when this occurs:

```
user@host> request chassis fpc slot 0 restart
FPC 0 Firmware update in progress. Wait!!!
```



**NOTE:** The command `request chassis fpc (offline | online) slot slot-number` is not supported on PTX1000 router. Whereas, `request chassis fpc restart slot slot-number` is supported on PTX1000 router

**Options**    **offline**—Take the FPC offline.

**online**—Bring the FPC online.

**interconnect-device *name***—(QFabric systems only) Bring the FPC on the QFX3008-I Interconnect device either offline or online:

- (QFabric System) On a QFabric system, specify the name of the QFX3008-I Interconnect device containing the FPC you want to bring either offline or online.

**restart**—Restart the FPC.

**slot *slot-number***—FPC slot number:

- M20 router—0 through 3.
- M120 router—0 through 5.
- MX240 router—0 through 2. On the MX240 router, slot-number corresponds to the (DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number.
- MX480 router—0 through 5. On the MX480 router, slot-number corresponds to the DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number.
- MX960 router—0 through 11. On the MX960 router, slot-number corresponds to the DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number.
- MX2020 router—0 through 19.
- MX2010 router—0 through 9.
- MX2008 router—0 through 9.
- TX Matrix and TX Matrix Plus routers only—On the TX Matrix router, if you specify the number of the T640 router by using the `lcc number` option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31.

Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 or T4000 router by using the `lcc number` option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31. In case of TX Matrix Plus router with 3D SIBs, replace *slot-number* with a value from 0 through 63. For example, the following commands have the same result:

```
user@host> request chassis fpc lcc 1 slot 1 offline
user@host> request chassis fpc slot 9 offline
```

- Other routers—0 through 7.
- QFabric System—Replace *slot-number* with a value from 0 through 2.
- EX Series switches:
  - EX4200 switches in a Virtual Chassis configuration—Replace *slot-number* with a value from 0 through 9.
  - EX6210 switches—Replace *slot-number* with a value from 0 through 9.



**NOTE:** These commands are not supported for slots 4 and 5 when a Switch Fabric and Routing Engine (SRE) module is installed in those slots. These commands are supported for slots 4 and 5 only if a line card is installed in them.

- EX8208 switches—Replace *slot-number* with a value from 0 through 7.
- EX8216 switches—Replace *slot-number* with a value from 0 through 15.
- EX9204 switches—Replace *slot-number* with a value from 0 through 2.
- EX9208 switches—Replace *slot-number* with a value from 0 through 5.
- EX9214 switches—Replace *slot-number* with a value from 0 through 11.
- PTX5000 Packet Transport Router—Replace *slot-number* with a value from 0 through 7.

**all-members**—(MX Series routers only) (Optional) Change FPC status of all members of the Virtual Chassis configuration.

**local**—(MX Series routers only) (Optional) Change FPC status of the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Change FPC status of the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**lcc *number***—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level** maintenance

**Related Documentation**

- [show chassis fpc on page 822](#)
- *show chassis fpc-feb-connectivity*
- [show chassis fabric fpcs on page 639](#)
- *Configuring the Junos OS to Make a Flexible PIC Concentrator Stay Offline*
- *Configuring the Junos OS to Resynchronize FPC Sequence Numbers with Active FPCs when an FPC Comes Online*
- *MX960 Flexible PIC Concentrator Description*

**List of Sample Output**

[request chassis fpc on page 283](#)  
[request chassis fpc \(MX Series Routers with Media Services Blade \[MSB\]\) on page 283](#)  
[request chassis fpc \(MX2020 Router\) on page 284](#)  
[request chassis fpc \(MX2010 Router\) on page 284](#)  
[request chassis fpc \(MX2008 Router\) on page 284](#)  
[request chassis fpc \(MX10003 Router\) on page 284](#)  
[request chassis fpc \(MX204 Router\) on page 284](#)  
[request chassis fpc \(EX9200 Switch\) on page 284](#)  
[request chassis fpc \(EX9251 Switch\) on page 284](#)  
[request chassis fpc \(EX9253 Switch\) on page 284](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request chassis fpc

```
user@host> request chassis fpc online slot 0
FPC 0 already online
```

### request chassis fpc (MX Series Routers with Media Services Blade [MSB])

```
user@host> request chassis fpc slot 0
Possible completions:
offline           Take FPC offline
online            Bring FPC online
restart           Restart FPC
```

#### request chassis fpc (MX2020 Router)

```
user@host >request chassis fpc online slot 2
FPC 2 already online
```

#### request chassis fpc (MX2010 Router)

```
user@host >request chassis fpc offline slot 5
Offline initiated, use "show chassis fpc" to verify
```

#### request chassis fpc (MX2008 Router)

```
user@host >request chassis fpc online slot 5
FPC 5 already online
```

#### request chassis fpc (MX10003 Router)

```
user@host>request chassis fpc online slot 1
FPC 1 already online
```

#### request chassis fpc (MX204 Router)

```
user@host>request chassis fpc online slot 0
FPC 0 already online
```

#### request chassis fpc (EX9200 Switch)

```
user@host> request chassis fpc slot 0
Possible completions:
  offline          Take FPC offline
  online           Bring FPC online
  restart          Restart FPC
```

#### request chassis fpc (EX9251 Switch)

```
user@switch> request chassis fpc online slot 0
FPC 0 already online
```

#### request chassis fpc (EX9253 Switch)

```
user@switch> request chassis online fpc slot 0
FPC 0 already online
```

## request chassis fpm resync

<b>List of Syntax</b>	<a href="#">Syntax on page 285</a> <a href="#">Syntax (TX Matrix Routers) on page 285</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 285</a> <a href="#">Syntax (MX Series Routers) on page 285</a> <a href="#">Syntax (MX2010 3D Universal Edge Routers) on page 285</a> <a href="#">Syntax (MX2020 3D Universal Edge Routers) on page 285</a>
<b>Syntax</b>	<code>request chassis fpm resync</code>
<b>Syntax (TX Matrix Routers)</b>	<code>request chassis fpm resync (lcc <i>number</i>   scc)</code>
<b>Syntax (TX Matrix Plus Routers)</b>	<code>request chassis fpm resync (lcc <i>number</i>   sfc <i>number</i>)</code>
<b>Syntax (MX Series Routers)</b>	<code>request chassis fpm resync</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (MX2010 3D Universal Edge Routers)</b>	<code>request chassis fpm resync</code>
<b>Syntax (MX2020 3D Universal Edge Routers)</b>	<code>request chassis fpm resync</code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p>
<b>Description</b>	(M40e, M120, M160, M320, MX Series, and T Series routers only) Resynchronize the craft interface status.
<b>Options</b>	<p><b>all-members</b>—(MX Series routers only) (Optional) Resynchronize the craft interface status on all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Resynchronize the craft interface status on the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Resynchronize the craft interface status on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**scc**—(TX Matrix routers only) Resynchronize the craft interface status on the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) Resynchronize the craft interface status on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**Required Privilege Level** maintenance

**Related Documentation**

- [show chassis environment fpm on page 510](#)
- *Configuring the Junos OS to Resynchronize FPC Sequence Numbers with Active FPCs when an FPC Comes Online*

**List of Sample Output** [request chassis fpm resync on page 286](#)  
[request chassis fpm resync \(MX2010 Router\) on page 286](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

[request chassis fpm resync](#)

```
user@host> request chassis fpm resync
Front Panel resynced
```

[request chassis fpm resync \(MX2010 Router\)](#)

```
user@host > request chassis fpm resync
Front Panel resynced.
```





## request chassis lcc

---

<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	request chassis lcc (offline   online) slot <i>slot-number</i>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, control the operation of a T640 LCC that is connected to the TX Matrix router. On a TX Matrix Plus router, control the operation of a LCC that is connected to the TX Matrix Plus router.
<b>Options</b>	<p><b>offline</b>—On a routing matrix based on the TX Matrix router (switch-card chassis), take the T640 router (line-card chassis) offline. On a routing matrix based on a TX Matrix Plus router (switch-fabric chassis), take the router (line-card chassis) offline.</p> <p><b>online</b>—On a routing matrix based on the TX Matrix router (switch-card chassis), bring the T640 router (line-card chassis) online. On a routing matrix based on a TX Matrix Plus router (switch-fabric chassis), bring the router (line-card chassis) online.</p> <p><b>slot <i>slot-number</i></b>—On a TX Matrix router (switch-card chassis), the slot number of a T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router (switch-fabric chassis), the slot number of a router (line-card chassis) that is connected to the TX Matrix Plus (switch-fabric chassis) router.</p> <p><i>slot-number</i> has the following values depending on the LCC configuration</p> <p>Replace <i>slot-number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"><li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li><li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li><li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li><li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li></ul>
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show chassis lccs on page 1111</a></li><li>• <i>Configuring Line-Card Upgrade Groups for Nonstop Software Upgrade (CLI Procedure)</i></li><li>• <i>fpc</i></li></ul>

List of Sample Output [request chassis lcc on page 289](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

### Sample Output

[request chassis lcc](#)

```
user@host> request chassis lcc offline slot 0
```

## request chassis pic

---

<b>List of Syntax</b>	<a href="#">Syntax on page 290</a>
	<a href="#">Syntax (ACX4000 Series Routers) on page 290</a>
	<a href="#">Syntax (MX Series Routers) on page 290</a>
	<a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 290</a>
	<a href="#">Syntax (EX9251, EX9253 Switches) on page 290</a>
<b>Syntax</b>	<code>request chassis pic (offline   online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
<b>Syntax (ACX4000 Series Routers)</b>	<code>request chassis pic (offline   online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
<b>Syntax (MX Series Routers)</b>	<code>request chassis pic (offline   online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> &lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	<code>request chassis pic (offline   online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> &lt;lcc <i>number</i>&gt;</code>
<b>Syntax (EX9251, EX9253 Switches)</b>	<code>request chassis pic (offline   online) pic-slot <i>slot-number</i> fpc--slot <i>slot-number</i> &lt;lcc <i>number</i>&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 12.3 for ACX4000 Routers. Command introduced in Junos OS Release 13.2 for the QFX Series. Command introduced in Junos OS Release 17.2 for PTX10008 Routers. Option <b>member</b> introduced in Junos OS Release 14.2 for MX Series routers. Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers. Command introduced in Junos OS Release 18.1R1 for EX9251 Switches. Command introduced in Junos OS Release 18.2 for EX9253 Switches.
<b>Description</b>	Control the operation of the PIC.



**NOTE:** The `request chassis pic (offline | online) fpc-slot slot number pic-slot slot-number` command is not supported for built-in PICs on MX Series routers.

To view a list of built-in PICs on the router or switch chassis, use the `show chassis hardware` command.

---



**NOTE:** This command is not supported on MX960 and MX2020 routers with MPC5EQ.

---



**NOTE:** T1600 routers and TX Matrix Plus routers with 100-Gigabit Ethernet PICs require two adjacent PIC slots, 0 and 1, for each PIC. Therefore, only online and offline command options to PIC slot 0 are allowed. Use of the online and offline command options for PIC slot 1 with the described router and PIC combination is not allowed.



**NOTE:** In T Series routers, when the PIC state is set from offline to online or vice-versa before the processing is complete for the previous command, you are provided feedback on the status of your request. The following sample messages are displayed if you try to set a PIC offline or online:

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 online
fpc 1 pic 0 online initiated, use "show chassis fpc pic-status" to verify
user@switch> request chassis pic fpc-slot 1 pic-slot 0 online
FPC 1 PIC 0 already transitioning to online
```

When the same PIC is set to a different state while the transition is in progress, you are provided feedback on the status of your request.

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 offline
FPC 1, PIC 0 already transitioning to online. Please retry later.
```



**NOTE:** If a CLI-based firmware upgrade is in progress, it prevents the specified PIC from restarting. Starting in Junos OS Release 15.1, the following message is displayed:

```
user@host> request chassis pic fpc-slot 0 pic-slot 1 offline
PIC's Firmware update in progress. Wait!!!
```



**NOTE:** The command `request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number` is not supported on PTX1000 routers.

**Options** **offline**—Take the PIC offline.

**online**—Bring the PIC online.

**fpc-slot slot-number**—Flexible PIC Concentrator (FPC) slot number. Replace *slot-number* with a value appropriate for your router or switch:

- ACX4000 routers—1 or 2.
- EX Series switches:
  - EX3200 switches and EX4200 standalone switches—0.
  - EX4200 switches in a Virtual Chassis configuration—0 through 9 (switch's member ID).
  - EX8208 switches—0 through 7 (line card).
  - EX8216 switches—0 through 15 (line card).
- M5, M7i, M10, and M10i routers—0 or 1.
- M20 routers—0 through 3.
- M40 and M40e routers—0 through 7.
- M120 routers—0 through 5.
- M160 routers—0 through 7.
- M320 routers—0 through 7.
- MX 5, MX10, and MX40 routers—0 or 1.
- MX80 routers—0 or 1.
- MX240 routers—0 through 2
- MX480 routers—0 through 5
- MX2020 routers—0 through 19.
- MX2010 routers—0 through 9.
- MX960 routers—0 through 11.
- MX10003 routers—0 or 1.
- MX204 routers—0.
- PTX5000 routers—0 or 1.
- T Series routers—0 through 7.
- TX Matrix and TX Matrix Plus routers only—On a TX Matrix router, if you specify the number of the T640 router by using the *lcc number* option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31.

Likewise, on a TX Matrix Plus router, if you specify the *number* of the T1600 or T4000 router by using the *lcc number* option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, for the FPC slot number, replace *slot-number* with a value from 0 through 31. On a TX Matrix Plus router with 3D SIBs to assign the FPC slot number, replace *slot-number* with a value from 0 through 63. For example, the following commands have the same result:

```
user@host> request chassis pic fpc-slot 1 lcc 1 pic-slot 0 offline
```

```
user@host> request chassis pic fpc-slot 9 pic-slot 0 offline
```

- QFX5100 standalone switches—0.

**lcc *number***—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**member *member-id***—(MX Series routers only) (Optional) Change the PIC status on the specified member of the Virtual Chassis configuration. Replace *member-id* with the value that is assigned to the specified member.

**offline**—Take the PIC offline.

**online**—Bring the PIC online.

**pic-slot *slot-number***—PIC slot number.

- EX3200 and EX4200 switches—0 for built-in network interfaces and 1 for interfaces on uplink modules.
- EX8208 and EX8216 switches—0.
- M Series routers—0, 1, 2, or 3
- MX960 router—*slot-number* corresponds to the slot number of the Packet Forwarding Engine.
- MX204 router—0 or 1.
- PTX5000 routers—0 or 1.
- T320 router—0 or 1.
- T640 router—0, 1, 2, or 3.
- T1600 router—0, 1, 2, or 3.
- T4000 router—0, 1, 2, or 3.
- QFX5100 standalone switches—0, 1, or 2. PIC 0 is used for all interfaces that are not configured on expansion modules, and PIC 1 and PIC 2 are used for interfaces configured on expansion modules.

**Required Privilege Level** maintenance

**Related Documentation**

- [show chassis hardware on page 870](#)
- [show chassis pic on page 1129](#)

**List of Sample Output**

- [request chassis pic on page 294](#)
- [request chassis pic online member \(MX Series Routers\) on page 294](#)
- [request chassis pic offline member \(MX Series Routers\) on page 294](#)
- [request chassis pic \(MX10003 Router\) on page 294](#)
- [request chassis pic online member \(PTX10008 Router\) on page 294](#)
- [request chassis pic online member \(EX9251 Switch\) on page 294](#)
- [request chassis pic online member \(EX9253 Switch\) on page 294](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### [request chassis pic](#)

```
user@host> request chassis pic pic-slot 0 online fpc-slot 0
FPC 0, PIC 0 is already online
```

### [request chassis pic online member \(MX Series Routers\)](#)

```
user@host> request chassis pic online member 1 fpc-slot 11 pic-slot 3
fpc 11 pic 3 online initiated
```

### [request chassis pic offline member \(MX Series Routers\)](#)

```
user@host> request chassis pic offline member 1 fpc-slot 11 pic-slot 3
fpc 11 pic 3 offline initiated
```

### [request chassis pic \(MX10003 Router\)](#)

```
user@host> request chassis pic online pic-slot 1 fpc-slot 0
FPC 0 is not online
```

### [request chassis pic online member \(PTX10008 Router\)](#)

```
user@host> request chassis pic online pic-slot 1 fpc-slot 0
FPC 0, PIC 1 is empty
```

### [request chassis pic online member \(EX9251 Switch\)](#)

```
user@switch> request chassis pic pic-slot 0 online fpc-slot 0
FPC 0, PIC 0 is already online
```

### [request chassis pic online member \(EX9253 Switch\)](#)

```
user@switch> request chassis pic pic-slot 0 online fpc-slot 0
FPC 0, PIC 0 is already online
```





## request chassis routing-engine master

---

<b>List of Syntax</b>	<a href="#">Syntax on page 296</a> <a href="#">Syntax (M Series, MX Series, T Series Routers) on page 296</a> <a href="#">Syntax (TX Matrix Routers) on page 296</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 296</a> <a href="#">Syntax (MX Series Virtual Chassis) on page 296</a> <a href="#">Syntax (QFX Series) on page 296</a>
<b>Syntax</b>	request chassis routing-engine master (acquire   release   switch) <no-confirm>
<b>Syntax (M Series, MX Series, T Series Routers)</b>	request chassis routing-engine master (acquire   release   switch) <no-confirm> <check>
<b>Syntax (TX Matrix Routers)</b>	request chassis routing-engine master (acquire   release   switch) (lcc <i>number</i>   scc   all-chassis) <no-confirm>
<b>Syntax (TX Matrix Plus Routers)</b>	request chassis routing-engine master (acquire   release   switch) (lcc <i>number</i>   sfc   all-chassis   all-lcc) <no-confirm>
<b>Syntax (MX Series Virtual Chassis)</b>	request chassis routing-engine master (acquire   release   switch) <all-members> <check> <local> <member <i>member-id</i> > <no-confirm>
<b>Syntax (QFX Series)</b>	request chassis routing-engine master (release   switch) <check> <interconnect-device <i>name</i> > <node-group <i>name</i> > <no-confirm>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. <b>all-chassis</b> option added in Junos OS Release 8.0. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.3 for QFX Series. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers. Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers. Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

**Description** For routers or switches with multiple Routing Engines, control which Routing Engine is the master.



**CAUTION:** (Routing matrix based on the TX Matrix or TX Matrix Plus routers only) Within the routing matrix, we recommend that all Routing Engines run the same Junos OS Release. If you run different releases on the Routing Engines and a change in mastership occurs on any backup Routing Engine in the routing matrix, one or all routers (in a routing matrix based on the TX Matrix router or in a routing matrix based on a TX Matrix Plus router) might become logically disconnected from the TX Matrix router and cause data loss. For more information, see the [TX Matrix Router Hardware Guide](#) or the [Junos OS High Availability Library for Routing Devices](#).



**NOTE:** Successive graceful Routing Engine switchover events must be a minimum of 240 seconds (4 minutes) apart after both Routing Engines have come up.

If the router or switch displays a warning message similar to “Standby Routing Engine is not ready for graceful switchover. Packet Forwarding Engines that are not ready for graceful switchover might be reset,” do not attempt switchover. If you choose to proceed with switchover, only the Packet Forwarding Engines that were not ready for graceful switchover are reset. None of the Flexible PIC concentrators (FPCs) should spontaneously restart. We recommend that you wait until the warning no longer appears and then proceed with the switchover.

You will receive an error message stating “Command aborted. Not ready for mastership switch, try after n seconds” when this command is re-entered before 240 seconds have elapsed on EX Series switches.



**NOTE:** On a QFabric system, to avoid traffic loss on the network Node group, switch mastership of the routing engine to the backup routing engine, and then reboot.

**Options**

- acquire**—Attempt to become the master Routing Engine.
- release**—Request that the other Routing Engine become the master.
- switch**—Toggle mastership between Routing Engines.



**NOTE:** The **acquire** option should be used with caution because acquiring a Routing Engine may result in a corrupted database. If possible, use the **switch** option instead.

The **acquire**, **release**, and **switch** options have the following suboptions:

**all-chassis**—(TX Matrix and TX Matrix Plus routers only) On a routing matrix composed of a TX Matrix router and the attached T640 routers, switch mastership on all the Routing Engines in the routing matrix. Likewise, on a routing matrix composed of a TX Matrix Plus router and the attached T1600 or T4000 routers, switch mastership on all the Routing Engines in the routing matrix.

**all-lcc**—(TX Matrix Plus routers only) Request to acquire mastership for all line-card chassis (LCC).

**all-members**—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines in all member routers of the Virtual Chassis configuration.

**check**—(QFabric systems, MX104, MX480, MX960, MX2010, MX2020, and MX2008 routers, and PTX5000 routers only) (Optional) Available with the **switch**, **release**, and **acquire** options. Check graceful switchover status of the standby Routing Engine before toggling mastership between Routing Engines.

**interconnect-device *name***—(QFabric systems only) (Optional) Control Routing Engine mastership on the Routing Engines on an Interconnect device.

**lcc *number***—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines in the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines of the specified member in the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**no-confirm**—(Optional) Do not request confirmation for the switch.

**node-group name**—(QFabric systems only) (Optional) Control Routing Engine mastership on the Routing Engines on a Node group.

**scc**—(TX Matrix routers only) TX Matrix (switch-card chassis).

**sfc**—(TX Matrix Plus routers only) TX Matrix Plus router (or switch-fabric chassis).

**Additional Information** Because both Routing Engines are always running, the transition from one to the other as the master Routing Engine is immediate. However, the changeover interrupts communication to the System and Switch Board (SSB). The SSB takes several seconds to reinitialize the Flexible PIC Concentrators (FPCs) and restart the PICs. Interior gateway protocol (IGP) and BGP convergence times depend on the specific network environment.

By default, the Routing Engine in slot 0 (**RE0**) is the master and the Routing Engine in slot 1 (**RE1**) is the backup. To change the default master Routing Engine, include the **routing-engine** statement at the **[edit chassis redundancy]** hierarchy level in the configuration. For more information, see the *Junos OS Administration Library*

To have the backup Routing Engine become the master Routing Engine, use the **request chassis routing-engine master switch** command. If you use this command to change the master and then restart the chassis software for any reason, the master reverts to the default setting.



**NOTE:** Although the configurations on the two Routing Engines do not have to be the same and are not automatically synchronized, we recommend making both configurations the same.

**Required Privilege Level** maintenance

**Related Documentation**

- [show chassis routing-engine on page 1156](#)
- *Configuring Routing Engine Redundancy*
- *Switching the Global Master and Backup Roles in a Virtual Chassis Configuration*

**List of Sample Output**

- [request chassis routing-engine master acquire on page 300](#)
- [request chassis routing-engine master switch on page 300](#)
- [request chassis routing-engine master switch check on page 300](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request chassis routing-engine master acquire

```
user@host> request chassis routing-engine master acquire

warning: Traffic will be interrupted while the PFE is re-initialized

warning: The other routing engine's file system could be corrupted

Reset other routing engine and become master ? [yes,no] (no)
```

### request chassis routing-engine master switch

```
user@host> request chassis routing-engine master switch

warning: Traffic will be interrupted while the PFE is re-initialized
Toggle mastership between Routing Engines ? [yes,no] (no) yes

Resolving mastership...
Complete. The other Routing Engine becomes the master.
```

Switch mastership back to the local Routing Engine:

```
user@host> request chassis routing-engine master switch

warning: Traffic will be interrupted while the PFE is re-initialized
Toggle mastership between routing engines ? [yes,no] (no) yes

Resolving mastership...
Complete. The local routing engine becomes the master.
```

### request chassis routing-engine master switch check

Usage shown for M Series, MX Series, and T Series routers.

```
{master}[edit]
```

```
user@host> request chassis routing-engine master switch check
```

```
warning: Standby Routing Engine is not ready for graceful switchover.
```

```
{master}[edit]
```

```
user@host> request chassis routing-engine master switch check
Switchover Ready
```

You can similarly check the backup Routing Engine.

## request chassis scg

<b>List of Syntax</b>	<a href="#">Syntax on page 301</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 301</a>
<b>Syntax</b>	request chassis scg (offline   online) slot <i>slot-number</i>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	request chassis scg lcc <i>number</i> (offline   online) slot <i>slot-number</i>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(T Series routers only) Control the operation of the specified SONET Clock Generator (SCG).
<b>Options</b>	<p><b>lcc <i>number</i></b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul> <p><b>offline</b>—Take the SCG offline. When you change the SCG status to offline, the unit is not powered down.</p> <p><b>online</b>—Bring the SCG online.</p> <p><b>slot <i>slot-number</i></b>—SCG slot number. Replace <i>slot-number</i> with 0 or 1.</p>
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show chassis environment scg on page 544</a></li> <li>• <i>Configuring the Clock Source</i></li> <li>• <i>T320 SONET Clock Generator (SCG) Description</i></li> </ul>

**List of Sample Output** [request chassis scg on page 302](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

[request chassis scg](#)

```
user@host> request chassis scg online slot 0
Online initiated, use "show chassis environment scg" to verify
```



## request chassis sib

<b>List of Syntax</b>	<a href="#">Syntax on page 303</a> <a href="#">Syntax (TX Matrix Router) on page 303</a> <a href="#">Syntax (TX Matrix Plus Router) on page 303</a>
<b>Syntax</b>	request chassis sib (offline   online) slot <i>slot-number</i>
<b>Syntax (TX Matrix Router)</b>	request chassis sib (all-chassis   lcc <i>number</i>   scc) (offline   online) slot <i>slot-number</i> (start-receiver <i>number</i>   stop-receiver <i>number</i> )
<b>Syntax (TX Matrix Plus Router)</b>	request chassis sib (all-lcc   f13 <i>slot-number</i>   f2s <i>sib-slot/sib-f2s-slot-number</i>   lcc <i>number</i>   (offline   online) slot <i>slot-number</i> )
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>f13</b> and <b>f2s</b> options for the TX Matrix Plus router introduced in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p>
<b>Description</b>	(M320 routers and T Series routers only) Control the operation of the specified Switch Interface Board (SIB).
<b>Options</b>	<p><b>all-chassis</b>—(TX Matrix routers only) Control the status of the specified SIB.</p> <p><b>all-lcc</b>—(TX Matrix Plus router only) On TX Matrix Plus router, control the operation of the SIB on all routers connected to the TX Matrix Plus router.</p> <p><b>f13 <i>slot-number</i></b>—Control the operation of F13 SIBs. Replace <i>slot-number</i> with a value 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12.</p> <p><b>f2s <i>sib-slot/sib-f2s-slot-number</i></b>—(TX Matrix Plus routers only) (Optional) Control the operation of the SIB F2s. Replace <i>sib-slot</i> with a value from 0 through 4, followed by a <i>sib-f2s-slot-number</i> value 0, 2, 4 or 6.</p> <p><b>lcc <i>number</i></b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>

**scc**—(TX Matrix router only) TX Matrix router (switch-card chassis) on a routing matrix.

**offline**—Take the SIB offline.



**NOTE:** In PTX Series (PTX3000 and PTX5000) and T Series (T640 and T1600) Routers with active PFE interfaces, when the last SIB is taken offline, a message displays that if no SIB is brought online within 10 seconds, the system will take action to address the fabric black hole condition. Taking all SIBs offline in these PTX Series or T Series Routers with active PFE interfaces results in traffic black hole condition, and the software takes action to rectify this condition if it persists for more than 10 seconds. If these routers do not have active PFE interfaces, taking all SIBs offline does not result in black hole condition, and the message is not displayed when the last active SIB is taken offline. For details on black hole condition, see *Fabric Resiliency and Degradation*.

**online**—Bring the SIB online.

**slot slot-number**—SIB slot number. For the T320 router, replace **slot-number** with a value from 0 through 2. For the T640 router, TX Matrix router, and T1600 router in a routing matrix, replace **slot-number** with a value from 0 through 4.

**start-receiver number**—(TX Matrix routers only) Start the SIB optical receiver. Replace **number** with a value from 0 through 3.

**stop-receiver number**—(TX Matrix routers only) Stop the SIB optical receiver. Replace **number** with a value from 0 through 3.

**Required Privilege Level** maintenance

**Related Documentation**

- [show chassis sibs on page 1185](#)
- [show chassis environment sib on page 553](#)
- *Configuring Junos OS to Upgrade and Downgrade Switch Interface Boards on a TX Matrix Router*
- *M320 SIB Description*

**List of Sample Output** [request chassis sib on page 305](#)  
[request chassis sib on page 305](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request chassis sib

```
user@host> request chassis sib slot 0 online
Online initiated, use "show chassis sibs" to verify
```

### request chassis sib

```
user@host> request chassis sib f13 slot 0 offline
Offline initiated, use "show chassis sibs" to verify
```

## request chassis sib train-link-transmit slot

---

<b>List of Syntax</b>	<a href="#">Syntax on page 306</a> <a href="#">Syntax (TX Matrix Plus Routing Platform) on page 306</a>
<b>Syntax</b>	<code>request chassis sib train-link-transmit slot <i>LCC-SIB-ST-SIB-L-slot-num</i></code>
<b>Syntax (TX Matrix Plus Routing Platform)</b>	<code>request chassis sib train-link-receive slot <i>LCC-SIB-ST-SIB-L-slot-num</i></code>
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	(T1600 Router (LCC), T4000 (LCC) and TX Matrix Plus router only) Control the transmission link of the specified Switch Interface Board (SIB) of the LCC.
<b>Options</b>	<b>slot</b> <i>LCC-SIB-ST-SIB-L-slot-num</i> — LCC SIB slot number. Replace it with a value from 0 through 4.
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">request chassis sib train-link-receive slot on page 307</a></li><li>• <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i></li></ul>
<b>List of Sample Output</b>	<a href="#">request chassis sib train-link-transmit slot on page 306</a>
<b>Output Fields</b>	When you enter this command, the LCC is ready to transmit traffic to the SFC.

## Sample Output

### request chassis sib train-link-transmit slot

```
user@host> request chassis sib train-link-transmit slot 0
```

## request chassis sib train-link-receive slot

---

<b>Syntax</b>	<code>request chassis sib train-link-receive slot <i>LCC-SIB-ST-SIB-L-slot-num</i></code>
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	(T1600 Router (LCC), T4000 Router (LCC), and TX Matrix Plus router only) Control the receiving link of the specified Switch Interface Board (SIB) of the LCC.
<b>Options</b>	<b>slot</b> <i>LCC-SIB-ST-SIB-L-slot-num</i> — LCC SIB slot number. Replace it with a value from 0 through 4.
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">request chassis sib train-link-transmit slot on page 306</a></li> <li>• <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i></li> </ul>
<b>List of Sample Output</b>	<a href="#">request chassis sib train-link-receive slot on page 307</a>
<b>Output Fields</b>	When you enter this command, the LCC is ready to receive traffic from the SFC.

## Sample Output

### request chassis sib train-link-receive slot

```
user@host> request chassis sib train-link-receive slot 0
```

## request chassis sib f13 train-link-transmit slot

---

<b>Syntax</b>	<code>request chassis sib f13 train-link-transmit slot <i>SFC-SIB-F13-slot-num</i></code>
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	(TX Matrix Plus router only) Control the transmission link of the specified Switch Interface Board (SIB) of the SFC.
<b>Options</b>	<code>slot <i>SFC-SIB-F13-slot-num</i></code> —SFC SIB slot number. Replace it with 0, 3, 6, 8 or 11.
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">request chassis sib f13 train-link-receive slot on page 309</a></li><li>• <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i></li></ul>
<b>List of Sample Output</b>	<a href="#">request chassis sib f13 train-link-transmit slot on page 308</a>
<b>Output Fields</b>	When you enter this command, the SFC is ready to transmit traffic to the T1600 or T4000 router (LCC).

## Sample Output

### request chassis sib f13 train-link-transmit slot

```
user@host> request chassis sib f13 train-link-transmit slot 0
```

## request chassis sib f13 train-link-receive slot

<b>List of Syntax</b>	<a href="#">Syntax on page 309</a> <a href="#">Syntax (TX Matrix Plus Router) on page 309</a>
<b>Syntax</b>	request chassis sib f13 train-link-receive slot <i>SFC-SIB-F13-slot-num</i>
<b>Syntax (TX Matrix Plus Router)</b>	request chassis sib f13 train-link-receive slot <i>SFC-SIB-F13-slot-num</i>
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	(TX Matrix Plus router only) Control the receiving link of the specified Switch Interface Board (SIB) of the SFC.
<b>Options</b>	slot <i>SFC-SIB-F13-slot-num</i> — SFC SIB slot number. Replace it with 0, 3, 6, 8 or 11.
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">request chassis sib f13 train-link-transmit slot on page 308</a></li> <li>• <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i></li> </ul>
<b>List of Sample Output</b>	<a href="#">request chassis sib f13 train-link-receive slot on page 309</a>
<b>Output Fields</b>	When you enter this command, the SFC is ready to receive traffic from the T1600 or T4000 router (LCC).

## Sample Output

### request chassis sib f13 train-link-receive slot

```
user@host> request chassis sib f13 train-link-receive slot 0
```

## request chassis spmb restart

---

<b>List of Syntax</b>	<a href="#">Syntax on page 310</a> <a href="#">Syntax (MX2020, MX2010, and 2008 Routers) on page 310</a> <a href="#">Syntax (TX Matrix Router) on page 310</a> <a href="#">Syntax (TX Matrix Plus Router) on page 310</a>
<b>Syntax</b>	<code>request chassis spmb restart slot <i>slot-number</i></code>
<b>Syntax (MX2020, MX2010, and 2008 Routers)</b>	<code>request chassis spmb restart slot <i>slot-number</i></code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>request chassis spmb restart (lcc <i>number</i>   scc) slot <i>slot-number</i></code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>request chassis spmb restart (lcc <i>number</i>   sfc <i>number</i>) slot <i>slot-number</i></code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. <b>sfc</b> option for the TX Matrix Plus router introduced in Junos OS Release 9.6. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers. <b>all-members</b> , <b>local</b> , and <b>member <i>member-id</i></b> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers. Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers. Command introduced in Junos OS Release 17.2 for PTX10008 Routers.
<b>Description</b>	Restart the specified Switch Processor Mezzanine Board (SPMB) on the Control Board (CB).
<b>Options</b>	<b>all-members</b> —(MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in all members of the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.  Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"><li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li><li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li></ul>



- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in the local Virtual Chassis member.

**member *member-id***—(MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in the specified member of the Virtual Chassis. Replace *member-id* with the value 0 or 1.

**scc**—(TX Matrix routers only) TX Matrix router (switch-card chassis) in the routing matrix.

**sfc *number***—(TX Matrix Plus routers only) The switch-fabric chassis number of the TX Matrix Plus router. Replace the *number* variable with a value 0.

**slot *slot-number***—The SPMB slot number. Replace *slot-number* with 0 or 1.

**Required Privilege Level** maintenance

**Related Documentation**

- [show chassis spmb on page 1197](#)
- [show chassis spmb sibs on page 1208](#)

**List of Sample Output**

- [request chassis spmb restart on page 311](#)
- [request chassis spmb restart \(MX2010 Router\) on page 311](#)
- [request chassis spmb restart \(MX2008 Router\) on page 311](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request chassis spmb restart

```
user@host> request chassis spmb restart slot 0
```

### request chassis spmb restart (MX2010 Router)


```
user@host> request chassis spmb restart slot 0
Restart initiated, use "show chassis spmb" to verify
```

### request chassis spmb restart (MX2008 Router)

```
user@host>request chassis spmb restart slot 0
Restart initiated, use "show chassis spmb" to verify
```

## set chassis display message

---

List of Syntax	Syntax on page 312
	Syntax (TX Matrix Router) on page 312
	Syntax (TX Matrix Plus Router) on page 312
Syntax	set chassis display message " <i>message</i> " <permanent>
Syntax (TX Matrix Router)	set chassis display message " <i>message</i> " ( <i>lcc number</i>   <i>scc</i> ) <permanent>
Syntax (TX Matrix Plus Router)	set chassis display message " <i>message</i> " ( <i>fpc-slot slot-number</i>   <i>lcc number</i>   <i>sfc number</i> ) <permanent>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option for TX Matrix Plus router introduced in Junos OS Release 9.6.
Description	Display or stop a text message on the craft interface display, which is on the front of the router, or on the LCD panel display on the switch. The craft interface alternates the display of text messages with standard craft interface messages three times, switching between messages every 60 seconds.
<hr/>	
<div> <b>NOTE:</b> On T Series routers, when this command is executed with the <b>permanent</b> option, the display of the text message alternates with that of the standard craft interface message continuously every 60 seconds.</div> <hr/>	
By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.	
Options	<b>"<i>message</i>"</b> —Message to display. On the craft interface display, if the message is longer than 20 characters, it wraps onto the next line. If a word does not fit on one line, the entire word moves down to the next line. Any portion of the message that does not fit on the display is truncated. An empty pair of quotation marks (" ") deletes the text message from the craft interface display. On the LCD panel display, the message is limited to 16 characters.  <b>fpc-slot <i>slot-number</i></b> —(TX Matrix Plus routers and EX4200 and QFX Series only) On the router or switch, display the text message on the craft interface for a specific Flexible PIC Concentrator (FPC). Replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>31</b> . On the switch, display the text message for a specific member of a Virtual Chassis, where <b>fpc-slot <i>slot-number</i></b> corresponds to the member ID. Replace <b><i>slot-number</i></b> with a value

from **0** through **9**. On the QFX Series, the **slot-number** is always **0**. On a TX Matrix Plus router with 3D SIBs replace **slot-number** with a value from **0** through **63**.

**lcc number**—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace **number** with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**permanent**—(Optional) Display a text message on the craft interface display or LCD panel display permanently.

**scc**—(TX Matrix routers only) Display the text message on the craft interface display of the TX Matrix router (switch-card chassis).

**sfc number**—(TX Matrix Plus routers only) Display the text message on the craft interface display of the TX Matrix Plus router (or switch-fabric chassis).

**Required Privilege Level** clear

**Related Documentation**

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\)](#)
- [clear chassis display message on page 263](#)
- [show chassis craft-interface on page 336](#)

**List of Sample Output** [set chassis display message \(Creating\) on page 313](#)  
[set chassis display message \(Deleting\) on page 314](#)

**Output Fields** See [show chassis craft-interface](#) for an explanation of output fields.

## Sample Output

### set chassis display message (Creating)

The following example shows how to set the display message and verify the result:

```
user@host> set chassis display message "NOC contact Dusty (888) 555-1234"
message sent

user@host> show chassis craft-interface
```

```
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
+-----+
|NOC contact Dusty|
|(888) 555-1234   |
+-----+
```

### set chassis display message (Deleting)

The following example shows how to delete the display message and verify that the message is removed:

```
user@host> set chassis display message ""
message sent
```

```
user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
+-----+
|host
|Up: 0+17:05:47
|
|Temperature OK
+-----+
```

## show chassis alarms

---

**List of Syntax**    [Syntax on page 315](#)  
                           [Syntax \(TX Matrix Routers\) on page 315](#)  
                           [Syntax \(TX Matrix Plus Routers\) on page 315](#)  
                           [Syntax \(MX Series Routers\) on page 315](#)  
                           [Syntax \(MX104, MX2010, MX2020, and MX2008 3D Universal Edge Routers\) on page 315](#)  
                           [Syntax \(MX10003, MX204, and MX10008\) on page 315](#)  
                           [Syntax \(QFX Series\) on page 315](#)  
                           [Syntax \(OCX Series\) on page 315](#)  
                           [Syntax \(PTX Series Packet Transport Routers\) on page 315](#)  
                           [Syntax \(ACX Series Universal Metro Routers\) on page 316](#)  
                           [Syntax \(EX9251, EX9253 Switches\) on page 316](#)

**Syntax**    `show chassis alarms`

**Syntax (TX Matrix Routers)**    `show chassis alarms`  
   `<lcc number | scc>`

**Syntax (TX Matrix Plus Routers)**    `show chassis alarms`  
   `<lcc number | sfc number>`

**Syntax (MX Series Routers)**    `show chassis alarms`  
   `<all-members>`  
   `<local>`  
   `<member member-id>`

**Syntax (MX104, MX2010, MX2020, and MX2008 3D Universal Edge Routers)**    `show chassis alarms`  
   `<satellite [slot-id slot-id]>`

**Syntax (MX10003, MX204, and MX10008)**    `show chassis alarms`

**Syntax (QFX Series)**    `show chassis alarms`  
                                   `<interconnect-device name>`  
                                   `<node-device name>`

**Syntax (OCX Series)**    `show chassis alarms`

**Syntax (PTX Series Packet Transport Routers)**    `show chassis alarms`

**Syntax (ACX Series Universal Metro Routers)**    `show chassis alarms`

**Syntax (EX9251, EX9253 Switches)**    `show chassis alarms`

**Release Information**    Command introduced before Junos OS Release 7.4.  
Command introduced in Junos OS Release 9.0 for EX Series switches.  
**sfc** option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.  
Command introduced in Junos OS Release 11.1 for the QFX Series.  
Command introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Routers.  
Command introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers.  
Command introduced in Junos OS Release 12.3 for MX 2010 and MX2020 3D Universal Edge Routers.  
Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.  
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.  
**satellite** option introduced in Junos OS Release 14.2R3 for Junos Fusion.  
Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.  
Command introduced in Junos OS Release 17.2 for PTX10008 Routers.  
Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.  
Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.  
Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.  
Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.  
Command introduced in Junos OS Release 18.2 for EX9253 Switches.  
Command introduced in Junos OS Release 18.2R1 for MX10008 3D Universal Edge Routers.

**Description**    Display information about the conditions that have been configured to trigger alarms.

**Options**    **none**—Display information about the conditions that have been configured to trigger alarms.

**all-members**—(MX Series routers only) (Optional) Display information about alarm conditions for all the member routers of the Virtual Chassis configuration.

**interconnect-device *name***—(QFabric systems only) (Optional) Display information about alarm conditions for the Interconnect device.

**lcc *number***—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display information about alarm conditions for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display information about alarm conditions for the specified member of the Virtual Chassis configuration. Replace *member-id* variable with a value of 0 or 1.

**node-device *name***—(QFabric systems only) (Optional) Display information about alarm conditions for the Node device.

**satellite [*slot-id slot-id*]**—(Junos Fusion only) (Optional) Display information about alarm conditions for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

**scc**—(TX Matrix router only) (Optional) Show information about the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus router only) (Optional) Show information about the respective TX Matrix Plus router, which is the switch-fabric chassis. Replace *number* variable with 0.

**Additional Information** Chassis alarms are preset. You cannot modify them.

You cannot clear the alarms for chassis components. Instead, you must remedy the cause of the alarm. When a chassis alarm LED is lit, it indicates that you are running the router or switch in a manner that we do not recommend.

On routers, you can manually silence external devices connected to the alarm relay contacts by pressing the alarm cutoff button, located on the craft interface. Silencing the device does not remove the alarm messages from the display (if present on the router) or extinguish the alarm LEDs. In addition, new alarms that occur after you silence an external device reactivate the external device.



**NOTE:** MX10003 routers do not support craft interface.

In Junos OS release 11.1 and later, alarms for fans also show the slot number of the fans in the CLI output.

In Junos OS Release 11.2 and later, the command output on EX8200 switches shows the detailed location (**Plane/FPC/PFE**) for link errors in the chassis.

In Junos OS Release 10.2 and later, an alarm is shown on T Series routers for a standby SONET Clock Generator (SCG) that is offline or absent.

You may often see the following error messages, in which only the error code is shown and no other information is provided:

```
Apr 12 08:04:10 send: red alarm set, device FPC 6, reason FPC 6 Major Errors
- Error code: 257
Apr 12 08:04:19 send: red alarm set, device FPC 1, reason FPC 1 Major Errors
- Error code: 559
```

To understand what CM\_ALARM error codes mean, you need to first identify the structure of the CM Alarm codes. A CM\_ALARM code has the following structure:

Bits:	Error type:
1-31	Major (1)
0	Minor (0)

According to the table above, the LSB (bit 0) identifies the **Error Type** (major alarm, if the bit is set and minor alarm if the bit is unset). The rest of the bits (1 - 31) identify the actual error code.

Take an example of the following error code, which was logged on a T1600:

```
Apr 12 08:04:10 send: red alarm set, device FPC 1, reason FPC 1 Major Errors
- Error code: 559
```

First, you have to convert 559 to binary; that is **100010111**. The LSB in this case is 1, which means that this is a major alarm. After removing the LSB, you are left with **10001011**, which is equal to 279 in decimal. This is the actual error code, its meaning can be found from the following list:

Chip Type: L Chip	Code
CMALARM_LCHIP_LOUT_DESRD_PARITY_ERR	1
CMALARM_LCHIP_LOUT_DESRD_UNINIT_ERR	2
CMALARM_LCHIP_LOUT_DESRD_ILLEGALLINK_ERR	3
CMALARM_LCHIP_LOUT_DESRD_ILLEGALSIZERR	4
CMALARM_LCHIP_LOUT_HDRF_TOERR_ERR	5
CMALARM_LCHIP_LOUT_HDRF_PARITY_ERR	6
CMALARM_LCHIP_LOUT_HDRF_UCERR_ERR	7
CMALARM_LCHIP_LOUT_NLIF_CRCDROP_ERR	8
CMALARM_LCHIP_LOUT_NLIF_CRCERR_ERR	9



CMALARM_LCHIP_UCODE_TIMEOUT_ERR	10
CMALARM_LCHIP_LIN_SRCTL_ACCT_DROP_ERR	11
CMALARM_LCHIP_LIN_SRCTL_ACCT_ADDR_SIZE_ERR	12
CMALARM_LCHIP_SRAM_PARITY_ERR	13
CMALARM_LCHIP_UCODE_OVFLW_ERR	14
CMALARM_LCHIP_LOUT_HDRF_MTU_ERR	15
<hr/>	
<b>Chip Type: M Chip</b>	<b>Code</b>
CMALARM_MCHIP_ECC_UNCORRECT_ERR	128
<hr/>	
<b>Chip Type: N Chip</b>	<b>Code</b>
CMALARM_NCHIP_RDDMA_JBUS_TIMEOUT_ERR	256
CMALARM_NCHIP_RDDMA_FIFO_OVFLW_ERR	257
CMALARM_NCHIP_RDDMA_FIFO_UNFLW_ERR	258
CMALARM_NCHIP_RDDMA_SIZE_ERR	259
CMALARM_NCHIP_RDDMA_JBUS_CRC_ERR	260
CMALARM_NCHIP_WRDMA_PKTR_ERR	261
CMALARM_NCHIP_WRDMA_PKT_CRC_ERR	262
CMALARM_NCHIP_WRDMA_JBUS_TIMEOUT_ERR	263
CMALARM_NCHIP_WRDMA_FIFO_OVFLW_ERR	264
CMALARM_NCHIP_WRDMA_FIFO_UNFLW_ERR	265
CMALARM_NCHIP_WRDMA_PKT_LEN_ERR	266
CMALARM_NCHIP_WRDMA_JBUS_CRC_ERR	267
CMALARM_NCHIP_PKTR_DMA_AGE_ERR	268
CMALARM_NCHIP_PKTR_ICELLSIG_ERR	269
CMALARM_NCHIP_PKTR_FTTL_ERR	270
CMALARM_NCHIP_RODR_OFFSET_OVFLW_ERR	271

CMALARM_NCHIP_PKTR_TMO_CELL_ERR	272
CMALARM_NCHIP_PKTR_TMO_OUTRANGE_ERR	273
CMALARM_NCHIP_PKTR_MD_REQUEST_Q_OVFLW_ERR	274
CMALARM_NCHIP_PKTR_DMA_BUFFER_OVFLW_ERR	275
CMALARM_NCHIP_PKTR_GRT_OVFLW_ERR	276
CMALARM_NCHIP_FRQ_ERR	277
CMALARM_NCHIP_RODR_IN_Q_OVFLW_ERR	278
CMALARM_NCHIP_DBUF_CRC_ERR	279
<hr/>	
<b>Chip Type: R Chip</b>	<b>Code</b>
CMALARM_RCHIP_SRAM_PARITY_ERR	512
<hr/>	
<b>Chip Type: R Chip</b>	<b>Code</b>
CMALARM_ICHIP_WO_DESRD_ID_ERR	601
CMALARM_ICHIP_WO_DESRD_DATA_ERR	602
CMALARM_ICHIP_WO_DESRD_OFLOW_ERR	603
CMALARM_ICHIP_WO_HDRF_UCERR_ERR	604
CMALARM_ICHIP_WO_HDRF_MTUERR_ERR	605
CMALARM_ICHIP_WO_HDRF_PARITY_ERR	606
CMALARM_ICHIP_WO_HDRF_TOERR_ERR	607
CMALARM_ICHIP_WO_IP_CRC_ERR	608
CMALARM_ICHIP_WO_IP_INTER_ERR	609
CMALARM_ICHIP_WI_WAN_TIMEOUT_ERR	625
CMALARM_ICHIP_WI_FAB_TIMEOUT_ERR	626
CMALARM_ICHIP_RLDRAM_BIST_ERR	630
CMALARM_ICHIP_SDRAM_BIST_ERR	631
CMALARM_ICHIP_RLDRAM_PARITY_ERR	632

CMALARM_ICHIP_SDRAM_UNCORRECT_ERR	633
CMALARM_ICHIP_SDRAM_CORRECT_ERR	634
CMALARM_ICHIP_FUSE_DONE_ERR	635

According to the table above, the **279** error code corresponds to **CMALARM\_NCHIP\_DBUF\_CRC\_ERR**; this means that new CRC errors were seen on the NCHIP of this particular FPC, which is FPC as per the logs.

If you do not want to convert decimal to binary and vice versa, you may use the following shortcut:

For major alarms, the **Actual Error Code = (Error Code - 1)/2**, where **Error Code** is the code that you get in the log message. For example, if you get the following log:

```
Apr 12 08:04:10 send: red alarm set, device FPC 6, reason FPC 6 Major
Errors - Error code: 257
```

Actual Error Code =  $(257-1)/2 = 128$ . Similarly, for minor alarms, Actual Error Code =  $(\text{Error Code})/2$



**NOTE:** Starting in Junos OS Release 18.2R1, on MX Series routers, the **show chassis alarms** output does not display error codes for PFE-related errors. You can use the following commands to view more details of the errors that caused the alarms:

- **show chassis errors active**
- **show chassis errors active detail**

**Required Privilege Level** view

**Related Documentation**

- *Configuring an RMON Alarm Entry and Its Attributes*
- *Chassis Conditions That Trigger Alarms*

**List of Sample Output**

- [show chassis alarms \(Alarms Active\) on page 323](#)
- [show chassis alarms \(No Alarms Active\) on page 323](#)
- [show chassis alarms \(Fan Tray\) on page 323](#)
- [show chassis alarms \(MX150\) on page 323](#)
- [show chassis alarms \(MX104 Router\) on page 323](#)
- [show chassis alarms \(MX2010 Router\) on page 323](#)
- [show chassis alarms \(MX2020 Router\) on page 324](#)
- [show chassis alarms \(MX10003 Router\) on page 324](#)
- [show chassis alarms \(MX204 Router\) on page 324](#)

[show chassis alarms \(MX2008 Router\) on page 324](#)  
[show chassis alarms \(MX960, MX480, and MX240 Routers showing Major CB Failure\) on page 324](#)  
[show chassis alarms \(PTX10008 Router\) on page 325](#)  
[show chassis alarms \(T4000 Router\) on page 325](#)  
[show chassis alarms \(Unreachable Destinations Present on a T Series Router\) on page 325](#)  
[show chassis alarms \(FPC Offline Due to Unreachable Destinations on a T Series Router\) on page 325](#)  
[show chassis alarms \(SCG Absent on a T Series Router\) on page 326](#)  
[show chassis alarms \(Alarms Active on a TX Matrix Router\) on page 326](#)  
[show chassis alarms \(TX Matrix Plus router with 3D SIBs\) on page 326](#)  
[show chassis alarms \(Alarms on a T4000 Router After the enhanced-mode Statement is Enabled\) on page 328](#)  
[show chassis alarms \(Backup Routing Engine\) on page 328](#)  
[show chassis alarms \(EX Series Switch\) on page 329](#)  
[show chassis alarms \(Alarms Active on the QFX Series and OCX Series Switches\) on page 329](#)  
[show chassis alarms node-device \(Alarms Active on the QFabric System\) on page 329](#)  
[show chassis alarms \(Alarms Active on the QFabric System\) on page 329](#)  
[show chassis alarms \(Alarms Active on an EX8200 Switch\) on page 329](#)  
[show chassis alarms \(EX9251 Switch\) on page 330](#)  
[show chassis alarms \(EX9253 Switch\) on page 330](#)  
[show chassis alarms \(Alarms Active on a PTX5000 Packet Transport Router\) on page 330](#)  
[show chassis alarms \(Mix of PDUs Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A\) on page 330](#)  
[show chassis alarms \(PDU Converter Failed Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A\) on page 331](#)  
[show chassis alarms \(No Power for System Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A\) on page 331](#)  
[show chassis alarms \(Alarms Active on an ACX2000 Universal Metro Router\) on page 331](#)  
[show chassis alarms \(Active Alarm to Indicate Status of the Bad SCB Clock on MX Series\) on page 331](#)  
[show chassis alarms \(Alarms active on a PTX1000 Packet Transport Router\) on page 332](#)  
[show chassis alarms \(MX10003 Router\) on page 332](#)  
[show chassis alarms \(Alarms active on a MX10008 Router\) on page 333](#)

**Output Fields** [Table 9 on page 322](#) lists the output fields for the **show chassis alarms** command. Output fields are listed in the approximate order in which they appear.

*Table 9: show chassis alarms Output Fields*

Field Name	Field Description
Alarm time	Date and time the alarm was first recorded.
Class	Severity class for this alarm: <b>Minor</b> or <b>Major</b> .

Table 9: show chassis alarms Output Fields (continued)

Field Name	Field Description
Description	Information about the alarm.

## Sample Output

### show chassis alarms (Alarms Active)

```

user@host> show chassis alarms
3 alarms are currently active
Alarm time           Class  Description
2000-02-07 10:12:22 UTC Major fxp0: ethernet link down
2000-02-07 10:11:54 UTC Minor YELLOW ALARM - PEM 1 Removed
2000-02-07 10:11:03 UTC Minor YELLOW ALARM - Lower Fan Tray Removed

```

### show chassis alarms (No Alarms Active)

```

user@host> show chassis alarms
No alarms are currently active

```

### show chassis alarms (Fan Tray)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time           Class  Description
2010-11-11 20:27:38 UTC Major Side Fan Tray 7 Failure
2010-11-11 20:27:13 UTC Minor Side Fan Tray 7 Overspeed
2010-11-11 20:27:13 UTC Major Side Fan Tray 5 Failure
2010-11-11 20:27:13 UTC Major Side Fan Tray 0 Failure

```

### show chassis alarms (MX150)

```

user@host > show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2016-06-04 01:49:43 PDT Major Fan Tray 1 Fan 0 failed

```

### show chassis alarms (MX104 Router)

```

user@host >show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2013-06-05 14:43:31 IST Minor Backup RE Active

```

### show chassis alarms (MX2010 Router)

```

user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2012-08-07 00:46:06 PDT Major Fan Tray 2 Failure
2012-08-06 18:24:36 PDT Minor Redundant feed missing for PSM 6
2012-08-06 07:41:04 PDT Minor Redundant feed missing for PSM 8
2012-08-04 02:42:06 PDT Minor Redundant feed missing for PSM 5
2012-08-03 21:14:24 PDT Minor Loss of communication with Backup RE

```

```
2012-08-03 12:26:03 PDT Minor Redundant feed missing for PSM 4
2012-08-03 10:40:18 PDT Minor Redundant feed missing for PSM 7
```

#### show chassis alarms (MX2020 Router)

```
user@host> show chassis alarms
1 alarms currently active
Alarm time Class Description
2012-10-03 12:14:59 PDT Minor Plane 0 not online
```

#### show chassis alarms (MX10003 Router)

```
user@host> show chassis alarms

9 alarms currently active
Alarm time      Class Description
2017-07-13 21:50:31 PDT Major FPC 1 Temperature Hot
2017-07-13 21:50:04 PDT Minor FPC 1 PIC 1 Invalid port profile configuration
2017-07-13 21:49:13 PDT Minor FPC 1 PIC 0 Invalid port profile configuration
2017-07-13 21:48:54 PDT Major FPC 0 Temperature Hot
2017-07-13 21:43:57 PDT Minor PEM 5 Not Present
2017-07-13 21:43:57 PDT Minor PEM 4 Not Present
2017-07-13 21:43:54 PDT Minor CB 1 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:54 PDT Minor CB 0 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:31 PDT Minor Loss of communication with Backup RE
```

#### show chassis alarms (MX204 Router)

```
user@host> show chassis alarms

1 alarms currently active
Alarm time      Class Description
2017-11-05 22:13:03 PST Major PEM 0 Not Present
```

#### show chassis alarms (MX2008 Router)

```
user@host> show chassis alarms
No alarms currently active
```

#### show chassis alarms (MX960, MX480, and MX240 Routers showing Major CB Failure)

A major CB 0 failure alarm occurs in the event of a bad CB (unknown or mismatched CBs do not trigger this alarm in Junos Release OS 12.3R9 and later). Following GRES or recovery, if the hardware issue persists, the traffic moves to the good CB and continues. If the alarm was triggered by something transient like a power zone budget on GRES, bringing the CB back online can clear the alarm. Otherwise, replace the bad CB. Note that fabric link speed is not impacted by an offline SCB. The alarm might be raised on CB0, CB1, and CB2.

```
user@host> show chassis alarms
6 alarms currently active
Alarm time      Class Description
2014-10-31 16:49:41 EDT Major PEM 3 Not OK
2014-10-31 16:49:41 EDT Major PEM 2 Not OK
2014-10-31 16:49:31 EDT Major CB 0 Failure
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 0 Not Online
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 1 Not Online
2014-10-31 16:49:31 EDT Minor Backup RE Active
```

**show chassis alarms (PTX10008 Router)**

```

user@host>show chassis alarms
12 alarms currently active
Alarm time          Class Description
2017-05-09 01:38:55 PDT Minor Loss of communication with Backup RE
2017-05-05 06:49:57 PDT Major FPC 5 LCPU Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 PE2 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE1 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PEO Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-C Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-B Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-A Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Intake-B Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 Intake-A Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 5 running at lower speed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 4 running at lower speed

```

**show chassis alarms (T4000 Router)**

```

user@host> show chassis alarms
9 alarms currently active
Alarm time          Class Description
2007-06-02 01:41:10 UTC Minor RE 0 Not Supported
2007-06-02 01:41:10 UTC Minor CB 0 Not Supported
2007-06-02 01:41:10 UTC Minor Mixed Master and Backup RE types
2007-05-30 19:37:33 UTC Major SPMB 1 not online
2007-05-30 19:37:29 UTC Minor Front Bottom Fan Tray Absent
2007-05-30 19:37:13 UTC Major PEM 1 Input Failure
2007-05-30 19:37:13 UTC Major PEM 0 Not OK
2007-05-30 19:37:03 UTC Major PEM 0 Improper for Platform
2007-05-30 19:37:03 UTC Minor Backup RE Active

```

**show chassis alarms (Unreachable Destinations Present on a T Series Router)**

```

user@host> show chassis alarms
10 alarms currently active
Alarm time          Class Description
2011-08-30 18:43:53 PDT Major FPC 7 has unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 has unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online
2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online
2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

**show chassis alarms (FPC Offline Due to Unreachable Destinations on a T Series Router)**

```

user@host> show chassis alarms
10 alarms currently active
Alarm time          Class Description
2011-08-30 18:43:53 PDT Major FPC 7 offline due to unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online

```

```

2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online
2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

#### show chassis alarms (SCG Absent on a T Series Router)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time          Class Description
2011-01-23 21:42:46 PST Major SCG 0 NO EXT CLK MEAS-BKUP SCG ABS

```

#### show chassis alarms (Alarms Active on a TX Matrix Router)

```

user@host> show chassis alarms
scc-re0:
-----
8 alarms currently active
Alarm time          Class Description
2004-08-05 18:43:53 PDT Minor LCC 0 Minor Errors
2004-08-05 18:43:53 PDT Minor SIB 3 Not Online
2004-08-05 18:43:52 PDT Major SIB 2 Absent
2004-08-05 18:43:52 PDT Major SIB 1 Absent
2004-08-05 18:43:52 PDT Major SIB 0 Absent
2004-08-05 18:43:33 PDT Major LCC 2 Major Errors
2004-08-05 18:43:28 PDT Major LCC 0 Major Errors
2004-08-05 18:43:05 PDT Minor LCC 2 Minor Errors
lcc0-re0:
-----
5 alarms currently active
Alarm time          Class Description
2004-08-05 18:43:53 PDT Minor SIB 3 Not Online
2004-08-05 18:43:49 PDT Major SIB 2 Absent
2004-08-05 18:43:49 PDT Major SIB 1 Absent
2004-08-05 18:43:49 PDT Major SIB 0 Absent
2004-08-05 18:43:28 PDT Major PEM 0 Not OK
lcc2-re0:
-----
5 alarms currently active
Alarm time          Class Description
2004-08-05 18:43:35 PDT Minor SIB 3 Not Online
2004-08-05 18:43:33 PDT Major SIB 2 Absent
2004-08-05 18:43:33 PDT Major SIB 1 Absent
2004-08-05 18:43:33 PDT Major SIB 0 Absent
2004-08-05 18:43:05 PDT Minor PEM 1 Absent

```

#### show chassis alarms (TX Matrix Plus router with 3D SIBs)

```

user@host> show chassis alarms
sfc0-re0:
-----
Alarm time          Class Description
2014-04-08 14:35:13 IST Minor FPM 0 SFC Config Size Changed
2014-04-08 14:32:58 IST Major Fan Tray Failure
2014-04-08 14:31:53 IST Major SIB F13 6 Fault
2014-04-08 14:31:43 IST Major SIB F13 11 Fault
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 8 Fbr Cbl

```



```

2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 3 Fbr Cbl
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 15 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 14
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 10 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 8
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 7 fault
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 4 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 3 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 3
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0 Fbr Cbl
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 14 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 12 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12
2014-04-08 14:31:08 IST Major SIB F13 6 CXP 10 fault
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 6 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 4 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 2 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 0 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 XC HSL Link Error
2014-04-08 14:29:27 IST Minor LCC 0 Minor Errors
2014-04-08 14:28:37 IST Major LCC 0 Major Errors
2014-04-08 14:28:37 IST Major LCC 2 Major Errors
2014-04-08 14:28:37 IST Minor LCC 2 Minor Errors
2014-04-08 14:28:24 IST Major SIB F2S 4/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/0 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/0 Absent
2014-04-08 14:28:24 IST Major SIB F13 9 Absent
2014-04-08 14:28:24 IST Major SIB F13 8 Absent
2014-04-08 14:28:24 IST Major SIB F13 7 Absent
2014-04-08 14:28:24 IST Major SIB F13 4 Absent
2014-04-08 14:28:24 IST Major SIB F13 1 Absent
2014-04-08 14:28:22 IST Major PEM 0 Input Failure
2014-04-08 14:28:22 IST Major PEM 0 Not OK

```

lcc0-re0:

-----  
12 alarms currently active

Alarm time	Class	Description
2014-04-08 14:36:08 IST	Minor	CB 1 M/S Switch Changed
2014-04-08 14:36:08 IST	Minor	CB 1 CHASSIS ID Changed
2014-04-08 14:35:43 IST	Minor	CB 0 M/S Switch Changed

```

2014-04-08 14:35:43 IST Minor CB 0 CHASSIS ID Changed
2014-04-08 14:29:30 IST Minor SIB 4 Not Online
2014-04-08 14:29:30 IST Minor SIB 3 Not Online
2014-04-08 14:29:30 IST Minor SIB 2 Not Online
2014-04-08 14:29:24 IST Major Rear Fan Tray Failure
2014-04-08 14:29:24 IST Major Front Bottom Fan Tray Improper for Platform
2014-04-08 14:29:24 IST Major Front Top Fan Tray Improper for Platform
2014-04-08 14:28:37 IST Major SIB 4 Absent
2014-04-08 14:28:37 IST Major SIB 3 Absent

```

```
lcc2-re0:
```

```
-----
12 alarms currently active
```

Alarm time	Class	Description
2014-04-08 14:36:02 IST	Minor	CB 1 M/S Switch Changed
2014-04-08 14:36:02 IST	Minor	CB 1 CHASSIS ID Changed
2014-04-08 14:35:42 IST	Minor	CB 0 M/S Switch Changed
2014-04-08 14:34:42 IST	Minor	CB 0 CHASSIS ID Changed
2014-04-08 14:29:29 IST	Minor	SIB 0 CXP 7 Unsupported Optics
2014-04-08 14:29:27 IST	Major	Front Bottom Fan Tray Improper for Platform
2014-04-08 14:29:27 IST	Major	Front Top Fan Tray Improper for Platform
2014-04-08 14:29:25 IST	Minor	SIB 4 Not Online
2014-04-08 14:29:25 IST	Minor	SIB 3 Not Online
2014-04-08 14:28:47 IST	Major	PEM 0 Not OK
2014-04-08 14:28:36 IST	Major	SIB 2 Absent
2014-04-08 14:28:36 IST	Minor	Host 0 Boot from alternate media

```
lcc6-re0:
```

```
-----
2 alarms currently active
```

Alarm time	Class	Description
2013-11-06 04:03:56 PST	Minor	SIB 1 CXP 0 XC HSL Link Error
2013-11-06 03:49:32 PST	Major	PEM 1 Not OK

### show chassis alarms (Alarms on a T4000 Router After the enhanced-mode Statement is Enabled)

To enable improved virtual private LAN service (VPLS) MAC address learning on T4000 routers, you must include the **enhanced-mode** statement at the **[edit chassis network-services]** hierarchy level and reboot the router. When router reboots, only the T4000 Type 5 FPCs are required to be present on the router. If there are any other FPCs (apart from T4000 Type 5 FPCs) on the T4000 router, such FPCs become offline, and FPC misconfiguration alarms are generated. The **show chassis alarm** command output displays FPC misconfiguration (**FPC *fpc-slot* misconfig**) as the reason for the generation of the alarms.

```

user@host> show chassis alarms
2 alarms currently active
Alarm time          Class  Description
2011-10-22 10:10:47 PDT  Major  FPC 1 misconfig
2011-10-22 10:10:46 PDT  Major  FPC 0 misconfig

```

### show chassis alarms (Backup Routing Engine)

```

user@host> show chassis alarms
2 alarms are currently active
Alarm time          Class  Description
2005-04-07 10:12:22 PDT  Minor  Host 1 Boot from alternate media
2005-04-07 10:11:54 PDT  Major  Host 1 compact-flash missing in Boot List

```

**show chassis alarms (EX Series Switch)**

```

user@switch> show chassis alarms
4 alarms currently active
Alarm time           Class Description
2014-03-12 15:36:09 UTC Minor Require a Fan Tray upgrade
2014-03-12 15:00:02 UTC Major PEM 0 Input Failure
2014-03-12 15:00:02 UTC Major PEM 0 Not OK
2014-03-12 14:59:51 UTC Minor Host 1 Boot from alternate media

```

**show chassis alarms (Alarms Active on the QFX Series and OCX Series Switches)**

```

user@switch> show chassis alarms
1 alarms currently active
Alarm time           Class Description
2012-03-05 2:10:24 UTC Major FPC 0 PEM 0 Airflow not matching Chassis Airflow

```

**show chassis alarms node-device (Alarms Active on the QFabric System)**

```

user@switch> show chassis alarms node-device Test
node-device ED3694
3 alarms currently active
Alarm time           Class Description
2011-08-24 16:04:15 UTC Major Test:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC Major Test:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC Major Test PEM 0 is not supported/powered

```

**show chassis alarms (Alarms Active on the QFabric System)**

```

user@switch> show chassis alarms
IC-1:
-----
1 alarms currently active
Alarm time           Class Description
2011-08-24 16:04:15 UTC Minor Backup RE Active

Test:
-----
3 alarms currently active
Alarm time           Class Description
2011-08-24 16:04:15 UTC Major Test:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC Major Test:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC Major Test PEM 0 is not supported/powered

SNG-0:
-----

NW-NG-0:
-----
1 alarms currently active
Alarm time           Class Description
2011-08-24 15:49:27 UTC Major Test PEM 0 is not supported/powered

```

**show chassis alarms (Alarms Active on an EX8200 Switch)**

```

user@switch> show chassis alarms

6 alarms currently active

```

Alarm time	Class	Description
2010-12-02 19:15:22 UTC	Major	Fan Tray Failure
2010-12-02 19:15:22 UTC	Major	Fan Tray Failure
2010-12-02 19:15:14 UTC	Minor	Check CB 0 Fabric Chip 1 on Plane/FPC/PFE: 1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ...
2010-12-02 19:15:14 UTC	Minor	Check CB 0 Fabric Chip 0 on Plane/FPC/PFE: 1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ...
2010-12-02 19:14:18 UTC	Major	PSU 1 Output Failure
2010-12-02 19:14:18 UTC	Minor	Loss of communication with Backup RE

### show chassis alarms (EX9251 Switch)

```
user@switch> show chassis alarms
2 alarms currently active
Alarm time          Class  Description
2018-03-08 05:13:10 PST Major  PEM 0 Not Powered
2018-03-08 05:13:10 PST Major  Fan Tray 2 is not present
```

### show chassis alarms (EX9253 Switch)

```
user@switch> show chassis alarms
6 alarms currently active
Alarm time          Class  Description
2018-03-07 01:09:01 PST Major  Power Budget:Insufficient Power
2018-03-06 23:56:34 PST Minor  Loss of communication with Backup RE
2018-02-15 00:48:10 PST Minor  PEM 3 Not Present
2018-02-15 00:48:10 PST Minor  PEM 2 Not Present
2018-02-15 00:48:07 PST Major  PEM 4 Not Powered
2018-02-15 00:48:07 PST Major  PEM 1 Not Powered
```

### show chassis alarms (Alarms Active on a PTX5000 Packet Transport Router)

```
user@host> show chassis alarms
23 alarms currently active
Alarm time          Class  Description
2011-07-12 16:22:05 PDT Minor  No Redundant Power for Rear Chassis
2011-07-12 16:22:05 PDT Major  PDU 0 PSM 1 Not OK
2011-07-12 16:21:57 PDT Minor  No Redundant Power for Fan 0-2
2011-07-12 16:21:57 PDT Major  PDU 0 PSM 0 Not OK
2011-07-12 15:56:06 PDT Major  PDU 1 PSM 2 Not OK
2011-07-12 15:56:06 PDT Minor  No Redundant Power for FPC 0-7
2011-07-12 15:56:06 PDT Major  PDU 0 PSM 3 Not OK
2011-07-12 15:28:20 PDT Major  PDU 0 PSM 2 Not OK
2011-07-12 15:19:14 PDT Minor  Backup RE Active
```

### show chassis alarms (Mix of PDUs Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

All PDUs installed on a PTX5000 router must be of the same type. The **Mix of PDUs** or **Power Manager Non Operational** alarm is raised when different types of PDUs are installed on a PTX5000 router.

```
user@host> show chassis alarms
15 alarms currently active
Alarm time          Class  Description
2013-03-19 23:03:53 PDT Minor  No Redundant Power
2013-03-19 23:03:48 PDT Minor Mix of PDUs
2013-03-19 23:03:47 PDT Minor  PDU 1 PSM 3 Absent
2013-03-19 23:03:47 PDT Minor  PDU 1 PSM 2 Absent
```

```

2013-03-19 23:03:47 PDT Minor PDU 1 PSM 1 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 0 Absent
2013-03-19 23:03:46 PDT Major No CG Online

```

#### show chassis alarms (PDU Converter Failed Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

The **PDU Converter Failed** alarm is raised when one or more 36 V booster converter of a DC PDU fails. If two or more 36 V booster converter fails, fan trays fail and the router might get over heated. Therefore, when this alarm is raised, check the PDU and replace it, if required.

```

user@host> show chassis alarms
11 alarms currently active
Alarm time          Class Description
2013-12-11 22:14:13 PST Minor No Redundant Power for System
2013-12-11 22:14:10 PST Major PDU 0 PSM 7 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 6 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 5 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 4 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 3 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 2 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 1 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 0 Not OK
2013-12-11 22:14:10 PST Major PDU 0 Not OK
2013-12-11 22:14:01 PST Major PDU 0 Converter Failed

```

#### show chassis alarms (No Power for System Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis alarms
8 alarms currently active
Alarm time          Class Description
2013-11-19 01:58:41 PST Major No Power for System
2013-11-19 01:58:37 PST Major PDU 0 PSM 1 Not OK
2013-11-19 01:56:46 PST Major PDU 0 PSM 2 Not OK
2013-11-19 01:54:26 PST Major PDU 0 PSM 3 Not OK
2013-11-19 01:53:30 PST Major PDU 1 PSM 3 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 2 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 1 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 0 Not OK

```

#### show chassis alarms (Alarms Active on an ACX2000 Universal Metro Router)

```

user@host> show chassis alarms
7 alarms currently active
Alarm time          Class Description
2012-05-22 11:19:09 UTC Major xe-0/3/1: Link down
2012-05-22 11:19:09 UTC Major xe-0/3/0: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/7: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/6: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/3: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/2: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/1: Link down

```

#### show chassis alarms (Active Alarm to Indicate Status of the Bad SCB Clock on MX Series)

```

user@host> show chassis alarms
1 alarm currently active
Alarm time          Class Description
2013-08-06 07:48:35 PDT Major CB 0 19.44 MHz clock failure

```

**show chassis alarms (Alarms active on a PTX1000 Packet Transport Router)**

```
user@host> show chassis alarms
2 alarms currently active
Alarm time           Class  Description
2004-08-10 00:55:49 UTC Major  PEM 1 Not Present
2004-08-10 00:55:49 UTC Major  PEM 0 Not Present
```

**show chassis alarms (MX10003 Router)**

If LCMD is down on the backup RE, then the following alarm is seen on the Master.

```
user@host> show chassis alarms
1 alarm currently active
Alarm time           Class  Description
2017-05-09 13:26:27 PDT Major  VMHost RE 1 host application failed
```

If LCMD is down on the master, then following alarms are displayed.

```
user@host> show chassis alarms
3 alarms currently active
Alarm time           Class  Description
2017-05-10 14:12:21 PDT Major  VMHost RE 0 host application failed
2017-05-10 14:12:16 PDT Minor  LCM Peer Absent
2017-05-09 13:26:27 PDT Major  VMHost RE 1 host application failed
```

If the LCMD process is crashing on the master, the system will switchover after one minute provided the backup RE LCMD connection is stable. The system will not switchover under the following conditions: if the backup RE LCMD connection is unstable or if the current master just gained mastership. When the master has just gained mastership, the switchover happens only after four minutes.

The LCM peer connection un-stable alarm is raised when the LCMD-CHASD IPC communication flaps three times within a small interval of two to three minutes. Once LCM peer connection un-stable alarm is raised, the connection status is monitored for two minutes.

```
user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2017-05-29 10:12:17 PDT Minor  LCM Peer Connection un-stable
2017-05-29 09:04:17 PDT Minor  PEM 8 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 9 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 7 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 3 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 0 Not Powered
2017-05-29 09:04:08 PDT Minor  Loss of communication with Backup RE
```

If there are no more connection flaps within this two minutes time interval, the LCM peer connection un-stable alarm is cleared.

```
6 alarms currently active
Alarm time           Class  Description
2017-05-29 09:04:17 PDT Minor  PEM 8 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 9 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 7 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 3 Not Powered
```

```
2017-05-29 09:04:17 PDT Minor PEM 0 Not Powered
2017-05-29 09:04:08 PDT Minor Loss of communication with Backup RE
```

A major alarm is raised even if there is on one PLL lock error, and this alarm can be cleared only through an FPC restart.

```
user@host> show chassis alarms
4 alarms currently active
Alarm time      Class Description
2017-02-16 09:06:06 PDT Major FPC 0 Major Errors
2017-02-16 09:08:40 PDT Major FPC 1 Major Errors
2017-02-16 09:11:47 PST Minor Fan Tray 3 Pair 1 Outer Fan running at over speed
2017-02-16 09:11:47 PST Minor Fan Tray 3 Pair 1 Inner Fan running at over speed
```

### show chassis alarms (Alarms active on a MX10008 Router)

```
user@host> show chassis alarms
19 alarms currently active
Alarm time      Class Description
2018-05-29 11:03:00 PDT Minor FPC 1 PIC 5 Need bounce
2018-05-29 11:03:00 PDT Minor FPC 1 PIC 4 Need bounce
2018-05-29 11:03:00 PDT Minor FPC 1 PIC 3 Need bounce
2018-05-29 11:03:00 PDT Minor FPC 1 PIC 2 Need bounce
2018-05-29 11:03:00 PDT Minor FPC 1 PIC 1 Need bounce
2018-05-29 11:03:00 PDT Minor FPC 1 PIC 0 Need bounce
2018-05-29 05:20:03 PDT Major FPC 2 Hard errors
2018-05-29 03:05:49 PDT Major FPC 5 I2C Failure
2018-05-29 03:05:49 PDT Major FPC 1 I2C Failure
2018-05-29 03:04:30 PDT Minor PEM 4 Feed 2 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 4 Feed 1 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 3 Feed 2 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 3 Feed 1 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 2 Feed 2 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 2 Feed 1 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 1 Feed 2 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 1 Feed 1 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 0 Feed 2 switch OFF but input connected
2018-05-29 03:04:30 PDT Minor PEM 0 Feed 1 switch OFF but input connected
```

## show chassis cip

**Syntax (TX Matrix Plus Router)** `show chassis cip`

**Release Information** Command introduced in Junos OS Release 9.6.

**Description** (TX Matrix Plus routers only) Display environmental information about the Connector Interface Panel (CIP) that provides Ethernet Control Plane connectivity to line-card chassis (LCCs), switch fabric chassis, and other devices.

**Options** This command has no options.

**Required Privilege Level** view

**Related Documentation**

- [request chassis cip on page 274](#)
- *Installing a T1600 CIP*
- *Installing a T640 CIP*
- *Installing a TX-CIP*
- *Installing an M320 CIP*
- *Installing an M320 CIP*
- *Installing the T320 CIP*
- *CIP Overview*

**Output Fields** [Table 10 on page 334](#) lists the output fields for the **show chassis cip** command. Output fields are listed in the approximate order in which they appear.

*Table 10: show chassis cip Output Fields*

Field Name	Field Description
Eswitch	Ethernet switch used to connect to the LCC or to a JCS1200: 0 or 1.
Port	<p>Physical port number of the Ethernet switch:</p> <ul style="list-style-type: none"> <li>• Port numbers: 4 to 8 on Ethernet switch 0 can be used to connect up to four (reserved for future use) other SFCs or optional JCS1200s.</li> </ul> <p><b>NOTE:</b> The current configuration of the routing matrix based on a TX Matrix Plus router supports only one SFC.</p> <ul style="list-style-type: none"> <li>• Port numbers 0 to 15 on Ethernet switch 1 can be used to connect up to 16 LCCs.</li> </ul> <p><b>NOTE:</b> The current configuration of a routing matrix based on a TX Matrix Plus router supports only up to eight LCCs. You can connect LCCs to the port numbers corresponding to LCC0 to LCC7 (0 to 15) on the Ethernet switch 1.</p>



Table 10: show chassis cip Output Fields (continued)

Field Name	Field Description
Type	Type of CIP: <ul style="list-style-type: none"> <li><b>XE</b>—Ethernet switch 0 ports used for connections to the SFC control plane or other devices such as JCS1200.</li> <li><b>GE</b>—Ethernet switch 1 ports used for connections to the LCC control plane.</li> </ul>
Connected-to	Show control plane connection to a specific LCC or SFC.
Link	State of the connection to an LCC control plane, SFC control plane, or other devices: <b>Up</b> or <b>Down</b> .
Speed	Ethernet link speed.
Duplex	Type of Ethernet link: <b>Full</b> or <b>Half Duplex</b> .
Auto-neg	Status of autonegotiation for the CIP connection to the LCC, SFC, or other devices: <b>On</b> or <b>Off</b> .

## show chassis cip (TX Matrix Plus Router)

```

user@host> show chassis cip
sfc0-cip0
Eswitch Port Type Connected-to Link Speed Duplex Auto-Neg
0 4 XE SFC1 Down 0 Full Off
0 5 XE SFC0 Down 0 Full Off
0 6 XE SFC3 Down 0 Full Off
0 7 XE SFC2 Down 0 Full Off
0 8 XE SFC4 Down 0 Full Off
1 0 GE LCC0 Up 1000Mbps Full On
1 1 GE LCC8 Down 0 Half On
1 2 GE LCC1 Up 1000Mbps Full On
1 3 GE LCC9 Down 0 Half On
1 4 GE LCC2 Up 1000Mbps Full On
1 5 GE LCC10 Down 0 Half On
1 6 GE LCC3 Up 1000Mbps Full On
1 7 GE LCC11 Down 0 Half On
1 8 GE LCC4 Down 0 Half On
1 9 GE LCC12 Down 0 Half On
1 10 GE LCC5 Down 0 Half On
1 11 GE LCC13 Down 0 Half On
1 12 GE LCC6 Down 0 Half On
1 13 GE LCC14 Down 0 Half On
1 14 GE LCC7 Down 0 Half On
1 15 GE LCC15 Down 0 Half On
1 16 GE GE17 Up 1000Mbps Full On
1 17 GE GE16 Down 0 Half On

```

## show chassis craft-interface

---

<b>List of Syntax</b>	<a href="#">Syntax on page 336</a> <a href="#">Syntax (MX Series Routers) on page 336</a> <a href="#">Syntax (MX104, MX2010, MX2020, and MX2008 3D Universal Edge Routers) on page 336</a> <a href="#">Syntax (TX Matrix Routers) on page 336</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 336</a> <a href="#">Syntax (ACX Series Universal Metro Routers) on page 336</a>
<b>Syntax</b>	<b>show chassis craft-interface</b>
<b>Syntax (MX Series Routers)</b>	<b>show chassis craft-interface</b> <b>&lt;all-members&gt;</b> <b>&lt;local&gt;</b> <b>&lt;member <i>member-id</i>&gt;</b>
<b>Syntax (MX104, MX2010, MX2020, and MX2008 3D Universal Edge Routers)</b>	<b>show chassis craft-interface</b>
<b>Syntax (TX Matrix Routers)</b>	<b>show chassis craft-interface</b> <b>&lt;lcc <i>number</i>   scc&gt;</b>
<b>Syntax (TX Matrix Plus Routers)</b>	<b>show chassis craft-interface</b> <b>&lt;lcc <i>number</i>   sfc <i>number</i>&gt;</b>
<b>Syntax (ACX Series Universal Metro Routers)</b>	<b>show chassis craft-interface</b>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. <b>sfc</b> option for the TX Matrix Plus router introduced in Junos OS Release 9.6. Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers. Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers. Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers. Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.
<b>Description</b>	For routers or switches that have a display on the craft interface, show the messages that are currently displayed. On all routers except for the M20 router, you must enter this command on the master Routing Engine.
<b>Options</b>	<b>none</b> —(TX Matrix, TX Matrix Plus routers, MX104, MX2010, MX2020, and MX2008 routers, and ACX Series routers only) On a TX Matrix router, show messages that are currently displayed on the craft interface on the TX Matrix router and its attached T640 routers.

On a TX Matrix Plus router, show messages that are currently displayed on the craft interface on the TX Matrix Plus router and its attached routers.

**all-members**—(MX Series routers only) (Optional) Display information currently on the craft interface for all members of the Virtual Chassis configuration.

**lcc *number***—(TX Matrix, TX Matrix Plus routers only) (Optional) On a TX Matrix router, show messages that are currently displayed on the craft interface for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, show messages that are currently displayed on the craft interface for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display information currently on the craft interface for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display information currently on the craft interface for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**scc**—(TX Matrix router only) (Optional) Show messages that are currently displayed on the craft interface for the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus router only) (Optional) Show messages that are currently displayed on the craft interface for the respective TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

**Required Privilege Level** view

**Related Documentation**

- [clear chassis display message on page 263](#)
- [set chassis display message on page 312](#)

**List of Sample Output**

- [show chassis craft-interface \(M20 Router\) on page 339](#)
- [show chassis craft-interface \(M40 Router\) on page 340](#)
- [show chassis craft-interface \(M120 Router\) on page 340](#)

[show chassis craft-interface \(M160 Router\) on page 341](#)  
[show chassis craft-interface \(MX150\) on page 341](#)  
[show chassis craft-interface \(MX104 Router\) on page 342](#)  
[show chassis craft-interface \(MX2010 Router\) on page 342](#)  
[show chassis craft-interface \(MX2020 Router\) on page 343](#)  
[show chassis craft-interface \(MX2008 Router\) on page 344](#)  
[show chassis craft-interface \(T4000 Router\) on page 345](#)  
[show chassis craft-interface \(TX Matrix Routing Matrix\) on page 346](#)  
[show chassis craft-interface \(TX Matrix Plus Routing Matrix\) on page 348](#)  
[show chassis craft-interface \(TX Matrix Plus router with 3D SIBs\) on page 351](#)  
[show chassis craft-interface \(ACX2000 Universal Metro Router\) on page 352](#)  
[show chassis craft-interface \(ACX500 Router\) on page 353](#)

**Output Fields** Table 11 on page 338 lists the output fields for the **show chassis craft-interface** command. Output fields are listed in the approximate order in which they appear.

*Table 11: show chassis craft-interface Output Fields*

Field Name	Field Description
LCD screen or FPM Display Contents	<p>Contents of the Front Panel Module display:</p> <ul style="list-style-type: none"> <li>• <b>router-name</b>—Name of the router.</li> <li>• <b>Up</b>—How long the router has been operational, in days, hours, minutes, and seconds.</li> <li>• <b>message</b>—Information about the router traffic load, the power supply status, the fan status, and the temperature status. The display of this information changes every 2 seconds. If a text message has been created with the <b>set chassis display</b> command, this message appears on all four lines of the craft interface display. The display alternates between the text message and the standard system status messages every 2 seconds.</li> </ul>
SFC Front Panel Switch Settings	<p>(TX Matrix Plus Routers)—Display the SFC front panel switch settings:</p> <p><b>SFC Chassis Number</b> and <b>Config Size</b> are settings on physical switches located on the left side of the craft interface of the TX Matrix Plus router.</p> <ul style="list-style-type: none"> <li>• <b>SFC Chassis Number</b>—This field always displays the value <b>00</b>.</li> <li>• <b>Config Size</b>—The value of this field is <b>0</b> for the TX Matrix Plus router. The value of this field is <b>3</b> for TX Matrix Plus router with 3D SIBs.</li> </ul>
Front Panel System LEDs	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the Front Panel System LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.</p>
Front Panel Alarm Indicators	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Alarm indicators. A dot (.) indicates the relay is off. An asterisk (*) indicates the relay is active.</p>
Input Relay	<p>Status of the configured input relay ports—0 through 3. The mode is normally open or closed. The status is clear or raised.</p>
Output Relay	<p>Status of the configured output ports—0 or 1. The mode is normally open or closed. The status is clear or raised.</p>

Table 11: show chassis craft-interface Output Fields (continued)

Field Name	Field Description
<b>Front Panel FPC LEDs</b>	(MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Flexible PIC Concentrator (FPC) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. On MX2010 and MX2008 routers, there are 10 (0-9) FPCs LEDs. On MX2020 routers, there are 20 (0-9 and 10-19) FPCs LEDs.
<b>CB LEDs</b>	Status of the Control Board (CB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
<b>PS LEDs</b>	(MX2010, MX2020, and MX2008 Routers) Status of the Power Supply (PS) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. On MX2010 and MX2008 routers, there are 9 (0-8) PS LEDs. On MX2020 routers, there are 18 (0-8 and 9-17) PS LEDs.
<b>PS Status</b>	(MX104 Routers) Status of the Power Supply (PS). Green indicates that the power supply is functioning. Red indicates that the power supply is not functioning. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
<b>FAN Tray LEDs</b>	(MX2010, MX2020, and MX2008 Routers) Status of the Fan Tray LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
<b>Front Panel SFB LEDs</b>	(MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Switch Fabric Boards (SFB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
<b>Front Panel Chassis Info</b>	(MX2010, MX2020, and MX2008 Routers) Information about the chassis such as the chassis number and role. User can set the chassis number in multi-chassis configurations.
<b>MCS and SFM LEDs</b>	Status of the Miscellaneous Control Subsystem (MCS) and Switching and Forwarding Module (SFM) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. When neither a dot nor an asterisk is displayed, there is no board in that slot.
<b>SIB LEDs</b>	Status of the Switch Interface Board (SIB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
<b>SCG LEDs</b>	Status of the SONET Clock Generator (SCG) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.

## Sample Output

### show chassis craft-interface (M20 Router)

```

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED on, relay on
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3
-----
Green  .  *  *.
Red    ....
LCD screen:
      +-----+
      |host      |

```

```

|1 Alarm active      |
|Y: FERF            |
|                   |
+-----+

```

### show chassis craft-interface (M40 Router)

```

user@host> show chassis craft-interface
Front Panel LCD Display: enabled
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host Fail LED:  Off
NICs           0  1  2  3  4  5  6  7
-----
Green  *.  *.  *.  *.
Red    .....
LCD Screen:
+-----+
|host    |
|Up: 27+18:52:37|
|        |
|52.649kpps Load|
+-----+

```

### show chassis craft-interface (M120 Router)

```

user@host> show chassis craft-interface
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    .
Master            *    .

Front Panel Alarm Indicators:
-----
Red LED           *
Yellow LED        .
Major relay       *
Minor relay        .

Front Panel FPC LEDs:
FPC    0    1    2    3    4    5
-----
Red     .    .    .    .    .    .
Green   .    *    .    *    *    *

CB LEDs:
CB     0    1
-----
Amber   .    .
Green  *    *

PS LEDs:
PS     0    1
-----
Red     .    .
Green  *    *

```

```

FEB LEDs:
  FEB  0    1    2    3    4    5
-----
Red    .    .    .    .    .    .
Green  .    .    .    *    *    *
Active .    .    .    *    *    *

```

### show chassis craft-interface (M160 Router)

```

user@host> show chassis craft-interface
FPM Display contents:

```

```

+-----+
|hosts          |
|Up: 1+16:46    |
|               |
|Fans OK       |
+-----+

```

Front Panel System LEDs:

```

Host    0    1
-----
OK      .    *
Fail    .    .
Master  .    *

```

Front Panel Alarm Indicators:

```

-----
Red LED    .
Yellow LED .
Major relay.
Minor relay.

```

Front Panel FPC LEDs:

```

FPC    0    1    2    3    4    5    6    7
-----
Red    .    .    .    .    .    .    .    .
Green  *    *    .    .    .    .    .    .

```

MCS and SFM LEDs:

```

MCS    0    1    SFM    0    1    2    3
-----
Amber   .                .    .
Green   .                .    .
Blue    .    *          *    *

```

### show chassis craft-interface (MX150)

```

user@host > show chassis craft-interface
LED status for: FPC 0

```

LEDs status:

```

Alarm LED : Off
System LED: Green
Master LED: Green

```

Interface	STATUS LED	LINK/ACTIVITY LED
ge-0/0/0	N/A	(null)
lc-0/0/0	(null)	(null)
ge-0/0/10	N/A	(null)

gr-0/0/10	N/A	(null)
ip-0/0/10	N/A	(null)
vt-0/0/10	N/A	(null)
ge-0/0/11	N/A	(null)

#### show chassis craft-interface (MX104 Router)

```
user@host > show chassis craft-interface
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    .
Master            *    .

Front Panel Alarm Indicators:
-----
Red LED           .
Yellow LED        *
Major relay        .
Minor relay        *

Input relay:
-----
Port   Mode   Status
0      Open   Clear
1      Open   Clear
2      Open   Clear
3      Open   Clear

Output relay:
-----
Port   Mode   Status
0      Open   Clear
1      Open   Clear

PS Status:
PS     0    1
-----
Red     .    .
Green  *    .
```

#### show chassis craft-interface (MX2010 Router)

```
user@host > show chassis craft-interface
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    *
Master            *    .

Front Panel Alarm Indicators:
-----
Red LED           .
Yellow LED        *
Major relay        .
Minor relay        *

Front Panel FPC LEDs:
```



```

FPC    0    1    2    3    4    5    6    7    8    9
-----
Red      .      .      .      .      .      .      .      .      .      .
Green    *      *      .      .      .      .      .      .      *      *

CB LEDs:
  CB    0    1
-----
Amber    .      .
Green    *      *

PS LEDs:
  PS    0    1    2    3    4    5    6    7    8
-----
Red      .      .      .      .      .      .      .      .      .
Green    .      .      .      .      *      *      *      *      *

Fan Tray LEDs:
  FT    0    1    2    3
-----
Red      .      .      .      .
Green    *      *      *      *

Front Panel SFB LEDs:
SFB     0    1    2    3    4    5    6    7
-----
Red      .      .      .      .      .      .      .      .
Green    *      *      *      *      *      *      *      *

Front Panel Chassis Info:
Chassis Number    0x0
Chassis Role      S

```

#### show chassis craft-interface (MX2020 Router)

```

user@host > show chassis craft-interface
Front Panel System LEDs:
Routing Engine 0 1
-----
OK * *
Fail . .
Master * .
Front Panel Alarm Indicators:
-----
Red LED .
Yellow LED .
Major relay .
Minor relay .
Front Panel FPC LEDs:
FPC 0 1 2 3 4 5 6 7 8 9
-----
Red . . . . .
Green * * * * *
Front Panel FPC LEDs:
FPC 10 11 12 13 14 15 16 17 18 19
-----
Red . . . . .
Green * * * * *
CB LEDs:
CB 0 1

```

```

-----
Amber . .
Green * *
PS LEDs:
PS 0 1 2 3 4 5 6 7 8
-----
Red . . . . .
Green * * * * * . . * *
PS LEDs:
PS 9 10 11 12 13 14 15 16 17
-----
Red . . . . .
Green * * * * * * * *
Fan Tray LEDs:
FT 0 1 2 3
-----
Red . . . .
Green * * * *
Front Panel SFB LEDs:
SFB 0 1 2 3 4 5 6 7
-----
Red . . . . .
Green * * * * * * *
Front Panel Chassis Info:
Chassis Number 0x57
Chassis Role M

```

#### show chassis craft-interface (MX2008 Router)

```

user@host> show chassis craft-interface
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    *
Fail              .    .
Master           *    .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED       .
Major relay      .
Minor relay      .

Front Panel FPC LEDs:
FPC    0    1    2    3    4    5    6    7    8    9
-----
Red    .    .    .    .    .    .    .    .    .    .
Green  *    *    .    .    .    .    .    *    .    .

CB LEDs:
CB    0    1
-----
Amber  .    .
Green  *    *

PS LEDs:
PS    0    1    2    3    4    5    6    7    8
-----
Red    .    .    .    .    .    .    .    .    .
Green  .    *    *    *    *    *    *    *    .

```

```

Fan Tray LEDs:
  FT   0   1
-----
Red    .   .
Green  *   *

Front Panel SFB LEDs:
SFB    0   1   2   3   4   5   6   7
-----
Red    .   .   .   .   .   .   .   .
Green  *   *   *   *   *   *   *   *

Front Panel Chassis Info:
Chassis Number    0x36
Chassis Role      M

```

### show chassis craft-interface (T4000 Router)

```

user@host> show chassis craft-interface
FPM Display contents:

```

```

+-----+
|stymphalian      |
|2 Alarms active  |
|R: Front Top Fan Tra|
|Y: PEM 1 Absent  |
+-----+

```

```

Front Panel System LEDs:
Routing Engine    0   1
-----

```

```

OK                *   *
Fail              .   .
Master            *   .

```

```

Front Panel Alarm Indicators:
-----

```

```

Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

```

```

Front Panel FPC LEDs:
FPC    0   1   2   3   4   5   6   7
-----

```

```

Red    .   .   .   .   .   .   .   .
Green  *   .   .   *   .   *   *   .

```

```

CB LEDs:

```

```

CB    0   1
-----
Amber  .   .
Green  *   *
Blue   *   .

```

```

SCG LEDs:

```

```

SCG   0   1
-----
Amber  .   .
Green  *   *
Blue   *   .

```

```

SIB LEDs:
  SIB  0   1   2   3   4
-----
Red    .   .   .   .   .
Green  *   *   *   *   *

```

### show chassis craft-interface (TX Matrix Routing Matrix)

```

user@host> show chassis craft-interface
scc-re0:

```

```

-----
FPM Display contents:
+-----+
|bradley          |
|8 Alarms active  |
|R: SIB 2 Absent  |
|R: SIB 1 Absent  |
+-----+

```

```

Front Panel System LEDs:
Routing Engine    0   1
-----
OK                *   .
Fail              .   .
Master            *   .

```

```

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

```

```

CB LEDs:
  CB  0   1
-----

```

```

Amber. .
Green * .
Blue  * .

```

```

SIB LEDs:
  SIB  0   1   2   3   4
-----
Fail . . . . .
OK   . . . . *
Active . . . . *

```

```

lcc0-re0:

```

```

-----
FPM Display contents:
+-----+
|hybrid          |
|5 Alarms active  |
|R: SIB 2 Absent  |
|R: SIB 1 Absent  |
+-----+

```

```

Front Panel System LEDs:
Routing Engine    0   1
-----
OK                *   .

```

```

Fail          . . .
Master        * .

```

#### Front Panel Alarm Indicators:

```

-----
Red LED      *
Yellow LED   *
Major relay   *
Minor relay   *

```

#### Front Panel FPC LEDs:

```

FPC   0   1   2   3   4   5   6   7
-----

```

```

Red   . . . . .
Green * * . . .

```

#### CB LEDs:

```

CB   0   1
-----

```

```

Amber. .
Green * .
Blue  * .

```

#### SCG LEDs:

```

SCG  0   1
-----

```

```

Amber. .
Green * .
Blue  * .

```

#### SIB LEDs:

```

SIB  0   1   2   3   4
-----

```

```

Red   . . . . .
Green . . . . *

```

#### lcc2-re0:

#### FPM Display contents:

```

+-----+
| prius          |
| 5 Alarms active |
| R: SIB 2 Absent |
| R: SIB 1 Absent |
+-----+

```

#### Front Panel System LEDs:

```

Routing Engine  0   1
-----

```

```

OK          * .
Fail        . . .
Master      * .

```

#### Front Panel Alarm Indicators:

```

-----
Red LED      *
Yellow LED   *
Major relay   *
Minor relay   *

```

#### Front Panel FPC LEDs:

```

FPC    0    1    2    3    4    5    6    7
-----
Red    .    .    .    .    .    .    .    .
Green  *    *    *    .    .    .    .    .

CB LEDs:
   CB    0    1
-----
Amber.  .
Green   *    .
Blue    *    .

SCG LEDs:
   SCG    0    1
-----
Amber.  .
Green   *    .
Blue    *    .

SIB LEDs:
   SIB    0    1    2    3    4
-----
Red     .    .    .    .    .
Green.  .    .    .    *

```

#### show chassis craft-interface (TX Matrix Plus Routing Matrix)

```

user@host> show chassis craft-interface
sfc0-re0:

```

```

-----
FPM Display Contents:
+-----+
|noname          |
|12 Alarms active|
|R: SIB F13 12 Absent|
|R: SIB F13 9 Absent|
+-----+

```

```

SFC Front Panel Switch Settings:
SFC Chassis Number : 00
Config Size        : 1

```

```

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    *
Fail              .    .
Master           *    .

```

```

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

```

```

Front Panel F13 SIB LEDs:
SIB    0    1    2    3    4    5    6    7    8    9    10   11   12   13   14   15
-----
Fail   .    .    .    .    .    .    .    .    .    .    .    .    .    .    .    .
OK     *    .    .    *    .    .    *    .    *    .    .    *    .    .    .    .

```

```
Active . . . * . . * . * . . * . . . .
```

#### PS LEDs:

```
PS 0 1
```

```
-----
Red . *
```

```
Green * .
```

#### Fan Tray LEDs:

```
FT 0 1 2 3 4 5
```

```
-----
Red . . . . * *
```

```
Green * * * * . .
```

#### CB LEDs:

```
CB 0 1
```

```
-----
Amber . .
```

```
Green * *
```

```
Blue * .
```

#### lcc0-re0:

#### ----- FPM Display contents:

```
+-----+
|noname1          |
|1 Alarm active   |
|R: PEM 1 Not OK  |
|                 |
+-----+
```

#### Front Panel System LEDs:

```
Routing Engine 0 1
```

```
-----
OK                * *
```

```
Fail              . .
```

```
Master            * .
```

#### Front Panel Alarm Indicators:

```
-----
Red LED          *
```

```
Yellow LED       .
```

```
Major relay      *
```

```
Minor relay      .
```

#### Front Panel FPC LEDs:

```
FPC 0 1 2 3 4 5 6 7
```

```
-----
Red . . . . . . . .
```

```
Green . * . * * . . *
```

#### CB LEDs:

```
CB 0 1
```

```
-----
Amber . .
```

```
Green * *
```

```
Blue * .
```

#### SCG LEDs:

```
SCG 0 1
```

```
-----
```

```

Amber . .
Green * *
Blue  * .

```

## SIB LEDs:

```

SIB  0  1  2  3  4
-----
Red   .  .  .  .  .
Green *  *  *  *  *

```

lcc1-re0:

## FPM Display contents:

```

+-----+
|noname2      |
|2 Alarms active|
|R: FPC 0 PIC 0 Failu|
|R: PEM 1 Not OK  |
+-----+

```

## Front Panel System LEDs:

```

Routing Engine  0  1
-----
OK              *  *
Fail            .  .
Master          *  .

```

## Front Panel Alarm Indicators:

```

-----
Red LED        *
Yellow LED     .
Major relay    *
Minor relay    .

```

## Front Panel FPC LEDs:

```

FPC  0  1  2  3  4  5  6  7
-----
Red   .  .  .  .  .  .  .  .
Green *  *  *  .  .  *  .  .

```

## CB LEDs:

```

CB  0  1
-----
Amber . .
Green * *
Blue  * .

```

## SCG LEDs:

```

SCG  0  1
-----
Amber . .
Green * *
Blue  * .

```

## SIB LEDs:

```

SIB  0  1  2  3  4
-----
Red   .  .  .  .  .
Green *  *  *  *  *

```



**show chassis craft-interface (TX Matrix Plus router with 3D SIBs)**

```
user@host> show chassis craft-interface
sfc0-re0:
```

```
-----
FPM Display Contents:
```

```
+-----+
|noname      |
|48 Alarms active |
|R: LCC 2 Major Error|
|R: LCC 0 Major Error|
+-----+
```

```
SFC Front Panel Switch Settings:
SFC Chassis Number : 00
Config Size       : 3
```

```
Front Panel System LEDs:
Routing Engine    0    1
```

```
-----
OK                *    *
Fail              .    .
Master            *    .
```

```
Front Panel Alarm Indicators:
```

```
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *
```

```
Front Panel F13 SIB LEDs:
```

SIB	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Fail	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
OK	*	.	.	*	.	.	*	.	.	.	.	.	.	.	.	.
Active	*	.	.	*	.	.	*	.	.	.	.	.	.	.	.	.

```
PS LEDs:
```

```
PS    0    1
-----
Red    *    .
Green  .    *
```

```
Fan Tray LEDs:
```

FT	0	1	2	3	4	5
Red	.	.	.	.	.	*
Green	*	*	*	*	*	.

```
CB LEDs:
```

```
CB    0    1
-----
Amber  .    .
Green  *    *
Blue   *    .
```

```
lcc0-re0:
```

```
-----
FPM Display contents:
```

```
+-----+
```

```

|noname1          |
|14 Alarms active |
|R: PEM 1 Not OK  |
|R: FPC 7 misconfig|
+-----+

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    *
Fail              .    .
Master           *    .

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

Front Panel FPC LEDs:
FPC    0    1    2    3    4    5    6    7
-----
Red     .    .    .    .    .    .    .    .
Green   .    .    .    .    *    .    .    .

CB LEDs:
CB     0    1
-----
Amber   .    .
Green  *    *
Blue   *    .

SCG LEDs:
SCG    0    1
-----
Amber   .    .
Green  *    *
Blue   *    .

SIB LEDs:
SIB    0    1    2    3    4
-----
Red     .    .    .    .    .
Green  *    *    *    .    .

```

#### show chassis craft-interface (ACX2000 Universal Metro Router)

```

user@host> show chassis craft-interface
Front Panel System LEDs:
Routing Engine
-----
OK                *
Fail              .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED       .
Major relay      .
Minor relay      .

```

```

Input relay:
-----
Port    Mode    Status
0       Open    Clear
1       Open    Clear
2       Open    Clear
3       Open    Clear

Output relay:
-----
Port    Mode    Status
0       Open    Clear
1       Open    Clear

PS Status:
  PS    0    1
-----
Red     .    .
Green  *    *

```

### show chassis craft-interface (ACX500 Router)

```
user@host> show chassis craft-interface
```

```

Front Panel System LEDs:
Routing Engine
-----
OK                *
Fail              .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED       .
Major relay      .
Minor relay      .

Input relay:
-----
Port    Mode    Status
0       Open    Clear
1       Open    Clear
2       Open    Clear
3       Open    Clear

Output relay:
-----
Port    Mode    Status
0       Open    Clear
1       Open    Clear

PS Status:
  PS    0    1
-----
Red     .    .
Green  *    *

```

## show chassis environment

List of Syntax	Syntax on page 354
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	Syntax (ACX500 Routers) on page 356
Syntax	show chassis environment
Syntax (T320, T640, T1600, and T4000 Routers)	show chassis environment <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</i> > <scg <i>scg-slot-number</i> > <sib <i>sib-slot-number</i> >
Syntax (TX Matrix Routers)	show chassis environment <lcc <i>number</i>   scc>
Syntax (TX Matrix Plus Routers)	show chassis environment <cb <i>cb-slot-number</i> > <cip <i>cip-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <lcc <i>number</i> > <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</i> > <scg <i>scg-slot-number</i> > < sfc <i>number</i> > <sib <i>sib-slot-number</i> >
Syntax (MX Series Routers)	show chassis environment <all-members> <local> <member <i>member-id</i> >

Syntax (MX104 3D Universal Edge Routers)	<pre>show chassis environment &lt;cb&gt; &lt;pem <i>pem-slot-number</i>&gt; &lt;routing-engine <i>re-slot-number</i>&gt;</pre>
Syntax (MX150 Router Appliance)	<pre>show chassis environment &lt;pem <i>pem-slot-number</i>&gt; &lt;routing-engine <i>re-slot-number</i>&gt;</pre>
Syntax (MX2010, MX2020, and MX2008 3D Universal Edge Routers)	<pre>show chassis environment &lt;adc <i>adc-slot-number</i>&gt; &lt;all-members&gt; &lt;cb <i>cb-slot-number</i>&gt; &lt;fan <i>fantray-slot-number</i>&gt; &lt;fpc <i>fpc-slot-number</i>&gt; &lt;fpm&gt; &lt;local&gt; &lt;member <i>member-id</i>&gt; &lt;monitored&gt; &lt;psm <i>psm-slot-number</i>&gt; &lt;routing-engine <i>re-slot-number</i>&gt; &lt;sfb <i>sfb-slot-number</i>&gt; &lt;satellite [<i>fpc-slot slot-id</i> [<i>device-alias alias-name</i>]]&gt;</pre>
Syntax (MX10003 3D Universal Edge and MX204 Routers)	<pre>show chassis environment &lt;cb <i>cb-slot-number</i>&gt; &lt;fpc <i>fpc-slot-number</i>&gt; &lt;pem <i>pem-slot-number</i>&gt; &lt;routing-engine <i>re-slot-number</i>&gt;</pre>
Syntax (EX8200 Switches)	<pre>show chassis environment &lt;all-members&gt; &lt;cb <i>cb-slot-number</i>&gt; &lt;fpc <i>fpc-slot-number</i>&gt; &lt;local&gt; &lt;member <i>member-id</i>&gt; &lt;psu <i>psu-slot-number</i>&gt; &lt;routing-engine <i>re-slot-number</i>&gt;</pre>
Syntax (EX Series Switches except EX8200)	<pre>show chassis environment &lt;all-members&gt; &lt;fpc <i>fpc-slot-number</i>&gt; &lt;local&gt; &lt;member <i>member-id</i>&gt; &lt;power-supply-unit&gt; &lt;routing-engine&gt; &lt;satellite [<i>fpc-slot slot-id</i> [<i>device-alias alias-name</i>]]&gt;</pre>
Syntax (QFX Series)	<pre>show chassis environment &lt;cb <i>slot-number</i> &lt;interconnect-device <i>name</i>&gt;&gt; &lt;fpc <i>slot-number</i> &lt;interconnect-device <i>name</i>&gt;&gt; &lt;interconnect-device <i>name</i> &lt;slot-number&gt;</pre>

<node-device *name*>  
<pem *slot-number* (interconnect-device *name slot-number*) | (node-device *name*)>  
<routing-engine *name* <interconnect-device *name slot-number*>>

**Syntax (OCX Series)**    show chassis environment

**Syntax (PTX Series  
Packet Transport  
Routers)**    show chassis environment  
                  <cb *cb-slot-number*>  
                  <ccg *ccg-slot-number* >  
                  <fpc *fpc-slot-number*>  
                  <fpm>  
                  <monitored>  
                  <pdu *pdu-slot-number*>  
                  <routing-engine *re-slot-number*>  
                  <sib *sib-slot-number*>

**Syntax (ACX Series  
Universal Metro  
Routers)**    show chassis environment  
                  <cb *cb-slot-number*>  
                  <pem *pem-slot-number*>  
                  <routing-engine *re-slot-number*>

**Syntax (ACX5048 and  
ACX5096 Routers)**    show chassis environment  
                  <fpc *slot-number*>  
                  <pem>  
                  <routing-engine>

**Syntax (ACX500  
Routers)**    show chassis environment  
                  <cb *cb-slot-number*>  
                  <routing-engine *re-slot-number*>

**Release Information**    Command introduced before Junos OS Release 7.4.  
                              Command introduced in Junos OS Release 9.0 for EX Series switches.  
                              **sfc** option introduced for the TX Matrix Plus router in Junos OS Release 9.6.  
                              Command introduced in Junos OS Release 11.1 for QFX Series.  
                              Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.  
                              **monitored** option added in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.  
                              Command introduced in Junos OS Release 12.1 for T4000 Core Routers.  
                              Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.  
                              Command introduced in Junos OS Release 12.3 for MX 2020 and MX2010 3D Universal Edge Routers.  
                              **pem** option introduced in Junos OS Release 12.3 for ACX4000 Universal Metro Routers.  
                              **satellite** option introduced in Junos OS Release 14.2R3.  
                              **all-members**, **local**, and **member** *member-id* options introduced in Junos OS Release 15.1 for MX2010 and MX2020 routers.  
                              Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.  
                              Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.  
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.  
 Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.  
 Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.  
 Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.  
 Command introduced in Junos OS Release 18.2 for EX9253 Switches.  
 Command introduced in Junos OS Release 18.2R1 for MX10008 Routers.

**Description** Display environmental information about the router or switch chassis, including the temperature and information about the fans, power supplies, and Routing Engine.

In addition, on ACX4000 routers, display temperature information about the different channels of a Modular Interface Card (MIC). The number of channels displayed depends on the type of MIC installed.

Starting with Junos OS Release 14.1, the **show chassis environment cb cb-slot-number | ccg ccg-slot-number | fpc fpc-slot-number | fpm | monitored | pdu pdu-slot-number | routing-engine re-slot-number | sib sib-slot-number** operational mode command output displays environmental information for the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-PIA) and other components in a PTX5000 Packet Transport Router.

**Options** **none**—Display environmental information about the router or switch chassis. On a TX Matrix router, display environmental information about the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about the TX Matrix Plus router and its attached routers.

**all-members**—(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for all the members of the Virtual Chassis configuration.

**adc adc-slot-number**—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the adapter cards. For MX2020 routers, replace **adc-slot-number** with a value from 0 through 19. For MX2010 and MX2008 routers, replace **adc-slot-number** with a value from 0 through 9.

**cb cb-slot-number**—(ACX Series Universal Metro Routers, EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2020 routers, MX2010 routers, MX2008 routers, PTX Series Packet Transport Routers, QFX Series, and T Series routers, and TX Matrix Plus routers only) (Optional) Display chassis environmental information for the Control Board. On devices other than EX Series switches, replace **cb-slot** with 0 or 1.

**cip cip-slot-number**—(TX Matrix Plus routers only) (Optional) Display chassis environmental information for the Connection Interface Panel (CIP). Replace the **cip-slot-number** variable with a value of 0 or 1.

**cb interconnect-device name**—(QFabric systems only) (Optional) Display chassis environmental information for the Control Board on an Interconnect device.

**ccg *ccg-slot-number***—(PTX Series only) (Optional) Display chassis environmental information for the Centralized Clock Generator. Replace ***cb-slot*** with a value of **0** or **1**.

**fan *fantray-slot-number***—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the fan trays. Replace ***fantray-slot-number*** with a value from **0** through **3**.

**fpc *fpc-slot***—(EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2010 routers, MX2020 routers, MX2008 routers, PTX Series Packet Transport Routers, QFX Series, QFX3500 switches, QFabric systems, T Series routers, and TX Matrix Plus routers) (Optional) Display chassis environmental information for a specified Flexible PIC Concentrator. For MX2010 and MX2008 routers, replace ***fpc-slot*** with a value from **0** through **9**. For MX2020 routers, replace ***fpc-slot*** with a value from **0** through **19**. For information about FPC numbering, see [show chassis environment fpc](#). On a QFabric system, display chassis environmental information for a specified Flexible PIC Concentrator on an Interconnect device. On an EX Series switch, display chassis environmental information for a specified Flexible PIC Concentrator; see the hardware documentation for your switch for information on FPC numbering. On a TX Matrix Plus router with 3D SIBs replace ***fpc-slot*** with a value from **0** through **63**.

**fpm**—(M120, M320, and M40e routers, MX2010 routers, MX2020 routers, MX2008 routers, PTX Series, Packet Transport Routers, T Series routers, and TX Matrix Plus routers only) (Optional) Display chassis environmental information for the craft interface (FPM).

**interconnect-device *name***—(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for the local Virtual Chassis member.

**member *member-id***—(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for the specified member of the Virtual Chassis



configuration. On MX Series routers, replace *member-id* with a value of 0 or 1. For EX Series switches, see *member* for member ID values.

**monitored**—(MX2020 routers and PTX Series Packet Transport Routers only) (Optional) Display chassis environmental information for monitored temperatures only. Temperatures that are not included in temperature alarm computations are not displayed.

**node-device name**—(QFabric systems only) (Optional) Display chassis environmental information for the Node device.

**pdu pdu-slot-number**—(PTX Series only) (Optional) Display chassis environmental information for the specified power distribution unit.

**pem**—(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Power Entry Module on the specified Interconnect device or Node device.

**pem pem-slot-number**—(ACX Series Universal Metro Routers, M120, M320, and M40e routers, MX Series routers, MX104 routers, QFX Series, and T Series routers only) (Optional) Display chassis environmental information for the Power Entry Module on the specified Power Entry Module. For information about the options, see [show chassis environment pem](#).

**psm psm-slot-number**—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the power supply module. For MX2020 routers, replace *psm-slot-number* with a value from 0 through 17. For MX2010 and MX2008 routers, replace *psm-slot-number* with a value from 0 through 8.

**psu psu-slot-number**—(EX Series switches only) (Optional) Display chassis environmental information for a specified power supply.

**routing-engine**—(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Routing Engine on the specified Interconnect device.

**routing-engine re-slot-number**—(Optional) Display chassis environmental information for the specified Routing Engine. For information about the options, see [show chassis environment routing-engine](#).

**satellite [fpc-slot slot-id | device-alias alias-name]**—(Junos Fusion only) (Optional) Display chassis environmental information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

**scg**—(T Series routers only) (Optional) Display chassis environmental information about the SONET Clock Generator.

**scc**—(TX Matrix routers only) (Optional) Display chassis environmental information about the TX Matrix router (switch-card chassis).

**sfb *sfb-slot-number***—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the switch fabric board. Replace *sfb-slot-number* with a value from 0 through 7.

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display chassis environmental information about the respective TX Matrix Plus router ( switch-fabric chassis). Replace *number* variable with 0.

**sib *sib-slot-number***—(M320 routers, PTX Series Packet Transport Routers, and T Series routers only) (Optional) Display chassis environmental information about the specified switch interface board. For information about the options, see [show chassis environment sib](#).

**Required Privilege Level**

view

**Related Documentation**

- *show chassis environment adc*
- [show chassis environment cb on page 433](#)
- *show chassis environment ccg*
- [show chassis environment cip on page 459](#)
- [show chassis environment fpc on page 461](#)
- [show chassis environment fpm on page 510](#)
- [show chassis environment lcc on page 517](#)
- *show chassis environment mcs*
- *show chassis environment monitored*
- *show chassis environment pcg*
- *show chassis environment pdu*
- [show chassis environment pem on page 522](#)
- *show chassis environment psm*
- *show chassis environment psu*
- [show chassis environment routing-engine on page 536](#)
- [show chassis environment scg on page 544](#)
- *show chassis environment sfb*
- [show chassis environment sib on page 553](#)
- [show chassis environment sfc on page 549](#)

**List of Sample Output**

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[show chassis environment \(M7i Router\) on page 363](#)  
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**Output Fields** [Table 12 on page 362](#) lists the output fields for the **show chassis environment** command. Output fields are listed in the approximate order in which they appear.

*Table 12: show chassis environment Output Fields*

Field Name	Field Description
<b>Class</b>	<p>Information about the category or class of chassis component:</p> <ul style="list-style-type: none"> <li>• <b>Power:</b> Power information: <ul style="list-style-type: none"> <li>• (M5, M10, M20, and M40 routers and EX Series switches only) Power supply status: <b>OK</b>, <b>Testing</b>, (during initial power-on), <b>Failed</b>, or <b>Absent</b>.</li> <li>• (M7i, M10i, M40e, M120, M160, M320, and T Series routers and EX Series switches only) Power Entry Modules status: <b>OK</b>, <b>Testing</b>, (during initial power-on), <b>Check</b>, <b>Failed</b>, or <b>Absent</b>.</li> <li>• (PTX Series only) Power information is reported in PDU or PSM combinations. The status is: <b>OK</b>, <b>Testing</b>, (during initial power-on), <b>Check</b>, <b>Failed</b>, or <b>Absent</b>.</li> </ul> </li> <li>• <b>Temp:</b> Temperature of air flowing through the chassis in degrees Celsius (C) and Fahrenheit (F). <ul style="list-style-type: none"> <li>• On PTX Series Packet Transport Routers and MX2010, MX2020, and MX2008 Routers, multiple cooling zones are supported. FRU temperatures in each zone are coordinated with the fan speed of fan trays in those zones.</li> <li>• EX2200 switches have a side-to-rear cooling system. The <b>Local Intake</b> temperature is measured by the sensor on the right side of the chassis, and the <b>Remote Intake</b> temperature is measured by the sensor on the left side of the chassis.</li> </ul> </li> <li>• <b>Pic:</b> On ACX4000 routers, multiple temperature channels on a MIC. The status is: <b>OK</b> and the <b>Measurement</b> is in degrees Celsius (C) and Fahrenheit (F).</li> <li>• <b>Fan:</b> Fan status: <b>OK</b>, <b>Testing</b> (during initial power-on), <b>Failed</b>, or <b>Absent</b>. On PTX Series Packet Transport Routers and MX2010, MX2020, and MX2008 Routers, multiple fan trays are supported. Fan status is reported in Fan Tray or Fan combinations. <b>Measurement</b> indicates actual fan RPM (PTX and MX2010, MX2020, and MX2008 Routers only).</li> <li>• <b>Misc:</b> Information about other components of the chassis. <ul style="list-style-type: none"> <li>• On some routers, this field indicates the status of one or more additional components.</li> <li>• On the M40e, M160, and M320 router, <b>Misc</b> includes <b>CIP</b> (Connector Interface Panel). <b>OK</b> indicates that the CIP is present. <b>Absent</b> indicates that the CIP is not present.</li> <li>• On T Series routers, <b>Misc</b> includes <b>CIP</b> and <b>SPMB</b> (Switch Processor Mezzanine Board). <b>OK</b> indicates that the <b>CIP</b> or <b>SPMB</b> is present. <b>Absent</b> indicates that the <b>CIP</b> or <b>SPMB</b> is not present.</li> <li>• On PTX Series Packet Transport Routers, <b>Misc</b> includes the <b>SPMB</b> (Switch Processor Mezzanine Board). The SPMB is located on the control boards. <b>OK</b> indicates that the control board is present. <b>Absent</b> indicates that the control board is not present.</li> </ul> </li> </ul>
<b>Item</b>	<p>(MX2010, MX2020, and MX2008 Routers) Information about the chassis component: Routing Engines, Controls Boards (CBs), Switch Fabric Boards (SFBs), PICs, Flexible PIC Concentrators (FPCs), and Adapter Cards (ADCs).</p> <p>(MX104 Routers) Information about the chassis components: Routing Engines, Control Board (CB), Power Entry Module (PEM), and Compact Forwarding Engine Board (AFEB).</p> <p>(QFabric Systems) Information about the chassis component: Control Boards, Routing Engines, Flexible PIC Concentrators (FPCs), and Power Entry Modules (PEMs), Node Devices, and Interconnect Devices.</p> <p>(QFX Series) Information about the chassis component: Flexible PIC Concentrators (FPCs), and Power Entry Modules (PEMs).</p>

Table 12: show chassis environment Output Fields (continued)

Field Name	Field Description
<b>Status</b>	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the specified chassis component. For example, if the Class is Fan, the fan status can be:</p> <ul style="list-style-type: none"> <li>• <b>OK:</b> The fans are operational.</li> <li>• <b>Testing:</b> The fans are being tested during initial power-on.</li> <li>• <b>Failed:</b> The fans have failed or the fans are not spinning.</li> <li>• <b>Absent:</b> The fan tray is not installed.</li> </ul> <p>If the Class is Power, the power supply status can be:</p> <ul style="list-style-type: none"> <li>• <b>OK:</b> The power component is operational.</li> <li>• <b>Testing:</b> The power component is being tested during initial power-on.</li> <li>• <b>Check:</b> There is insufficient power---that is, fewer than the minimum required feeds are connected.</li> <li>• <b>Failed:</b> The inputs leads have failed.</li> <li>• <b>Absent:</b> The power component is not installed.</li> </ul>
<b>Measurement</b>	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Dependant on the Class. For example, if the Class is Temp, indicates the temperature in degree Celsius and degrees Fahrenheit. If the Class is Fan, indicates actual fan RPM.</p>

## Sample Output

### show chassis environment (M5 Router)

```

user@host> show chassis environment
Class Item           Status      Measurement
Power Power Supply A   OK
        Power Supply B Absent
Temp  FPC 0           OK          30 degrees C / 86 degrees F
        FEB           OK          33 degrees C / 91 degrees F
        PS Intake      OK          27 degrees C / 80 degrees F
        PS Exhaust     OK          27 degrees C / 80 degrees F
        Routing Engine OK          34 degrees C / 93 degrees F
Fans  Left Fan 1      OK          Spinning at normal speed
        Left Fan 2      OK          Spinning at normal speed
        Left Fan 3      OK          Spinning at normal speed
        Left Fan 4      OK          Spinning at normal speed
Misc  Craft Interface OK

```

### show chassis environment (M7i Router)

```

user@host> show chassis environment
Class Item           Status      Measurement
Power Power Supply 0   OK
        Power Supply 1 Absent
Temp  Intake           OK          22 degrees C / 71 degrees F
        FPC 0           OK          23 degrees C / 73 degrees F
        Power Supplies OK          23 degrees C / 73 degrees F
        CFEB Intake     OK          24 degrees C / 75 degrees F
        CFEB Exhaust    OK          29 degrees C / 84 degrees F
        Routing Engine  OK          26 degrees C / 78 degrees F
Fans  Fan 1            OK          Spinning at normal speed

```

Fan 2	OK	Spinning at normal speed
Fan 3	OK	Spinning at normal speed
Fan 4	OK	Spinning at normal speed

**show chassis environment (M10 Router)**

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A        OK
        Power Supply B      Failed
Temp  FPC 0                  OK          36 degrees C / 96 degrees F
        FPC 1                OK          35 degrees C / 95 degrees F
        FEB                  OK          34 degrees C / 93 degrees F
        PS Intake            OK          31 degrees C / 87 degrees F
        PS Exhaust           OK          34 degrees C / 93 degrees F
        Routing Engine        OK          35 degrees C / 95 degrees F
Fans  Left Fan 1            OK          Spinning at normal speed
        Left Fan 2            OK          Spinning at normal speed
        Left Fan 3            OK          Spinning at normal speed
        Left Fan 4            OK          Spinning at normal speed
Misc  Craft Interface        OK

```

**show chassis environment (M10i Router)**

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply 0        OK
        Power Supply 1        OK
        Power Supply 2        Absent
        Power Supply 3        Absent
Temp  Intake                OK          26 degrees C / 78 degrees F
        FPC 0                  OK          27 degrees C / 80 degrees F
        FPC 1                  OK          28 degrees C / 82 degrees F
        Lower Power Supplies   OK          29 degrees C / 84 degrees F
        Upper Power Supplies   OK          28 degrees C / 82 degrees F
        CFEB Intake            OK          27 degrees C / 80 degrees F
        CFEB Exhaust           OK          36 degrees C / 96 degrees F
        Routing Engine 0        OK          31 degrees C / 87 degrees F
        Routing Engine 1        OK          27 degrees C / 80 degrees F
Fans  Fan Tray 0 Fan 1        OK          Spinning at normal speed
        Fan Tray 0 Fan 2        OK          Spinning at normal speed
        Fan Tray 0 Fan 3        OK          Spinning at normal speed
        Fan Tray 0 Fan 4        OK          Spinning at normal speed
        Fan Tray 0 Fan 5        OK          Spinning at normal speed
        Fan Tray 0 Fan 6        OK          Spinning at normal speed
        Fan Tray 0 Fan 7        OK          Spinning at normal speed
        Fan Tray 0 Fan 8        OK          Spinning at normal speed
        Fan Tray 1 Fan 1        Absent
        Fan Tray 1 Fan 2        Absent
        Fan Tray 1 Fan 3        Absent
        Fan Tray 1 Fan 4        Absent
        Fan Tray 1 Fan 5        Absent
        Fan Tray 1 Fan 6        Absent
        Fan Tray 1 Fan 7        Absent
        Fan Tray 1 Fan 8        Absent

```

**show chassis environment (M20 Router)**

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A       OK
        Power Supply B     Absent
Temp   FPC 0                OK          28 degrees C / 82 degrees F
        FPC 1                OK          27 degrees C / 80 degrees F
        Power Supply A       OK          22 degrees C / 71 degrees F
        Power Supply B     Absent
        SSB 0                OK          30 degrees C / 86 degrees F
        Backplane            OK          22 degrees C / 71 degrees F
        Routing Engine 0     OK          26 degrees C / 78 degrees F
        Routing Engine 1     Testing
Fans   Rear Fan             OK          Spinning at normal speed
        Front Upper Fan      OK          Spinning at normal speed
        Front Middle Fan     OK          Spinning at normal speed
        Front Bottom Fan     OK          Spinning at normal speed
Misc   Craft Interface      OK

```

**show chassis environment (M40 Router)**

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A       OK
        Power Supply B     Absent
Temp   FPC 3                OK          24 degrees C / 75 degrees F
        FPC 6                OK          26 degrees C / 78 degrees F
        SCB                  OK          26 degrees C / 78 degrees F
        Backplane @ A1       OK          28 degrees C / 82 degrees F
        Backplane @ A2       OK          23 degrees C / 73 degrees F
        Routing Engine        OK          26 degrees C / 78 degrees F
Fans   Top Impeller          OK          Spinning at normal speed
        Bottom impeller      OK          Spinning at normal speed
        Rear Left Fan        OK          Spinning at normal speed
        Rear Center Fan      OK          Spinning at normal speed
        Rear Right Fan       OK          Spinning at normal speed
Misc   Craft Interface      OK

```

**show chassis environment (M40e Router)**

```

user@host> show chassis environment
Class Item                Status      Measurement
Power PEM 0                OK
        PEM 1                Absent
Temp   PCG 0                OK          44 degrees C / 111 degrees F
        PCG 1                OK          47 degrees C / 116 degrees F
        Routing Engine 0     OK          40 degrees C / 104 degrees F
        Routing Engine 1     OK          37 degrees C / 98 degrees F
        MCS 0                OK          45 degrees C / 113 degrees F
        MCS 1                OK          42 degrees C / 107 degrees F
        SFM 0 SPP            OK          40 degrees C / 104 degrees F
        SFM 0 SPR            OK          44 degrees C / 111 degrees F
        SFM 1 SPP            OK          43 degrees C / 109 degrees F
        SFM 1 SPR            OK          45 degrees C / 113 degrees F
        FPC 0                OK          38 degrees C / 100 degrees F
        FPC 1                OK          40 degrees C / 104 degrees F
        FPC 2                OK          38 degrees C / 100 degrees F

```

	FPC 4	OK	34 degrees C / 93 degrees F
	FPC 5	OK	43 degrees C / 109 degrees F
	FPC 6	OK	41 degrees C / 105 degrees F
	FPC 7	OK	43 degrees C / 109 degrees F
	FPM CMB	OK	28 degrees C / 82 degrees F
	FPM Display	OK	28 degrees C / 82 degrees F
Fans	Rear Bottom Blower	OK	Spinning at normal speed
	Rear Top Blower	OK	Spinning at normal speed
	Front Top Blower	OK	Spinning at normal speed
	Fan Tray Rear Left	OK	Spinning at normal speed
	Fan Tray Rear Right	OK	Spinning at normal speed
	Fan Tray Front Left	OK	Spinning at normal speed
	Fan Tray Front Right	OK	Spinning at normal speed
Misc	CIP	OK	

### show chassis environment (M120 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	
	PEM 1	OK	
	Routing Engine 0	OK	43 degrees C / 109 degrees F
	Routing Engine 1	OK	44 degrees C / 111 degrees F
	CB 0 Intake	OK	33 degrees C / 91 degrees F
	CB 0 Exhaust A	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust B	OK	35 degrees C / 95 degrees F
	CB 1 Intake	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust A	OK	38 degrees C / 100 degrees F
	CB 1 Exhaust B	OK	35 degrees C / 95 degrees F
	FEB 3 Intake	OK	35 degrees C / 95 degrees F
	FEB 3 Exhaust A	OK	37 degrees C / 98 degrees F
	FEB 3 Exhaust B	OK	39 degrees C / 102 degrees F
	FEB 4 Intake	OK	33 degrees C / 91 degrees F
	FEB 4 Exhaust A	OK	39 degrees C / 102 degrees F
	FEB 4 Exhaust B	OK	36 degrees C / 96 degrees F
	FPC 2 Exhaust A	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust B	OK	31 degrees C / 87 degrees F
	FPC 3 Exhaust A	OK	32 degrees C / 89 degrees F
	FPC 3 Exhaust B	OK	33 degrees C / 91 degrees F
	FPC 4 Exhaust A	OK	32 degrees C / 89 degrees F
	FPC 4 Exhaust B	OK	30 degrees C / 86 degrees F
Fans	Front Top Tray Fan 1	OK	Spinning at normal speed
	Front Top Tray Fan 2	OK	Spinning at normal speed
	Front Top Tray Fan 3	OK	Spinning at normal speed
	Front Top Tray Fan 4	OK	Spinning at normal speed
	Front Top Tray Fan 5	OK	Spinning at normal speed
	Front Top Tray Fan 6	OK	Spinning at normal speed
	Front Top Tray Fan 7	OK	Spinning at normal speed
	Front Top Tray Fan 8	OK	Spinning at normal speed
	Front Bottom Tray Fan 1	OK	Spinning at normal speed
	Front Bottom Tray Fan 2	OK	Spinning at normal speed
	Front Bottom Tray Fan 3	OK	Spinning at normal speed
	Front Bottom Tray Fan 4	OK	Spinning at normal speed
	Front Bottom Tray Fan 5	OK	Spinning at normal speed
	Front Bottom Tray Fan 6	OK	Spinning at normal speed
	Front Bottom Tray Fan 7	OK	Spinning at normal speed
	Front Bottom Tray Fan 8	OK	Spinning at normal speed
	Rear Top Tray Fan 1	OK	Spinning at normal speed
	Rear Top Tray Fan 2	OK	Spinning at normal speed
	Rear Top Tray Fan 3	OK	Spinning at normal speed



Rear Top Tray Fan 4	OK	Spinning at normal speed
Rear Top Tray Fan 5	OK	Spinning at normal speed
Rear Top Tray Fan 6	OK	Spinning at normal speed
Rear Top Tray Fan 7	OK	Spinning at normal speed
Rear Top Tray Fan 8	OK	Spinning at normal speed
Rear Bottom Tray Fan 1	OK	Spinning at normal speed
Rear Bottom Tray Fan 2	OK	Spinning at normal speed
Rear Bottom Tray Fan 3	OK	Spinning at normal speed
Rear Bottom Tray Fan 4	OK	Spinning at normal speed
Rear Bottom Tray Fan 5	OK	Spinning at normal speed
Rear Bottom Tray Fan 6	OK	Spinning at normal speed
Rear Bottom Tray Fan 7	OK	Spinning at normal speed
Rear Bottom Tray Fan 8	OK	Spinning at normal speed

### show chassis environment (M160 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Power	PEM 0	OK	PEM 1
Temp	PCG 0	OK	45 degrees C / 113 degrees F
	PCG 1	Absent	
	Routing Engine 0	OK	35 degrees C / 95 degrees F
	Routing Engine 1	Absent	
	MCS 0	OK	50 degrees C / 122 degrees F
	SFM 0 SPP	OK	47 degrees C / 116 degrees F
	SFM 0 SPR	OK	49 degrees C / 120 degrees F
	SFM 1 SPP	OK	50 degrees C / 122 degrees F
	SFM 1 SPR	OK	50 degrees C / 122 degrees F
	SFM 2 SPP	OK	51 degrees C / 123 degrees F
	SFM 2 SPR	OK	52 degrees C / 125 degrees F
	SFM 3 SPP	OK	52 degrees C / 125 degrees F
	SFM 3 SPR	OK	48 degrees C / 118 degrees F
	FPC 0	OK	45 degrees C / 113 degrees F
	FPC 6	OK	43 degrees C / 109 degrees F
	FPM CMB	OK	31 degrees C / 87 degrees F
	FPM Display	OK	33 degrees C / 91 degrees F
Fans	Rear Bottom Blower	OK	Spinning at normal speed
	Rear Top Blower	OK	Spinning at normal speed
	Front Top Blower	OK	Spinning at normal speed
	Fan Tray Rear Left	OK	Spinning at normal speed
	Fan Tray Rear Right	OK	Spinning at normal speed
	Fan Tray Front Left	OK	Spinning at normal speed
	Fan Tray Front Right	OK	Spinning at normal speed
Misc	CIP	OK	

### show chassis environment (M320 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	Absent	
	PEM 1	Absent	
	PEM 2	OK	
	PEM 3	OK	
	Routing Engine 0	OK	33 degrees C / 91 degrees F
	Routing Engine 1	OK	32 degrees C / 89 degrees F
	CB 0	OK	36 degrees C / 96 degrees F
	CB 1	OK	36 degrees C / 96 degrees F
	SIB 0	OK	38 degrees C / 100 degrees F
	SIB 1	OK	29 degrees C / 84 degrees F

	SIB 2	OK	38 degrees C / 100 degrees F
	SIB 3	OK	41 degrees C / 105 degrees F
	FPC 0 Intake	OK	28 degrees C / 82 degrees F
	FPC 0 Exhaust	OK	40 degrees C / 104 degrees F
	FPC 1 Intake	OK	29 degrees C / 84 degrees F
	FPC 1 Exhaust	OK	39 degrees C / 102 degrees F
	FPC 2 Intake	OK	28 degrees C / 82 degrees F
	FPC 2 Exhaust	OK	38 degrees C / 100 degrees F
	FPC 3 Intake	OK	28 degrees C / 82 degrees F
	FPC 3 Exhaust	OK	39 degrees C / 102 degrees F
	FPC 6 Intake	OK	27 degrees C / 80 degrees F
	FPC 6 Exhaust	OK	39 degrees C / 102 degrees F
	FPC 7 Intake	OK	27 degrees C / 80 degrees F
	FPC 7 Exhaust	OK	42 degrees C / 107 degrees F
	FPM GBUS	OK	30 degrees C / 86 degrees F
Fan	Top Left Front fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Rear Fan 1 (TOP)	OK	Spinning at normal speed
	Rear Fan 2	OK	Spinning at normal speed
	Rear Fan 3	OK	Spinning at normal speed
	Rear Fan 4	OK	Spinning at normal speed
	Rear Fan 5	OK	Spinning at normal speed
	Rear Fan 6	OK	Spinning at normal speed
	Rear Fan 7 (Bottom)	OK	Spinning at normal speed
Misc	CIP	OK	

**show chassis environment (MX150)**

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	OK	
	Temp FPC 0 Sensor 1	OK	42 degrees C / 107 degrees F
Fans	FPC 0 Sensor 2	OK	39 degrees C / 102 degrees F
	FPC 0 Coretemp	OK	75 degrees C / 167 degrees F
	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed

**show chassis environment (MX104 Router)**

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	34 degrees C / 93 degrees F
	PEM 1	Absent	
	ABB 0 Intake	OK	33 degrees C / 91 degrees F
	ABB 0 Exhaust A	OK	42 degrees C / 107 degrees F
	ABB 0 Exhaust B	OK	43 degrees C / 109 degrees F
	ABB 1 Intake	Absent	
	ABB 1 Exhaust A	Absent	
	ABB 1 Exhaust B	Absent	
	Routing Engine 0	OK	34 degrees C / 93 degrees F
	Routing Engine 0 CPU	OK	46 degrees C / 114 degrees F
	Routing Engine 1	Absent	
	Routing Engine 1 CPU	Absent	

	AFEB 0 AFEB Processor	OK	33 degrees C / 91 degrees F
Fans	Fan 1	OK	Spinning at normal speed
	Fan 2	OK	Spinning at normal speed
	Fan 3	OK	Spinning at normal speed
	Fan 4	OK	Spinning at normal speed
	Fan 5	OK	Spinning at normal speed

### show chassis environment (MX240 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	40 degrees C / 104 degrees F
	PEM 1	OK	45 degrees C / 113 degrees F
	PEM 2	Absent	
	PEM 3	Absent	
	Routing Engine 0	OK	39 degrees C / 102 degrees F
	Routing Engine 1	OK	37 degrees C / 98 degrees F
	CB 0 Intake	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 0 Exhaust B	OK	38 degrees C / 100 degrees F
	CB 0 ACBC	OK	37 degrees C / 98 degrees F
	CB 0 SF A	OK	49 degrees C / 120 degrees F
	CB 0 SF B	OK	41 degrees C / 105 degrees F
	CB 1 Intake	OK	37 degrees C / 98 degrees F
	CB 1 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 1 ACBC	OK	38 degrees C / 100 degrees F
	CB 1 SF A	OK	47 degrees C / 116 degrees F
	CB 1 SF B	OK	41 degrees C / 105 degrees F
	FPC 1 Intake	OK	33 degrees C / 91 degrees F
	FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
	FPC 1 Exhaust B	OK	53 degrees C / 127 degrees F
	FPC 1 I3 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 1 I3 0 Chip	OK	53 degrees C / 127 degrees F
	FPC 1 I3 1 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	47 degrees C / 116 degrees F
	FPC 1 I3 2 Chip	OK	49 degrees C / 120 degrees F
	FPC 1 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 1 IA 0 Chip	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 Intake	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
	FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 2 I3 1 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 1 Chip	OK	55 degrees C / 131 degrees F
	FPC 2 I3 2 TSensor	OK	49 degrees C / 120 degrees F
	FPC 2 I3 2 Chip	OK	52 degrees C / 125 degrees F
	FPC 2 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 2 I3 3 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 2 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 2 IA 1 Chip	OK	53 degrees C / 127 degrees F
Fans	Front Fan	OK	Spinning at normal speed

Middle Fan	OK	Spinning at normal speed
Rear Fan	OK	Spinning at normal speed

**show chassis environment (MX240 Router with SCBE)**

user@host&gt; show chassis environment

Class	Item	Status	Measurement
Temp	PEM 0	OK	40 degrees C / 104 degrees F
	PEM 1	OK	45 degrees C / 113 degrees F
	PEM 2	Absent	
	PEM 3	Absent	
	Routing Engine 0	OK	39 degrees C / 102 degrees F
	Routing Engine 1	OK	37 degrees C / 98 degrees F
	CB 0 Intake	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 0 Exhaust B	OK	38 degrees C / 100 degrees F
	CB 0 ACBC	OK	37 degrees C / 98 degrees F
	CB 0 XF A	OK	49 degrees C / 120 degrees F
	CB 0 XF B	OK	41 degrees C / 105 degrees F
	CB 1 Intake	OK	37 degrees C / 98 degrees F
	CB 1 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 1 ACBC	OK	38 degrees C / 100 degrees F
	CB 1 XF A	OK	47 degrees C / 116 degrees F
	CB 1 XF B	OK	41 degrees C / 105 degrees F
	FPC 1 Intake	OK	33 degrees C / 91 degrees F
	FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
	FPC 1 Exhaust B	OK	53 degrees C / 127 degrees F
	FPC 1 I3 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 1 I3 0 Chip	OK	53 degrees C / 127 degrees F
	FPC 1 I3 1 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	47 degrees C / 116 degrees F
	FPC 1 I3 2 Chip	OK	49 degrees C / 120 degrees F
	FPC 1 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 1 IA 0 Chip	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 Intake	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
	FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 2 I3 1 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 1 Chip	OK	55 degrees C / 131 degrees F
	FPC 2 I3 2 TSensor	OK	49 degrees C / 120 degrees F
	FPC 2 I3 2 Chip	OK	52 degrees C / 125 degrees F
	FPC 2 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 2 I3 3 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 2 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 2 IA 1 Chip	OK	53 degrees C / 127 degrees F
Fans	Front Fan	OK	Spinning at normal speed
	Middle Fan	OK	Spinning at normal speed
	Rear Fan	OK	Spinning at normal speed

## show chassis environment (MX480 Router)

user@host&gt; show chassis environment

Class	Item	Status	Measurement
Temp	PEM 0	OK	35 degrees C / 95 degrees F
	PEM 1	OK	40 degrees C / 104 degrees F
	PEM 2	Absent	
	PEM 3	Absent	
	Routing Engine 0	OK	44 degrees C / 111 degrees F
	Routing Engine 1	OK	45 degrees C / 113 degrees F
	CB 0 Intake	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust A	OK	38 degrees C / 100 degrees F
	CB 0 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 0 ACBC	OK	37 degrees C / 98 degrees F
	CB 0 SF A	OK	51 degrees C / 123 degrees F
	CB 0 SF B	OK	44 degrees C / 111 degrees F
	CB 1 Intake	OK	36 degrees C / 96 degrees F
	CB 1 Exhaust A	OK	39 degrees C / 102 degrees F
	CB 1 Exhaust B	OK	40 degrees C / 104 degrees F
	CB 1 ACBC	OK	37 degrees C / 98 degrees F
	CB 1 SF A	OK	50 degrees C / 122 degrees F
	CB 1 SF B	OK	43 degrees C / 109 degrees F
	FPC 0 Intake	OK	36 degrees C / 96 degrees F
	FPC 0 Exhaust A	OK	39 degrees C / 102 degrees F
	FPC 0 Exhaust B	OK	51 degrees C / 123 degrees F
	FPC 0 I3 0 TSensor	OK	49 degrees C / 120 degrees F
	FPC 0 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 0 I3 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 0 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 0 I3 2 TSensor	OK	46 degrees C / 114 degrees F
	FPC 0 I3 2 Chip	OK	48 degrees C / 118 degrees F
	FPC 0 I3 3 TSensor	OK	42 degrees C / 107 degrees F
	FPC 0 I3 3 Chip	OK	45 degrees C / 113 degrees F
	FPC 0 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 0 IA 0 Chip	OK	45 degrees C / 113 degrees F
	FPC 0 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 0 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 1 Intake	OK	37 degrees C / 98 degrees F
	FPC 1 Exhaust A	OK	41 degrees C / 105 degrees F
	FPC 1 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 1 I3 0 TSensor	OK	51 degrees C / 123 degrees F
	FPC 1 I3 0 Chip	OK	57 degrees C / 134 degrees F
	FPC 1 I3 1 TSensor	OK	48 degrees C / 118 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	46 degrees C / 114 degrees F
	FPC 1 I3 2 Chip	OK	50 degrees C / 122 degrees F
	FPC 1 I3 3 TSensor	OK	42 degrees C / 107 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 1 IA 1 TSensor	OK	46 degrees C / 114 degrees F
	FPC 1 IA 1 Chip	OK	50 degrees C / 122 degrees F
Fans	Top Rear Fan	OK	Spinning at normal speed
	Bottom Rear Fan	OK	Spinning at normal speed
	Top Middle Fan	OK	Spinning at normal speed
	Bottom Middle Fan	OK	Spinning at normal speed
	Top Front Fan	OK	Spinning at normal speed
	Bottom Front Fan	OK	Spinning at normal speed

## show chassis environment (MX480 Router with SCBE)

user@host&gt; show chassis environment

Class	Item	Status	Measurement
Temp	PEM 0	OK	35 degrees C / 95 degrees F
	PEM 1	OK	40 degrees C / 104 degrees F
	PEM 2	Absent	
	PEM 3	Absent	
	Routing Engine 0	OK	44 degrees C / 111 degrees F
	Routing Engine 1	OK	45 degrees C / 113 degrees F
	CB 0 Intake	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust A	OK	38 degrees C / 100 degrees F
	CB 0 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 0 ACBC	OK	37 degrees C / 98 degrees F
	CB 0 XF A	OK	51 degrees C / 123 degrees F
	CB 0 XF B	OK	44 degrees C / 111 degrees F
	CB 1 Intake	OK	36 degrees C / 96 degrees F
	CB 1 Exhaust A	OK	39 degrees C / 102 degrees F
	CB 1 Exhaust B	OK	40 degrees C / 104 degrees F
	CB 1 ACBC	OK	37 degrees C / 98 degrees F
	CB 1 XF A	OK	50 degrees C / 122 degrees F
	CB 1 XF B	OK	43 degrees C / 109 degrees F
	FPC 0 Intake	OK	36 degrees C / 96 degrees F
	FPC 0 Exhaust A	OK	39 degrees C / 102 degrees F
	FPC 0 Exhaust B	OK	51 degrees C / 123 degrees F
	FPC 0 I3 0 TSensor	OK	49 degrees C / 120 degrees F
	FPC 0 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 0 I3 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 0 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 0 I3 2 TSensor	OK	46 degrees C / 114 degrees F
	FPC 0 I3 2 Chip	OK	48 degrees C / 118 degrees F
	FPC 0 I3 3 TSensor	OK	42 degrees C / 107 degrees F
	FPC 0 I3 3 Chip	OK	45 degrees C / 113 degrees F
	FPC 0 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 0 IA 0 Chip	OK	45 degrees C / 113 degrees F
	FPC 0 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 0 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 1 Intake	OK	37 degrees C / 98 degrees F
	FPC 1 Exhaust A	OK	41 degrees C / 105 degrees F
	FPC 1 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 1 I3 0 TSensor	OK	51 degrees C / 123 degrees F
	FPC 1 I3 0 Chip	OK	57 degrees C / 134 degrees F
	FPC 1 I3 1 TSensor	OK	48 degrees C / 118 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	46 degrees C / 114 degrees F
	FPC 1 I3 2 Chip	OK	50 degrees C / 122 degrees F
	FPC 1 I3 3 TSensor	OK	42 degrees C / 107 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 1 IA 1 TSensor	OK	46 degrees C / 114 degrees F
	FPC 1 IA 1 Chip	OK	50 degrees C / 122 degrees F
Fans	Top Rear Fan	OK	Spinning at normal speed
	Bottom Rear Fan	OK	Spinning at normal speed
	Top Middle Fan	OK	Spinning at normal speed
	Bottom Middle Fan	OK	Spinning at normal speed
	Top Front Fan	OK	Spinning at normal speed
	Bottom Front Fan	OK	Spinning at normal speed

**show chassis environment (MX960 Router)**

```

user@host> show chassis environment
Class Item                               Status Measurement
Temp PEM 0                             Absent
      PEM 1                             Absent
      PEM 2                             Check
      PEM 3                             OK           35 degrees C / 95 degrees F
      Routing Engine 0                   OK           37 degrees C / 98 degrees F
      Routing Engine 1                   Absent
      CB 0 Intake                         OK           24 degrees C / 75 degrees F
      CB 0 Exhaust A                     OK           30 degrees C / 86 degrees F
      CB 0 Exhaust B                     OK           27 degrees C / 80 degrees F
      CB 1 Intake                         Absent
      CB 1 Exhaust A                     Absent
      CB 1 Exhaust B                     Absent
      CB 1 ACBC                          Absent
      CB 1 SF A                          Absent
      CB 1 SF B                          Absent
      CB 2 Intake                         Absent
      CB 2 Exhaust A                     Absent
      CB 2 Exhaust B                     Absent
      CB 2 ACBC                          Absent
      CB 2 SF A                          Absent
      CB 2 SF B                          Absent
      FPC 4 Intake                       OK           24 degrees C / 75 degrees F
      FPC 4 Exhaust A                    OK           36 degrees C / 96 degrees F
      FPC 4 Exhaust B                    OK           38 degrees C / 100 degrees F
      FPC 7 Intake                       OK           24 degrees C / 75 degrees F
      FPC 7 Exhaust A                    OK           36 degrees C / 96 degrees F
      FPC 7 Exhaust B                    OK           42 degrees C / 107 degrees F
Fans  Top Fan Tray Temp                  Failed
      Top Tray Fan 1                     OK           Spinning at normal speed
      Top Tray Fan 2                     OK           Spinning at normal speed
      Top Tray Fan 3                     OK           Spinning at normal speed
      Top Tray Fan 4                     OK           Spinning at normal speed
      Top Tray Fan 5                     OK           Spinning at normal speed
      Top Tray Fan 6                     OK           Spinning at normal speed
      Bottom Fan Tray Temp                Failed
      Bottom Tray Fan 1                  OK           Spinning at normal speed
      Bottom Tray Fan 2                  OK           Spinning at normal speed
      Bottom Tray Fan 3                  OK           Spinning at normal speed
      Bottom Tray Fan 4                  OK           Spinning at normal speed
      Bottom Tray Fan 5                  OK           Spinning at normal speed
      Bottom Tray Fan 6                  OK           Spinning at normal speed

```

**show chassis environment (MX960 Router with SCBE)**

```

user@host> show chassis environment
Class Item                               Status Measurement
Temp PEM 0                             Absent
      PEM 1                             OK           50 degrees C / 122 degrees F
      PEM 2                             OK           50 degrees C / 122 degrees F
      PEM 3                             OK           50 degrees C / 122 degrees F
      Routing Engine 0                   OK           42 degrees C / 107 degrees F
      Routing Engine 0 CPU                OK           51 degrees C / 123 degrees F
      Routing Engine 1                   OK           39 degrees C / 102 degrees F
      Routing Engine 1 CPU                OK           44 degrees C / 111 degrees F
      CB 0 Intake                         OK           35 degrees C / 95 degrees F
      CB 0 Exhaust A                     OK           36 degrees C / 96 degrees F

```

CB 0 Exhaust B	OK	43 degrees C / 109 degrees F
CB 0 ACBC	OK	38 degrees C / 100 degrees F
CB 0 XF A	OK	53 degrees C / 127 degrees F
CB 0 XF B	OK	47 degrees C / 116 degrees F
CB 1 Intake	OK	35 degrees C / 95 degrees F
CB 1 Exhaust A	OK	35 degrees C / 95 degrees F
CB 1 Exhaust B	OK	41 degrees C / 105 degrees F
CB 1 ACBC	OK	38 degrees C / 100 degrees F
CB 1 XF A	OK	52 degrees C / 125 degrees F
CB 1 XF B	OK	47 degrees C / 116 degrees F
CB 2 Intake	OK	32 degrees C / 89 degrees F
CB 2 Exhaust A	OK	30 degrees C / 86 degrees F
CB 2 Exhaust B	OK	35 degrees C / 95 degrees F
CB 2 ACBC	OK	33 degrees C / 91 degrees F
CB 2 XF A	OK	51 degrees C / 123 degrees F
CB 2 XF B	OK	50 degrees C / 122 degrees F
FPC 0 Intake	OK	35 degrees C / 95 degrees F
FPC 0 Exhaust A	OK	39 degrees C / 102 degrees F
FPC 0 Exhaust B	OK	50 degrees C / 122 degrees F
FPC 0 I3 0 TSensor	OK	50 degrees C / 122 degrees F
FPC 0 I3 0 Chip	OK	56 degrees C / 132 degrees F
FPC 0 I3 1 TSensor	OK	47 degrees C / 116 degrees F
FPC 0 I3 1 Chip	OK	50 degrees C / 122 degrees F
FPC 0 I3 2 TSensor	OK	45 degrees C / 113 degrees F
FPC 0 I3 2 Chip	OK	48 degrees C / 118 degrees F
FPC 0 I3 3 TSensor	OK	41 degrees C / 105 degrees F
FPC 0 I3 3 Chip	OK	44 degrees C / 111 degrees F
FPC 0 IA 0 TSensor	OK	45 degrees C / 113 degrees F
FPC 0 IA 0 Chip	OK	45 degrees C / 113 degrees F
FPC 0 IA 1 TSensor	OK	44 degrees C / 111 degrees F
FPC 0 IA 1 Chip	OK	48 degrees C / 118 degrees F
FPC 1 Intake	OK	36 degrees C / 96 degrees F
FPC 1 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 1 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 1 LU 0 TCAM TSensor	OK	53 degrees C / 127 degrees F
FPC 1 LU 0 TCAM Chip	OK	57 degrees C / 134 degrees F
FPC 1 LU 0 TSensor	OK	53 degrees C / 127 degrees F
FPC 1 LU 0 Chip	OK	60 degrees C / 140 degrees F
FPC 1 MQ 0 TSensor	OK	53 degrees C / 127 degrees F
FPC 1 MQ 0 Chip	OK	56 degrees C / 132 degrees F
FPC 1 LU 1 TCAM TSensor	OK	51 degrees C / 123 degrees F
FPC 1 LU 1 TCAM Chip	OK	52 degrees C / 125 degrees F
FPC 1 LU 1 TSensor	OK	51 degrees C / 123 degrees F
FPC 1 LU 1 Chip	OK	53 degrees C / 127 degrees F
FPC 1 MQ 1 TSensor	OK	51 degrees C / 123 degrees F
FPC 1 MQ 1 Chip	OK	58 degrees C / 136 degrees F
FPC 2 Intake	OK	35 degrees C / 95 degrees F
FPC 2 Exhaust A	OK	39 degrees C / 102 degrees F
FPC 2 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
FPC 2 I3 0 Chip	OK	59 degrees C / 138 degrees F
FPC 2 I3 1 TSensor	OK	48 degrees C / 118 degrees F
FPC 2 I3 1 Chip	OK	52 degrees C / 125 degrees F
FPC 2 I3 2 TSensor	OK	47 degrees C / 116 degrees F
FPC 2 I3 2 Chip	OK	49 degrees C / 120 degrees F
FPC 2 I3 3 TSensor	OK	41 degrees C / 105 degrees F
FPC 2 I3 3 Chip	OK	44 degrees C / 111 degrees F
FPC 2 IA 0 TSensor	OK	47 degrees C / 116 degrees F
FPC 2 IA 0 Chip	OK	46 degrees C / 114 degrees F
FPC 2 IA 1 TSensor	OK	45 degrees C / 113 degrees F
FPC 2 IA 1 Chip	OK	49 degrees C / 120 degrees F



FPC 3 Intake	OK	34 degrees C / 93 degrees F
FPC 3 Exhaust A	OK	34 degrees C / 93 degrees F
FPC 3 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 3 I3 0 TSensor	OK	48 degrees C / 118 degrees F
FPC 3 I3 0 Chip	OK	52 degrees C / 125 degrees F
FPC 3 I3 1 TSensor	OK	46 degrees C / 114 degrees F
FPC 3 I3 1 Chip	OK	48 degrees C / 118 degrees F
FPC 3 IA 0 TSensor	OK	41 degrees C / 105 degrees F
FPC 3 IA 0 Chip	OK	40 degrees C / 104 degrees F
FPC 5 Intake	OK	42 degrees C / 107 degrees F
FPC 5 Exhaust A	OK	42 degrees C / 107 degrees F
FPC 5 Exhaust B	OK	53 degrees C / 127 degrees F
FPC 5 LU 0 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 0 Chip	OK	54 degrees C / 129 degrees F
FPC 5 LU 1 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 1 Chip	OK	61 degrees C / 141 degrees F
FPC 5 LU 2 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 5 LU 3 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 5 MQ 0 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 5 MQ 1 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 5 MQ 2 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 5 MQ 3 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 3 Chip	OK	45 degrees C / 113 degrees F
FPC 7 Intake	OK	36 degrees C / 96 degrees F
FPC 7 Exhaust A	OK	35 degrees C / 95 degrees F
FPC 7 Exhaust B	OK	33 degrees C / 91 degrees F
FPC 7 QX 0 TSensor	OK	42 degrees C / 107 degrees F
FPC 7 QX 0 Chip	OK	47 degrees C / 116 degrees F
FPC 7 LU 0 TCAM TSensor	OK	42 degrees C / 107 degrees F
FPC 7 LU 0 TCAM Chip	OK	44 degrees C / 111 degrees F
FPC 7 LU 0 TSensor	OK	42 degrees C / 107 degrees F
FPC 7 LU 0 Chip	OK	46 degrees C / 114 degrees F
FPC 7 MQ 0 TSensor	OK	42 degrees C / 107 degrees F
FPC 7 MQ 0 Chip	OK	45 degrees C / 113 degrees F
FPC 8 Intake	OK	33 degrees C / 91 degrees F
FPC 8 Exhaust A	OK	33 degrees C / 91 degrees F
FPC 8 Exhaust B	OK	36 degrees C / 96 degrees F
FPC 8 I3 0 TSensor	OK	38 degrees C / 100 degrees F
FPC 8 I3 0 Chip	OK	43 degrees C / 109 degrees F
FPC 8 BDS 0 TSensor	OK	37 degrees C / 98 degrees F
FPC 8 BDS 0 Chip	OK	36 degrees C / 96 degrees F
FPC 8 IA 0 TSensor	OK	37 degrees C / 98 degrees F
FPC 8 IA 0 Chip	OK	37 degrees C / 98 degrees F
FPC 10 Intake	OK	38 degrees C / 100 degrees F
FPC 10 Exhaust A	OK	36 degrees C / 96 degrees F
FPC 10 Exhaust B	OK	41 degrees C / 105 degrees F
FPC 10 I3 0 TSensor	OK	40 degrees C / 104 degrees F
FPC 10 I3 0 Chip	OK	42 degrees C / 107 degrees F
FPC 10 I3 1 TSensor	OK	40 degrees C / 104 degrees F
FPC 10 I3 1 Chip	OK	44 degrees C / 111 degrees F
FPC 10 I3 2 TSensor	OK	42 degrees C / 107 degrees F
FPC 10 I3 2 Chip	OK	43 degrees C / 109 degrees F
FPC 10 I3 3 TSensor	OK	39 degrees C / 102 degrees F
FPC 10 I3 3 Chip	OK	44 degrees C / 111 degrees F
FPC 10 IA 0 TSensor	OK	36 degrees C / 96 degrees F
FPC 10 IA 0 Chip	OK	36 degrees C / 96 degrees F

Fans	FPC 10 IA 1 TSensor	OK	43 degrees C / 109 degrees F
	FPC 10 IA 1 Chip	OK	42 degrees C / 107 degrees F
	Top Fan Tray Temp	OK	37 degrees C / 98 degrees F
	Top Tray Fan 1	OK	Spinning at normal speed
	Top Tray Fan 2	OK	Spinning at normal speed
	Top Tray Fan 3	OK	Spinning at normal speed
	Top Tray Fan 4	OK	Spinning at normal speed
	Top Tray Fan 5	OK	Spinning at normal speed
	Top Tray Fan 6	OK	Spinning at normal speed
	Bottom Fan Tray Temp	OK	28 degrees C / 82 degrees F
	Bottom Tray Fan 1	OK	Spinning at normal speed
	Bottom Tray Fan 2	OK	Spinning at normal speed
	Bottom Tray Fan 3	OK	Spinning at normal speed
	Bottom Tray Fan 4	OK	Spinning at normal speed
	Bottom Tray Fan 5	OK	Spinning at normal speed
	Bottom Tray Fan 6	OK	Spinning at normal speed

### show chassis environment (MX960 Router with MPC5EQ)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	50 degrees C / 122 degrees F
	PEM 1	OK	45 degrees C / 113 degrees F
	PEM 2	OK	45 degrees C / 113 degrees F
	PEM 3	Absent	
	Routing Engine 0	OK	31 degrees C / 87 degrees F
	Routing Engine 0 CPU	OK	30 degrees C / 86 degrees F
	Routing Engine 1	Present	
	Routing Engine 1 CPU	Present	
	CB 0 Intake	OK	29 degrees C / 84 degrees F
	CB 0 Exhaust A	OK	29 degrees C / 84 degrees F
	CB 0 Exhaust B	OK	34 degrees C / 93 degrees F
	CB 0 ACBC	OK	32 degrees C / 89 degrees F
	CB 0 XF A	OK	49 degrees C / 120 degrees F
	CB 0 XF B	OK	45 degrees C / 113 degrees F
	CB 1 Intake	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust A	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust B	OK	27 degrees C / 80 degrees F
	CB 1 ACBC	OK	26 degrees C / 78 degrees F
	CB 1 XF A	OK	32 degrees C / 89 degrees F
	CB 1 XF B	OK	32 degrees C / 89 degrees F
	CB 2 Intake	OK	28 degrees C / 82 degrees F
	CB 2 Exhaust A	OK	27 degrees C / 80 degrees F
	CB 2 Exhaust B	OK	33 degrees C / 91 degrees F
	CB 2 ACBC	OK	30 degrees C / 86 degrees F
	CB 2 XF A	OK	48 degrees C / 118 degrees F
	CB 2 XF B	OK	46 degrees C / 114 degrees F
	FPC 0 Intake	OK	38 degrees C / 100 degrees F
	FPC 0 Exhaust A	OK	48 degrees C / 118 degrees F
	FPC 0 Exhaust B	OK	49 degrees C / 120 degrees F
	FPC 0 XL TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XL Chip	OK	50 degrees C / 122 degrees F
	FPC 0 XL_XR0 TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XL_XR0 Chip	OK	53 degrees C / 127 degrees F
	FPC 0 XL_XR1 TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XL_XR1 Chip	OK	54 degrees C / 129 degrees F
	FPC 0 XQ TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XQ Chip	OK	52 degrees C / 125 degrees F
	FPC 0 XQ_XR0 TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XQ_XR0 Chip	OK	62 degrees C / 143 degrees F
	FPC 0 XQ_XR1 TSen	OK	48 degrees C / 118 degrees F

FPC 0 XQ_XR1 Chip	OK	62 degrees C / 143 degrees F
FPC 0 XM 0 TSen	OK	53 degrees C / 127 degrees F
FPC 0 XM 0 Chip	OK	63 degrees C / 145 degrees F
FPC 0 XM 1 TSen	OK	53 degrees C / 127 degrees F
FPC 0 XM 1 Chip	OK	46 degrees C / 114 degrees F
FPC 0 PLX PCIe Switch TSe	OK	53 degrees C / 127 degrees F
FPC 0 PLX PCIe Switch Chi	OK	66 degrees C / 150 degrees F
FPC 1 Intake	OK	31 degrees C / 87 degrees F
FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
FPC 1 Exhaust B	OK	49 degrees C / 120 degrees F
FPC 1 LU 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 0 Chip	OK	47 degrees C / 116 degrees F
FPC 1 LU 1 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 1 Chip	OK	42 degrees C / 107 degrees F
FPC 1 LU 2 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 2 Chip	OK	46 degrees C / 114 degrees F
FPC 1 LU 3 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 1 XM 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 XM 0 Chip	OK	49 degrees C / 120 degrees F
FPC 1 XF 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 XF 0 Chip	OK	63 degrees C / 145 degrees F
FPC 1 PLX Switch TSen	OK	41 degrees C / 105 degrees F
FPC 1 PLX Switch Chip	OK	43 degrees C / 109 degrees F
FPC 3 Intake	OK	31 degrees C / 87 degrees F
FPC 3 Exhaust A	OK	37 degrees C / 98 degrees F
FPC 3 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 3 LU 0 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 0 Chip	OK	43 degrees C / 109 degrees F
FPC 3 LU 1 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 1 Chip	OK	46 degrees C / 114 degrees F
FPC 3 LU 2 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 2 Chip	OK	40 degrees C / 104 degrees F
FPC 3 LU 3 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 3 Chip	OK	41 degrees C / 105 degrees F
FPC 3 MQ 0 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 0 Chip	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 Chip	OK	40 degrees C / 104 degrees F
FPC 3 MQ 2 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 2 Chip	OK	36 degrees C / 96 degrees F
FPC 3 MQ 3 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 3 Chip	OK	38 degrees C / 100 degrees F
FPC 4 Intake	OK	34 degrees C / 93 degrees F
FPC 4 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 4 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 4 XL TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL Chip	OK	47 degrees C / 116 degrees F
FPC 4 XL_XR0 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL_XR0 Chip	OK	48 degrees C / 118 degrees F
FPC 4 XL_XR1 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL_XR1 Chip	OK	47 degrees C / 116 degrees F
FPC 4 XQ TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ Chip	OK	47 degrees C / 116 degrees F
FPC 4 XQ_XR0 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 4 XQ_XR1 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 4 XM 0 TSen	OK	51 degrees C / 123 degrees F
FPC 4 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 4 XM 1 TSen	OK	51 degrees C / 123 degrees F

FPC 4 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 4 PLX PCIe Switch TSe	OK	51 degrees C / 123 degrees F
FPC 4 PLX PCIe Switch Chi	OK	60 degrees C / 140 degrees F
FPC 5 Intake	OK	34 degrees C / 93 degrees F
FPC 5 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 5 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 5 XL TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL Chip	OK	47 degrees C / 116 degrees F
FPC 5 XL_XR0 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL_XR0 Chip	OK	49 degrees C / 120 degrees F
FPC 5 XL_XR1 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL_XR1 Chip	OK	49 degrees C / 120 degrees F
FPC 5 XQ TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ Chip	OK	48 degrees C / 118 degrees F
FPC 5 XQ_XR0 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ_XR0 Chip	OK	60 degrees C / 140 degrees F
FPC 5 XQ_XR1 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 5 XM 0 TSen	OK	50 degrees C / 122 degrees F
FPC 5 XM 0 Chip	OK	48 degrees C / 118 degrees F
FPC 5 XM 1 TSen	OK	50 degrees C / 122 degrees F
FPC 5 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 5 PLX PCIe Switch TSe	OK	50 degrees C / 122 degrees F
FPC 5 PLX PCIe Switch Chi	OK	59 degrees C / 138 degrees F
FPC 7 Intake	OK	32 degrees C / 89 degrees F
FPC 7 Exhaust A	OK	32 degrees C / 89 degrees F
FPC 7 Exhaust B	OK	33 degrees C / 91 degrees F
FPC 7 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 0 Chip	OK	44 degrees C / 111 degrees F
FPC 7 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 1 Chip	OK	47 degrees C / 116 degrees F
FPC 7 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 2 Chip	OK	39 degrees C / 102 degrees F
FPC 7 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 3 Chip	OK	43 degrees C / 109 degrees F
FPC 7 XM 0 TSen	OK	49 degrees C / 120 degrees F
FPC 7 XM 0 Chip	OK	57 degrees C / 134 degrees F
FPC 7 XM 1 TSen	OK	49 degrees C / 120 degrees F
FPC 7 XM 1 Chip	OK	48 degrees C / 118 degrees F
FPC 7 PLX Switch TSen	OK	49 degrees C / 120 degrees F
FPC 7 PLX Switch Chip	OK	45 degrees C / 113 degrees F
FPC 8 Intake	OK	36 degrees C / 96 degrees F
FPC 8 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 8 Exhaust B	OK	46 degrees C / 114 degrees F
FPC 8 XL TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL Chip	OK	47 degrees C / 116 degrees F
FPC 8 XL_XR0 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL_XR0 Chip	OK	53 degrees C / 127 degrees F
FPC 8 XL_XR1 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL_XR1 Chip	OK	52 degrees C / 125 degrees F
FPC 8 XQ TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ Chip	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR0 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR0 Chip	OK	59 degrees C / 138 degrees F
FPC 8 XQ_XR1 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR1 Chip	OK	57 degrees C / 134 degrees F
FPC 8 XM 0 TSen	OK	52 degrees C / 125 degrees F
FPC 8 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 8 XM 1 TSen	OK	52 degrees C / 125 degrees F
FPC 8 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 8 PLX PCIe Switch TSe	OK	52 degrees C / 125 degrees F

FPC 8 PLX PCIe Switch Chi	OK	63 degrees C / 145 degrees F
FPC 9 Intake	OK	31 degrees C / 87 degrees F
FPC 9 Exhaust A	OK	34 degrees C / 93 degrees F
FPC 9 Exhaust B	OK	35 degrees C / 95 degrees F
FPC 9 QX 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 QX 0 Chip	OK	45 degrees C / 113 degrees F
FPC 9 LU 0 TCAM TSen	OK	42 degrees C / 107 degrees F
FPC 9 LU 0 TCAM Chip	OK	41 degrees C / 105 degrees F
FPC 9 LU 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 LU 0 Chip	OK	43 degrees C / 109 degrees F
FPC 9 MQ 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 MQ 0 Chip	OK	43 degrees C / 109 degrees F
FPC 9 QX 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 QX 1 Chip	OK	40 degrees C / 104 degrees F
FPC 9 LU 1 TCAM TSen	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 TCAM Chip	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 Chip	OK	41 degrees C / 105 degrees F
FPC 9 MQ 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 MQ 1 Chip	OK	41 degrees C / 105 degrees F
FPC 10 Intake	OK	35 degrees C / 95 degrees F
FPC 10 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 10 Exhaust B	OK	46 degrees C / 114 degrees F
FPC 10 XL TSen	OK	42 degrees C / 107 degrees F
FPC 10 XL Chip	OK	44 degrees C / 111 degrees F
FPC 10 XL_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XL_XR0 Chip	OK	47 degrees C / 116 degrees F
FPC 10 XL_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XL_XR1 Chip	OK	48 degrees C / 118 degrees F
FPC 10 XQ TSen	OK	42 degrees C / 107 degrees F
FPC 10 XQ Chip	OK	46 degrees C / 114 degrees F
FPC 10 XQ_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 10 XQ_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XQ_XR1 Chip	OK	53 degrees C / 127 degrees F
FPC 10 XM 0 TSen	OK	51 degrees C / 123 degrees F
FPC 10 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 10 XM 1 TSen	OK	51 degrees C / 123 degrees F
FPC 10 XM 1 Chip	OK	49 degrees C / 120 degrees F
FPC 10 PLX PCIe Switch TSe	OK	51 degrees C / 123 degrees F
FPC 10 PLX PCIe Switch Chi	OK	61 degrees C / 141 degrees F
FPC 11 Intake	OK	33 degrees C / 91 degrees F
FPC 11 Exhaust A	OK	33 degrees C / 91 degrees F
FPC 11 Exhaust B	OK	34 degrees C / 93 degrees F
FPC 11 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 0 Chip	OK	48 degrees C / 118 degrees F
FPC 11 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 1 Chip	OK	50 degrees C / 122 degrees F
FPC 11 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 2 Chip	OK	41 degrees C / 105 degrees F
FPC 11 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 3 Chip	OK	48 degrees C / 118 degrees F
FPC 11 XM 0 TSen	OK	50 degrees C / 122 degrees F
FPC 11 XM 0 Chip	OK	57 degrees C / 134 degrees F
FPC 11 XM 1 TSen	OK	50 degrees C / 122 degrees F
FPC 11 XM 1 Chip	OK	52 degrees C / 125 degrees F
FPC 11 PLX Switch TSen	OK	50 degrees C / 122 degrees F
FPC 11 PLX Switch Chip	OK	45 degrees C / 113 degrees F
Fans Top Fan Tray Temp	OK	42 degrees C / 107 degrees F
Top Tray Fan 1	OK	Spinning at high speed
Top Tray Fan 2	OK	Spinning at high speed

Top Tray Fan 3	OK	Spinning at high speed
Top Tray Fan 4	OK	Spinning at high speed
Top Tray Fan 5	OK	Spinning at high speed
Top Tray Fan 6	OK	Spinning at high speed
Top Tray Fan 7	OK	Spinning at high speed
Top Tray Fan 8	OK	Spinning at high speed
Top Tray Fan 9	OK	Spinning at high speed
Top Tray Fan 10	OK	Spinning at high speed
Top Tray Fan 11	OK	Spinning at high speed
Top Tray Fan 12	OK	Spinning at high speed
Bottom Fan Tray Temp	OK	33 degrees C / 91 degrees F
Bottom Tray Fan 1	OK	Spinning at high speed
Bottom Tray Fan 2	OK	Spinning at high speed
Bottom Tray Fan 3	OK	Spinning at high speed
Bottom Tray Fan 4	OK	Spinning at high speed
Bottom Tray Fan 5	OK	Spinning at high speed
Bottom Tray Fan 6	OK	Spinning at high speed
Bottom Tray Fan 7	OK	Spinning at high speed
Bottom Tray Fan 8	OK	Spinning at high speed
Bottom Tray Fan 9	OK	Spinning at high speed
Bottom Tray Fan 10	OK	Spinning at high speed
Bottom Tray Fan 11	OK	Spinning at high speed
Bottom Tray Fan 12	OK	Spinning at high speed

#### show chassis environment (MX2020 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PSM 0	Absent	
	PSM 1	Absent	
	PSM 2	OK	41 degrees C / 105 degrees F
	PSM 3	OK	39 degrees C / 102 degrees F
	PSM 4	OK	39 degrees C / 102 degrees F
	PSM 5	OK	38 degrees C / 100 degrees F
	PSM 6	OK	38 degrees C / 100 degrees F
	PSM 7	OK	38 degrees C / 100 degrees F
	PSM 8	OK	37 degrees C / 98 degrees F
	PSM 9	Absent	
	PSM 10	Absent	
	PSM 11	OK	47 degrees C / 116 degrees F
	PSM 12	OK	45 degrees C / 113 degrees F
	PSM 13	OK	44 degrees C / 111 degrees F
	PSM 14	OK	44 degrees C / 111 degrees F
	PSM 15	OK	43 degrees C / 109 degrees F
	PSM 16	OK	42 degrees C / 107 degrees F
	PSM 17	OK	41 degrees C / 105 degrees F
	PDM 0	OK	
	PDM 1	Absent	
	PDM 2	Absent	
	PDM 3	OK	
	CB 0 IntakeA-Zone0	OK	45 degrees C / 113 degrees F
	CB 0 IntakeB-Zone1	OK	34 degrees C / 93 degrees F
	CB 0 IntakeC-Zone0	OK	48 degrees C / 118 degrees F
	CB 0 ExhaustA-Zone0	OK	45 degrees C / 113 degrees F
	CB 0 ExhaustB-Zone1	OK	37 degrees C / 98 degrees F
	CB 0 TCBC-Zone0	OK	41 degrees C / 105 degrees F
	CB 1 IntakeA-Zone0	OK	46 degrees C / 114 degrees F
	CB 1 IntakeB-Zone1	OK	42 degrees C / 107 degrees F
	CB 1 IntakeC-Zone0	OK	49 degrees C / 120 degrees F
	CB 1 ExhaustA-Zone0	OK	46 degrees C / 114 degrees F
	CB 1 ExhaustB-Zone1	OK	41 degrees C / 105 degrees F

CB 1 TCBC-Zone0	OK	46 degrees C / 114 degrees F
SPMB 0 Intake	OK	33 degrees C / 91 degrees F
SPMB 1 Intake	OK	42 degrees C / 107 degrees F
Routing Engine 0	OK	35 degrees C / 95 degrees F
Routing Engine 0 CPU	OK	34 degrees C / 93 degrees F
Routing Engine 1	OK	44 degrees C / 111 degrees F
Routing Engine 1 CPU	OK	42 degrees C / 107 degrees F
SFB 0 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 0 Exhaust-Zone1	OK	48 degrees C / 118 degrees F
SFB 0 IntakeA-Zone0	OK	50 degrees C / 122 degrees F
SFB 0 IntakeB-Zone1	OK	40 degrees C / 104 degrees F
SFB 0 Exhaust-Zone0	OK	52 degrees C / 125 degrees F
SFB 0 SFB-XF2-Zone1	OK	61 degrees C / 141 degrees F
SFB 0 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 0 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 1 Intake-Zone0	OK	56 degrees C / 132 degrees F
SFB 1 Exhaust-Zone1	OK	47 degrees C / 116 degrees F
SFB 1 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 1 IntakeB-Zone1	OK	40 degrees C / 104 degrees F
SFB 1 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 1 SFB-XF2-Zone1	OK	62 degrees C / 143 degrees F
SFB 1 SFB-XF1-Zone0	OK	67 degrees C / 152 degrees F
SFB 1 SFB-XF0-Zone0	OK	69 degrees C / 156 degrees F
SFB 2 Intake-Zone0	OK	56 degrees C / 132 degrees F
SFB 2 Exhaust-Zone1	OK	47 degrees C / 116 degrees F
SFB 2 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 2 IntakeB-Zone1	OK	40 degrees C / 104 degrees F
SFB 2 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 2 SFB-XF2-Zone1	OK	65 degrees C / 149 degrees F
SFB 2 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 2 SFB-XF0-Zone0	OK	70 degrees C / 158 degrees F
SFB 3 Intake-Zone0	OK	57 degrees C / 134 degrees F
SFB 3 Exhaust-Zone1	OK	48 degrees C / 118 degrees F
SFB 3 IntakeA-Zone0	OK	52 degrees C / 125 degrees F
SFB 3 IntakeB-Zone1	OK	41 degrees C / 105 degrees F
SFB 3 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 3 SFB-XF2-Zone1	OK	66 degrees C / 150 degrees F
SFB 3 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 3 SFB-XF0-Zone0	OK	71 degrees C / 159 degrees F
SFB 4 Intake-Zone0	OK	58 degrees C / 136 degrees F
SFB 4 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 4 IntakeA-Zone0	OK	54 degrees C / 129 degrees F
SFB 4 IntakeB-Zone1	OK	42 degrees C / 107 degrees F
SFB 4 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 4 SFB-XF2-Zone1	OK	64 degrees C / 147 degrees F
SFB 4 SFB-XF1-Zone0	OK	68 degrees C / 154 degrees F
SFB 4 SFB-XF0-Zone0	OK	71 degrees C / 159 degrees F
SFB 5 Intake-Zone0	OK	58 degrees C / 136 degrees F
SFB 5 Exhaust-Zone1	OK	50 degrees C / 122 degrees F
SFB 5 IntakeA-Zone0	OK	53 degrees C / 127 degrees F
SFB 5 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 5 Exhaust-Zone0	OK	54 degrees C / 129 degrees F
SFB 5 SFB-XF2-Zone1	OK	66 degrees C / 150 degrees F
SFB 5 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 5 SFB-XF0-Zone0	OK	74 degrees C / 165 degrees F
SFB 6 Intake-Zone0	OK	58 degrees C / 136 degrees F
SFB 6 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 6 IntakeA-Zone0	OK	53 degrees C / 127 degrees F
SFB 6 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 6 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 6 SFB-XF2-Zone1	OK	65 degrees C / 149 degrees F

SFB 6 SFB-XF1-Zone0	OK	68 degrees C / 154 degrees F
SFB 6 SFB-XF0-Zone0	OK	72 degrees C / 161 degrees F
SFB 7 Intake-Zone0	OK	57 degrees C / 134 degrees F
SFB 7 Exhaust-Zone1	OK	50 degrees C / 122 degrees F
SFB 7 IntakeA-Zone0	OK	53 degrees C / 127 degrees F
SFB 7 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 7 Exhaust-Zone0	OK	54 degrees C / 129 degrees F
SFB 7 SFB-XF2-Zone1	OK	68 degrees C / 154 degrees F
SFB 7 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 7 SFB-XF0-Zone0	OK	73 degrees C / 163 degrees F
FPC 0 Intake	OK	41 degrees C / 105 degrees F
FPC 0 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 0 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 0 LU 0 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 0 LU 1 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 0 LU 2 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 0 LU 3 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 0 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 0 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 0 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 3 Chip	OK	45 degrees C / 113 degrees F
FPC 1 Intake	OK	40 degrees C / 104 degrees F
FPC 1 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 1 Exhaust B	OK	58 degrees C / 136 degrees F
FPC 1 LU 0 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 0 Chip	OK	56 degrees C / 132 degrees F
FPC 1 LU 1 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 1 Chip	OK	58 degrees C / 136 degrees F
FPC 1 LU 2 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 2 Chip	OK	49 degrees C / 120 degrees F
FPC 1 LU 3 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 1 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 1 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 1 Chip	OK	50 degrees C / 122 degrees F
FPC 1 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 1 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 3 Chip	OK	44 degrees C / 111 degrees F
FPC 2 Intake	OK	39 degrees C / 102 degrees F
FPC 2 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 2 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 2 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 2 LU 0 Chip	OK	60 degrees C / 140 degrees F
FPC 2 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 2 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 2 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 2 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 2 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 2 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 2 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 0 Chip	OK	50 degrees C / 122 degrees F



FPC 2 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 2 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 2 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 3 Intake	OK	40 degrees C / 104 degrees F
FPC 3 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 3 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 3 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 0 Chip	OK	61 degrees C / 141 degrees F
FPC 3 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 1 Chip	OK	62 degrees C / 143 degrees F
FPC 3 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 3 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 3 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 3 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 3 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 3 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 4 Intake	OK	40 degrees C / 104 degrees F
FPC 4 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 4 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 4 LU 0 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 4 LU 1 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 4 LU 2 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 4 LU 3 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 4 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 4 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 1 Chip	OK	53 degrees C / 127 degrees F
FPC 4 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 4 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 5 Intake	OK	41 degrees C / 105 degrees F
FPC 5 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 5 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 5 LU 0 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 0 Chip	OK	63 degrees C / 145 degrees F
FPC 5 LU 1 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 1 Chip	OK	66 degrees C / 150 degrees F
FPC 5 LU 2 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 5 LU 3 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 5 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 5 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 1 Chip	OK	53 degrees C / 127 degrees F
FPC 5 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 2 Chip	OK	48 degrees C / 118 degrees F

FPC 5 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 6 Intake	OK	42 degrees C / 107 degrees F
FPC 6 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 6 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 6 LU 0 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 0 Chip	OK	64 degrees C / 147 degrees F
FPC 6 LU 1 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 1 Chip	OK	66 degrees C / 150 degrees F
FPC 6 LU 2 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 6 LU 3 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 6 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 6 MQ 0 Chip	OK	56 degrees C / 132 degrees F
FPC 6 MQ 1 TSen	OK	50 degrees C / 122 degrees F
FPC 6 MQ 1 Chip	OK	59 degrees C / 138 degrees F
FPC 6 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 6 MQ 2 Chip	OK	49 degrees C / 120 degrees F
FPC 6 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 6 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 7 Intake	OK	41 degrees C / 105 degrees F
FPC 7 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 7 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 7 LU 0 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 0 Chip	OK	61 degrees C / 141 degrees F
FPC 7 LU 1 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 7 LU 2 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 7 LU 3 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 1 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 7 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 7 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 8 Intake	OK	41 degrees C / 105 degrees F
FPC 8 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 8 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 8 LU 0 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 8 LU 1 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 8 LU 2 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 2 Chip	OK	55 degrees C / 131 degrees F
FPC 8 LU 3 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 8 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 0 Chip	OK	51 degrees C / 123 degrees F
FPC 8 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 8 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 8 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 9 Intake	OK	42 degrees C / 107 degrees F
FPC 9 Exhaust A	OK	51 degrees C / 123 degrees F

FPC 9 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 9 LU 0 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 0 Chip	OK	65 degrees C / 149 degrees F
FPC 9 LU 1 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 1 Chip	OK	67 degrees C / 152 degrees F
FPC 9 LU 2 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 9 LU 3 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 9 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 0 Chip	OK	55 degrees C / 131 degrees F
FPC 9 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 1 Chip	OK	59 degrees C / 138 degrees F
FPC 9 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 2 Chip	OK	49 degrees C / 120 degrees F
FPC 9 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 10 Intake	OK	44 degrees C / 111 degrees F
FPC 10 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 10 Exhaust B	OK	55 degrees C / 131 degrees F
FPC 10 LU 0 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 0 Chip	OK	55 degrees C / 131 degrees F
FPC 10 LU 1 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 1 Chip	OK	59 degrees C / 138 degrees F
FPC 10 LU 2 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 2 Chip	OK	52 degrees C / 125 degrees F
FPC 10 LU 3 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 10 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 0 Chip	OK	49 degrees C / 120 degrees F
FPC 10 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 10 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 10 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 11 Intake	OK	30 degrees C / 86 degrees F
FPC 11 Exhaust A	OK	35 degrees C / 95 degrees F
FPC 11 Exhaust B	OK	30 degrees C / 86 degrees F
FPC 11 LU 0 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 0 Chip	OK	58 degrees C / 136 degrees F
FPC 11 LU 1 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 1 Chip	OK	62 degrees C / 143 degrees F
FPC 11 LU 2 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 11 LU 3 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 11 MQ 0 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 11 MQ 1 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 1 Chip	OK	57 degrees C / 134 degrees F
FPC 11 MQ 2 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 11 MQ 3 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 3 Chip	OK	52 degrees C / 125 degrees F
FPC 12 Intake	OK	40 degrees C / 104 degrees F
FPC 12 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 12 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 12 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 12 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 12 LU 1 TSen	OK	51 degrees C / 123 degrees F

FPC 12 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 12 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 12 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 12 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 12 LU 3 Chip	OK	50 degrees C / 122 degrees F
FPC 12 MQ 0 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 12 MQ 1 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 1 Chip	OK	50 degrees C / 122 degrees F
FPC 12 MQ 2 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 12 MQ 3 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 13 Intake	OK	40 degrees C / 104 degrees F
FPC 13 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 13 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 13 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 13 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 13 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 13 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 13 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 13 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 13 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 13 LU 3 Chip	OK	48 degrees C / 118 degrees F
FPC 13 MQ 0 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 13 MQ 1 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 1 Chip	OK	50 degrees C / 122 degrees F
FPC 13 MQ 2 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 13 MQ 3 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 14 Intake	OK	40 degrees C / 104 degrees F
FPC 14 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 14 Exhaust B	OK	51 degrees C / 123 degrees F
FPC 14 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 14 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 14 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 14 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 14 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 14 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 14 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 14 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 15 Intake	OK	44 degrees C / 111 degrees F
FPC 15 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 15 Exhaust B	OK	60 degrees C / 140 degrees F
FPC 15 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 15 LU 0 Chip	OK	56 degrees C / 132 degrees F
FPC 15 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 15 LU 1 Chip	OK	50 degrees C / 122 degrees F
FPC 15 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 15 LU 2 Chip	OK	58 degrees C / 136 degrees F
FPC 15 LU 3 TSen	OK	50 degrees C / 122 degrees F

FPC 15 LU 3 Chip	OK	63 degrees C / 145 degrees F
FPC 15 XM 0 TSen	OK	50 degrees C / 122 degrees F
FPC 15 XM 0 Chip	OK	56 degrees C / 132 degrees F
FPC 15 XF 0 TSen	OK	50 degrees C / 122 degrees F
FPC 15 XF 0 Chip	OK	68 degrees C / 154 degrees F
FPC 15 PLX Switch TSen	OK	50 degrees C / 122 degrees F
FPC 15 PLX Switch Chip	OK	56 degrees C / 132 degrees F
FPC 16 Intake	OK	42 degrees C / 107 degrees F
FPC 16 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 16 Exhaust B	OK	53 degrees C / 127 degrees F
FPC 16 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 16 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 16 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 16 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 16 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 16 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 1 Chip	OK	53 degrees C / 127 degrees F
FPC 16 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 16 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 17 Intake	OK	43 degrees C / 109 degrees F
FPC 17 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 17 Exhaust B	OK	55 degrees C / 131 degrees F
FPC 17 LU 0 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 0 Chip	OK	57 degrees C / 134 degrees F
FPC 17 LU 1 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 1 Chip	OK	60 degrees C / 140 degrees F
FPC 17 LU 2 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 17 LU 3 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 17 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 17 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 17 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 17 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 3 Chip	OK	51 degrees C / 123 degrees F
FPC 18 Intake	OK	44 degrees C / 111 degrees F
FPC 18 Exhaust A	OK	53 degrees C / 127 degrees F
FPC 18 Exhaust B	OK	57 degrees C / 134 degrees F
FPC 18 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 0 Chip	OK	57 degrees C / 134 degrees F
FPC 18 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 1 Chip	OK	62 degrees C / 143 degrees F
FPC 18 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 18 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 3 Chip	OK	55 degrees C / 131 degrees F
FPC 18 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 18 MQ 0 Chip	OK	54 degrees C / 129 degrees F
FPC 18 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 18 MQ 1 Chip	OK	58 degrees C / 136 degrees F
FPC 18 MQ 2 TSen	OK	51 degrees C / 123 degrees F

FPC 18 MQ 2 Chip	OK	50 degrees C / 122 degrees F
FPC 18 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 18 MQ 3 Chip	OK	53 degrees C / 127 degrees F
FPC 19 Intake	OK	48 degrees C / 118 degrees F
FPC 19 Exhaust A	OK	56 degrees C / 132 degrees F
FPC 19 Exhaust B	OK	64 degrees C / 147 degrees F
FPC 19 LU 0 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 0 Chip	OK	64 degrees C / 147 degrees F
FPC 19 LU 1 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 1 Chip	OK	70 degrees C / 158 degrees F
FPC 19 LU 2 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 2 Chip	OK	61 degrees C / 141 degrees F
FPC 19 LU 3 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 3 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 0 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 0 Chip	OK	60 degrees C / 140 degrees F
FPC 19 MQ 1 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 1 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 2 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 2 Chip	OK	56 degrees C / 132 degrees F
FPC 19 MQ 3 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 3 Chip	OK	57 degrees C / 134 degrees F
ADC 0 Intake	OK	40 degrees C / 104 degrees F
ADC 0 Exhaust	OK	52 degrees C / 125 degrees F
ADC 0 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 0 ADC-XF0	OK	66 degrees C / 150 degrees F
ADC 1 Intake	OK	38 degrees C / 100 degrees F
ADC 1 Exhaust	OK	50 degrees C / 122 degrees F
ADC 1 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 1 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 2 Intake	OK	37 degrees C / 98 degrees F
ADC 2 Exhaust	OK	52 degrees C / 125 degrees F
ADC 2 ADC-XF1	OK	53 degrees C / 127 degrees F
ADC 2 ADC-XF0	OK	61 degrees C / 141 degrees F
ADC 3 Intake	OK	40 degrees C / 104 degrees F
ADC 3 Exhaust	OK	51 degrees C / 123 degrees F
ADC 3 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 3 ADC-XF0	OK	64 degrees C / 147 degrees F
ADC 4 Intake	OK	39 degrees C / 102 degrees F
ADC 4 Exhaust	OK	51 degrees C / 123 degrees F
ADC 4 ADC-XF1	OK	60 degrees C / 140 degrees F
ADC 4 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 5 Intake	OK	38 degrees C / 100 degrees F
ADC 5 Exhaust	OK	54 degrees C / 129 degrees F
ADC 5 ADC-XF1	OK	56 degrees C / 132 degrees F
ADC 5 ADC-XF0	OK	67 degrees C / 152 degrees F
ADC 6 Intake	OK	39 degrees C / 102 degrees F
ADC 6 Exhaust	OK	52 degrees C / 125 degrees F
ADC 6 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 6 ADC-XF0	OK	66 degrees C / 150 degrees F
ADC 7 Intake	OK	39 degrees C / 102 degrees F
ADC 7 Exhaust	OK	54 degrees C / 129 degrees F
ADC 7 ADC-XF1	OK	62 degrees C / 143 degrees F
ADC 7 ADC-XF0	OK	70 degrees C / 158 degrees F
ADC 8 Intake	OK	39 degrees C / 102 degrees F
ADC 8 Exhaust	OK	52 degrees C / 125 degrees F
ADC 8 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 8 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 9 Intake	OK	41 degrees C / 105 degrees F
ADC 9 Exhaust	OK	51 degrees C / 123 degrees F
ADC 9 ADC-XF1	OK	63 degrees C / 145 degrees F

	ADC 9 ADC-XF0	OK	63 degrees C / 145 degrees F
	ADC 10 Intake	OK	48 degrees C / 118 degrees F
	ADC 10 Exhaust	OK	53 degrees C / 127 degrees F
	ADC 10 ADC-XF1	OK	67 degrees C / 152 degrees F
	ADC 10 ADC-XF0	OK	66 degrees C / 150 degrees F
	ADC 12 Intake	OK	49 degrees C / 120 degrees F
	ADC 12 Exhaust	OK	54 degrees C / 129 degrees F
	ADC 12 ADC-XF1	OK	67 degrees C / 152 degrees F
	ADC 12 ADC-XF0	OK	67 degrees C / 152 degrees F
	ADC 13 Intake	OK	49 degrees C / 120 degrees F
	ADC 13 Exhaust	OK	57 degrees C / 134 degrees F
	ADC 13 ADC-XF1	OK	66 degrees C / 150 degrees F
	ADC 13 ADC-XF0	OK	69 degrees C / 156 degrees F
	ADC 14 Intake	OK	51 degrees C / 123 degrees F
	ADC 14 Exhaust	OK	59 degrees C / 138 degrees F
	ADC 14 ADC-XF1	OK	69 degrees C / 156 degrees F
	ADC 14 ADC-XF0	OK	74 degrees C / 165 degrees F
	ADC 15 Intake	OK	50 degrees C / 122 degrees F
	ADC 15 Exhaust	OK	59 degrees C / 138 degrees F
	ADC 15 ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 15 ADC-XF0	OK	69 degrees C / 156 degrees F
	ADC 16 Intake	OK	52 degrees C / 125 degrees F
	ADC 16 Exhaust	OK	58 degrees C / 136 degrees F
	ADC 16 ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 16 ADC-XF0	OK	70 degrees C / 158 degrees F
	ADC 17 Intake	OK	52 degrees C / 125 degrees F
	ADC 17 Exhaust	OK	59 degrees C / 138 degrees F
	ADC 17 ADC-XF1	OK	69 degrees C / 156 degrees F
	ADC 17 ADC-XF0	OK	71 degrees C / 159 degrees F
	ADC 18 Intake	OK	53 degrees C / 127 degrees F
	ADC 18 Exhaust	OK	59 degrees C / 138 degrees F
	ADC 18 ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 18 ADC-XF0	OK	73 degrees C / 163 degrees F
	ADC 19 Intake	OK	50 degrees C / 122 degrees F
	ADC 19 Exhaust	OK	59 degrees C / 138 degrees F
	ADC 19 ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 19 ADC-XF0	OK	72 degrees C / 161 degrees F
Fans	Fan Tray 0 Fan 1	OK	7440 RPM
	Fan Tray 0 Fan 2	OK	7200 RPM
	Fan Tray 0 Fan 3	OK	6960 RPM
	Fan Tray 0 Fan 4	OK	7200 RPM
	Fan Tray 0 Fan 5	OK	7080 RPM
	Fan Tray 0 Fan 6	OK	6840 RPM
	Fan Tray 1 Fan 1	OK	6840 RPM
	Fan Tray 1 Fan 2	OK	6960 RPM
	Fan Tray 1 Fan 3	OK	6960 RPM
	Fan Tray 1 Fan 4	OK	7080 RPM
	Fan Tray 1 Fan 5	OK	6960 RPM
	Fan Tray 1 Fan 6	OK	6960 RPM
	Fan Tray 2 Fan 1	OK	8640 RPM
	Fan Tray 2 Fan 2	OK	8640 RPM
	Fan Tray 2 Fan 3	OK	8760 RPM
	Fan Tray 2 Fan 4	OK	8760 RPM
	Fan Tray 2 Fan 5	OK	8640 RPM
	Fan Tray 2 Fan 6	OK	8640 RPM
	Fan Tray 3 Fan 1	OK	8520 RPM
	Fan Tray 3 Fan 2	OK	8520 RPM
	Fan Tray 3 Fan 3	OK	8640 RPM
	Fan Tray 3 Fan 4	OK	8640 RPM
	Fan Tray 3 Fan 5	OK	8520 RPM
	Fan Tray 3 Fan 6	OK	8520 RPM

## show chassis environment (MX2020 Router with MPC5EQ and MPC6E)

Class	Item	Status	Measurement
Temp	PSM 0	OK	32 degrees C / 89 degrees F
	PSM 1	OK	32 degrees C / 89 degrees F
	PSM 2	OK	32 degrees C / 89 degrees F
	PSM 3	OK	32 degrees C / 89 degrees F
	PSM 4	OK	32 degrees C / 89 degrees F
	PSM 5	OK	33 degrees C / 91 degrees F
	PSM 6	OK	32 degrees C / 89 degrees F
	PSM 7	OK	32 degrees C / 89 degrees F
	PSM 8	OK	32 degrees C / 89 degrees F
	PSM 9	Absent	
	PSM 10	Absent	
	PSM 11	Absent	
	PSM 12	OK	33 degrees C / 91 degrees F
	PSM 13	OK	33 degrees C / 91 degrees F
	PSM 14	OK	34 degrees C / 93 degrees F
	PSM 15	OK	34 degrees C / 93 degrees F
	PSM 16	OK	33 degrees C / 91 degrees F
	PSM 17	OK	33 degrees C / 91 degrees F
	PDM 0	OK	
	PDM 1	OK	
	PDM 2	OK	
	PDM 3	OK	
	CB 0 IntakeA-Zone0	OK	34 degrees C / 93 degrees F
	CB 0 IntakeB-Zone1	OK	26 degrees C / 78 degrees F
	CB 0 IntakeC-Zone0	OK	38 degrees C / 100 degrees F
	CB 0 ExhaustA-Zone0	OK	34 degrees C / 93 degrees F
	CB 0 ExhaustB-Zone1	OK	27 degrees C / 80 degrees F
	CB 0 TCBC-Zone0	OK	32 degrees C / 89 degrees F
	CB 1 IntakeA-Zone0	OK	24 degrees C / 75 degrees F
	CB 1 IntakeB-Zone1	OK	22 degrees C / 71 degrees F
	CB 1 IntakeC-Zone0	OK	34 degrees C / 93 degrees F
	CB 1 ExhaustA-Zone0	OK	31 degrees C / 87 degrees F
	CB 1 ExhaustB-Zone1	OK	24 degrees C / 75 degrees F
	CB 1 TCBC-Zone0	OK	27 degrees C / 80 degrees F
	SPMB 0 Intake	OK	25 degrees C / 77 degrees F
	SPMB 1 Intake	OK	23 degrees C / 73 degrees F
	Routing Engine 0	OK	28 degrees C / 82 degrees F
	Routing Engine 0 CPU	OK	25 degrees C / 77 degrees F
	Routing Engine 1	OK	25 degrees C / 77 degrees F
	Routing Engine 1 CPU	OK	24 degrees C / 75 degrees F
	SFB 0 Intake-Zone0	OK	45 degrees C / 113 degrees F
	SFB 0 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
	SFB 0 IntakeA-Zone0	OK	32 degrees C / 89 degrees F
	SFB 0 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
	SFB 0 Exhaust-Zone0	OK	36 degrees C / 96 degrees F
	SFB 0 SFB-XF2-Zone1	OK	46 degrees C / 114 degrees F
	SFB 0 SFB-XF1-Zone0	OK	48 degrees C / 118 degrees F
	SFB 0 SFB-XF0-Zone0	OK	60 degrees C / 140 degrees F
	SFB 1 Intake-Zone0	OK	44 degrees C / 111 degrees F
	SFB 1 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
	SFB 1 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
	SFB 1 IntakeB-Zone1	OK	27 degrees C / 80 degrees F
	SFB 1 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
	SFB 1 SFB-XF2-Zone1	OK	47 degrees C / 116 degrees F
	SFB 1 SFB-XF1-Zone0	OK	49 degrees C / 120 degrees F
SFB 1	SFB-XF0-Zone0	OK	56 degrees C / 132 degrees F
	SFB 2 Intake-Zone0	OK	41 degrees C / 105 degrees F



SFB 2 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 2 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 2 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 2 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
SFB 2 SFB-XF2-Zone1	OK	47 degrees C / 116 degrees F
SFB 2 SFB-XF1-Zone0	OK	55 degrees C / 131 degrees F
SFB 2 SFB-XF0-Zone0	OK	55 degrees C / 131 degrees F
SFB 3 Intake-Zone0	OK	43 degrees C / 109 degrees F
SFB 3 Exhaust-Zone1	OK	33 degrees C / 91 degrees F
SFB 3 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 3 IntakeB-Zone1	OK	27 degrees C / 80 degrees F
SFB 3 Exhaust-Zone0	OK	36 degrees C / 96 degrees F
SFB 3 SFB-XF2-Zone1	OK	46 degrees C / 114 degrees F
SFB 3 SFB-XF1-Zone0	OK	46 degrees C / 114 degrees F
SFB 3 SFB-XF0-Zone0	OK	57 degrees C / 134 degrees F
SFB 4 Intake-Zone0	OK	36 degrees C / 96 degrees F
SFB 4 Exhaust-Zone1	OK	32 degrees C / 89 degrees F
SFB 4 IntakeA-Zone0	OK	31 degrees C / 87 degrees F
SFB 4 IntakeB-Zone1	OK	26 degrees C / 78 degrees F
SFB 4 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 4 SFB-XF2-Zone1	OK	44 degrees C / 111 degrees F
SFB 4 SFB-XF1-Zone0	OK	45 degrees C / 113 degrees F
SFB 4 SFB-XF0-Zone0	OK	52 degrees C / 125 degrees F
SFB 5 Intake-Zone0	OK	31 degrees C / 87 degrees F
SFB 5 Exhaust-Zone1	OK	30 degrees C / 86 degrees F
SFB 5 IntakeA-Zone0	OK	26 degrees C / 78 degrees F
SFB 5 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 5 Exhaust-Zone0	OK	29 degrees C / 84 degrees F
SFB 5 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 5 SFB-XF1-Zone0	OK	47 degrees C / 116 degrees F
SFB 5 SFB-XF0-Zone0	OK	49 degrees C / 120 degrees F
SFB 6 Intake-Zone0	OK	30 degrees C / 86 degrees F
SFB 6 Exhaust-Zone1	OK	29 degrees C / 84 degrees F
SFB 6 IntakeA-Zone0	OK	25 degrees C / 77 degrees F
SFB 6 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 6 Exhaust-Zone0	OK	29 degrees C / 84 degrees F
SFB 6 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 6 SFB-XF1-Zone0	OK	44 degrees C / 111 degrees F
SFB 6 SFB-XF0-Zone0	OK	45 degrees C / 113 degrees F
SFB 7 Intake-Zone0	OK	31 degrees C / 87 degrees F
SFB 7 Exhaust-Zone1	OK	30 degrees C / 86 degrees F
SFB 7 IntakeA-Zone0	OK	26 degrees C / 78 degrees F
SFB 7 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 7 Exhaust-Zone0	OK	28 degrees C / 82 degrees F
SFB 7 SFB-XF2-Zone1	OK	50 degrees C / 122 degrees F
SFB 7 SFB-XF1-Zone0	OK	43 degrees C / 109 degrees F
SFB 7 SFB-XF0-Zone0	OK	47 degrees C / 116 degrees F
FPC 0 Intake	OK	31 degrees C / 87 degrees F
FPC 0 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 0 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 0 XL TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL Chip	OK	46 degrees C / 114 degrees F
FPC 0 XL_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL_XR0 Chip	OK	48 degrees C / 118 degrees F
FPC 0 XL_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL_XR1 Chip	OK	48 degrees C / 118 degrees F
FPC 0 XQ TSen	OK	42 degrees C / 107 degrees F
FPC 0 XQ Chip	OK	44 degrees C / 111 degrees F
FPC 0 XQ_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 0 XQ_XR1 TSen	OK	42 degrees C / 107 degrees F

FPC 0 XQ_XR1 Chip	OK	55 degrees C / 131 degrees F
FPC 0 XM 0 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XM 0 Chip	OK	62 degrees C / 143 degrees F
FPC 0 XM 1 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XM 1 Chip	OK	44 degrees C / 111 degrees F
FPC 0 PLX PCIe Switch TSe	OK	48 degrees C / 118 degrees F
FPC 0 PLX PCIe Switch Chi	OK	57 degrees C / 134 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust A	OK	36 degrees C / 96 degrees F
FPC 1 Exhaust B	OK	44 degrees C / 111 degrees F
FPC 1 LU 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 0 Chip	OK	45 degrees C / 113 degrees F
FPC 1 LU 1 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 1 Chip	OK	38 degrees C / 100 degrees F
FPC 1 LU 2 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 2 Chip	OK	42 degrees C / 107 degrees F
FPC 1 LU 3 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 3 Chip	OK	47 degrees C / 116 degrees F
FPC 1 XM 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 XM 0 Chip	OK	44 degrees C / 111 degrees F
FPC 1 XF 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 XF 0 Chip	OK	54 degrees C / 129 degrees F
FPC 1 PLX Switch TSen	OK	38 degrees C / 100 degrees F
FPC 1 PLX Switch Chip	OK	41 degrees C / 105 degrees F
FPC 2 Intake	OK	28 degrees C / 82 degrees F
FPC 2 Exhaust A	OK	28 degrees C / 82 degrees F
FPC 2 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 2 LU 0 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 0 Chip	OK	40 degrees C / 104 degrees F
FPC 2 LU 1 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 1 Chip	OK	41 degrees C / 105 degrees F
FPC 2 LU 2 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 2 Chip	OK	34 degrees C / 93 degrees F
FPC 2 LU 3 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 3 Chip	OK	38 degrees C / 100 degrees F
FPC 2 XM 0 TSen	OK	40 degrees C / 104 degrees F
FPC 2 XM 0 Chip	OK	47 degrees C / 116 degrees F
FPC 2 XM 1 TSen	OK	40 degrees C / 104 degrees F
FPC 2 XM 1 Chip	OK	42 degrees C / 107 degrees F
FPC 2 PLX Switch TSen	OK	40 degrees C / 104 degrees F
FPC 2 PLX Switch Chip	OK	39 degrees C / 102 degrees F
FPC 3 Intake	OK	27 degrees C / 80 degrees F
FPC 3 Exhaust A	OK	38 degrees C / 100 degrees F
FPC 3 Exhaust B	OK	31 degrees C / 87 degrees F
FPC 3 QX 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 QX 0 Chip	OK	42 degrees C / 107 degrees F
FPC 3 LU 0 TCAM TSen	OK	38 degrees C / 100 degrees F
FPC 3 LU 0 TCAM Chip	OK	43 degrees C / 109 degrees F
FPC 3 LU 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 LU 0 Chip	OK	42 degrees C / 107 degrees F
FPC 3 MQ 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 MQ 0 Chip	OK	39 degrees C / 102 degrees F
FPC 3 QX 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 QX 1 Chip	OK	36 degrees C / 96 degrees F
FPC 3 LU 1 TCAM TSen	OK	32 degrees C / 89 degrees F
FPC 3 LU 1 TCAM Chip	OK	35 degrees C / 95 degrees F
FPC 3 LU 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 LU 1 Chip	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 MQ 1 Chip	OK	36 degrees C / 96 degrees F
FPC 4 Intake	OK	29 degrees C / 84 degrees F

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FPC 4 Exhaust A          OK          36 degrees C / 96 degrees F
FPC 4 Exhaust B          OK          40 degrees C / 104 degrees F
FPC 4 XL TSen            OK          39 degrees C / 102 degrees F
FPC 4 XL Chip            OK          42 degrees C / 107 degrees F
FPC 4 XL_XR0 TSen        OK          39 degrees C / 102 degrees F
FPC 4 XL_XR0 Chip        OK          45 degrees C / 113 degrees F
FPC 4 XL_XR1 TSen        OK          39 degrees C / 102 degrees F
FPC 4 XL_XR1 Chip        OK          46 degrees C / 114 degrees F
FPC 4 XQ TSen            OK          39 degrees C / 102 degrees F
FPC 4 XQ Chip            OK          42 degrees C / 107 degrees F
FPC 4 XQ_XR0 TSen        OK          39 degrees C / 102 degrees F
FPC 4 XQ_XR0 Chip        OK          54 degrees C / 129 degrees F
FPC 4 XQ_XR1 TSen        OK          39 degrees C / 102 degrees F
FPC 4 XQ_XR1 Chip        OK          53 degrees C / 127 degrees F
FPC 4 XM 0 TSen          OK          45 degrees C / 113 degrees F
FPC 4 XM 0 Chip          OK          59 degrees C / 138 degrees F
FPC 4 XM 1 TSen          OK          45 degrees C / 113 degrees F
FPC 4 XM 1 Chip          OK          41 degrees C / 105 degrees F
FPC 4 PLX PCIe Switch TSe OK          45 degrees C / 113 degrees F
FPC 4 PLX PCIe Switch Chi OK          58 degrees C / 136 degrees F
FPC 5 Intake             OK          29 degrees C / 84 degrees F
FPC 5 Exhaust A          OK          33 degrees C / 91 degrees F
FPC 5 Exhaust B          OK          39 degrees C / 102 degrees F
FPC 5 LU 0 TSen          OK          40 degrees C / 104 degrees F
FPC 5 LU 0 Chip          OK          40 degrees C / 104 degrees F
FPC 5 LU 1 TSen          OK          40 degrees C / 104 degrees F
FPC 5 LU 1 Chip          OK          45 degrees C / 113 degrees F
FPC 5 LU 2 TSen          OK          40 degrees C / 104 degrees F
FPC 5 LU 2 Chip          OK          40 degrees C / 104 degrees F
FPC 5 LU 3 TSen          OK          40 degrees C / 104 degrees F
FPC 5 LU 3 Chip          OK          46 degrees C / 114 degrees F
FPC 5 MQ 0 TSen          OK          32 degrees C / 89 degrees F
FPC 5 MQ 0 Chip          OK          33 degrees C / 91 degrees F
FPC 5 MQ 1 TSen          OK          32 degrees C / 89 degrees F
FPC 5 MQ 1 Chip          OK          35 degrees C / 95 degrees F
FPC 5 MQ 2 TSen          OK          32 degrees C / 89 degrees F
FPC 5 MQ 2 Chip          OK          32 degrees C / 89 degrees F
FPC 5 MQ 3 TSen          OK          32 degrees C / 89 degrees F
FPC 5 MQ 3 Chip          OK          32 degrees C / 89 degrees F
FPC 9 Intake             OK          25 degrees C / 77 degrees F
FPC 9 Exhaust A          OK          37 degrees C / 98 degrees F
FPC 9 Exhaust B          OK          40 degrees C / 104 degrees F
FPC 9 XL 0 TSen          OK          40 degrees C / 104 degrees F
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### show chassis environment (MX2010 Router)

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user@host> show chassis environment
Class Item                Status    Measurement
Temp  PSM 0                  OK        7 degrees C / 44 degrees F
      PSM 1                  OK        7 degrees C / 44 degrees F
      PSM 2                  OK        7 degrees C / 44 degrees F
      PSM 3                  OK        6 degrees C / 42 degrees F
      PSM 4                  OK        6 degrees C / 42 degrees F
      PSM 5                  OK        6 degrees C / 42 degrees F
      PSM 6                  OK        6 degrees C / 42 degrees F
      PSM 7                  OK        7 degrees C / 44 degrees F
      PSM 8                  OK        7 degrees C / 44 degrees F
      PDM 0                  OK
      PDM 1                  Absent
      CB 0 IntakeA-Zone0     OK        14 degrees C / 57 degrees F

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CB 0 IntakeB-Zone1	OK	7 degrees C / 44 degrees F
CB 0 IntakeC-Zone0	OK	22 degrees C / 71 degrees F
CB 0 ExhaustA-Zone0	OK	14 degrees C / 57 degrees F
CB 0 ExhaustB-Zone1	OK	9 degrees C / 48 degrees F
CB 0 TCBC-Zone0	OK	11 degrees C / 51 degrees F
CB 1 IntakeA-Zone0	OK	9 degrees C / 48 degrees F
CB 1 IntakeB-Zone1	OK	5 degrees C / 41 degrees F
CB 1 IntakeC-Zone0	OK	20 degrees C / 68 degrees F
CB 1 ExhaustA-Zone0	OK	12 degrees C / 53 degrees F
CB 1 ExhaustB-Zone1	OK	7 degrees C / 44 degrees F
CB 1 TCBC-Zone0	OK	10 degrees C / 50 degrees F
SPMB 0 Intake	OK	5 degrees C / 41 degrees F
SPMB 1 Intake	OK	4 degrees C / 39 degrees F
Routing Engine 0	OK	9 degrees C / 48 degrees F
Routing Engine 0 CPU	OK	9 degrees C / 48 degrees F
Routing Engine 1	OK	6 degrees C / 42 degrees F
Routing Engine 1 CPU	OK	6 degrees C / 42 degrees F
SFB 0 Intake-Zone0	OK	26 degrees C / 78 degrees F
SFB 0 Exhaust-Zone1	OK	17 degrees C / 62 degrees F
SFB 0 IntakeA-Zone0	OK	16 degrees C / 60 degrees F
SFB 0 IntakeB-Zone1	OK	11 degrees C / 51 degrees F
SFB 0 Exhaust-Zone0	OK	18 degrees C / 64 degrees F
SFB 0 SFB-XF2-Zone1	OK	25 degrees C / 77 degrees F
SFB 0 SFB-XF1-Zone0	OK	23 degrees C / 73 degrees F
SFB 0 SFB-XF0-Zone0	OK	33 degrees C / 91 degrees F
SFB 1 Intake-Zone0	OK	27 degrees C / 80 degrees F
SFB 1 Exhaust-Zone1	OK	15 degrees C / 59 degrees F
SFB 1 IntakeA-Zone0	OK	20 degrees C / 68 degrees F
SFB 1 IntakeB-Zone1	OK	10 degrees C / 50 degrees F
SFB 1 Exhaust-Zone0	OK	19 degrees C / 66 degrees F
SFB 1 SFB-XF2-Zone1	OK	26 degrees C / 78 degrees F
SFB 1 SFB-XF1-Zone0	OK	27 degrees C / 80 degrees F
SFB 1 SFB-XF0-Zone0	OK	32 degrees C / 89 degrees F
SFB 2 Intake-Zone0	OK	21 degrees C / 69 degrees F
SFB 2 Exhaust-Zone1	OK	13 degrees C / 55 degrees F
SFB 2 IntakeA-Zone0	OK	18 degrees C / 64 degrees F
SFB 2 IntakeB-Zone1	OK	9 degrees C / 48 degrees F
SFB 2 Exhaust-Zone0	OK	16 degrees C / 60 degrees F
SFB 2 SFB-XF2-Zone1	OK	24 degrees C / 75 degrees F
SFB 2 SFB-XF1-Zone0	OK	21 degrees C / 69 degrees F
SFB 2 SFB-XF0-Zone0	OK	26 degrees C / 78 degrees F
SFB 4 Intake-Zone0	OK	28 degrees C / 82 degrees F
SFB 4 Exhaust-Zone1	OK	16 degrees C / 60 degrees F
SFB 4 IntakeA-Zone0	OK	18 degrees C / 64 degrees F
SFB 4 IntakeB-Zone1	OK	11 degrees C / 51 degrees F
SFB 4 Exhaust-Zone0	OK	19 degrees C / 66 degrees F
SFB 4 SFB-XF2-Zone1	OK	27 degrees C / 80 degrees F
SFB 4 SFB-XF1-Zone0	OK	27 degrees C / 80 degrees F
SFB 4 SFB-XF0-Zone0	OK	32 degrees C / 89 degrees F
SFB 5 Intake-Zone0	OK	22 degrees C / 71 degrees F
SFB 5 Exhaust-Zone1	OK	14 degrees C / 57 degrees F
SFB 5 IntakeA-Zone0	OK	18 degrees C / 64 degrees F
SFB 5 IntakeB-Zone1	OK	10 degrees C / 50 degrees F
SFB 5 Exhaust-Zone0	OK	17 degrees C / 62 degrees F
SFB 5 SFB-XF2-Zone1	OK	22 degrees C / 71 degrees F
SFB 5 SFB-XF1-Zone0	OK	29 degrees C / 84 degrees F
SFB 5 SFB-XF0-Zone0	OK	27 degrees C / 80 degrees F
SFB 6 Intake-Zone0	OK	27 degrees C / 80 degrees F
SFB 6 Exhaust-Zone1	OK	13 degrees C / 55 degrees F
SFB 6 IntakeA-Zone0	OK	19 degrees C / 66 degrees F
SFB 6 IntakeB-Zone1	OK	10 degrees C / 50 degrees F

SFB 6 Exhaust-Zone0	OK	20 degrees C / 68 degrees F
SFB 6 SFB-XF2-Zone1	OK	24 degrees C / 75 degrees F
SFB 6 SFB-XF1-Zone0	OK	32 degrees C / 89 degrees F
SFB 6 SFB-XF0-Zone0	OK	33 degrees C / 91 degrees F
SFB 7 Intake-Zone0	OK	25 degrees C / 77 degrees F
SFB 7 Exhaust-Zone1	OK	13 degrees C / 55 degrees F
SFB 7 IntakeA-Zone0	OK	14 degrees C / 57 degrees F
SFB 7 IntakeB-Zone1	OK	8 degrees C / 46 degrees F
SFB 7 Exhaust-Zone0	OK	17 degrees C / 62 degrees F
SFB 7 SFB-XF2-Zone1	OK	21 degrees C / 69 degrees F
SFB 7 SFB-XF1-Zone0	OK	21 degrees C / 69 degrees F
SFB 7 SFB-XF0-Zone0	OK	33 degrees C / 91 degrees F
FPC 0 Intake	OK	13 degrees C / 55 degrees F
FPC 0 Exhaust A	OK	13 degrees C / 55 degrees F
FPC 0 Exhaust B	OK	14 degrees C / 57 degrees F
FPC 0 LU 0 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 0 Chip	OK	25 degrees C / 77 degrees F
FPC 0 LU 1 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 1 Chip	OK	27 degrees C / 80 degrees F
FPC 0 LU 2 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 2 Chip	OK	19 degrees C / 66 degrees F
FPC 0 LU 3 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 3 Chip	OK	23 degrees C / 73 degrees F
FPC 0 XM 0 TSen	OK	28 degrees C / 82 degrees F
FPC 0 XM 0 Chip	OK	33 degrees C / 91 degrees F
FPC 0 XM 1 TSen	OK	28 degrees C / 82 degrees F
FPC 0 XM 1 Chip	OK	26 degrees C / 78 degrees F
FPC 0 PLX Switch TSen	OK	28 degrees C / 82 degrees F
FPC 0 PLX Switch Chip	OK	26 degrees C / 78 degrees F
FPC 1 Intake	OK	10 degrees C / 50 degrees F
FPC 1 Exhaust A	OK	24 degrees C / 75 degrees F
FPC 1 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 1 LU 0 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 0 Chip	OK	31 degrees C / 87 degrees F
FPC 1 LU 1 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 1 Chip	OK	21 degrees C / 69 degrees F
FPC 1 LU 2 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 2 Chip	OK	25 degrees C / 77 degrees F
FPC 1 LU 3 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 3 Chip	OK	33 degrees C / 91 degrees F
FPC 1 XM 0 TSen	OK	22 degrees C / 71 degrees F
FPC 1 XM 0 Chip	OK	30 degrees C / 86 degrees F
FPC 1 XF 0 TSen	OK	22 degrees C / 71 degrees F
FPC 1 XF 0 Chip	OK	37 degrees C / 98 degrees F
FPC 1 PLX Switch TSen	OK	22 degrees C / 71 degrees F
FPC 1 PLX Switch Chip	OK	22 degrees C / 71 degrees F
FPC 2 Intake	OK	9 degrees C / 48 degrees F
FPC 2 Exhaust A	OK	10 degrees C / 50 degrees F
FPC 2 Exhaust B	OK	10 degrees C / 50 degrees F
FPC 2 LU 0 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 0 Chip	OK	25 degrees C / 77 degrees F
FPC 2 LU 1 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 1 Chip	OK	26 degrees C / 78 degrees F
FPC 2 LU 2 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 2 Chip	OK	17 degrees C / 62 degrees F
FPC 2 LU 3 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 3 Chip	OK	22 degrees C / 71 degrees F
FPC 2 XM 0 TSen	OK	26 degrees C / 78 degrees F
FPC 2 XM 0 Chip	OK	34 degrees C / 93 degrees F
FPC 2 XM 1 TSen	OK	26 degrees C / 78 degrees F
FPC 2 XM 1 Chip	OK	26 degrees C / 78 degrees F

FPC 2 PLX Switch TSen	OK	26 degrees C / 78 degrees F
FPC 2 PLX Switch Chip	OK	20 degrees C / 68 degrees F
FPC 3 Intake	OK	12 degrees C / 53 degrees F
FPC 3 Exhaust A	OK	16 degrees C / 60 degrees F
FPC 3 Exhaust B	OK	26 degrees C / 78 degrees F
FPC 3 LU 0 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 0 Chip	OK	26 degrees C / 78 degrees F
FPC 3 LU 1 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 1 Chip	OK	27 degrees C / 80 degrees F
FPC 3 LU 2 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 2 Chip	OK	22 degrees C / 71 degrees F
FPC 3 LU 3 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 3 Chip	OK	21 degrees C / 69 degrees F
FPC 3 MQ 0 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 0 Chip	OK	18 degrees C / 64 degrees F
FPC 3 MQ 1 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 1 Chip	OK	20 degrees C / 68 degrees F
FPC 3 MQ 2 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 2 Chip	OK	17 degrees C / 62 degrees F
FPC 3 MQ 3 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 3 Chip	OK	16 degrees C / 60 degrees F
FPC 4 Intake	OK	11 degrees C / 51 degrees F
FPC 4 Exhaust A	OK	22 degrees C / 71 degrees F
FPC 4 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 4 LU 0 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 0 Chip	OK	33 degrees C / 91 degrees F
FPC 4 LU 1 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 1 Chip	OK	21 degrees C / 69 degrees F
FPC 4 LU 2 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 2 Chip	OK	26 degrees C / 78 degrees F
FPC 4 LU 3 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 3 Chip	OK	33 degrees C / 91 degrees F
FPC 4 XM 0 TSen	OK	22 degrees C / 71 degrees F
FPC 4 XM 0 Chip	OK	30 degrees C / 86 degrees F
FPC 4 XF 0 TSen	OK	22 degrees C / 71 degrees F
FPC 4 XF 0 Chip	OK	37 degrees C / 98 degrees F
FPC 4 PLX Switch TSen	OK	22 degrees C / 71 degrees F
FPC 4 PLX Switch Chip	OK	23 degrees C / 73 degrees F
FPC 5 Intake	OK	12 degrees C / 53 degrees F
FPC 5 Exhaust A	OK	12 degrees C / 53 degrees F
FPC 5 Exhaust B	OK	12 degrees C / 53 degrees F
FPC 5 LU 0 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 0 Chip	OK	28 degrees C / 82 degrees F
FPC 5 LU 1 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 1 Chip	OK	27 degrees C / 80 degrees F
FPC 5 LU 2 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 2 Chip	OK	19 degrees C / 66 degrees F
FPC 5 LU 3 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 3 Chip	OK	22 degrees C / 71 degrees F
FPC 5 XM 0 TSen	OK	27 degrees C / 80 degrees F
FPC 5 XM 0 Chip	OK	36 degrees C / 96 degrees F
FPC 5 XM 1 TSen	OK	27 degrees C / 80 degrees F
FPC 5 XM 1 Chip	OK	26 degrees C / 78 degrees F
FPC 5 PLX Switch TSen	OK	27 degrees C / 80 degrees F
FPC 5 PLX Switch Chip	OK	24 degrees C / 75 degrees F
FPC 6 Intake	OK	12 degrees C / 53 degrees F
FPC 6 Exhaust A	OK	17 degrees C / 62 degrees F
FPC 6 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 6 LU 0 TSen	OK	24 degrees C / 75 degrees F
FPC 6 LU 0 Chip	OK	29 degrees C / 84 degrees F
FPC 6 LU 1 TSen	OK	24 degrees C / 75 degrees F

FPC 6 LU 1 Chip	OK	30 degrees C / 86 degrees F
FPC 6 LU 2 TSen	OK	24 degrees C / 75 degrees F
FPC 6 LU 2 Chip	OK	24 degrees C / 75 degrees F
FPC 6 LU 3 TSen	OK	24 degrees C / 75 degrees F
FPC 6 LU 3 Chip	OK	22 degrees C / 71 degrees F
FPC 6 MQ 0 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 0 Chip	OK	19 degrees C / 66 degrees F
FPC 6 MQ 1 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 1 Chip	OK	20 degrees C / 68 degrees F
FPC 6 MQ 2 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 2 Chip	OK	17 degrees C / 62 degrees F
FPC 6 MQ 3 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 3 Chip	OK	16 degrees C / 60 degrees F
FPC 7 Intake	OK	10 degrees C / 50 degrees F
FPC 7 Exhaust A	OK	10 degrees C / 50 degrees F
FPC 7 Exhaust B	OK	11 degrees C / 51 degrees F
FPC 7 LU 0 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 0 Chip	OK	26 degrees C / 78 degrees F
FPC 7 LU 1 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 1 Chip	OK	29 degrees C / 84 degrees F
FPC 7 LU 2 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 2 Chip	OK	19 degrees C / 66 degrees F
FPC 7 LU 3 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 3 Chip	OK	24 degrees C / 75 degrees F
FPC 7 XM 0 TSen	OK	26 degrees C / 78 degrees F
FPC 7 XM 0 Chip	OK	34 degrees C / 93 degrees F
FPC 7 XM 1 TSen	OK	26 degrees C / 78 degrees F
FPC 7 XM 1 Chip	OK	32 degrees C / 89 degrees F
FPC 7 PLX Switch TSen	OK	26 degrees C / 78 degrees F
FPC 7 PLX Switch Chip	OK	22 degrees C / 71 degrees F
FPC 8 Intake	OK	10 degrees C / 50 degrees F
FPC 8 Exhaust A	OK	22 degrees C / 71 degrees F
FPC 8 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 8 LU 0 TSen	OK	20 degrees C / 68 degrees F
FPC 8 LU 0 Chip	OK	33 degrees C / 91 degrees F
FPC 8 LU 1 TSen	OK	20 degrees C / 68 degrees F
FPC 8 LU 1 Chip	OK	23 degrees C / 73 degrees F
FPC 8 LU 2 TSen	OK	20 degrees C / 68 degrees F
FPC 8 LU 2 Chip	OK	26 degrees C / 78 degrees F
FPC 8 LU 3 TSen	OK	20 degrees C / 68 degrees F
FPC 8 LU 3 Chip	OK	33 degrees C / 91 degrees F
FPC 8 XM 0 TSen	OK	20 degrees C / 68 degrees F
FPC 8 XM 0 Chip	OK	29 degrees C / 84 degrees F
FPC 8 XF 0 TSen	OK	20 degrees C / 68 degrees F
FPC 8 XF 0 Chip	OK	38 degrees C / 100 degrees F
FPC 8 PLX Switch TSen	OK	20 degrees C / 68 degrees F
FPC 8 PLX Switch Chip	OK	24 degrees C / 75 degrees F
FPC 9 Intake	OK	11 degrees C / 51 degrees F
FPC 9 Exhaust A	OK	11 degrees C / 51 degrees F
FPC 9 Exhaust B	OK	11 degrees C / 51 degrees F
FPC 9 LU 0 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 0 Chip	OK	24 degrees C / 75 degrees F
FPC 9 LU 1 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 1 Chip	OK	26 degrees C / 78 degrees F
FPC 9 LU 2 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 2 Chip	OK	16 degrees C / 60 degrees F
FPC 9 LU 3 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 3 Chip	OK	21 degrees C / 69 degrees F
FPC 9 XM 0 TSen	OK	25 degrees C / 77 degrees F
FPC 9 XM 0 Chip	OK	32 degrees C / 89 degrees F
FPC 9 XM 1 TSen	OK	25 degrees C / 77 degrees F

	FPC 9 XM 1 Chip	OK	25 degrees C / 77 degrees F
	FPC 9 PLX Switch TSen	OK	25 degrees C / 77 degrees F
	FPC 9 PLX Switch Chip	OK	21 degrees C / 69 degrees F
	ADC 0 Intake	OK	12 degrees C / 53 degrees F
	ADC 0 Exhaust	OK	20 degrees C / 68 degrees F
	ADC 0 ADC-XF1	OK	26 degrees C / 78 degrees F
	ADC 0 ADC-XF0	OK	32 degrees C / 89 degrees F
	ADC 1 Intake	OK	11 degrees C / 51 degrees F
	ADC 1 Exhaust	OK	21 degrees C / 69 degrees F
	ADC 1 ADC-XF1	OK	24 degrees C / 75 degrees F
	ADC 1 ADC-XF0	OK	31 degrees C / 87 degrees F
	ADC 2 Intake	OK	14 degrees C / 57 degrees F
	ADC 2 Exhaust	OK	21 degrees C / 69 degrees F
	ADC 2 ADC-XF1	OK	28 degrees C / 82 degrees F
	ADC 2 ADC-XF0	OK	34 degrees C / 93 degrees F
	ADC 3 Intake	OK	13 degrees C / 55 degrees F
	ADC 3 Exhaust	OK	19 degrees C / 66 degrees F
	ADC 3 ADC-XF1	OK	24 degrees C / 75 degrees F
	ADC 3 ADC-XF0	OK	31 degrees C / 87 degrees F
	ADC 4 Intake	OK	9 degrees C / 48 degrees F
	ADC 4 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 4 ADC-XF1	OK	28 degrees C / 82 degrees F
	ADC 4 ADC-XF0	OK	35 degrees C / 95 degrees F
	ADC 5 Intake	OK	12 degrees C / 53 degrees F
	ADC 5 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 5 ADC-XF1	OK	28 degrees C / 82 degrees F
	ADC 5 ADC-XF0	OK	34 degrees C / 93 degrees F
	ADC 6 Intake	OK	11 degrees C / 51 degrees F
	ADC 6 Exhaust	OK	21 degrees C / 69 degrees F
	ADC 6 ADC-XF1	OK	26 degrees C / 78 degrees F
ADC 6 ADC-XF0	OK	35 degrees C / 95 degrees F	
	ADC 7 Intake	OK	14 degrees C / 57 degrees F
	ADC 7 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 7 ADC-XF1	OK	26 degrees C / 78 degrees F
	ADC 7 ADC-XF0	OK	34 degrees C / 93 degrees F
	ADC 8 Intake	OK	14 degrees C / 57 degrees F
	ADC 8 Exhaust	OK	21 degrees C / 69 degrees F
	ADC 8 ADC-XF1	OK	24 degrees C / 75 degrees F
	ADC 8 ADC-XF0	OK	31 degrees C / 87 degrees F
	ADC 9 Intake	OK	10 degrees C / 50 degrees F
	ADC 9 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 9 ADC-XF1	OK	28 degrees C / 82 degrees F
	ADC 9 ADC-XF0	OK	36 degrees C / 96 degrees F
Fans	Fan Tray 0 Fan 1	OK	3480 RPM
	Fan Tray 0 Fan 2	OK	3480 RPM
	Fan Tray 0 Fan 3	OK	3480 RPM
	Fan Tray 0 Fan 4	OK	3360 RPM
	Fan Tray 0 Fan 5	OK	3360 RPM
	Fan Tray 0 Fan 6	OK	3480 RPM
	Fan Tray 1 Fan 1	OK	3360 RPM
	Fan Tray 1 Fan 2	OK	3360 RPM
	Fan Tray 1 Fan 3	OK	3360 RPM
	Fan Tray 1 Fan 4	OK	3480 RPM
	Fan Tray 1 Fan 5	OK	3480 RPM
	Fan Tray 1 Fan 6	OK	3480 RPM
	Fan Tray 2 Fan 1	OK	3360 RPM
	Fan Tray 2 Fan 2	OK	3360 RPM
	Fan Tray 2 Fan 3	OK	3480 RPM
	Fan Tray 2 Fan 4	OK	3480 RPM
	Fan Tray 2 Fan 5	OK	3360 RPM
	Fan Tray 2 Fan 6	OK	3480 RPM



Fan Tray 3 Fan 1	OK	3360 RPM
Fan Tray 3 Fan 2	OK	3360 RPM
Fan Tray 3 Fan 3	OK	3480 RPM
Fan Tray 3 Fan 4	OK	3480 RPM
Fan Tray 3 Fan 5	OK	3480 RPM
Fan Tray 3 Fan 6	OK	3360 RPM

### show chassis environment (MX2008 Router)

```
user@host>show chassis environment
```

Class	Item	Status	Measurement
Temp	PSM 0	Absent	
	PSM 1	OK	29 degrees C / 84 degrees F
	PSM 2	OK	30 degrees C / 86 degrees F
	PSM 3	OK	29 degrees C / 84 degrees F
	PSM 4	OK	29 degrees C / 84 degrees F
	PSM 5	OK	30 degrees C / 86 degrees F
	PSM 6	OK	29 degrees C / 84 degrees F
	PSM 7	OK	31 degrees C / 87 degrees F
	PSM 8	Absent	
	PDM 0	OK	
	PDM 1	OK	
	CB 0 Inlet1	OK	37 degrees C / 98 degrees F
	CB 0 Inlet2	OK	45 degrees C / 113 degrees F
	CB 0 Inlet3	OK	44 degrees C / 111 degrees F
	CB 0 Inlet4	OK	41 degrees C / 105 degrees F
	CB 0 Exhaust1	OK	30 degrees C / 86 degrees F
	CB 0 Exhaust2	OK	40 degrees C / 104 degrees F
	CB 0 Exhaust3	OK	48 degrees C / 118 degrees F
	CB 0 Exhaust4	OK	46 degrees C / 114 degrees F
	CB 1 Inlet1	OK	30 degrees C / 86 degrees F
	CB 1 Inlet2	OK	31 degrees C / 87 degrees F
	CB 1 Inlet3	OK	29 degrees C / 84 degrees F
	CB 1 Inlet4	OK	32 degrees C / 89 degrees F
	CB 1 Exhaust1	OK	30 degrees C / 86 degrees F
	CB 1 Exhaust2	OK	33 degrees C / 91 degrees F
	CB 1 Exhaust3	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust4	OK	34 degrees C / 93 degrees F
	Routing Engine 0	OK	
	Routing Engine 0 CPU	OK	75 degrees C / 167 degrees F
	Routing Engine 1	OK	
	Routing Engine 1 CPU	OK	46 degrees C / 114 degrees F
	SFB 0 Inlet2	OK	44 degrees C / 111 degrees F
	SFB 0 Exhaust1	OK	39 degrees C / 102 degrees F
	SFB 0 Inlet1	OK	41 degrees C / 105 degrees F
	SFB 0 Exhaust2	OK	45 degrees C / 113 degrees F
	SFB 0 SFB2-PF-local	OK	45 degrees C / 113 degrees F
	SFB 0 SFB2-PF-die	OK	51 degrees C / 123 degrees F
	SFB 1 Inlet2	OK	30 degrees C / 86 degrees F
	SFB 1 Exhaust1	OK	27 degrees C / 80 degrees F
	SFB 1 Inlet1	OK	28 degrees C / 82 degrees F
	SFB 1 Exhaust2	OK	31 degrees C / 87 degrees F
	SFB 1 SFB2-PF-local	OK	30 degrees C / 86 degrees F
	SFB 1 SFB2-PF-die	OK	37 degrees C / 98 degrees F
	SFB 2 Inlet2	OK	28 degrees C / 82 degrees F
	SFB 2 Exhaust1	OK	26 degrees C / 78 degrees F
	SFB 2 Inlet1	OK	27 degrees C / 80 degrees F
	SFB 2 Exhaust2	OK	28 degrees C / 82 degrees F
	SFB 2 SFB2-PF-local	OK	27 degrees C / 80 degrees F
	SFB 2 SFB2-PF-die	OK	33 degrees C / 91 degrees F
	SFB 3 Inlet2	OK	28 degrees C / 82 degrees F

SFB 3 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 3 Inlet1	OK	26 degrees C / 78 degrees F
SFB 3 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 3 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 3 SFB2-PF-die	OK	33 degrees C / 91 degrees F
SFB 4 Inlet2	OK	28 degrees C / 82 degrees F
SFB 4 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 4 Inlet1	OK	26 degrees C / 78 degrees F
SFB 4 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 4 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 4 SFB2-PF-die	OK	32 degrees C / 89 degrees F
SFB 5 Inlet2	OK	29 degrees C / 84 degrees F
SFB 5 Exhaust1	OK	27 degrees C / 80 degrees F
SFB 5 Inlet1	OK	28 degrees C / 82 degrees F
SFB 5 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 5 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 5 SFB2-PF-die	OK	34 degrees C / 93 degrees F
SFB 6 Inlet2	OK	33 degrees C / 91 degrees F
SFB 6 Exhaust1	OK	32 degrees C / 89 degrees F
SFB 6 Inlet1	OK	32 degrees C / 89 degrees F
SFB 6 Exhaust2	OK	34 degrees C / 93 degrees F
SFB 6 SFB2-PF-local	OK	33 degrees C / 91 degrees F
SFB 6 SFB2-PF-die	OK	40 degrees C / 104 degrees F
SFB 7 Inlet2	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust1	OK	28 degrees C / 82 degrees F
SFB 7 Inlet1	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 7 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 7 SFB2-PF-die	OK	33 degrees C / 91 degrees F
FPC 0 Intake	OK	29 degrees C / 84 degrees F
FPC 0 Exhaust A	OK	42 degrees C / 107 degrees F
FPC 0 Exhaust B	OK	42 degrees C / 107 degrees F
FPC 0 XL 0 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 Chip	OK	53 degrees C / 127 degrees F
FPC 0 XL 0 XR2 0 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 XR2 0 Chip	OK	59 degrees C / 138 degrees F
FPC 0 XL 0 XR2 1 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 XR2 1 Chip	OK	59 degrees C / 138 degrees F
FPC 0 XL 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XL 1 XR2 0 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 XL 1 XR2 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 1 Chip	OK	50 degrees C / 122 degrees F
FPC 0 XM 0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 XM 1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 1 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 Chip	OK	40 degrees C / 104 degrees F
FPC 0 PCIe Switch TSen	OK	42 degrees C / 107 degrees F
FPC 0 PCIe Switch Chip	OK	22 degrees C / 71 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust A	OK	52 degrees C / 125 degrees F
FPC 1 Exhaust B	OK	44 degrees C / 111 degrees F
FPC 1 EA0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0 Chip	OK	47 degrees C / 116 degrees F
FPC 1 EA0_XR0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0_XR0 Chip	OK	56 degrees C / 132 degrees F

FPC 1 EA0_XR1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0_XR1 Chip	OK	53 degrees C / 127 degrees F
FPC 1 EA1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1 Chip	OK	49 degrees C / 120 degrees F
FPC 1 EA1_XR0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 1 EA1_XR1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 1 PEX TSen	OK	54 degrees C / 129 degrees F
FPC 1 PEX Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2 Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR0 Chip	OK	45 degrees C / 113 degrees F
FPC 1 EA2_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR1 Chip	OK	42 degrees C / 107 degrees F
FPC 1 EA3 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3 Chip	OK	40 degrees C / 104 degrees F
FPC 1 EA3_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR0 Chip	OK	50 degrees C / 122 degrees F
FPC 1 EA3_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR1 Chip	OK	46 degrees C / 114 degrees F
FPC 1 EA0_HMC0 Logic die	OK	60 degrees C / 140 degrees F
FPC 1 EA0_HMC0 DRAM botm	OK	57 degrees C / 134 degrees F
FPC 1 EA0_HMC1 Logic die	OK	61 degrees C / 141 degrees F
FPC 1 EA0_HMC1 DRAM botm	OK	58 degrees C / 136 degrees F
FPC 1 EA0_HMC2 Logic die	OK	57 degrees C / 134 degrees F
FPC 1 EA0_HMC2 DRAM botm	OK	54 degrees C / 129 degrees F
FPC 1 EA1_HMC0 Logic die	OK	65 degrees C / 149 degrees F
FPC 1 EA1_HMC0 DRAM botm	OK	62 degrees C / 143 degrees F
FPC 1 EA1_HMC1 Logic die	OK	64 degrees C / 147 degrees F
FPC 1 EA1_HMC1 DRAM botm	OK	61 degrees C / 141 degrees F
FPC 1 EA1_HMC2 Logic die	OK	61 degrees C / 141 degrees F
FPC 1 EA1_HMC2 DRAM botm	OK	58 degrees C / 136 degrees F
FPC 1 EA2_HMC0 Logic die	OK	50 degrees C / 122 degrees F
FPC 1 EA2_HMC0 DRAM botm	OK	47 degrees C / 116 degrees F
FPC 1 EA2_HMC1 Logic die	OK	54 degrees C / 129 degrees F
FPC 1 EA2_HMC1 DRAM botm	OK	51 degrees C / 123 degrees F
FPC 1 EA2_HMC2 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA2_HMC2 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC0 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC0 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC1 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC1 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC2 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC2 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 7 Intake	OK	30 degrees C / 86 degrees F
FPC 7 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 7 Exhaust B	OK	38 degrees C / 100 degrees F
FPC 7 QX 0 TSen	OK	48 degrees C / 118 degrees F
FPC 7 QX 0 Chip	OK	51 degrees C / 123 degrees F
FPC 7 LU 0 TCAM TSen	OK	48 degrees C / 118 degrees F
FPC 7 LU 0 TCAM Chip	OK	51 degrees C / 123 degrees F
FPC 7 LU 0 TSen	OK	48 degrees C / 118 degrees F
FPC 7 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 7 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 7 MQ 0 Chip	OK	54 degrees C / 129 degrees F
FPC 7 QX 1 TSen	OK	41 degrees C / 105 degrees F
FPC 7 QX 1 Chip	OK	42 degrees C / 107 degrees F
FPC 7 LU 1 TCAM TSen	OK	41 degrees C / 105 degrees F
FPC 7 LU 1 TCAM Chip	OK	43 degrees C / 109 degrees F

	FPC 7 LU 1 TSen	OK	41 degrees C / 105 degrees F
	FPC 7 LU 1 Chip	OK	46 degrees C / 114 degrees F
	FPC 7 MQ 1 TSen	OK	41 degrees C / 105 degrees F
	FPC 7 MQ 1 Chip	OK	47 degrees C / 116 degrees F
	ADC 7 Intake	OK	32 degrees C / 89 degrees F
	ADC 7 Exhaust	OK	39 degrees C / 102 degrees F
	ADC 7 ADC-XF1	OK	46 degrees C / 114 degrees F
	ADC 7 ADC-XF0	OK	54 degrees C / 129 degrees F
Fans	Fan Tray 0 Fan 1	OK	6240 RPM
	Fan Tray 0 Fan 2	OK	6120 RPM
	Fan Tray 0 Fan 3	OK	6120 RPM
	Fan Tray 0 Fan 4	OK	5760 RPM
	Fan Tray 0 Fan 5	OK	5880 RPM
	Fan Tray 0 Fan 6	OK	6000 RPM
	Fan Tray 1 Fan 1	OK	5880 RPM
	Fan Tray 1 Fan 2	OK	5880 RPM
	Fan Tray 1 Fan 3	OK	6000 RPM
	Fan Tray 1 Fan 4	OK	6000 RPM
	Fan Tray 1 Fan 5	OK	6000 RPM
	Fan Tray 1 Fan 6	OK	6000 RPM

### show chassis environment (T320 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Power	PEM 0	OK	
	PEM 1	Absent	
Temp	SCG 0	OK	28 degrees C / 82 degrees F
	SCG 1	OK	28 degrees C / 82 degrees F
	Routing Engine 0	OK	31 degrees C / 87 degrees F
	Routing Engine 1	OK	30 degrees C / 86 degrees F
	CB 0	OK	32 degrees C / 89 degrees F
	CB 1	OK	32 degrees C / 89 degrees F
	SIB 0	OK	33 degrees C / 91 degrees F
	SIB 1	OK	33 degrees C / 91 degrees F
	SIB 2	OK	34 degrees C / 93 degrees F
	FPC 0 Top	OK	38 degrees C / 100 degrees F
	FPC 0 Bottom	OK	32 degrees C / 89 degrees F
	FPC 1 Top	OK	38 degrees C / 100 degrees F
	FPC 1 Bottom	OK	33 degrees C / 91 degrees F
	FPC 2 Top	OK	36 degrees C / 96 degrees F
	FPC 2 Bottom	OK	31 degrees C / 87 degrees F
	FPM GBUS	OK	26 degrees C / 78 degrees F
	FPM Display	OK	29 degrees C / 84 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Middle fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed

```

Misc  CIP                OK
      SPMB 0             OK
      SPMB 1             OK

```

### show chassis environment (MX10003 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Exhaust Temp Sensor 0x49	OK	36 degrees C / 96 degrees F
	CB 0 Inlet Temp Sensor 0x49	OK	29 degrees C / 84 degrees F
	CB 1 Exhaust Temp Sensor 0x49	OK	36 degrees C / 96 degrees F
	CB 1 Inlet Temp Sensor 0x49	OK	31 degrees C / 87 degrees F
	FPC 0 Intake Temp Sensor	OK	29 degrees C / 84 degrees F
	FPC 0 Exhaust-A Temp Sensor	OK	55 degrees C / 131 degrees F
	FPC 0 Exhaust-B Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 0 EA0 Chip	OK	58 degrees C / 136 degrees F
	FPC 0 EA0-XR0 Chip	OK	61 degrees C / 141 degrees F
	FPC 0 EA0-XR1 Chip	OK	62 degrees C / 143 degrees F
	FPC 0 EA1 Chip	OK	67 degrees C / 152 degrees F
	FPC 0 EA1-XR0 Chip	OK	71 degrees C / 159 degrees F
	FPC 0 EA1-XR1 Chip	OK	72 degrees C / 161 degrees F
	FPC 0 PEX Chip	OK	75 degrees C / 167 degrees F
	FPC 0 EA2 Chip	OK	49 degrees C / 120 degrees F
	FPC 0 EA2-XR0 Chip	OK	55 degrees C / 131 degrees F
	FPC 0 EA2-XR1 Chip	OK	56 degrees C / 132 degrees F
	FPC 0 PF Chip	OK	68 degrees C / 154 degrees F
	FPC 0 EA0_HMC0 Logic die	OK	72 degrees C / 161 degrees F
	FPC 0 EA0_HMC0 DRAM botm	OK	69 degrees C / 156 degrees F
	FPC 0 EA0_HMC1 Logic die	OK	72 degrees C / 161 degrees F
	FPC 0 EA0_HMC1 DRAM botm	OK	69 degrees C / 156 degrees F
	FPC 0 EA0_HMC2 Logic die	OK	75 degrees C / 167 degrees F
	FPC 0 EA0_HMC2 DRAM botm	OK	72 degrees C / 161 degrees F
	FPC 0 EA1_HMC0 Logic die	OK	81 degrees C / 177 degrees F
	FPC 0 EA1_HMC0 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 0 EA1_HMC1 Logic die	OK	79 degrees C / 174 degrees F
	FPC 0 EA1_HMC1 DRAM botm	OK	76 degrees C / 168 degrees F
	FPC 0 EA1_HMC2 Logic die	OK	82 degrees C / 179 degrees F
	FPC 0 EA1_HMC2 DRAM botm	OK	79 degrees C / 174 degrees F
	FPC 0 EA2_HMC0 Logic die	OK	61 degrees C / 141 degrees F
	FPC 0 EA2_HMC0 DRAM botm	OK	58 degrees C / 136 degrees F
	FPC 0 EA2_HMC1 Logic die	OK	62 degrees C / 143 degrees F
	FPC 0 EA2_HMC1 DRAM botm	OK	59 degrees C / 138 degrees F
	FPC 0 EA2_HMC2 Logic die	OK	64 degrees C / 147 degrees F
	FPC 0 EA2_HMC2 DRAM botm	OK	61 degrees C / 141 degrees F
	FPC 1 Intake Temp Sensor	OK	28 degrees C / 82 degrees F
	FPC 1 Exhaust-A Temp Sensor	OK	58 degrees C / 136 degrees F
	FPC 1 Exhaust-B Temp Sensor	OK	46 degrees C / 114 degrees F
	FPC 1 EA0 Chip	OK	64 degrees C / 147 degrees F
	FPC 1 EA0-XR0 Chip	OK	67 degrees C / 152 degrees F
	FPC 1 EA0-XR1 Chip	OK	68 degrees C / 154 degrees F
	FPC 1 EA1 Chip	OK	70 degrees C / 158 degrees F
	FPC 1 EA1-XR0 Chip	OK	74 degrees C / 165 degrees F
	FPC 1 EA1-XR1 Chip	OK	74 degrees C / 165 degrees F
	FPC 1 PEX Chip	OK	88 degrees C / 190 degrees F
	FPC 1 EA2 Chip	OK	50 degrees C / 122 degrees F
	FPC 1 EA2-XR0 Chip	OK	54 degrees C / 129 degrees F
	FPC 1 EA2-XR1 Chip	OK	56 degrees C / 132 degrees F
	FPC 1 PF Chip	OK	71 degrees C / 159 degrees F
	FPC 1 EA0_HMC0 Logic die	OK	74 degrees C / 165 degrees F

	FPC 1	EA0_HMC0	DRAM botm	OK	71 degrees C / 159 degrees F
	FPC 1	EA0_HMC1	Logic die	OK	78 degrees C / 172 degrees F
	FPC 1	EA0_HMC1	DRAM botm	OK	75 degrees C / 167 degrees F
	FPC 1	EA0_HMC2	Logic die	OK	78 degrees C / 172 degrees F
	FPC 1	EA0_HMC2	DRAM botm	OK	75 degrees C / 167 degrees F
	FPC 1	EA1_HMC0	Logic die	OK	84 degrees C / 183 degrees F
	FPC 1	EA1_HMC0	DRAM botm	OK	81 degrees C / 177 degrees F
	FPC 1	EA1_HMC1	Logic die	OK	81 degrees C / 177 degrees F
	FPC 1	EA1_HMC1	DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 1	EA1_HMC2	Logic die	OK	85 degrees C / 185 degrees F
	FPC 1	EA1_HMC2	DRAM botm	OK	82 degrees C / 179 degrees F
	FPC 1	EA2_HMC0	Logic die	OK	63 degrees C / 145 degrees F
	FPC 1	EA2_HMC0	DRAM botm	OK	60 degrees C / 140 degrees F
	FPC 1	EA2_HMC1	Logic die	OK	60 degrees C / 140 degrees F
	FPC 1	EA2_HMC1	DRAM botm	OK	57 degrees C / 134 degrees F
	FPC 1	EA2_HMC2	Logic die	OK	66 degrees C / 150 degrees F
	FPC 1	EA2_HMC2	DRAM botm	OK	63 degrees C / 145 degrees F
Power	PEM 0			OK	
	PEM 1			OK	
	PEM 2			OK	
	PEM 3			OK	
	PEM 4			Absent	
	PEM 5			Absent	
Fans	Fan Tray 0	Fan 0		OK	Spinning at normal speed
	Fan Tray 0	Fan 1		OK	Spinning at normal speed
	Fan Tray 0	Fan 2		OK	Spinning at normal speed
	Fan Tray 0	Fan 3		OK	Spinning at normal speed
	Fan Tray 1	Fan 0		OK	Spinning at normal speed
	Fan Tray 1	Fan 1		OK	Spinning at normal speed
	Fan Tray 1	Fan 2		OK	Spinning at normal speed
	Fan Tray 1	Fan 3		OK	Spinning at normal speed
	Fan Tray 2	Fan 0		OK	Spinning at normal speed
	Fan Tray 2	Fan 1		OK	Spinning at normal speed
	Fan Tray 2	Fan 2		OK	Spinning at normal speed
	Fan Tray 2	Fan 3		OK	Spinning at normal speed
	Fan Tray 3	Fan 0		OK	Spinning at normal speed
	Fan Tray 3	Fan 1		OK	Spinning at normal speed
	Fan Tray 3	Fan 2		OK	Spinning at normal speed
	Fan Tray 3	Fan 3		OK	Spinning at normal speed

## show chassis environment (MX10008 Router)

user@host> show chassis environment					
Class	Item		Status	Measurement	
	Routing Engine 0	CPU	OK	39 degrees C / 102 degrees F	
	Routing Engine 1	CPU	OK	39 degrees C / 102 degrees F	
Temp	CB 0	Intake Temp Sensor	OK	30 degrees C / 86 degrees F	
	CB 0	Exhaust Temp Sensor	OK	35 degrees C / 95 degrees F	
	CB 1	Intake Temp Sensor	OK	30 degrees C / 86 degrees F	
	CB 1	Exhaust Temp Sensor	OK	35 degrees C / 95 degrees F	
	FPC 0	Intake-A Temp Sensor	OK	38 degrees C / 100 degrees F	
	FPC 0	Intake-B Temp Sensor	OK	36 degrees C / 96 degrees F	
	FPC 0	Exhaust-A Temp Sensor	OK	41 degrees C / 105 degrees F	
	FPC 0	Exhaust-B Temp Sensor	OK	41 degrees C / 105 degrees F	
	FPC 0	Exhaust-C Temp Sensor	OK	42 degrees C / 107 degrees F	
	FPC 0	EA0 Temp Sensor	OK	46 degrees C / 114 degrees F	
	FPC 0	EA1 Temp Sensor	OK	46 degrees C / 114 degrees F	
	FPC 0	EA2 Temp Sensor	OK	50 degrees C / 122 degrees F	
	FPC 0	EA3 Temp Sensor	OK	50 degrees C / 122 degrees F	
	FPC 0	LCPU Temp Sensor	OK	45 degrees C / 113 degrees F	
SIB	0	Intake-A Temp Sensor	OK	31 degrees C / 87 degrees F	

	SIB 0 Intake-B Temp Sensor	OK	29 degrees C / 84 degrees F
	SIB 0 Exhaust-A Temp Sensor	OK	34 degrees C / 93 degrees F
	SIB 0 Exhaust-B Temp Sensor	OK	33 degrees C / 91 degrees F
	SIB 0 PF0 Temp Sensor	OK	40 degrees C / 104 degrees F
	SIB 0 PF1 Temp Sensor	OK	38 degrees C / 100 degrees F
	SIB 1 Intake-A Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 1	Intake-B Temp Sensor	OK	29 degrees C / 84 degrees F
	SIB 1 Exhaust-A Temp Sensor	OK	34 degrees C / 93 degrees F
	SIB 1 Exhaust-B Temp Sensor	OK	33 degrees C / 91 degrees F
	SIB 1 PF0 Temp Sensor	OK	40 degrees C / 104 degrees F
	SIB 1 PF1 Temp Sensor	OK	39 degrees C / 102 degrees F
	SIB 2 Intake-A Temp Sensor	OK	30 degrees C / 86 degrees F
	SIB 2 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
	SIB 2 Exhaust-A Temp Sensor	OK	35 degrees C / 95 degrees F
	SIB 2 Exhaust-B Temp Sensor	OK	33 degrees C / 91 degrees F
	SIB 2 PF0 Temp Sensor	OK	39 degrees C / 102 degrees F
	SIB 2 PF1 Temp Sensor	OK	39 degrees C / 102 degrees F
	SIB 3 Intake-A Temp Sensor	OK	30 degrees C / 86 degrees F
	SIB 3 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	SIB 3 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
	SIB 3 Exhaust-B Temp Sensor	OK	33 degrees C / 91 degrees F
	SIB 3 PF0 Temp Sensor	OK	38 degrees C / 100 degrees F
	SIB 3 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
	SIB 4 Intake-A Temp Sensor	OK	30 degrees C / 86 degrees F
	SIB 4 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	SIB 4 Exhaust-A Temp Sensor	OK	35 degrees C / 95 degrees F
	SIB 4 Exhaust-B Temp Sensor	OK	33 degrees C / 91 degrees F
	SIB 4 PF0 Temp Sensor	OK	41 degrees C / 105 degrees F
	SIB 4 PF1 Temp Sensor	OK	39 degrees C / 102 degrees F
	SIB 5 Intake-A Temp Sensor	OK	31 degrees C / 87 degrees F
	SIB 5 Intake-B Temp Sensor	OK	28 degrees C / 82 degrees F
	SIB 5 Exhaust-A Temp Sensor	OK	33 degrees C / 91 degrees F
	SIB 5 Exhaust-B Temp Sensor	OK	33 degrees C / 91 degrees F
	SIB 5 PF0 Temp Sensor	OK	41 degrees C / 105 degrees F
	SIB 5 PF1 Temp Sensor	OK	38 degrees C / 100 degrees F
Power	Power Supply 0	OK	
	Power Supply 1	Absent	
	Power Supply 2	OK	
	Power Supply 3	OK	
	Power Supply 4	Absent	
	Power Supply 5	Absent	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 0 Fan 7	OK	Spinning at normal speed
	Fan Tray 0 Fan 8	OK	Spinning at normal speed
	Fan Tray 0 Fan 9	OK	Spinning at normal speed
	Fan Tray 0 Fan 10	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 7	OK	Spinning at normal speed
	Fan Tray 1 Fan 8	OK	Spinning at normal speed

Fan Tray 1 Fan 9	OK	Spinning at normal speed
Fan Tray 1 Fan 10	OK	Spinning at normal speed

**show chassis environment (MX204 Router)**

user@host&gt; show chassis environment

Class	Item	Status	Measurement
Temp	CB 0 Top Right Inlet Sensor	OK	35 degrees C / 95 degrees F
	CB 0 Top Left Inlet Sensor	OK	37 degrees C / 98 degrees F
	CB 0 Top Right Exhaust Sensor	OK	43 degrees C / 109 degrees F
	CB 0 Top Left Exhaust Sensor	OK	50 degrees C / 122 degrees F
	CB 0 CPU Core-0 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-1 Temp	OK	48 degrees C / 118 degrees F
	CB 0 CPU Core-2 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-3 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-4 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-5 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-6 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-7 Temp	OK	47 degrees C / 116 degrees F
	FPC 0 EAO_HMC0 Logic die	OK	77 degrees C / 170 degrees F
	FPC 0 EAO_HMC0 DRAM botm	OK	74 degrees C / 165 degrees F
	FPC 0 EAO_HMC1 Logic die	OK	81 degrees C / 177 degrees F
	FPC 0 EAO_HMC1 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 0 EAO Chip	OK	94 degrees C / 201 degrees F
Power	PEM 0	Absent	
	PEM 1	OK	48 degrees C / 118 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed

**show chassis environment (T640 Router)**

user@host&gt; show chassis environment

Class	Item	Status	Measurement
Temp	PEM 0	Absent	
	PEM 1	OK	22 degrees C / 71 degrees F
	SCG 0	OK	30 degrees C / 86 degrees F
	SCG 1	OK	30 degrees C / 86 degrees F
	Routing Engine 0	Present	
	Routing Engine 1	OK	27 degrees C / 80 degrees F
	CB 0	Present	
	CB 1	OK	33 degrees C / 91 degrees F
	SIB 0	Absent	
	SIB 1	Absent	
	SIB 2	Absent	
	SIB 3	Absent	
	SIB 4	Absent	
	FPC 4 Top	Testing	
	FPC 4 Bottom	Testing	
	FPC 5 Top	Testing	
	FPC 5 Bottom	Testing	
	FPC 6 Top	Testing	
	FPC 6 Bottom	Testing	
	FPM GBUS	OK	23 degrees C / 73 degrees F



	FPM Display	Absent	
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Fourth Blower from top	OK	Spinning at normal speed
	Bottom Blower	OK	Spinning at normal speed
	Middle Blower	OK	Spinning at normal speed
	Top Blower	OK	Spinning at normal speed
Misc	Second Blower from top	OK	Spinning at normal speed
	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

#### show chassis environment (T4000 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	33 degrees C / 91 degrees F
	PEM 1	Absent	
	SCG 0	OK	33 degrees C / 91 degrees F
	SCG 1	OK	33 degrees C / 91 degrees F
	Routing Engine 0	OK	33 degrees C / 91 degrees F
	Routing Engine 0 CPU	OK	50 degrees C / 122 degrees F
	Routing Engine 1	OK	32 degrees C / 89 degrees F
	Routing Engine 1 CPU	OK	46 degrees C / 114 degrees F
	CB 0	OK	32 degrees C / 89 degrees F
	CB 1	OK	33 degrees C / 91 degrees F
	SIB 0	OK	42 degrees C / 107 degrees F
	SIB 1	OK	42 degrees C / 107 degrees F
	SIB 2	OK	42 degrees C / 107 degrees F
	SIB 3	OK	43 degrees C / 109 degrees F
	SIB 4	OK	45 degrees C / 113 degrees F
	FPC 0 Fan Intake	OK	34 degrees C / 93 degrees F
	FPC 0 Fan Exhaust	OK	48 degrees C / 118 degrees F
	FPC 0 PMB	OK	47 degrees C / 116 degrees F
	FPC 0 LMB0	OK	50 degrees C / 122 degrees F
	FPC 0 LMB1	OK	41 degrees C / 105 degrees F
	FPC 0 LMB2	OK	35 degrees C / 95 degrees F
	FPC 0 PFE1 LU2	OK	46 degrees C / 114 degrees F
	FPC 0 PFE1 LU0	OK	41 degrees C / 105 degrees F
	FPC 0 PFE0 LU0	OK	57 degrees C / 134 degrees F
	FPC 0 XF1	OK	46 degrees C / 114 degrees F
	FPC 0 XF0	OK	52 degrees C / 125 degrees F
	FPC 0 XM1	OK	41 degrees C / 105 degrees F
	FPC 0 XM0	OK	50 degrees C / 122 degrees F
	FPC 0 PFE0 LU1	OK	56 degrees C / 132 degrees F
	FPC 0 PFE0 LU2	OK	45 degrees C / 113 degrees F
	FPC 0 PFE1 LU1	OK	37 degrees C / 98 degrees F
	FPC 3 Fan Intake	OK	36 degrees C / 96 degrees F
	FPC 3 Fan Exhaust	OK	51 degrees C / 123 degrees F
	FPC 3 PMB	OK	43 degrees C / 109 degrees F

	FPC 3 LMB0	OK	57 degrees C / 134 degrees F
	FPC 3 LMB1	OK	54 degrees C / 129 degrees F
	FPC 3 LMB2	OK	38 degrees C / 100 degrees F
	FPC 3 PFE1 LU2	OK	63 degrees C / 145 degrees F
	FPC 3 PFE1 LU0	OK	45 degrees C / 113 degrees F
	FPC 3 PFE0 LU0	OK	69 degrees C / 156 degrees F
	FPC 3 XF1	OK	62 degrees C / 143 degrees F
	FPC 3 XF0	OK	63 degrees C / 145 degrees F
	FPC 3 XM1	OK	43 degrees C / 109 degrees F
	FPC 3 XM0	OK	67 degrees C / 152 degrees F
	FPC 3 PFE0 LU1	OK	63 degrees C / 145 degrees F
	FPC 3 PFE0 LU2	OK	66 degrees C / 150 degrees F
	FPC 3 PFE1 LU1	OK	41 degrees C / 105 degrees F
	FPC 5 Top	OK	39 degrees C / 102 degrees F
	FPC 5 Bottom	OK	38 degrees C / 100 degrees F
	FPC 6 Fan Intake	OK	33 degrees C / 91 degrees F
	FPC 6 Fan Exhaust	OK	49 degrees C / 120 degrees F
	FPC 6 PMB	OK	40 degrees C / 104 degrees F
	FPC 6 LMB0	OK	60 degrees C / 140 degrees F
	FPC 6 LMB1	OK	58 degrees C / 136 degrees F
	FPC 6 LMB2	OK	40 degrees C / 104 degrees F
	FPC 6 PFE1 LU2	OK	69 degrees C / 156 degrees F
	FPC 6 PFE1 LU0	OK	45 degrees C / 113 degrees F
	FPC 6 PFE0 LU0	OK	71 degrees C / 159 degrees F
	FPC 6 XF1	OK	58 degrees C / 136 degrees F
	FPC 6 XF0	OK	65 degrees C / 149 degrees F
	FPC 6 XM1	OK	39 degrees C / 102 degrees F
	FPC 6 XM0	OK	66 degrees C / 150 degrees F
	FPC 6 PFE0 LU1	OK	69 degrees C / 156 degrees F
	FPC 6 PFE0 LU2	OK	69 degrees C / 156 degrees F
	FPC 6 PFE1 LU1	OK	42 degrees C / 107 degrees F
	FPM GBUS	OK	24 degrees C / 75 degrees F
	FPM Display	OK	27 degrees C / 80 degrees F
Fans	Top Left Front fan	OK	Spinning at high speed
	Top Left Middle fan	OK	Spinning at high speed
	Top Left Rear fan	OK	Spinning at high speed
	Top Right Front fan	OK	Spinning at high speed
	Top Right Middle fan	OK	Spinning at high speed
	Top Right Rear fan	OK	Spinning at high speed
	Bottom Left Front fan	OK	Spinning at high speed
	Bottom Left Middle fan	OK	Spinning at high speed
	Bottom Left Rear fan	OK	Spinning at high speed
	Bottom Right Front fan	OK	Spinning at high speed
	Bottom Right Middle fan	OK	Spinning at high speed
	Bottom Right Rear fan	OK	Spinning at high speed
	Rear Tray Top fan	OK	Spinning at high speed
	Rear Tray Second fan	OK	Spinning at high speed
	Rear Tray Third fan	OK	Spinning at high speed
	Rear Tray Fourth fan	OK	Spinning at high speed
	Rear Tray Fifth fan	OK	Spinning at high speed
	Rear Tray Sixth fan	OK	Spinning at high speed
	Rear Tray Seventh fan	OK	Spinning at high speed
	Rear Tray Bottom fan	OK	Spinning at high speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

**show chassis environment (TX Matrix Router)**

user@host&gt; show chassis environment

Class	Item	Status	Measurement
Temp	PEM 0	Absent	
	PEM 1	OK	29 degrees C / 84 degrees F
	Routing Engine 0	OK	34 degrees C / 93 degrees F
	Routing Engine 1	OK	34 degrees C / 93 degrees F
	CB 0	OK	32 degrees C / 89 degrees F
	CB 1	OK	32 degrees C / 89 degrees F
	SIB 0	OK	44 degrees C / 111 degrees F
	SIB 0 (B)	OK	44 degrees C / 111 degrees F
	FPM GBUS	OK	27 degrees C / 80 degrees F
	FPM Display	OK	32 degrees C / 89 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Third fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Fifth fan	OK	Spinning at normal speed
	Rear Tray Sixth fan	OK	Spinning at normal speed
	Rear Tray Seventh fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP 0	OK	
	CIP 1	OK	
	SPMB 0	OK	
	SPMB 1	OK	

1cc0-re0:

Class	Item	Status	Measurement
Temp	PEM 0	OK	29 degrees C / 84 degrees F
	PEM 1	Absent	
	SCG 0	OK	35 degrees C / 95 degrees F
	SCG 1	Absent	
	Routing Engine 0	OK	39 degrees C / 102 degrees F
	Routing Engine 1	OK	36 degrees C / 96 degrees F
	CB 0	OK	32 degrees C / 89 degrees F
	CB 1	OK	32 degrees C / 89 degrees F
	SIB 0	OK	40 degrees C / 104 degrees F
	SIB 0 (B)	OK	51 degrees C / 123 degrees F
	FPC 0 Top	OK	45 degrees C / 113 degrees F
	FPC 0 Bottom	OK	31 degrees C / 87 degrees F
	FPC 1 Top	OK	34 degrees C / 93 degrees F
	FPC 1 Bottom	OK	31 degrees C / 87 degrees F
	FPM GBUS	OK	30 degrees C / 86 degrees F
	FPM Display	OK	34 degrees C / 93 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed

	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Third fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Fifth fan	OK	Spinning at normal speed
	Rear Tray Sixth fan	OK	Spinning at normal speed
	Rear Tray Seventh fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

lcc2-re0:

Class	Item	Status	Measurement
Temp	PEM 0	OK	29 degrees C / 84 degrees F
	PEM 1	Absent	
	SCG 0	OK	32 degrees C / 89 degrees F
	SCG 1	Absent	
	Routing Engine 0	OK	31 degrees C / 87 degrees F
	Routing Engine 1	OK	32 degrees C / 89 degrees F
	CB 0	OK	30 degrees C / 86 degrees F
	SIB 0	OK	38 degrees C / 100 degrees F
	SIB 0 (B)	OK	49 degrees C / 120 degrees F
	FPC 0 Top	OK	45 degrees C / 113 degrees F
	FPC 0 Bottom	OK	33 degrees C / 91 degrees F
	FPC 1 Top	OK	37 degrees C / 98 degrees F
	FPC 1 Bottom	OK	33 degrees C / 91 degrees F
	FPM GBUS	OK	30 degrees C / 86 degrees F
	FPM Display	OK	34 degrees C / 93 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	...		

## show chassis environment (T1600 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	27 degrees C / 80 degrees F
	PEM 1	Absent	
	SCG 0	OK	31 degrees C / 87 degrees F
	SCG 1	OK	35 degrees C / 95 degrees F
	Routing Engine 0	OK	30 degrees C / 86 degrees F
	Routing Engine 1	OK	30 degrees C / 86 degrees F
	CB 0	OK	31 degrees C / 87 degrees F
	CB 1	OK	31 degrees C / 87 degrees F
	SIB 0	OK	41 degrees C / 105 degrees F
	SIB 0 (B)	OK	34 degrees C / 93 degrees F
	SIB 1	OK	0 degrees C / 32 degrees F
	SIB 1 (B)	OK	0 degrees C / 32 degrees F
	SIB 2	OK	0 degrees C / 32 degrees F
	SIB 2 (B)	OK	0 degrees C / 32 degrees F
	SIB 3	OK	0 degrees C / 32 degrees F

	SIB 3 (B)	OK	0 degrees C / 32 degrees F
	SIB 4	OK	0 degrees C / 32 degrees F
	SIB 4 (B)	OK	0 degrees C / 32 degrees F
	FPC 0 Top	OK	49 degrees C / 120 degrees F
	FPC 0 Bottom	OK	50 degrees C / 122 degrees F
	FPC 1 Top	OK	48 degrees C / 118 degrees F
	FPC 1 Bottom	OK	49 degrees C / 120 degrees F
	FPM GBUS	OK	27 degrees C / 80 degrees F
	FPM Display	OK	30 degrees C / 86 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Third fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Fifth fan	OK	Spinning at normal speed
	Rear Tray Sixth fan	OK	Spinning at normal speed
	Rear Tray Seventh fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

### show chassis environment (TX Matrix Plus Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	28 degrees C / 82 degrees F
	PEM 1	Absent	
	Routing Engine 0	OK	27 degrees C / 80 degrees F
	Routing Engine 1	OK	29 degrees C / 84 degrees F
	CB 0 Intake	OK	26 degrees C / 78 degrees F
	CB 0 Exhaust A	OK	25 degrees C / 77 degrees F
	CB 0 Exhaust B	OK	25 degrees C / 77 degrees F
	CB 1 Intake	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust A	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust B	OK	26 degrees C / 78 degrees F
	SIB F13 0	OK	47 degrees C / 116 degrees F
	SIB F13 0 (B)	OK	48 degrees C / 118 degrees F
	SIB F13 1	OK	38 degrees C / 100 degrees F
	SIB F13 1 (B)	OK	37 degrees C / 98 degrees F
	SIB F2S 0/0	OK	27 degrees C / 80 degrees F
	SIB F2S 0/2	OK	28 degrees C / 82 degrees F
	SIB F2S 0/4	OK	27 degrees C / 80 degrees F
	SIB F2S 0/6	OK	28 degrees C / 82 degrees F
	SIB F2S 1/0	OK	26 degrees C / 78 degrees F
	SIB F2S 1/2	OK	26 degrees C / 78 degrees F
	SIB F2S 1/4	OK	26 degrees C / 78 degrees F
	SIB F2S 1/6	OK	26 degrees C / 78 degrees F

	SIB F2S 2/0	OK	25 degrees C / 77 degrees F
	SIB F2S 2/2	OK	25 degrees C / 77 degrees F
	SIB F2S 2/4	OK	23 degrees C / 73 degrees F
	CIP 0 Intake	OK	23 degrees C / 73 degrees F
	CIP 0 Exhaust A	OK	24 degrees C / 75 degrees F
	CIP 0 Exhaust B	OK	24 degrees C / 75 degrees F
	CIP 1 Intake	OK	24 degrees C / 75 degrees F
	CIP 1 Exhaust A	OK	25 degrees C / 77 degrees F
	CIP 1 Exhaust B	OK	25 degrees C / 77 degrees F
Fans	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 2	OK	Spinning at normal speed
	Fan Tray 2 Fan 3	OK	Spinning at normal speed
	Fan Tray 2 Fan 4	OK	Spinning at normal speed
	Fan Tray 2 Fan 5	OK	Spinning at normal speed
	Fan Tray 2 Fan 6	OK	Spinning at normal speed
	Fan Tray 2 Fan 7	OK	Spinning at normal speed
	Fan Tray 2 Fan 8	OK	Spinning at normal speed
	Fan Tray 2 Fan 9	OK	Spinning at normal speed
	Fan Tray 3 Fan 1	OK	Spinning at normal speed
	Fan Tray 3 Fan 2	OK	Spinning at normal speed
	Fan Tray 3 Fan 3	OK	Spinning at normal speed
	Fan Tray 3 Fan 4	OK	Spinning at normal speed
	Fan Tray 3 Fan 5	OK	Spinning at normal speed
	Fan Tray 3 Fan 6	OK	Spinning at normal speed
	Fan Tray 3 Fan 7	OK	Spinning at normal speed
	Fan Tray 3 Fan 8	OK	Spinning at normal speed
	Fan Tray 3 Fan 9	OK	Spinning at normal speed
	Fan Tray 4 Fan 1	OK	Spinning at normal speed
	Fan Tray 4 Fan 2	OK	Spinning at normal speed
	Fan Tray 4 Fan 3	OK	Spinning at normal speed
	Fan Tray 4 Fan 4	OK	Spinning at normal speed
	Fan Tray 4 Fan 5	OK	Spinning at normal speed
	Fan Tray 4 Fan 6	OK	Spinning at normal speed
	Fan Tray 4 Fan 7	OK	Spinning at normal speed
	Fan Tray 4 Fan 8	OK	Spinning at normal speed
	Fan Tray 4 Fan 9	OK	Spinning at normal speed
	Fan Tray 5 Fan 1	OK	Spinning at normal speed
	Fan Tray 5 Fan 2	OK	Spinning at normal speed
	Fan Tray 5 Fan 3	OK	Spinning at normal speed
	Fan Tray 5 Fan 4	OK	Spinning at normal speed
	Fan Tray 5 Fan 5	OK	Spinning at normal speed
	Fan Tray 5 Fan 6	OK	Spinning at normal speed
	Fan Tray 5 Fan 7	OK	Spinning at normal speed
	Fan Tray 5 Fan 8	OK	Spinning at normal speed
	Fan Tray 5 Fan 9	OK	Spinning at normal speed
Misc	SPMB 0	OK	
	SPMB 1	OK	

1cc0-re0:

Class	Item	Status	Measurement
Temp	PEM 0	OK	27 degrees C / 80 degrees F
	PEM 1	Absent	
	SCG 0	OK	31 degrees C / 87 degrees F
	SCG 1	OK	35 degrees C / 95 degrees F
	Routing Engine 0	OK	30 degrees C / 86 degrees F
	Routing Engine 1	OK	30 degrees C / 86 degrees F
	CB 0	OK	31 degrees C / 87 degrees F
	CB 1	OK	31 degrees C / 87 degrees F
	SIB 0	OK	41 degrees C / 105 degrees F
	SIB 0 (B)	OK	34 degrees C / 93 degrees F
	SIB 1	OK	0 degrees C / 32 degrees F
	SIB 1 (B)	OK	0 degrees C / 32 degrees F
	SIB 2	OK	0 degrees C / 32 degrees F
	SIB 2 (B)	OK	0 degrees C / 32 degrees F
	SIB 3	OK	0 degrees C / 32 degrees F
	SIB 3 (B)	OK	0 degrees C / 32 degrees F
	SIB 4	OK	0 degrees C / 32 degrees F
	SIB 4 (B)	OK	0 degrees C / 32 degrees F
	FPC 0 Top	OK	49 degrees C / 120 degrees F
	FPC 0 Bottom	OK	50 degrees C / 122 degrees F
	FPC 1 Top	OK	48 degrees C / 118 degrees F
	FPC 1 Bottom	OK	49 degrees C / 120 degrees F
	FPM GBUS	OK	27 degrees C / 80 degrees F
	FPM Display	OK	30 degrees C / 86 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Third fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Fifth fan	OK	Spinning at normal speed
	Rear Tray Sixth fan	OK	Spinning at normal speed
	Rear Tray Seventh fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

### show chassis environment (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	Check	30 degrees C / 86 degrees F
	PEM 1	OK	33 degrees C / 91 degrees F
	Routing Engine 0	OK	28 degrees C / 82 degrees F
	Routing Engine 0 CPU	OK	42 degrees C / 107 degrees F
	Routing Engine 1	OK	29 degrees C / 84 degrees F

	Routing Engine 1 CPU	OK	44 degrees C / 111 degrees F
	CB 0 Intake	OK	30 degrees C / 86 degrees F
	CB 0 Exhaust A	OK	28 degrees C / 82 degrees F
	CB 0 Exhaust B	OK	30 degrees C / 86 degrees F
	CB 1 Intake	OK	31 degrees C / 87 degrees F
	CB 1 Exhaust A	OK	27 degrees C / 80 degrees F
	CB 1 Exhaust B	OK	31 degrees C / 87 degrees F
	SIB F13 0 Board	OK	44 degrees C / 111 degrees F
	SIB F13 0 XF Junction	OK	62 degrees C / 143 degrees F
	SIB F13 3 Board	OK	45 degrees C / 113 degrees F
	SIB F13 3 XF Junction	OK	60 degrees C / 140 degrees F
	SIB F13 6 Board	OK	47 degrees C / 116 degrees F
	SIB F13 6 XF Junction	OK	62 degrees C / 143 degrees F
	SIB F2S 0/0 Board	OK	32 degrees C / 89 degrees F
	SIB F2S 0/0 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 0/2 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/2 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 0/4 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/4 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 0/6 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/6 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 1/0 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 1/0 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 1/2 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 1/2 XF Junction	OK	39 degrees C / 102 degrees F
	SIB F2S 1/4 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 1/4 XF Junction	OK	35 degrees C / 95 degrees F
	SIB F2S 1/6 Board	OK	30 degrees C / 86 degrees F
	SIB F2S 1/6 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 2/0 Board	OK	30 degrees C / 86 degrees F
	SIB F2S 2/0 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 2/2 Board	OK	28 degrees C / 82 degrees F
	SIB F2S 2/2 XF Junction	OK	39 degrees C / 102 degrees F
	SIB F2S 2/4 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 2/4 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 2/6 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 2/6 XF Junction	OK	41 degrees C / 105 degrees F
	CIP 0 Intake	OK	25 degrees C / 77 degrees F
	CIP 0 Exhaust A	OK	26 degrees C / 78 degrees F
	CIP 0 Exhaust B	OK	26 degrees C / 78 degrees F
	CIP 1 Intake	OK	26 degrees C / 78 degrees F
	CIP 1 Exhaust A	OK	27 degrees C / 80 degrees F
	CIP 1 Exhaust B	OK	27 degrees C / 80 degrees F
Fans	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 2	OK	Spinning at normal speed
	Fan Tray 2 Fan 3	OK	Spinning at normal speed
	Fan Tray 2 Fan 4	OK	Spinning at normal speed
	Fan Tray 2 Fan 5	OK	Spinning at normal speed
	Fan Tray 2 Fan 6	OK	Spinning at normal speed



Fan Tray 2 Fan 7	OK	Spinning at normal speed
Fan Tray 2 Fan 8	OK	Spinning at normal speed
Fan Tray 2 Fan 9	OK	Spinning at normal speed
Fan Tray 3 Fan 1	OK	Spinning at normal speed
Fan Tray 3 Fan 2	OK	Spinning at normal speed
Fan Tray 3 Fan 3	OK	Spinning at normal speed
Fan Tray 3 Fan 4	OK	Spinning at normal speed
Fan Tray 3 Fan 5	OK	Spinning at normal speed
Fan Tray 3 Fan 6	OK	Spinning at normal speed
Fan Tray 3 Fan 7	OK	Spinning at normal speed
Fan Tray 3 Fan 8	OK	Spinning at normal speed
Fan Tray 3 Fan 9	OK	Spinning at normal speed
Fan Tray 4 Fan 1	OK	Spinning at normal speed
Fan Tray 4 Fan 2	OK	Spinning at normal speed
Fan Tray 4 Fan 3	OK	Spinning at normal speed
Fan Tray 4 Fan 4	OK	Spinning at normal speed
Fan Tray 4 Fan 5	OK	Spinning at normal speed
Fan Tray 4 Fan 6	OK	Spinning at normal speed
Fan Tray 4 Fan 7	OK	Spinning at normal speed
Fan Tray 4 Fan 8	OK	Spinning at normal speed
Fan Tray 4 Fan 9	OK	Spinning at normal speed
Fan Tray 5 Fan 1	OK	Spinning at normal speed
Fan Tray 5 Fan 2	OK	Spinning at normal speed
Fan Tray 5 Fan 3	OK	Spinning at normal speed
Fan Tray 5 Fan 4	OK	Spinning at normal speed
Fan Tray 5 Fan 5	OK	Spinning at normal speed
Fan Tray 5 Fan 6	OK	Spinning at normal speed
Fan Tray 5 Fan 7	OK	Spinning at normal speed
Fan Tray 5 Fan 8	OK	Spinning at normal speed
Fan Tray 5 Fan 9	Check	
Misc SPMB 0	OK	
SPMB 1	OK	

1cc0-re0:

Class	Item	Status	Measurement
Temp	PEM 0	OK	29 degrees C / 84 degrees F
	PEM 1	Check	29 degrees C / 84 degrees F
	SCG 0	OK	32 degrees C / 89 degrees F
	SCG 1	OK	33 degrees C / 91 degrees F
	Routing Engine 0	OK	32 degrees C / 89 degrees F
	Routing Engine 0 CPU	OK	51 degrees C / 123 degrees F
	Routing Engine 1	OK	32 degrees C / 89 degrees F
	Routing Engine 1 CPU	OK	49 degrees C / 120 degrees F
	CB 0	OK	34 degrees C / 93 degrees F
	CB 1	OK	34 degrees C / 93 degrees F
	SIB 0	OK	39 degrees C / 102 degrees F
	SIB 0 (B)	Absent	
	SIB 1	OK	39 degrees C / 102 degrees F
	SIB 1 (B)	Absent	
	SIB 2	OK	39 degrees C / 102 degrees F
	SIB 2 (B)	Absent	
	FPC 4 Top	OK	43 degrees C / 109 degrees F
	FPC 4 Bottom	OK	43 degrees C / 109 degrees F
	FPC 7 Fan Intake	OK	35 degrees C / 95 degrees F
	FPC 7 Fan Exhaust	OK	50 degrees C / 122 degrees F
	FPC 7 PMB	OK	50 degrees C / 122 degrees F
	FPC 7 LMB0	OK	55 degrees C / 131 degrees F
	FPC 7 LMB1	OK	49 degrees C / 120 degrees F
	FPC 7 LMB2	OK	39 degrees C / 102 degrees F
	FPC 7 PFE1 LU2	OK	55 degrees C / 131 degrees F

	FPC 7 PFE1 LU0	OK	45 degrees C / 113 degrees F
	FPC 7 PFE0 LU0	OK	62 degrees C / 143 degrees F
	FPC 7 XF1	OK	52 degrees C / 125 degrees F
	FPC 7 XF0	OK	61 degrees C / 141 degrees F
	FPC 7 XM1	OK	39 degrees C / 102 degrees F
	FPC 7 XM0	OK	56 degrees C / 132 degrees F
	FPC 7 PFE0 LU1	OK	60 degrees C / 140 degrees F
	FPC 7 PFE0 LU2	OK	55 degrees C / 131 degrees F
	FPC 7 PFE1 LU1	OK	41 degrees C / 105 degrees F
	FPM GBUS	OK	24 degrees C / 75 degrees F
	FPM Display	OK	28 degrees C / 82 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray fan 1 (Top)	OK	Spinning at normal speed
	Rear Tray fan 2	OK	Spinning at normal speed
	Rear Tray fan 3	OK	Spinning at normal speed
	Rear Tray fan 4	OK	Spinning at normal speed
	Rear Tray fan 5	OK	Spinning at normal speed
	Rear Tray fan 6	OK	Spinning at normal speed
	Rear Tray fan 7	OK	Spinning at normal speed
	Rear Tray fan 8	OK	Spinning at normal speed
	Rear Tray fan 9	OK	Spinning at normal speed
	Rear Tray fan 10	OK	Spinning at normal speed
	Rear Tray fan 11	OK	Spinning at normal speed
	Rear Tray fan 12	OK	Spinning at normal speed
	Rear Tray fan 13	OK	Spinning at normal speed
	Rear Tray fan 14	OK	Spinning at normal speed
	Rear Tray fan 15	OK	Spinning at normal speed
	Rear Tray fan 16 (Bottom)	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

## show chassis environment (EX4200 Standalone Switch)

user@switch> show chassis environment			
Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	OK	
	FPC 0 Power Supply 1	Absent	
Temp	FPC 0 CPU	OK	41 degrees C / 105 degrees F
	FPC 0 EX-PFE1	OK	42 degrees C / 107 degrees F
	FPC 0 EX-PFE2	OK	46 degrees C / 114 degrees F
	FPC 0 GEPHY Front Left	OK	25 degrees C / 77 degrees F
	FPC 0 GEPHY Front Right	OK	27 degrees C / 80 degrees F
	FPC 0 Uplink Conn	OK	29 degrees C / 84 degrees F
Fans	FPC 0 Fan 1	OK	Spinning at normal speed
	FPC 0 Fan 2	OK	Spinning at normal speed
	FPC 0 Fan 3	OK	Spinning at normal speed

## show chassis environment (EX8216 Switch)

```

user@switch> show chassis environment
Class Item                               Status      Measurement
Power PSU 0                             OK
        PSU 1                             OK
        PSU 2                             OK
        PSU 3                             Check
        PSU 4                             Absent
        PSU 5                             Absent
Temp   CB 0 Intake                         OK          23 degrees C / 73 degrees F
        CB 0 Exhaust                     OK          26 degrees C / 78 degrees F
        CB 1 Intake                       OK          22 degrees C / 71 degrees F
        CB 1 Exhaust                     OK          25 degrees C / 77 degrees F
        FPC 4 Intake                     OK          49 degrees C / 120 degrees F
        FPC 4 Exhaust                   OK          59 degrees C / 138 degrees F
        SIB 5 Intake                     OK          25 degrees C / 77 degrees F
        SIB 5 Exhaust                   OK          35 degrees C / 95 degrees F
        SIB 6 Intake                     OK          25 degrees C / 77 degrees F
        SIB 6 Exhaust                   OK          38 degrees C / 100 degrees F
Fans   Top Fan 1                         OK          Spinning at normal speed
        Top Fan 2                         OK          Spinning at normal speed
        Top Fan 3                         OK          Spinning at normal speed
        Top Fan 4                         OK          Spinning at normal speed
        Top Fan 5                         OK          Spinning at normal speed
        Top Fan 6                         OK          Spinning at normal speed
        Top Fan 7                         OK          Spinning at normal speed
        Top Fan 8                         OK          Spinning at normal speed
        Top Fan 9                         OK          Spinning at normal speed
        Bottom Fan 1                     OK          Spinning at normal speed
        Bottom Fan 2                     OK          Spinning at normal speed
        Bottom Fan 3                     OK          Spinning at normal speed
        Bottom Fan 4                     OK          Spinning at normal speed
        Bottom Fan 5                     OK          Spinning at normal speed
        Bottom Fan 6                     OK          Spinning at normal speed
        Bottom Fan 7                     OK          Spinning at normal speed
        Bottom Fan 8                     OK          Spinning at normal speed
        Bottom Fan 9                     OK          Spinning at normal speed

```

## show chassis environment (EX9200 Switch)

```

user@switch> show chassis environment
Class Item                               Status      Measurement
Temp   PEM 0                             Check
        PEM 1                             OK          40 degrees C / 104 degrees F
        PEM 2                             OK          40 degrees C / 104 degrees F
        PEM 3                             Absent
        Routing Engine 0                 OK          35 degrees C / 95 degrees F
        Routing Engine 0 CPU              OK          33 degrees C / 91 degrees F
        Routing Engine 1                 OK          38 degrees C / 100 degrees F
        Routing Engine 1 CPU              OK          33 degrees C / 91 degrees F
        CB 0 Intake                       OK          35 degrees C / 95 degrees F
        CB 0 Exhaust A                   OK          33 degrees C / 91 degrees F
        CB 0 Exhaust B                   OK          40 degrees C / 104 degrees F
        CB 0 ACBC                         OK          39 degrees C / 102 degrees F
        CB 0 XF A                         OK          49 degrees C / 120 degrees F
        CB 0 XF B                         OK          46 degrees C / 114 degrees F
        CB 1 Intake                       OK          37 degrees C / 98 degrees F
        CB 1 Exhaust A                   OK          32 degrees C / 89 degrees F
        CB 1 Exhaust B                   OK          39 degrees C / 102 degrees F

```

CB 1 ACBC	OK	41 degrees C / 105 degrees F
CB 1 XF A	OK	49 degrees C / 120 degrees F
CB 1 XF B	OK	49 degrees C / 120 degrees F
FPC 2 Intake	OK	37 degrees C / 98 degrees F
FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
FPC 2 Exhaust B	OK	34 degrees C / 93 degrees F
FPC 2 LU 0 TCAM TSen	OK	44 degrees C / 111 degrees F
FPC 2 LU 0 TCAM Chip	OK	48 degrees C / 118 degrees F
FPC 2 LU 0 TSen	OK	44 degrees C / 111 degrees F
FPC 2 LU 0 Chip	OK	60 degrees C / 140 degrees F
FPC 2 MQ 0 TSen	OK	44 degrees C / 111 degrees F
FPC 2 MQ 0 Chip	OK	51 degrees C / 123 degrees F
FPC 3 Intake	OK	39 degrees C / 102 degrees F
FPC 3 Exhaust A	OK	51 degrees C / 123 degrees F

[...Output truncated...]

Fans	Top Rear Fan	OK	Spinning at intermediate-speed
	Bottom Rear Fan	OK	Spinning at intermediate-speed
	Top Middle Fan	OK	Spinning at intermediate-speed
	Bottom Middle Fan	OK	Spinning at intermediate-speed
	Top Front Fan	OK	Spinning at intermediate-speed
	Bottom Front Fan	OK	Spinning at intermediate-speed

#### show chassis environment (EX9251 Switch)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Top Right Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Left Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Right Exhaust Sensor	OK	40 degrees C / 104 degrees F
	CB 0 Top Left Exhaust Sensor	OK	59 degrees C / 138 degrees F
	CB 0 CPU Core-0 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-1 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-2 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-3 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-4 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-5 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-6 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-7 Temp	OK	43 degrees C / 109 degrees F
Power	PEM 0	Check	
	PEM 1	OK	36 degrees C / 96 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	Absent	
	Fan Tray 2 Fan 1	Absent	

#### show chassis environment (EX9253 Switch)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Exhaust Temp Sensor	OK	37 degrees C / 98 degrees F
	CB 0 Inlet Temp Sensor	OK	31 degrees C / 87 degrees F
	CB 0 CPU DIE Temp Sensor	OK	42 degrees C / 107 degrees F
	CB 1 Exhaust Temp Sensor	OK	31 degrees C / 87 degrees F
	CB 1 Inlet Temp Sensor	OK	28 degrees C / 82 degrees F
	CB 1 CPU DIE Temp Sensor	OK	42 degrees C / 107 degrees F
	FPC 0 Intake Temp Sensor	OK	31 degrees C / 87 degrees F

	FPC 0 Exhaust-A Temp Sensor	OK	58 degrees C / 136 degrees F
	FPC 0 Exhaust-B Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 1 Intake Temp Sensor	OK	29 degrees C / 84 degrees F
	FPC 1 Exhaust-A Temp Sensor	OK	59 degrees C / 138 degrees F
	FPC 1 Exhaust-B Temp Sensor	OK	48 degrees C / 118 degrees F
Power	PEM 0	OK	54 degrees C / 129 degrees F
	PEM 1	Check	
	PEM 2	Absent	
	PEM 3	Absent	
	PEM 4	Check	
	PEM 5	OK	61 degrees C / 141 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 2	OK	Spinning at normal speed
	Fan Tray 2 Fan 3	OK	Spinning at normal speed
	Fan Tray 3 Fan 0	OK	Spinning at normal speed
	Fan Tray 3 Fan 1	OK	Spinning at normal speed
	Fan Tray 3 Fan 2	OK	Spinning at normal speed
	Fan Tray 3 Fan 3	OK	Spinning at normal speed

#### show chassis environment (QFX Series and OCX Series)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Top Right Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Left Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Right Exhaust Sensor	OK	40 degrees C / 104 degrees F
	CB 0 Top Left Exhaust Sensor	OK	59 degrees C / 138 degrees F
	CB 0 CPU Core-0 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-1 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-2 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-3 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-4 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-5 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-6 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-7 Temp	OK	43 degrees C / 109 degrees F
Power	PEM 0	Check	
	PEM 1	OK	36 degrees C / 96 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	Absent	
	Fan Tray 2 Fan 1	Absent	

#### show chassis environment interconnect-device (QFabric System)

```
user@switch> show chassis environment interconnect-device IC-A0004
```

Class	Item	Status	Measurement
CB 0			
	CB 0 L Intake	OK	30 degrees C / 86 degrees F
	CB 0 R Intake	OK	31 degrees C / 87 degrees F

CB 0 L Exhaust	OK	32 degrees C / 89 degrees F
CB 0 R Exhaust	OK	33 degrees C / 91 degrees F
Routing Engine 0 CPU temp	OK	51 degrees C / 123 degrees F
CB 1		
CB 1 L Intake	OK	27 degrees C / 80 degrees F
CB 1 R Intake	OK	29 degrees C / 84 degrees F
CB 1 L Exhaust	OK	31 degrees C / 87 degrees F
CB 1 R Exhaust	OK	32 degrees C / 89 degrees F
Routing Engine 1 CPU temp	OK	40 degrees C / 104 degrees F
FC 0 FPC 0		
FPC 0 L Intake	OK	25 degrees C / 77 degrees F
FPC 0 R Intake	OK	28 degrees C / 82 degrees F
FPC 0 L Exhaust	OK	28 degrees C / 82 degrees F
FPC 0 R Exhaust	OK	29 degrees C / 84 degrees F
FC 7 FPC 7		
FPC 7 L Intake	OK	25 degrees C / 77 degrees F
FPC 7 R Intake	OK	26 degrees C / 78 degrees F
FPC 7 L Exhaust	OK	28 degrees C / 82 degrees F
FPC 7 R Exhaust	OK	29 degrees C / 84 degrees F
RC 0 FPC 8		
FPC 8 L Intake	OK	25 degrees C / 77 degrees F
FPC 8 R Intake	OK	26 degrees C / 78 degrees F
FPC 8 L Exhaust	OK	32 degrees C / 89 degrees F
FPC 8 R Exhaust	OK	30 degrees C / 86 degrees F
RC 7 FPC 15		
FPC 15 L Intake	OK	24 degrees C / 75 degrees F
FPC 15 R Intake	OK	25 degrees C / 77 degrees F
FPC 15 L Exhaust	OK	33 degrees C / 91 degrees F
FPC 15 R Exhaust	OK	31 degrees C / 87 degrees F
Fans TFT 0 Fan 0	OK	Spinning at normal speed
Fans TFT 0 Fan 1	OK	Spinning at normal speed
Fans TFT 0 Fan 2	OK	Spinning at normal speed
Fans TFT 0 Fan 3	OK	Spinning at normal speed
Fans TFT 0 Fan 4	OK	Spinning at normal speed
Fans TFT 0 Fan 5	OK	Spinning at normal speed
Fans BFT 1 Fan 0	OK	Spinning at normal speed
Fans BFT 1 Fan 1	OK	Spinning at normal speed
Fans BFT 1 Fan 2	OK	Spinning at normal speed
Fans BFT 1 Fan 3	Check	
Fans BFT 1 Fan 4	OK	Spinning at normal speed
Fans BFT 1 Fan 5	OK	Spinning at normal speed
Fans SFT 0 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 2 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 2 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 2 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 2 Fan 1 Rotor 1	OK	Spinning at normal speed

Fans	SFT 2	Fan 2	Rotor 0	OK	Spinning at normal speed
Fans	SFT 2	Fan 2	Rotor 1	OK	Spinning at normal speed
Fans	SFT 2	Fan 3	Rotor 0	OK	Spinning at normal speed
Fans	SFT 2	Fan 3	Rotor 1	OK	Spinning at normal speed
Fans	SFT 3	Fan 0	Rotor 0	OK	Spinning at normal speed
Fans	SFT 3	Fan 0	Rotor 1	OK	Spinning at normal speed
Fans	SFT 3	Fan 1	Rotor 0	OK	Spinning at normal speed
Fans	SFT 3	Fan 1	Rotor 1	OK	Spinning at normal speed
Fans	SFT 3	Fan 2	Rotor 0	OK	Spinning at normal speed
Fans	SFT 3	Fan 2	Rotor 1	OK	Spinning at normal speed
Fans	SFT 3	Fan 3	Rotor 0	OK	Spinning at normal speed
Fans	SFT 3	Fan 3	Rotor 1	OK	Spinning at normal speed
Fans	SFT 4	Fan 0	Rotor 0	OK	Spinning at normal speed
Fans	SFT 4	Fan 0	Rotor 1	OK	Spinning at normal speed
Fans	SFT 4	Fan 1	Rotor 0	OK	Spinning at normal speed
Fans	SFT 4	Fan 1	Rotor 1	OK	Spinning at normal speed
Fans	SFT 4	Fan 2	Rotor 0	OK	Spinning at normal speed
Fans	SFT 4	Fan 2	Rotor 1	OK	Spinning at normal speed
Fans	SFT 4	Fan 3	Rotor 0	OK	Spinning at normal speed
Fans	SFT 4	Fan 3	Rotor 1	OK	Spinning at normal speed
Fans	SFT 5	Fan 0	Rotor 0	OK	Spinning at normal speed
Fans	SFT 5	Fan 0	Rotor 1	OK	Spinning at normal speed
Fans	SFT 5	Fan 1	Rotor 0	OK	Spinning at normal speed
Fans	SFT 5	Fan 1	Rotor 1	OK	Spinning at normal speed
Fans	SFT 5	Fan 2	Rotor 0	OK	Spinning at normal speed
Fans	SFT 5	Fan 2	Rotor 1	OK	Spinning at normal speed
Fans	SFT 5	Fan 3	Rotor 0	OK	Spinning at normal speed
Fans	SFT 5	Fan 3	Rotor 1	OK	Spinning at normal speed
Fans	SFT 6	Fan 0	Rotor 0	OK	Spinning at normal speed
Fans	SFT 6	Fan 0	Rotor 1	OK	Spinning at normal speed
Fans	SFT 6	Fan 1	Rotor 0	OK	Spinning at normal speed
Fans	SFT 6	Fan 1	Rotor 1	OK	Spinning at normal speed
Fans	SFT 6	Fan 2	Rotor 0	OK	Spinning at normal speed
Fans	SFT 6	Fan 2	Rotor 1	OK	Spinning at normal speed
Fans	SFT 6	Fan 3	Rotor 0	OK	Spinning at normal speed
Fans	SFT 6	Fan 3	Rotor 1	OK	Spinning at normal speed
Fans	SFT 7	Fan 0	Rotor 0	OK	Spinning at normal speed
Fans	SFT 7	Fan 0	Rotor 1	OK	Spinning at normal speed
Fans	SFT 7	Fan 1	Rotor 0	OK	Spinning at normal speed
Fans	SFT 7	Fan 1	Rotor 1	OK	Spinning at normal speed
Fans	SFT 7	Fan 2	Rotor 0	OK	Spinning at normal speed
Fans	SFT 7	Fan 2	Rotor 1	OK	Spinning at normal speed
Fans	SFT 7	Fan 3	Rotor 0	OK	Spinning at normal speed
Fans	SFT 7	Fan 3	Rotor 1	OK	Spinning at normal speed
Power	PEM 0			OK	30 degrees C / 86 degrees F
Power	PEM 1			OK	30 degrees C / 86 degrees F
Power	PEM 2			OK	30 degrees C / 86 degrees F
Power	PEM 3			Absent	
Power	PEM 4			Absent	
Power	PEM 5			Absent	

### show chassis environment node-device (QFabric System)

```

user@switch> show chassis environment node-device node1
Class Item                               Status Measurement
Power node1 Power Supply 0              Absent
       node1 Power Supply 1              Absent
Fans   node1 Fan Tray 0                  Testing
       node1 Fan Tray 1                  Testing
       node1 Fan Tray 2                  Testing

```

**show chassis environment pem node-device (QFabric System)**

```

user@switch> show chassis environment pem node-device node1
FPC 0 PEM 0 status:
  State          Check
  Airflow        Front to Back
  Temperature     OK
  AC Input:      OK
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12          10       120      18
FPC 0 PEM 1 status:
  State          Online
  Airflow        Back to Front
  Temperature     OK
  AC Input:      OK
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  11          10       110      17

```

**show chassis environment (PTX5000 Packet Transport Router)**

```

user@host> show chassis environment
Class Item                               Status Measurement
Temp PDU 0                               OK
      PDU 0 PSM 0                         OK      36 degrees C / 96 degrees F
      PDU 0 PSM 1                         OK      38 degrees C / 100 degrees F
      PDU 0 PSM 2                         OK      38 degrees C / 100 degrees F
      PDU 0 PSM 3                         OK      37 degrees C / 98 degrees F
      PDU 1                               Absent
      CCG 0                               OK      44 degrees C / 111 degrees F
      CCG 1                               OK      44 degrees C / 111 degrees F
      Routing Engine 0                     OK      62 degrees C / 143 degrees F
      Routing Engine 0 CPU                 OK      75 degrees C / 167 degrees F
      Routing Engine 1                     OK      51 degrees C / 123 degrees F
      Routing Engine 1 CPU                 OK      64 degrees C / 147 degrees F
      CB 0 Intake                          OK      38 degrees C / 100 degrees F
      CB 0 Exhaust A                      OK      46 degrees C / 114 degrees F
      CB 0 Exhaust B                      OK      42 degrees C / 107 degrees F
      CB 1 Intake                          OK      35 degrees C / 95 degrees F
      CB 1 Exhaust A                      OK      39 degrees C / 102 degrees F
      CB 1 Exhaust B                      OK      36 degrees C / 96 degrees F
      SIB 0 Exhaust                       OK      47 degrees C / 116 degrees F
      SIB 0 Junction                      OK      45 degrees C / 113 degrees F
      SIB 1 Exhaust                       OK      44 degrees C / 111 degrees F
      SIB 1 Junction                      OK      43 degrees C / 109 degrees F
      SIB 2 Exhaust                       OK      47 degrees C / 116 degrees F
      SIB 2 Junction                      OK      42 degrees C / 107 degrees F
      SIB 3 Exhaust                       OK      43 degrees C / 109 degrees F
      SIB 3 Junction                      OK      43 degrees C / 109 degrees F
      SIB 4 Exhaust                       OK      47 degrees C / 116 degrees F
      SIB 4 Junction                      OK      42 degrees C / 107 degrees F
      SIB 5 Exhaust                       OK      42 degrees C / 107 degrees F
      SIB 5 Junction                      OK      40 degrees C / 104 degrees F
      SIB 6 Exhaust                       OK      46 degrees C / 114 degrees F
      SIB 6 Junction                      OK      42 degrees C / 107 degrees F
      SIB 7 Exhaust                       OK      43 degrees C / 109 degrees F
      SIB 7 Junction                      OK      39 degrees C / 102 degrees F
      SIB 8 Exhaust                       OK      44 degrees C / 111 degrees F
      SIB 8 Junction                      OK      41 degrees C / 105 degrees F
      FPC 0 PMB                           OK      35 degrees C / 95 degrees F
      FPC 0 Intake                        OK      33 degrees C / 91 degrees F

```



FPC 0 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 0 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 0 TL0	OK	48 degrees C / 118 degrees F
FPC 0 TQ0	OK	53 degrees C / 127 degrees F
FPC 0 TL1	OK	56 degrees C / 132 degrees F
FPC 0 TQ1	OK	58 degrees C / 136 degrees F
FPC 0 TL2	OK	55 degrees C / 131 degrees F
FPC 0 TQ2	OK	56 degrees C / 132 degrees F
FPC 0 TL3	OK	59 degrees C / 138 degrees F
FPC 0 TQ3	OK	59 degrees C / 138 degrees F
FPC 2 PMB	OK	35 degrees C / 95 degrees F
FPC 2 Intake	OK	34 degrees C / 93 degrees F
FPC 2 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 2 TL0	OK	53 degrees C / 127 degrees F
FPC 2 TQ0	OK	53 degrees C / 127 degrees F
FPC 2 TL1	OK	57 degrees C / 134 degrees F
FPC 2 TQ1	OK	58 degrees C / 136 degrees F
FPC 2 TL2	OK	54 degrees C / 129 degrees F
FPC 2 TQ2	OK	59 degrees C / 138 degrees F
FPC 2 TL3	OK	60 degrees C / 140 degrees F
FPC 2 TQ3	OK	64 degrees C / 147 degrees F
PIC 2/0 Ambient	OK	49 degrees C / 120 degrees F
FPC 3 PMB	OK	34 degrees C / 93 degrees F
FPC 3 Intake	OK	35 degrees C / 95 degrees F
FPC 3 Exhaust A	OK	54 degrees C / 129 degrees F
FPC 3 Exhaust B	OK	49 degrees C / 120 degrees F
FPC 3 TL0	OK	49 degrees C / 120 degrees F
FPC 3 TQ0	OK	55 degrees C / 131 degrees F
FPC 3 TL1	OK	56 degrees C / 132 degrees F
FPC 3 TQ1	OK	58 degrees C / 136 degrees F
FPC 3 TL2	OK	56 degrees C / 132 degrees F
FPC 3 TQ2	OK	59 degrees C / 138 degrees F
FPC 3 TL3	OK	62 degrees C / 143 degrees F
FPC 3 TQ3	OK	63 degrees C / 145 degrees F
PIC 3/1	Absent	
FPC 5 PMB	OK	35 degrees C / 95 degrees F
FPC 5 Intake	OK	34 degrees C / 93 degrees F
FPC 5 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 5 Exhaust B	OK	53 degrees C / 127 degrees F
FPC 5 TL0	OK	54 degrees C / 129 degrees F
FPC 5 TQ0	OK	52 degrees C / 125 degrees F
FPC 5 TL1	OK	61 degrees C / 141 degrees F
FPC 5 TQ1	OK	60 degrees C / 140 degrees F
FPC 5 TL2	OK	55 degrees C / 131 degrees F
FPC 5 TQ2	OK	55 degrees C / 131 degrees F
FPC 5 TL3	OK	59 degrees C / 138 degrees F
FPC 5 TQ3	OK	58 degrees C / 136 degrees F
PIC 5/0 Ambient	OK	51 degrees C / 123 degrees F
PIC 5/1 Ambient	OK	34 degrees C / 93 degrees F
PIC 5/1 cfp-5/1/0	OK	34 degrees C / 93 degrees F
PIC 5/1 cfp-5/1/1	OK	36 degrees C / 96 degrees F
FPC 6 PMB	OK	36 degrees C / 96 degrees F
FPC 6 Intake	OK	33 degrees C / 91 degrees F
FPC 6 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 6 Exhaust B	OK	39 degrees C / 102 degrees F
FPC 6 TL0	OK	44 degrees C / 111 degrees F
FPC 6 TQ0	OK	54 degrees C / 129 degrees F
FPC 6 TL1	OK	59 degrees C / 138 degrees F
FPC 6 TQ1	OK	58 degrees C / 136 degrees F
FPC 6 TL2	OK	60 degrees C / 140 degrees F

	FPC 6 TQ2	OK	57 degrees C / 134 degrees F
	FPC 6 TL3	OK	65 degrees C / 149 degrees F
	FPC 6 TQ3	OK	60 degrees C / 140 degrees F
	FPC 7 PMB	OK	35 degrees C / 95 degrees F
	FPC 7 Intake	OK	33 degrees C / 91 degrees F
	FPC 7 Exhaust A	OK	53 degrees C / 127 degrees F
	FPC 7 Exhaust B	OK	40 degrees C / 104 degrees F
	FPC 7 TL0	OK	46 degrees C / 114 degrees F
	FPC 7 TQ0	OK	58 degrees C / 136 degrees F
	FPC 7 TL1	OK	53 degrees C / 127 degrees F
	FPC 7 TQ1	OK	59 degrees C / 138 degrees F
	FPC 7 TL2	OK	56 degrees C / 132 degrees F
	FPC 7 TQ2	OK	61 degrees C / 141 degrees F
	FPC 7 TL3	OK	63 degrees C / 145 degrees F
	FPC 7 TQ3	OK	63 degrees C / 145 degrees F
	FPM I2CS	OK	37 degrees C / 98 degrees F
Fans	Fan Tray 0 Fan 1	OK	3042 RPM
	Fan Tray 0 Fan 2	OK	3042 RPM
	Fan Tray 0 Fan 3	OK	3000 RPM
	Fan Tray 0 Fan 4	OK	3042 RPM
	Fan Tray 0 Fan 5	OK	3000 RPM
	Fan Tray 0 Fan 6	OK	3042 RPM
	Fan Tray 0 Fan 7	OK	3085 RPM
	Fan Tray 0 Fan 8	OK	3042 RPM
	Fan Tray 0 Fan 9	OK	3042 RPM
	Fan Tray 0 Fan 10	OK	3085 RPM
	Fan Tray 0 Fan 11	OK	3085 RPM
	Fan Tray 0 Fan 12	OK	3128 RPM
	Fan Tray 0 Fan 13	OK	3128 RPM
	Fan Tray 0 Fan 14	OK	3042 RPM
	Fan Tray 1 Fan 1	OK	2299 RPM
	Fan Tray 1 Fan 2	OK	2399 RPM
	Fan Tray 1 Fan 3	OK	2299 RPM
	Fan Tray 1 Fan 4	OK	2266 RPM
	Fan Tray 1 Fan 5	OK	2266 RPM
	Fan Tray 1 Fan 6	OK	2366 RPM
	Fan Tray 2 Fan 1	OK	2199 RPM
	Fan Tray 2 Fan 2	OK	2133 RPM
	Fan Tray 2 Fan 3	OK	2366 RPM
	Fan Tray 2 Fan 4	OK	2233 RPM
	Fan Tray 2 Fan 5	OK	2399 RPM
	Fan Tray 2 Fan 6	OK	2233 RPM
Misc	SPMB 0 Intake	OK	50 degrees C / 122 degrees F
	SPMB 1 Intake	OK	40 degrees C / 104 degrees F

### show chassis environment (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

user@host> show chassis environment			
Class	Item	Status	Measurement
Temp	PDU 0	OK	
	PDU 0 PSM 0	OK	41 degrees C / 105 degrees F
	PDU 0 PSM 1	Absent	
	PDU 0 PSM 2	OK	43 degrees C / 109 degrees F
	PDU 0 PSM 3	Absent	
	PDU 0 PSM 4	OK	44 degrees C / 111 degrees F
	PDU 0 PSM 5	Absent	
	PDU 0 PSM 6	OK	45 degrees C / 113 degrees F
	PDU 0 PSM 7	Absent	
	PDU 1	OK	
	PDU 1 PSM 0	Absent	
	PDU 1 PSM 1	OK	45 degrees C / 113 degrees F

```

PDU 1 PSM 2          Absent
PDU 1 PSM 3          OK          43 degrees C / 109 degrees F
PDU 1 PSM 4          Absent
PDU 1 PSM 5          OK          46 degrees C / 114 degrees F
PDU 1 PSM 6          Absent
PDU 1 PSM 7          OK          46 degrees C / 114 degrees F
CCG 0                OK          27 degrees C / 80 degrees F
CCG 1                OK          29 degrees C / 84 degrees F
...

```

### show chassis environment (PTX1000 Packet Transport Router)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Power FPC 0 Power Supply 0              Absent
      FPC 0 Power Supply 1              Absent
      FPC 0 Power Supply 2              OK
      FPC 0 Power Supply 3              OK
Temp  FPC 0 Intake Temp Sensor           OK          25 degrees C / 77 degrees F
      FPC 0 Exhaust Temp Sensor          OK          35 degrees C / 95 degrees F
      FPC 0 Mezz Temp Sensor 0           OK          25 degrees C / 77 degrees F
      FPC 0 Mezz Temp Sensor 1           OK          34 degrees C / 93 degrees F
      FPC 0 PE2 Temp Sensor              OK          34 degrees C / 93 degrees F
      FPC 0 PE1 Temp Sensor              OK          32 degrees C / 89 degrees F
      FPC 0 PF0 Temp Sensor              OK          40 degrees C / 104 degrees F
      FPC 0 PE0 Temp Sensor              OK          33 degrees C / 91 degrees F
      FPC 0 PE5 Temp Sensor              OK          34 degrees C / 93 degrees F
      FPC 0 PE4 Temp Sensor              OK          34 degrees C / 93 degrees F
      FPC 0 PF1 Temp Sensor              OK          41 degrees C / 105 degrees F
      FPC 0 PE3 Temp Sensor              OK          36 degrees C / 96 degrees F
      FPC 0 CPU Die Temp Sensor           OK          40 degrees C / 104 degrees F
      FPC 0 OCX0 Temp Sensor             OK          37 degrees C / 98 degrees F
Fans  FPC 0 Fan Tray 0                   OK          Spinning at normal speed
      FPC 0 Fan Tray 1                   OK          Spinning at normal speed
      FPC 0 Fan Tray 2                   OK          Spinning at normal speed

```

### show chassis environment (PTX10008 Router)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Routing Engine 0 CPU                     OK          40 degrees C / 104 degrees F
Routing Engine 1 CPU                     OK          40 degrees C / 104 degrees F
Temp  CB 0 Intake Temp Sensor             OK          29 degrees C / 84 degrees F
      CB 0 Exhaust Temp Sensor            OK          33 degrees C / 91 degrees F
      CB 1 Intake Temp Sensor             OK          28 degrees C / 82 degrees F
      CB 1 Exhaust Temp Sensor            OK          32 degrees C / 89 degrees F
      FPC 0 Intake-A Temp Sensor           OK          38 degrees C / 100 degrees F
      FPC 0 Intake-B Temp Sensor           OK          34 degrees C / 93 degrees F
      FPC 0 Exhaust-A Temp Sensor           OK          36 degrees C / 96 degrees F
      FPC 0 Exhaust-B Temp Sensor           OK          37 degrees C / 98 degrees F
      FPC 0 Exhaust-C Temp Sensor           OK          40 degrees C / 104 degrees F
      FPC 0 PE0 Temp Sensor               OK          40 degrees C / 104 degrees F
      FPC 0 PE1 Temp Sensor               OK          42 degrees C / 107 degrees F
      FPC 0 PE2 Temp Sensor               OK          44 degrees C / 111 degrees F
      FPC 0 LCPU Temp Sensor               OK          41 degrees C / 105 degrees F
      FPC 1 Intake-A Temp Sensor           OK          37 degrees C / 98 degrees F
      FPC 1 Intake-B Temp Sensor           OK          33 degrees C / 91 degrees F
      FPC 1 Exhaust-A Temp Sensor           OK          37 degrees C / 98 degrees F
      FPC 1 Exhaust-B Temp Sensor           OK          38 degrees C / 100 degrees F
      FPC 1 Exhaust-C Temp Sensor           OK          40 degrees C / 104 degrees F

```

FPC 1 PE0 Temp Sensor	OK	41 degrees C / 105 degrees F
FPC 1 PE1 Temp Sensor	OK	41 degrees C / 105 degrees F
FPC 1 PE2 Temp Sensor	OK	45 degrees C / 113 degrees F
FPC 1 LCPU Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 2 Intake-A Temp Sensor	OK	44 degrees C / 111 degrees F
FPC 2 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
FPC 2 Exhaust-A Temp Sensor	OK	52 degrees C / 125 degrees F
FPC 2 Exhaust-B Temp Sensor	OK	54 degrees C / 129 degrees F
FPC 2 Exhaust-C Temp Sensor	OK	52 degrees C / 125 degrees F
FPC 2 PE0 Temp Sensor	OK	49 degrees C / 120 degrees F
FPC 2 PE1 Temp Sensor	OK	59 degrees C / 138 degrees F
FPC 2 PE2 Temp Sensor	OK	49 degrees C / 120 degrees F
FPC 2 PE3 Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 2 PE4 Temp Sensor	OK	49 degrees C / 120 degrees F
FPC 2 PE5 Temp Sensor	OK	63 degrees C / 145 degrees F
FPC 2 LCPU Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 3 Intake-A Temp Sensor	OK	42 degrees C / 107 degrees F
FPC 3 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
FPC 3 Exhaust-A Temp Sensor	OK	46 degrees C / 114 degrees F
FPC 3 Exhaust-B Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3 Exhaust-C Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 3 PE0 Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 3 PE1 Temp Sensor	OK	53 degrees C / 127 degrees F
FPC 3 PE2 Temp Sensor	OK	46 degrees C / 114 degrees F
FPC 3 PE3 Temp Sensor	OK	53 degrees C / 127 degrees F
FPC 3 PE4 Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3 PE5 Temp Sensor	OK	57 degrees C / 134 degrees F
FPC 3 LCPU Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 5 Intake-A Temp Sensor	Failed	
FPC 5 Intake-B Temp Sensor	Failed	
FPC 5 Exhaust-A Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 5 Exhaust-B Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 5 Exhaust-C Temp Sensor	OK	41 degrees C / 105 degrees F
FPC 5 PE0 Temp Sensor	OK	46 degrees C / 114 degrees F
FPC 5 PE1 Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 5 PE2 Temp Sensor	OK	51 degrees C / 123 degrees F
FPC 5 LCPU Temp Sensor	Failed	
FPC 6 Intake-A Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 6 Intake-B Temp Sensor	OK	36 degrees C / 96 degrees F
FPC 6 Exhaust-A Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 Exhaust-B Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 Exhaust-C Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 PE0 Temp Sensor	OK	44 degrees C / 111 degrees F
FPC 6 PE1 Temp Sensor	OK	45 degrees C / 113 degrees F
FPC 6 PE2 Temp Sensor	OK	50 degrees C / 122 degrees F
FPC 6 LCPU Temp Sensor	OK	40 degrees C / 104 degrees F
SIB 0 Intake-A Temp Sensor	OK	37 degrees C / 98 degrees F
SIB 0 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 Exhaust-A Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 0 Exhaust-B Temp Sensor	OK	38 degrees C / 100 degrees F
SIB 0 PF0 Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 0 PF1 Temp Sensor	OK	39 degrees C / 102 degrees F
SIB 1 Intake-A Temp Sensor	OK	43 degrees C / 109 degrees F
SIB 1 Intake-B Temp Sensor	OK	34 degrees C / 93 degrees F
SIB 1 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
SIB 1 Exhaust-B Temp Sensor	OK	44 degrees C / 111 degrees F
SIB 1 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
SIB 1 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
SIB 2 Intake-A Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 2 Intake-B Temp Sensor	OK	35 degrees C / 95 degrees F
SIB 2 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F

	SIB 2 Exhaust-B Temp Sensor	OK	47 degrees C / 116 degrees F
	SIB 2 PF0 Temp Sensor	OK	55 degrees C / 131 degrees F
	SIB 2 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
	SIB 3 Intake-A Temp Sensor	OK	45 degrees C / 113 degrees F
	SIB 3 Intake-B Temp Sensor	OK	35 degrees C / 95 degrees F
	SIB 3 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
	SIB 3 Exhaust-B Temp Sensor	OK	45 degrees C / 113 degrees F
	SIB 3 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
	SIB 3 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
	SIB 4 Intake-A Temp Sensor	OK	46 degrees C / 114 degrees F
	SIB 4 Intake-B Temp Sensor	OK	34 degrees C / 93 degrees F
	SIB 4 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
	SIB 4 Exhaust-B Temp Sensor	OK	46 degrees C / 114 degrees F
	SIB 4 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
	SIB 4 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
	SIB 5 Intake-A Temp Sensor	OK	38 degrees C / 100 degrees F
	SIB 5 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	SIB 5 Exhaust-A Temp Sensor	OK	34 degrees C / 93 degrees F
	SIB 5 Exhaust-B Temp Sensor	OK	39 degrees C / 102 degrees F
	SIB 5 PF0 Temp Sensor	OK	44 degrees C / 111 degrees F
	SIB 5 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
Power	Power Supply 0	OK	
	Power Supply 1	OK	
	Power Supply 2	OK	
	Power Supply 3	OK	
	Power Supply 4	Check	
	Power Supply 5	OK	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	Failed	
	Fan Tray 0 Fan 5	Failed	
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 0 Fan 7	OK	Spinning at normal speed
	Fan Tray 0 Fan 8	OK	Spinning at normal speed
	Fan Tray 0 Fan 9	OK	Spinning at normal speed
	Fan Tray 0 Fan 10	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 7	OK	Spinning at normal speed
	Fan Tray 1 Fan 8	OK	Spinning at normal speed
	Fan Tray 1 Fan 9	OK	Spinning at normal speed
	Fan Tray 1 Fan 10	OK	Spinning at normal speed

### show chassis environment (PTX10016 Router)

```

user@host> show chassis environment
Class Item                               Status Measurement
Temp Routing Engine 0 CPU                OK          34 degrees C / 93 degrees F
Temp Routing Engine 1 CPU                OK          34 degrees C / 93 degrees F
Temp CB 0 Intake Temp Sensor              OK          20 degrees C / 68 degrees F
Temp CB 0 Exhaust Temp Sensor             OK          24 degrees C / 75 degrees F
Temp CB 1 Intake Temp Sensor              OK          20 degrees C / 68 degrees F
Temp CB 1 Exhaust Temp Sensor             OK          23 degrees C / 73 degrees F
Temp FPC 1 Intake-A Temp Sensor           OK          37 degrees C / 98 degrees F

```

	FPC 1 Intake-B Temp Sensor	OK	32 degrees C / 89 degrees F
	FPC 1 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 1 Exhaust-B Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 1 Exhaust-C Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 1 PE0 Temp Sensor	OK	45 degrees C / 113 degrees F
	FPC 1 PE1 Temp Sensor	OK	46 degrees C / 114 degrees F
	FPC 1 PE2 Temp Sensor	OK	54 degrees C / 129 degrees F
	FPC 1 LCPU Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 3 Intake-A Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 3 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	FPC 3 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 3 Exhaust-B Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 3 Exhaust-C Temp Sensor	OK	33 degrees C / 91 degrees F
	FPC 3 PE0 Temp Sensor	OK	43 degrees C / 109 degrees F
	FPC 3 PE1 Temp Sensor	OK	45 degrees C / 113 degrees F
	FPC 3 PE2 Temp Sensor	OK	49 degrees C / 120 degrees F
	FPC 3 LCPU Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 Intake-A Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 6 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	FPC 6 Exhaust-A Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 Exhaust-B Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 Exhaust-C Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 PE0 Temp Sensor	OK	43 degrees C / 109 degrees F
	FPC 6 PE1 Temp Sensor	OK	43 degrees C / 109 degrees F
	FPC 6 PE2 Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 6 LCPU Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 8 Intake-A Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 8 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	FPC 8 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 8 Exhaust-B Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 8 Exhaust-C Temp Sensor	OK	38 degrees C / 100 degrees F
	FPC 8 PE0 Temp Sensor	OK	42 degrees C / 107 degrees F
	FPC 8 PE1 Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 8 PE2 Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 8 LCPU Temp Sensor	OK	33 degrees C / 91 degrees F
	FPC 9 Intake-A Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 9 Intake-B Temp Sensor	OK	28 degrees C / 82 degrees F
	FPC 9 Exhaust-A Temp Sensor	OK	51 degrees C / 123 degrees F
	FPC 9 Exhaust-B Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 9 Exhaust-C Temp Sensor	OK	48 degrees C / 118 degrees F
	FPC 9 PE0 Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 9 PE1 Temp Sensor	OK	66 degrees C / 150 degrees F
	FPC 9 PE2 Temp Sensor	OK	50 degrees C / 122 degrees F
	FPC 9 PE3 Temp Sensor	OK	65 degrees C / 149 degrees F
	FPC 9 PE4 Temp Sensor	OK	51 degrees C / 123 degrees F
	FPC 9 PE5 Temp Sensor	OK	68 degrees C / 154 degrees F
	FPC 9 LCPU Temp Sensor	OK	46 degrees C / 114 degrees F
Power	Power Supply 0	OK	22 degrees C / 71 degrees F
	Power Supply 1	OK	23 degrees C / 73 degrees F
	Power Supply 2	OK	23 degrees C / 73 degrees F
	Power Supply 3	OK	21 degrees C / 69 degrees F
	Power Supply 4	OK	22 degrees C / 71 degrees F
	Power Supply 5	OK	25 degrees C / 77 degrees F
	Power Supply 6	OK	21 degrees C / 69 degrees F
	Power Supply 7	Absent	
	Power Supply 8	Absent	
	Power Supply 9	Absent	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed

Fan Tray 0 Fan 4	OK	Spinning at normal speed
Fan Tray 0 Fan 5	OK	Spinning at normal speed
Fan Tray 0 Fan 6	OK	Spinning at normal speed
Fan Tray 0 Fan 7	OK	Spinning at normal speed
Fan Tray 0 Fan 8	OK	Spinning at normal speed
Fan Tray 0 Fan 9	OK	Spinning at normal speed
Fan Tray 0 Fan 10	OK	Spinning at normal speed
Fan Tray 0 Fan 11	OK	Spinning at normal speed
Fan Tray 0 Fan 12	OK	Spinning at normal speed
Fan Tray 0 Fan 13	OK	Spinning at normal speed
Fan Tray 0 Fan 14	OK	Spinning at normal speed
Fan Tray 0 Fan 15	OK	Spinning at normal speed
Fan Tray 0 Fan 16	OK	Spinning at normal speed
Fan Tray 0 Fan 17	OK	Spinning at normal speed
Fan Tray 0 Fan 18	OK	Spinning at normal speed
Fan Tray 0 Fan 19	OK	Spinning at normal speed
Fan Tray 0 Fan 20	OK	Spinning at normal speed
Fan Tray 1 Fan 0	OK	Spinning at normal speed
Fan Tray 1 Fan 1	OK	Spinning at normal speed
Fan Tray 1 Fan 2	OK	Spinning at normal speed
Fan Tray 1 Fan 3	OK	Spinning at normal speed
Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 1 Fan 7	OK	Spinning at normal speed
Fan Tray 1 Fan 8	OK	Spinning at normal speed
Fan Tray 1 Fan 9	OK	Spinning at normal speed
Fan Tray 1 Fan 10	OK	Spinning at normal speed
Fan Tray 1 Fan 11	OK	Spinning at normal speed
Fan Tray 1 Fan 12	OK	Spinning at normal speed
Fan Tray 1 Fan 13	OK	Spinning at normal speed
Fan Tray 1 Fan 14	OK	Spinning at normal speed
Fan Tray 1 Fan 15	OK	Spinning at normal speed
Fan Tray 1 Fan 16	OK	Spinning at normal speed
Fan Tray 1 Fan 17	OK	Spinning at normal speed
Fan Tray 1 Fan 18	OK	Spinning at normal speed
Fan Tray 1 Fan 19	OK	Spinning at normal speed
Fan Tray 1 Fan 20	OK	Spinning at normal speed
SIB 0 Intake-A Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 0 Intake-B Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 0 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 0 Exhaust-A Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 0 Exhaust-B Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 0 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 0 PF0 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 PF2 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 0 PF3 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 0 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 0 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 1 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 1 Intake-B Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 1 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 1 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 1 Exhaust-B Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 1 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 1 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 1 PF1 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 1 PF2 Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 1 PF3 Temp Sensor	OK	38 degrees C / 100 degrees F
SIB 1 PF4 Temp Sensor	OK	28 degrees C / 82 degrees F

SIB 1 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 2 Intake-A Temp Sensor	OK	24 degrees C / 75 degrees F
SIB 2 Intake-B Temp Sensor	OK	21 degrees C / 69 degrees F
SIB 2 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 2 Exhaust-A Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 2 Exhaust-B Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 2 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 2 PF0 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 2 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 2 PF2 Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 2 PF3 Temp Sensor	OK	41 degrees C / 105 degrees F
SIB 2 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 2 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 3 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 3 Intake-B Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 3 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 3 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 3 Exhaust-B Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 3 Exhaust-C Temp Sensor	OK	24 degrees C / 75 degrees F
SIB 3 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 3 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 3 PF2 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 3 PF3 Temp Sensor	OK	39 degrees C / 102 degrees F
SIB 3 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 3 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 4 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 4 Intake-B Temp Sensor	OK	25 degrees C / 77 degrees F
SIB 4 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 4 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 4 Exhaust-B Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 4 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 PF1 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 4 PF2 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 PF3 Temp Sensor	OK	40 degrees C / 104 degrees F
SIB 4 PF4 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 4 PF5 Temp Sensor	OK	25 degrees C / 77 degrees F
SIB 5 Intake-A Temp Sensor	OK	21 degrees C / 69 degrees F
SIB 5 Intake-B Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 5 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 5 Exhaust-A Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 5 Exhaust-B Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 5 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 5 PF0 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 5 PF1 Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 5 PF2 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 5 PF3 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 5 PF4 Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 5 PF5 Temp Sensor	OK	27 degrees C / 80 degrees F

### show chassis environment (ACX2000 Universal Metro Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
	PCB Left	OK	44 degrees C / 111 degrees F
	SFP+ Xcvr	OK	50 degrees C / 122 degrees F
	FEB	OK	70 degrees C / 158 degrees F
	PCB Up	OK	63 degrees C / 145 degrees F
	PCB Mid	OK	66 degrees C / 150 degrees F
	Telecom Mod	OK	65 degrees C / 149 degrees F



Routing Engine	OK	54 degrees C / 129 degrees F
Heater off		

### show chassis environment (ACX4000 Universal Metro Router)

On the ACX4000 router, the MIC output of the **show chassis environment** command varies depending on the number of temperature channels present in the installed MIC.

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	33 degrees C / 91 degrees F
	PEM 1	Absent	
	PCB Bottom	OK	30 degrees C / 86 degrees F
	PCB Middle	OK	34 degrees C / 93 degrees F
	BCM56445	OK	33 degrees C / 91 degrees F
	SFP+ Xcvr	OK	32 degrees C / 89 degrees F
	Fan tray inlet	OK	39 degrees C / 102 degrees F
	Exhaust	OK	30 degrees C / 86 degrees F
	Routing Engine Heater off	OK	32 degrees C / 89 degrees F
Pic	PIC 0/0 Channel 0	OK	28 degrees C / 82 degrees F
	PIC 0/0 Channel 1	OK	29 degrees C / 84 degrees F
	PIC 0/0 Channel 2	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 3	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 4	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 5	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 6	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 7	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 8	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 9	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 0	OK	33 degrees C / 91 degrees F
	PIC 1/0 Channel 1	OK	31 degrees C / 87 degrees F
	PIC 1/0 Channel 2	OK	30 degrees C / 86 degrees F
	PIC 1/0 Channel 3	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 4	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 5	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 6	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 7	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 8	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 0	OK	31 degrees C / 87 degrees F
	PIC 1/1 Channel 1	OK	29 degrees C / 84 degrees F
	PIC 1/1 Channel 2	OK	28 degrees C / 82 degrees F
	PIC 1/1 Channel 3	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 4	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 5	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 6	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 7	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 8	OK	0 degrees C / 32 degrees F
Fans	Fan 1	OK	Spinning at normal speed
	Fan 2	OK	Spinning at normal speed

### show chassis environment (ACX5048 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	Absent	
	FPC 0 Power Supply 1	OK	
Temp	FPC 0 Sensor TopMiddle E	OK	23 degrees C / 73 degrees F

	FPC 0 Sensor TopRight C	OK	18 degrees C / 64 degrees F
	FPC 0 Sensor TopLeft C	OK	21 degrees C / 69 degrees F
	FPC 0 Sensor TopRight E	OK	20 degrees C / 68 degrees F
	FPC 0 Sensor CPURight C	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor CPULeft E	OK	22 degrees C / 71 degrees F
	FPC 0 Sensor CPU Die Temp	OK	39 degrees C / 102 degrees F
Fans	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed
	FPC 0 Fan Tray 2	OK	Spinning at normal speed
	FPC 0 Fan Tray 3	OK	Spinning at normal speed
	FPC 0 Fan Tray 4	OK	Spinning at normal speed

### show chassis environment (ACX5096 Router)

user@host> show chassis environment

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	OK	
	FPC 0 Power Supply 1	OK	
Temp	FPC 0 Sensor TopMiddle E	OK	32 degrees C / 89 degrees F
	FPC 0 Sensor TopRight I	OK	29 degrees C / 84 degrees F
	FPC 0 Sensor TopLeft I	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor TopRight E	OK	28 degrees C / 82 degrees F
	FPC 0 Sensor CPURight I	OK	30 degrees C / 86 degrees F
	FPC 0 Sensor CPULeft I	OK	29 degrees C / 84 degrees F
	FPC 0 Sensor Die Temp	OK	46 degrees C / 114 degrees F
	FPC 0 Mezz Temp	OK	23 degrees C / 73 degrees F
Fans	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed
	FPC 0 Fan Tray 2	OK	Spinning at normal speed

### show chassis environment (ACX500 Router)

user@host> show chassis environment

Class	Item	Status	Measurement
Power	Mod	OK	47 degrees C / 116 degrees F
	BCM54610	OK	46 degrees C / 114 degrees F
	DPLL31404	OK	45 degrees C / 113 degrees F
	CPLD	OK	42 degrees C / 107 degrees F
	1588-FPGA	OK	43 degrees C / 109 degrees F
	NPU	OK	62 degrees C / 143 degrees F
	MAC sensor 1	OK	40 degrees C / 104 degrees F
	MAC sensor 2	OK	38 degrees C / 100 degrees F
	SFP PHY	OK	38 degrees C / 100 degrees F
	Combo/RJ45 PHY	OK	37 degrees C / 98 degrees F
	SFP sensor 1	OK	35 degrees C / 95 degrees F
	SFP sensor 2	OK	33 degrees C / 91 degrees F
	SFP sensor 3	OK	32 degrees C / 89 degrees F
	Routing Engine	OK	54 degrees C / 129 degrees F
	Heater off		

## show chassis environment cb

<b>List of Syntax</b>	<a href="#">Syntax on page 433</a> <a href="#">Syntax (TX Matrix Routers) on page 433</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 433</a> <a href="#">Syntax (MX Series Routers) on page 433</a> <a href="#">Syntax (MX104 3D Universal Edge Routers) on page 433</a> <a href="#">Syntax (MX2010, MX2020, MX10003, MX204, MX2008, and MX10008 3D Universal Edge Routers) on page 433</a> <a href="#">Syntax (QFabric System) on page 433</a> <a href="#">Syntax (EX9251, EX9253 Switches) on page 433</a>
<b>Syntax</b>	show chassis environment cb <slot>
<b>Syntax (TX Matrix Routers)</b>	show chassis environment cb <lcc number   scc> <slot>
<b>Syntax (TX Matrix Plus Routers)</b>	show chassis environment cb <lcc number   sfc number > <slot>
<b>Syntax (MX Series Routers)</b>	show chassis environment cb <slot> <all-members> <local> <member member-id>
<b>Syntax (MX104 3D Universal Edge Routers)</b>	show chassis environment cb
<b>Syntax (MX2010, MX2020, MX10003, MX204, MX2008, and MX10008 3D Universal Edge Routers)</b>	show chassis environment cb <slot>
<b>Syntax (QFabric System)</b>	show chassis environment cb <slot interconnect-device interconnect-device-name> < interconnect-device interconnect-device-name slot>
<b>Syntax (EX9251, EX9253 Switches)</b>	show chassis environment cb <slot>
<b>Release Information</b>	Command introduced before Junos Release 7.4. Command introduced in Junos OS Release 9.4 for EX Series switches.

Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.

Command introduced in Junos OS Release 12.1 for T4000 Core Routers.

option introduced for the TX Matrix Plus router in Junos Release 9.6.

Command introduced in Junos OS Release 11.3 for the QFX Series.

Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.

Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.

Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.

Command introduced in Junos OS Release 18.1R1 for EX9251 switches.

Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Command introduced in Junos OS Release 18.2 for MX10008 3D Universal Edge Routers..

**Description** (M120, M320, MX Series, and T Series routers, EX8200 switches, and PTX Series Packet Transport Routers only) Display environmental information about the Control Boards (CBs).

**Options** **none**—Display environmental information about all CBs. For a TX Matrix router, display environmental information about all CBs on the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display environmental information about all CBs on the TX Matrix Plus router and its attached T1600 or T4000 routers.

**all-members**—(MX Series routers only) (Optional) Display environmental information about the CBs on all the members of the Virtual Chassis configuration.

**interconnect-device**—(QFabric systems only) Display environmental information about CBs on the Interconnect device.

**lcc number**—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display environmental information about the CBs on the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display environmental information about the CBs on the specified member of the Virtual Chassis configuration. Replace ***member-id*** with a value of 0 or 1.

**scc**—(TX Matrix router only) (Optional) Display environmental information about the CBs in the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus router only) (Optional) Display environmental information about the CBs in the TX Matrix Plus router (or switch-fabric chassis).

**slot**—(Optional) Display environmental information about the specified CB. On routers and PTX Series Packet Transport Routers, replace ***slot*** with 0 or 1. On EX Series switches replace ***slot*** with 0, 1, or 2. On QFX Series switches, replace ***slot*** with 0 or 1.

**Required Privilege Level** view

**Related Documentation**

- [request chassis cb on page 270](#)
- *Understanding Switching Control Board Redundancy*

**List of Sample Output**

- [show chassis environment cb \(M120 Router\) on page 436](#)
- [show chassis environment cb \(M320 Router\) on page 437](#)
- [show chassis environment cb \(MX80 Router\) on page 437](#)
- [show chassis environment cb \(MX104 Router\) on page 438](#)
- [show chassis environment cb \(MX240 Router\) on page 438](#)
- [show chassis environment cb \(MX240 Router with Enhanced MX SCB\) on page 438](#)
- [show chassis environment cb \(MX480 Router\) on page 439](#)
- [show chassis environment cb \(MX480 Router with Enhanced MX SCB\) on page 439](#)
- [show chassis environment cb \(MX960 Router\) on page 440](#)
- [show chassis environment cb \(MX960 Router with Enhanced MX SCB\) on page 440](#)
- [show chassis environment cb \(MX2020 Router\) on page 441](#)
- [show chassis environment cb \(MX2010 Router\) on page 442](#)
- [show chassis environment cb \(MX2008 Router\) on page 442](#)
- [show chassis environment cb \(MX10003 Router\) on page 443](#)
- [show chassis environment cb \(MX204 Router\) on page 444](#)
- [show chassis environment cb \(MX10008 Router\) on page 445](#)
- [show chassis environment cb \(T4000 Core Router\) on page 446](#)
- [show chassis environment cb \(TX Matrix Router\) on page 447](#)
- [show chassis environment cb \(TX Matrix Plus Router\) on page 448](#)
- [show chassis environment cb \(EX8200 Switch\) on page 451](#)
- [show chassis environment cb \(EX8208 Switch\) on page 452](#)
- [show chassis environment cb \(EX9251 Switch\) on page 453](#)
- [show chassis environment cb \(EX9253 Switch\) on page 454](#)
- [show chassis environment cb \(PTX5000 Packet Transport Router\) on page 455](#)
- [show chassis environment cb \(PTX10008 Router\) on page 456](#)
- [show chassis environment cb \(PTX10016 Router\) on page 457](#)
- [show chassis environment cb \(QFabric System\) on page 457](#)

**Output Fields** Table 13 on page 436 lists the output fields for the **show chassis environment cb** command. Output fields are listed in the approximate order in which they appear.

*Table 13: show chassis environment cb Output Fields*

Field Name	Field Description
<b>State</b>	<p>Status of the CB. If two CBs are installed and online, one is functioning as the master, and the other is the standby.</p> <ul style="list-style-type: none"> <li>• <b>Online</b>—CB is online and running.</li> <li>• <b>Offline</b>—CB is powered down.</li> </ul> <p><b>NOTE:</b> On the EX8208 switch, the installation can include three CBs.</p>
<b>Temperature</b>	<p>Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the CB.</p> <ul style="list-style-type: none"> <li>• <b>Temperature Intake</b>—Measures the temperature of the air intake to cool the power supplies.</li> <li>• <b>Temperature Exhaust</b>—Measures the temperature of the hot air exhaust.</li> </ul> <p><b>NOTE:</b> On the MX2010, MX2020, and MX2008 routers, the intake temperature measures the temperature of the air intake to cool the Control Board (CB). The MX2010, MX2020, and MX2008 routers include intake and exhaust temperatures for multiple zones (<b>Intake A</b>, <b>Intake B</b>, <b>Intake C</b>, <b>Exhaust A</b>, <b>Exhaust B</b>, and <b>TCBC</b>).</p>
<b>Power</b>	<p>Power required and measured on the CB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p>
<b>BUS Revision</b>	<p>Revision level of the generic bus device. (Not on switches.)</p>
<b>FPGA Revision</b>	<p>Revision level of the field-programmable gate array (FPGA). (Not on switches.)</p>
<b>PMBus device</b> (on MX240, MX480, and MX960 routers with Enhanced MX SCB)	<p>Enhanced SCB on MX 240, MX480, and MX960 routers allows the system to save power by supplying only the amount of voltage that is required. Configurable PMBus devices are used to provide the voltage for each individual device. There is one PMBus device for each XF ASIC so that the output can be customized to each device. The following PMBus device information is displayed for routers with Enhanced MX SCB:</p> <ul style="list-style-type: none"> <li>• <b>Expected voltage</b></li> <li>• <b>Measured voltage</b></li> <li>• <b>Measured current</b></li> <li>• <b>Calculated power</b></li> </ul>

## Sample Output

### show chassis environment cb (M120 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature          33 degrees C / 91 degrees F
  Power
    1.2 V              1214 mV
    1.5 V              1495 mV
    2.5 V              2494 mV

```

```

3.3 V          3319 mV
5.0 V          5085 mV
3.3 V bias     3296 mV
Bus Revision    12
FPGA Revision   17
CB 1 status:
State           Online Standby
Temperature      34 degrees C / 93 degrees F
Power:
1.2 V          1195 mV
1.5 V          1495 mV
2.5 V          2504 mV
3.3 V          3312 mV
5.0 V          5111 mV
3.3 V bias     3296 mV
Bus Revision    12
FPGA Revision   17

```

#### show chassis environment cb (M320 Router)

```

user@host> show chassis environment cb
CB 0 status:
State           Online Master
Temperature      29 degrees C / 84 degrees F
Power:
1.8 V          1805 mV
2.5 V          2501 mV
3.3 V          3293 mV
4.6 V          4725 mV
5.0 V          5032 mV
12.0 V         11975 mV
3.3 V bias     3286 mV
8.0 V bias     7589 mV
BUS Revision    40
FPGA Revision   7
CB 1 status:
State           Online Standby
Temperature      32 degrees C / 89 degrees F
Power:
1.8 V          1802 mV
2.5 V          2482 mV
3.3 V          3289 mV
4.6 V          4720 mV
5.0 V          5001 mV
12.0 V         11946 mV
3.3 V bias     3274 mV
8.0 V bias     7562 mV
BUS Revision    40
FPGA Revision   7

```

#### show chassis environment cb (MX80 Router)

```

user@host> show chassis environment cb
CB 0 status:
State           Online Master
Temperature      36 degrees C / 96 degrees F
Power 1
1.0 V          1034 mV
1.0 V MQ       1037 mV
1.0 V LU       1005 mV

```

1.2 V	1218 mV
1.5 V	1524 mV
1.8 V	1814 mV
2.5 V	2558 mV
3.3 V	3296 mV
5.0 V	5233 mV
5.0 V bias	5207 mV
12.0 V	12162 mV

#### show chassis environment cb (MX104 Router)

```
user@host > show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature          33 degrees C / 91 degrees F
  Power 1
    0.75 V             751 mV
    1.0 V              1005 mV
    1.1 V              1113 mV
    1.5 V              1494 mV
    2.5 V              2518 mV
    3.3 V              3338 mV
    5.0 V              4960 mV
    12.0 V             12006 mV
  FPGA Revision        25
CB 1 status:
  State                Empty
```

#### show chassis environment cb (MX240 Router)

```
user@host> show chassis environment cb
CB 0 status:
  State                Online Standby
  Temperature          37 degrees C / 98 degrees F
  Power 1
    1.2 V              1208 mV
    1.5 V              1521 mV
    1.8 V              1811 mV
    2.5 V              2513 mV
    3.3 V              3332 mV
    5.0 V              5059 mV
    12.0 V             12162 mV
    1.25 V             1260 mV
    3.3 V SM3          3306 mV
    5.0 V RE           5085 mV
    12.0 V RE          11872 mV
  Power 2
    11.3 V bias PEM     11272 mV
    4.6 V bias MidPlane 4827 mV
    11.3 V bias FPD     11272 mV
    11.3 V bias POE 0   11292 mV
    11.3 V bias POE 1   11253 mV
  Bus Revision         42
  FPGA Revision        1
```

#### show chassis environment cb (MX240 Router with Enhanced MX SCB)

```
user@host> show chassis environment cb
CB 0 status:
  State                Online Standby
```



```

Temperature                                37 degrees C / 98 degrees F
Power 1
  1.2 V                                    1208 mV
  1.5 V                                    1521 mV
  1.8 V                                    1811 mV
  2.5 V                                    2513 mV
  3.3 V                                    3332 mV
  5.0 V                                    5059 mV
  12.0 V                                   12162 mV
  1.25 V                                   1260 mV
  3.3 V SM3                               3306 mV
  5.0 V RE                                5085 mV
  12.0 V RE                               11872 mV
Power 2
  11.3 V bias PEM                         11272 mV
  4.6 V bias MidPlane                     4827 mV
  11.3 V bias FPD                         11272 mV
  11.3 V bias POE 0                       11292 mV
  11.3 V bias POE 1                       11253 mV
Bus Revision                               42
FPGA Revision                             1
PMBus Expected Measured Measured Calculated
device voltage voltage current power
  XF ASIC A      1000 mV    997 mV   11031 mA   10997 mW
  XF ASIC B      1000 mV    996 mV   12125 mA   12076 mW

```

#### show chassis environment cb (MX480 Router)

```

user@host> show chassis environment cb
CB 0 status:
State                                Online Master
Temperature                           41 degrees C / 105 degrees F
Power 1
  1.2 V                                1202 mV
  1.5 V                                1511 mV
  1.8 V                                1798 mV
  2.5 V                                2507 mV
  3.3 V                                3312 mV
  5.0 V                                5027 mV
  12.0 V                               12200 mV
  1.25 V                               1260 mV
  3.3 V SM3                            3293 mV
  5 V RE                               5040 mV
  12 V RE                               11910 mV
Power 2
  11.3 V bias PEM                       11156 mV
  4.6 V bias MidPlane                   4801 mV
  11.3 V bias FPD                       11214 mV
  11.3 V bias POE 0                     11098 mV
  11.3 V bias POE 1                     11330 mV
Bus Revision                           42
FPGA Revision                           1

```

#### show chassis environment cb (MX480 Router with Enhanced MX SCB)

```

user@host> show chassis environment cb
CB 0 status:
State                                Online Master
Temperature                           41 degrees C / 105 degrees F
Power 1

```

1.2 V	1202 mV			
1.5 V	1511 mV			
1.8 V	1798 mV			
2.5 V	2507 mV			
3.3 V	3312 mV			
5.0 V	5027 mV			
12.0 V	12200 mV			
1.25 V	1260 mV			
3.3 V SM3	3293 mV			
5 V RE	5040 mV			
12 V RE	11910 mV			
Power 2				
11.3 V bias PEM	11156 mV			
4.6 V bias MidPlane	4801 mV			
11.3 V bias FPD	11214 mV			
11.3 V bias POE 0	11098 mV			
11.3 V bias POE 1	11330 mV			
Bus Revision	42			
FPGA Revision	1			
PMBus				
device	Expected voltage	Measured voltage	Measured current	Calculated power
XF ASIC A	1000 mV	997 mV	11031 mA	10997 mW
XF ASIC B	1000 mV	996 mV	12125 mA	12076 mW

**show chassis environment cb (MX960 Router)**

```

user@host> show chassis environment cb
CB 0 status:
State                               Online Master
Temperature                         24 degrees C / 75 degrees F
Power 1
  1.2 V                             1965 mV
  1.5 V                             2465 mV
  1.8 V                             2990 mV
  2.5 V                             3296 mV
  3.3 V                             3296 mV
  5.0 V                             6593 mV
  12.0 V                             13187 mV
  3.3 V bias                         3296 mV
  1.25 V                             1994 mV
  3.3 V SM3                         3296 mV
  5 V RE                             6593 mV
  12 V RE                             13174 mV
Power 2                             Sensor failure
Bus Revision                         4
FPGA Revision                       3

```

**show chassis environment cb (MX960 Router with Enhanced MX SCB)**

```

user@host> show chassis environment cb
CB 0 status:
State                               Online Master
Temperature                         24 degrees C / 75 degrees F
Power 1
  1.2 V                             1965 mV
  1.5 V                             2465 mV
  1.8 V                             2990 mV
  2.5 V                             3296 mV
  3.3 V                             3296 mV
  5.0 V                             6593 mV

```

12.0 V	13187 mV			
3.3 V bias	3296 mV			
1.25 V	1994 mV			
3.3 V SM3	3296 mV			
5 V RE	6593 mV			
12 V RE	13174 mV			
Power 2	Sensor failure			
Bus Revision	4			
FPGA Revision	3			
PMBus	Expected	Measured	Measured	Calculated
device	voltage	voltage	current	power
XF ASIC A	1000 mV	997 mV	11031 mA	10997 mW
XF ASIC B	1000 mV	996 mV	12125 mA	12076 mW

### show chassis environment cb (MX2020 Router)

```

user@host> show chassis environment cb
CB 0 status:
State Online Master
IntakeA-Zone0 Temperature 44 degrees C / 111 degrees F
IntakeB-Zone1 Temperature 34 degrees C / 93 degrees F
IntakeC-Zone0 Temperature 45 degrees C / 113 degrees F
ExhaustA-Zone0 Temperature 43 degrees C / 109 degrees F
ExhaustB-Zone1 Temperature 36 degrees C / 96 degrees F
TCBC-Zone0 Temperature 39 degrees C / 102 degrees F
Power 1
  1.0 V 1011 mV
  1.2 V 1208 mV
  1.8 V 1801 mV
  2.5 V 2552 mV
  3.3 V 3312 mV
  5.0 V 5040 mV
  5.0 V RE 4988 mV
  12.0 V 12065 mV
  12.0 V RE 12046 mV
Bus Revision 99
FPGA Revision 270
CB 1 status:
State Online Standby
IntakeA-Zone0 Temperature 45 degrees C / 113 degrees F
IntakeB-Zone1 Temperature 41 degrees C / 105 degrees F
IntakeC-Zone0 Temperature 46 degrees C / 114 degrees F
ExhaustA-Zone0 Temperature 44 degrees C / 111 degrees F
ExhaustB-Zone1 Temperature 41 degrees C / 105 degrees F
TCBC-Zone0 Temperature 45 degrees C / 113 degrees F
Power 1
  1.0 V 1008 mV
  1.2 V 1208 mV
  1.8 V 1798 mV
  2.5 V 2539 mV
  3.3 V 3325 mV
  5.0 V 5033 mV
  5.0 V RE 4950 mV
  12.0 V 12046 mV
  12.0 V RE 11968 mV
Bus Revision 99
FPGA Revision 0

```

**show chassis environment cb (MX2010 Router)**

```

user@host> show chassis environment cb
CB 0 status:
  State                               Online Master
  IntakeA-Zone0 Temperature           36 degrees C / 96 degrees F
  IntakeB-Zone1 Temperature           30 degrees C / 86 degrees F
  IntakeC-Zone0 Temperature           38 degrees C / 100 degrees F
  ExhaustA-Zone0 Temperature          36 degrees C / 96 degrees F
  ExhaustB-Zone1 Temperature          32 degrees C / 89 degrees F
  TCBC-Zone0 Temperature              34 degrees C / 93 degrees F
  Power 1
    1.0 V                             1015 mV
    1.2 V                             1205 mV
    1.8 V                             1804 mV
    2.5 V                             2552 mV
    3.3 V                             3325 mV
    5.0 V                             5020 mV
    5.0 V RE                          4988 mV
    12.0 V                             12104 mV
    12.0 V RE                         12026 mV
  Bus Revision                        100
  FPGA Revision                       270
CB 1 status:
  State                               Online
  IntakeA-Zone0 Temperature           35 degrees C / 95 degrees F
  IntakeB-Zone1 Temperature           28 degrees C / 82 degrees F
  IntakeC-Zone0 Temperature           37 degrees C / 98 degrees F
  ExhaustA-Zone0 Temperature          34 degrees C / 93 degrees F
  ExhaustB-Zone1 Temperature          29 degrees C / 84 degrees F
  TCBC-Zone0 Temperature              32 degrees C / 89 degrees F
  Power 1
    1.0 V                             1011 mV
    1.2 V                             1208 mV
    1.8 V                             1788 mV
    2.5 V                             2526 mV
    3.3 V                             3319 mV
    5.0 V                             5046 mV
    5.0 V RE                          4975 mV
    12.0 V                             12046 mV
    12.0 V RE                         12007 mV
  Bus Revision                        100
  FPGA Revision                       0

```

**show chassis environment cb (MX2008 Router)**

```

user@host> show chassis environment cb
CB 0 status:
  State                               Online Master
  Inlet1 Temperature                  37 degrees C / 98 degrees F
  Inlet2 Temperature                  45 degrees C / 113 degrees F
  Inlet3 Temperature                  44 degrees C / 111 degrees F
  Inlet4 Temperature                  42 degrees C / 107 degrees F
  Exhaust1 Temperature                30 degrees C / 86 degrees F
  Exhaust2 Temperature                40 degrees C / 104 degrees F
  Exhaust3 Temperature                48 degrees C / 118 degrees F
  Exhaust4 Temperature                46 degrees C / 114 degrees F
  Power 1
    1.0 V PHY                         989 mV
    1.15 V                            1150 mV

```

```

1.2 V bias          1189 mV
1.5 V              1488 mV
1.8 V              1772 mV
2.5 V              2462 mV
3.3 V bias         3296 mV
VCCIO              1028 mV
Power 2
  1.1 V            1099 mV
  3.3 V            3300 mV
Power 3
  0.95 V XL710     949 mV
  1.05 V           1050 mV
Power 4
  1.2 V            1199 mV
  5.0 V            4999 mV
Power 5
  1.0 V            1000 mV
  1.2 V PHY        1199 mV
Bus Revision        114
FPGA Revision       1
CB 1 status:
State               Online Standby
Inlet1 Temperature  30 degrees C / 86 degrees F
Inlet2 Temperature  31 degrees C / 87 degrees F
Inlet3 Temperature  29 degrees C / 84 degrees F
Inlet4 Temperature  32 degrees C / 89 degrees F
Exhaust1 Temperature 30 degrees C / 86 degrees F
Exhaust2 Temperature 33 degrees C / 91 degrees F
Exhaust3 Temperature 34 degrees C / 93 degrees F
Exhaust4 Temperature 35 degrees C / 95 degrees F
Power 1
  1.0 V PHY        986 mV
  1.15 V           1153 mV
  1.2 V bias       1195 mV
  1.5 V            1498 mV
  1.8 V            1798 mV
  2.5 V            2494 mV
  3.3 V bias       3296 mV
  VCCIO            1034 mV
Power 2
  1.1 V            1100 mV
  3.3 V            3300 mV
Power 3
  0.95 V XL710     949 mV
  1.05 V           1050 mV
Power 4
  1.2 V            1199 mV
  5.0 V            5000 mV
Power 5
  1.0 V            1000 mV
  1.2 V PHY        1199 mV
Bus Revision        114
FPGA Revision       1

```

### show chassis environment cb (MX10003 Router)

```
user@host> show chassis environment cb
```

```

CB 0 status:
State               Online Master
CB 0 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F

```

```

CB 0 Inlet Temp Sensor 0x49 28 degrees C / 82 degrees F
Power
  VDD1V5_PCH          1489 mV
  VDDIO                940 mV
  VDD3V3_PCH          3332 mV
  VDD2V5_AB           2508 mV
  VDD1V8_CLC          1764 mV
  VDD3V3              3292 mV
  VDD2V5_CD           2508 mV
  VDD1V2_CBC_GTX      0 mV
  VDD1V8_GLS_GTX      0 mV
  VDD1V2_CBC           0 mV
  VDD1V8_GLS           0 mV
  BIAS3V3_BP           0 mV
  VDD1V2_GH           1200 mV
  VDD3V3_CBC           3299 mV
  VDD1V2_CD           1199 mV
  BIAS3V3              3340 mV
  VDD1V2_AB           1200 mV
  VDD5V0              5000 mV
  VDD1V05              1049 mV
  VDD1V05              1050 mV
  VCORE                1780 mV
    12V                  12272 mV    3952 mA    48984 mW

CB 1 status:
State                      Online Standby
CB 1 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F
CB 1 Inlet Temp Sensor 0x49 31 degrees C / 87 degrees F
Power
  VDD1V5_PCH          1489 mV
  VDDIO                940 mV
  VDD3V3_PCH          3351 mV
  VDD2V5_AB           2508 mV
  VDD1V8_CLC          1764 mV
  VDD3V3              3312 mV
  VDD2V5_CD           2508 mV
  VDD1V2_CBC_GTX      1195 mV
  VDD1V8_GLS_GTX      1764 mV
  VDD1V2_CBC           1195 mV
  VDD1V8_GLS           1783 mV
  BIAS3V3_BP           4096 mV
  VDD1V2_GH           1200 mV
  VDD3V3_CBC           3300 mV
  VDD1V2_CD           1200 mV
  BIAS3V3              3339 mV
  VDD1V2_AB           1200 mV
  VDD5V0              5000 mV
  VDD1V05              1050 mV
  VDD1V05              1050 mV
  VCORE                1780 mV
    12V                  12351 mV    3823 mA    45007 mW

```

#### show chassis environment cb (MX204 Router)

```
user@host> show chassis environment cb
```

```

CB 0 status:
State                      Online Master
CB 0 Top Right Inlet Sensor 35 degrees C / 95 degrees F
CB 0 Top Left Inlet Sensor 37 degrees C / 98 degrees F
CB 0 Top Right Exhaust Sensor 43 degrees C / 109 degrees F

```

```

CB 0 Top Left Exhaust Sensor 50 degrees C / 122 degrees F
CB 0 CPU Core-0 Temp        48 degrees C / 118 degrees F
CB 0 CPU Core-1 Temp        48 degrees C / 118 degrees F
CB 0 CPU Core-2 Temp        48 degrees C / 118 degrees F
CB 0 CPU Core-3 Temp        47 degrees C / 116 degrees F
CB 0 CPU Core-4 Temp        47 degrees C / 116 degrees F
CB 0 CPU Core-5 Temp        47 degrees C / 116 degrees F
CB 0 CPU Core-6 Temp        47 degrees C / 116 degrees F
CB 0 CPU Core-7 Temp        47 degrees C / 116 degrees F
Power
  VDD1V5_PCH                1509 mV
  VDDIO                      950 mV
  VDD3V3_PCH                3312 mV
  VDD2V5_AB                 2508 mV
  VDD1V8_FRMR               1813 mV
  VDD3V3                    3312 mV
  VDD2V5_CD                 2508 mV
  VDD1V8_PLL                1813 mV
  VDD1V5                    1499 mV
  EA0_1V5                   1499 mV
  EA0_1V04                  1038 mV
  EA0_PLL_1V0               999 mV
  EA0_2V5                   2508 mV
  BIAS3V                    3332 mV
  VDD1V2_CD                 1214 mV
  VDD1V2_AB                 1215 mV
  VDD1V05                   1050 mV
  BIAS3V3                   3309 mV
  VDD1V0                    1015 mV
  VDD1V8                    1804 mV
  VDD1V2                    1199 mV
  VDD2V5                    2504 mV
  EA0_VDD0V9                949 mV
  EA0_HM1_VDD0V9            899 mV
  EA0_VDD0V9R2              952 mV
  EA0_VDD1V0                1000 mV
  VDD3V3                    3304 mV
  EA0_XR_VDD1V2             1199 mV
  EA0_XR_VDD0V9             903 mV
  EA0_HM_VDDM1V2            1199 mV
  EA0_HM_VDD1V2            1199 mV
  VDDCPU0                   1770 mV
    12V Hotswap A           11968 mV    4696 mA    55466 mW
    12V Hotswap B           12048 mV    14936 mA   180652 mW

```

### show chassis environment cb (MX10008 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
CB 0 Intake A Temp Sensor 21 degrees C / 69 degrees F
CB 0 Intake B Temp Sensor 21 degrees C / 69 degrees F
CB 0 Exhaust A Temp Sensor 26 degrees C / 78 degrees F
CB 0 Exhaust B Temp Sensor 27 degrees C / 80 degrees F
CB 0 Middle Temp Sensor  25 degrees C / 77 degrees F
Power
  GESw_VDD1V0          1000 mV
  VDD1V0                1000 mV
  VDD1V2                1199 mV
  VDD3V3                3300 mV
  XL710_VCCD            749 mV

```

```

VDD1V05          1050 mV
VDD2V5           2499 mV
FPGA_VDD1V2      1199 mV
VDD1V8           1800 mV
VDD1V15          1149 mV
VDD1V1           1099 mV
VCCIO            949 mV
PHY_VDD1V0       1000 mV
VDD5V0           4998 mV
FPGA_VDD1V5      1496 mV
VDD1V5           1504 mV
12V              12342 mV    8002 mA    96024 mW

CB 1 status:
State            Online Standby
CB 1 Intake A Temp Sensor 22 degrees C / 71 degrees F
CB 1 Intake B Temp Sensor 21 degrees C / 69 degrees F
CB 1 Exhaust A Temp Sensor 25 degrees C / 77 degrees F
CB 1 Exhaust B Temp Sensor 26 degrees C / 78 degrees F
CB 1 Middle Temp Sensor 25 degrees C / 77 degrees F
Power
GESW_VDD1V0      1000 mV
VDD1V0           1000 mV
VDD1V2           1200 mV
VDD3V3           3300 mV
XL710_VCCD       749 mV
VDD1V05          1050 mV
VDD2V5           2500 mV
FPGA_VDD1V2      1199 mV
VDD1V8           1799 mV
VDD1V15          1150 mV
VDD1V1           1100 mV
VCCIO            950 mV
PHY_VDD1V0       1000 mV
VDD5V0           4994 mV
FPGA_VDD1V5      1494 mV
VDD1V5           1500 mV
12V              12342 mV    7398 mA    88776 mW

```

### show chassis environment cb (T4000 Core Router)

```

user@host> show chassis environment cb
CB 0 status:
State            Online Master
Temperature       33 degrees C / 91 degrees F
Power 1
1.8 V            1805 mV
2.5 V            2523 mV
3.3 V            3324 mV
3.3 V bias       3296 mV
4.6 V            4680 mV
5.0 V            4893 mV
8.0 V bias       7572 mV
12.0 V           11916 mV
Power 2
1.0 V            993 mV
1.2 V            1210 mV
3.3 V RE         3330 mV
Bus Revision      51
FPGA Revision     5
CB 1 status:
State            Online Standby

```



```

Temperature                33 degrees C / 91 degrees F
Power 1
  1.8 V                    1810 mV
  2.5 V                    2496 mV
  3.3 V                    3308 mV
  3.3 V bias               3286 mV
  4.6 V                    4692 mV
  5.0 V                    4954 mV
  8.0 V bias               7282 mV
  12.0 V                   11926 mV
Power 2
  1.0 V                    993 mV
  1.2 V                   1185 mV
  3.3 V RE                 3316 mV
Bus Revision                51
FPGA Revision               5

```

### show chassis environment cb (TX Matrix Router)

```
user@host> show chassis environment cb
```

```

-----
CB 0 status:
State                Online Master
Temperature          32 degrees C / 89 degrees F
Power:
  1.8 V              1797 mV
  2.5 V              2477 mV
  3.3 V              3311 mV
  4.6 V              4727 mV
  5.0 V              5015 mV
  12.0 V             12185 mV
  3.3 V bias         3304 mV
  8.0 V bias         7870 mV
BUS Revision         40
FPGA Revision        1
CB 1 status:
State                Online Standby
...

```

```
lcc0-re0:
```

```

-----
CB 0 status:
State                Online Master
Temperature          32 degrees C / 89 degrees F
Power:
  1.8 V              1787 mV
  2.5 V              2473 mV
  3.3 V              3306 mV
  4.6 V              4793 mV
  5.0 V              5025 mV
  12.0 V             12156 mV
  3.3 V bias         3289 mV
  8.0 V bias         7609 mV
BUS Revision         40
FPGA Revision        5
CB 1 status:
State                Online Standby
....
BUS Revision         40
FPGA Revision        5

```

```
lcc2-re0:
-----
CB 0 status:
  State                      Online Master
  ...
CB 1 status:
  State                      Online Standby
  ...
```

#### show chassis environment cb (TX Matrix Plus Router)

```
user@host> show chassis environment cb
sfc0-re0:
-----
CB 0 status:
  State                      Online Master
  Temperature                38 degrees C / 100 degrees F
  Power 1
    1.0 V                    1005 mV
    1.1 V                    1108 mV
    1.2 V                    1205 mV
    1.25 V                   1269 mV
    1.5 V                    1508 mV
    1.8 V                    1814 mV
    2.5 V                    2507 mV
    3.3 V                    3306 mV
    3.3 V bias               3300 mV
    9.0 V                    9058 mV
    9.0 V RE                 9107 mV
  Power 2
    3.9 V                    3963 mV
    5.0 V                    5020 mV
    9.0 V                    9087 mV
  Bus Revision               79
  FPGA Revision              23
CB 1 status:
  State                      Online Standby
  Temperature                39 degrees C / 102 degrees F
  Power 1
    1.0 V                    1002 mV
    1.1 V                    1105 mV
    1.2 V                    1198 mV
    1.25 V                   1276 mV
    1.5 V                    1504 mV
    1.8 V                    1804 mV
    2.5 V                    2507 mV
    3.3 V                    3300 mV
    3.3 V bias               3293 mV
    9.0 V                    9039 mV
    9.0 V RE                 9049 mV
  Power 2
    3.9 V                    3892 mV
    5.0 V                    5040 mV
    9.0 V                    9058 mV
  Bus Revision               79
  FPGA Revision              23

lcc0-re0:
-----
CB 0 status:
  State                      Online Master
```

```

Temperature                39 degrees C / 102 degrees F
Power 1
  1.8 V                    1799 mV
  2.5 V                    2499 mV
  3.3 V                    3327 mV
  3.3 V bias               3299 mV
  4.6 V                    4673 mV
  5.0 V                    4918 mV
  8.0 V bias               7308 mV
  12.0 V                   11887 mV
Power 2
  1.0 V                    996 mV
  1.2 V                    1199 mV
  3.3 V RE                 3319 mV
Bus Revision               51
FPGA Revision              3
CB 1 status:
State                      Online Standby
Temperature                 40 degrees C / 104 degrees F
Power 1
  1.8 V                    1800 mV
  2.5 V                    2496 mV
  3.3 V                    3322 mV
  3.3 V bias               3284 mV
  4.6 V                    4680 mV
  5.0 V                    4954 mV
  8.0 V bias               7284 mV
  12.0 V                   11902 mV
Power 2
  1.0 V                    998 mV
  1.2 V                    1205 mV
  3.3 V RE                 3327 mV
Bus Revision               51
FPGA Revision              3

```

```
lcc1-re0:
```

```

-----
CB 0 status:
State                      Online Master
Temperature                 41 degrees C / 105 degrees F
Power 1
  1.8 V                    1804 mV
  2.5 V                    2517 mV
  3.3 V                    3300 mV
  3.3 V bias               3284 mV
  4.6 V                    4681 mV
  5.0 V                    4927 mV
  8.0 V bias               7357 mV
  12.0 V                   11907 mV
Power 2
  1.0 V                    991 mV
  1.2 V                    1202 mV
  3.3 V RE                 3301 mV
Bus Revision               51
FPGA Revision              3
CB 1 status:
State                      Online Standby
Temperature                 40 degrees C / 104 degrees F
Power 1
  1.8 V                    1805 mV
  2.5 V                    2528 mV

```

3.3 V	3324 mV
3.3 V bias	3289 mV
4.6 V	4694 mV
5.0 V	4959 mV
8.0 V bias	7311 mV
12.0 V	11926 mV
Power 2	
1.0 V	998 mV
1.2 V	1200 mV
3.3 V RE	3313 mV
Bus Revision	51
FPGA Revision	3

## 1cc2-re0:

-----  
CB 0 status:

State	Online Master
Temperature	41 degrees C / 105 degrees F
Power 1	
1.8 V	1805 mV
2.5 V	2494 mV
3.3 V	3333 mV
3.3 V bias	3296 mV
4.6 V	4673 mV
5.0 V	4901 mV
8.0 V bias	7343 mV
12.0 V	11916 mV
Power 2	
1.0 V	993 mV
1.2 V	1213 mV
3.3 V RE	3328 mV
Bus Revision	51
FPGA Revision	3

## CB 1 status:

State	Online Standby
Temperature	41 degrees C / 105 degrees F
Power 1	
1.8 V	1804 mV
2.5 V	2523 mV
3.3 V	3334 mV
3.3 V bias	3291 mV
4.6 V	4697 mV
5.0 V	4969 mV
8.0 V bias	7308 mV
12.0 V	11936 mV
Power 2	
1.0 V	996 mV
1.2 V	1200 mV
3.3 V RE	3328 mV
Bus Revision	51
FPGA Revision	3

## 1cc3-re0:

-----  
CB 0 status:

State	Online Master
Temperature	37 degrees C / 98 degrees F
Power 1	
1.8 V	1809 mV
2.5 V	2510 mV
3.3 V	3296 mV

```

3.3 V bias          3291 mV
4.6 V              4670 mV
5.0 V              4905 mV
8.0 V bias         7211 mV
12.0 V             11882 mV
Power 2
1.0 V              996 mV
1.2 V             1188 mV
3.3 V RE           3326 mV
Bus Revision       51
FPGA Revision      5
CB 1 status:
State              Online Standby
Temperature         38 degrees C / 100 degrees F
Power 1
1.8 V              1813 mV
2.5 V              2510 mV
3.3 V              3322 mV
3.3 V bias         3289 mV
4.6 V              4692 mV
5.0 V              4967 mV
8.0 V bias         7194 mV
12.0 V             11916 mV
Power 2
1.0 V              996 mV
1.2 V             1205 mV
3.3 V RE           3273 mV
Bus Revision       51
FPGA Revision      5

```

### show chassis environment cb (EX8200 Switch)

```
user@host> show chassis environment cb
```

```

CB 0 status:
State              Online Master
Temperature Intake  20 degrees C / 68 degrees F
Temperature Exhaust 24 degrees C / 75 degrees F
Power 1
1.1 V              1086 mV
1.2 V              1179 mV
1.2 V *            1182 mV
1.2 V *            1182 mV
1.25 V             1211 mV
1.5 V              1472 mV
1.8 V              1756 mV
2.5 V              2449 mV
3.3 V              3254 mV
3.3 V bias         3300 mV
5.0 V              4911 mV
12.0 V             11891 mV
Power 2
3.3 V bias *       3615 mV
3.3 V bias *       3615 mV
3.3 V bias *       3567 mV
3.3 V bias *       3664 mV
4.3 V bias *       4224 mV
4.3 V bias *       4215 mV
4.3 V bias *       4224 mV
4.3 V bias *       4205 mV
4.3 V bias *       4195 mV

```

```

    4.3 V bias *           4215 mV
    5.0 V bias             4920 mV
CB 1 status:
State                     Online Standby
Temperature Intake        19 degrees C / 66 degrees F
Temperature Exhaust      23 degrees C / 73 degrees F
Power 1
  1.1 V                   1082 mV
  1.2 V                   1169 mV
  1.2 V *                 1179 mV
  1.2 V *                 1179 mV
  1.25 V                  1214 mV
  1.5 V                   1482 mV
  1.8 V                   1759 mV
  2.5 V                   2481 mV
  3.3 V                   3248 mV
  3.3 V bias              3306 mV
  5.0 V                   4911 mV
 12.0 V                  11910 mV
Power 2
  3.3 V bias *            3644 mV
  3.3 V bias *            3664 mV
  3.3 V bias *            3586 mV
  3.3 V bias *            3654 mV
  4.3 V bias *            4224 mV
  4.3 V bias *            4215 mV
  4.3 V bias *            4224 mV
  4.3 V bias *            4205 mV
  4.3 V bias *            4244 mV
  4.3 V bias *            4215 mV
  5.0 V bias              4930 mV
CB 2 status:
State                     Online
Temperature Intake        19 degrees C / 66 degrees F
Temperature Exhaust      23 degrees C / 73 degrees F
Power 1
  1.2 V                   1195 mV
  1.5 V                   1511 mV
  1.8 V                   1804 mV
  2.5 V                   2526 mV
  3.3 V                   3300 mV
  3.3 V bias              3306 mV
 12.0 V                  12220 mV

```

### show chassis environment cb (EX8208 Switch)

```

user@host> show chassis environment cb
CB 0 status:
State                     Online Master
Temperature Intake        20 degrees C / 68 degrees F
Temperature Exhaust      24 degrees C / 75 degrees F
Power 1
  1.1 V                   1086 mV
  1.2 V                   1179 mV
  1.2 V *                 1182 mV
  1.2 V *                 1182 mV
  1.25 V                  1211 mV
  1.5 V                   1466 mV
  1.8 V                   1759 mV
  2.5 V                   2455 mV
  3.3 V                   3261 mV

```

```

3.3 V bias          3300 mV
5.0 V               4930 mV
12.0 V             11891 mV
Power 2
3.3 V bias *       3606 mV
3.3 V bias *       3615 mV
3.3 V bias *       3567 mV
3.3 V bias *       3673 mV
4.3 V bias *       4224 mV
4.3 V bias *       4215 mV
4.3 V bias *       4234 mV
4.3 V bias *       4205 mV
4.3 V bias *       4186 mV
4.3 V bias *       4215 mV
5.0 V bias         4940 mV
CB 1 status:
State              Online Standby
Temperature Intake  19 degrees C / 66 degrees F
Temperature Exhaust 23 degrees C / 73 degrees F
Power 1
1.1 V              1086 mV
1.2 V              1169 mV
1.2 V *            1179 mV
1.2 V *            1179 mV
1.25 V             1211 mV
1.5 V              1479 mV
1.8 V              1759 mV
2.5 V              2475 mV
3.3 V              3235 mV
3.3 V bias         3306 mV
5.0 V              4930 mV
12.0 V             11891 mV
Power 2
3.3 V bias *       3644 mV
3.3 V bias *       3664 mV
3.3 V bias *       3586 mV
3.3 V bias *       3654 mV
4.3 V bias *       4215 mV
4.3 V bias *       4224 mV
4.3 V bias *       4215 mV
4.3 V bias *       4215 mV
4.3 V bias *       4234 mV
4.3 V bias *       4224 mV
5.0 V bias         4920 mV
CB 2 status:
State              Online
Temperature Intake  20 degrees C / 68 degrees F
Temperature Exhaust 24 degrees C / 75 degrees F
Power 1
1.2 V              1202 mV
1.5 V              1508 mV
1.8 V              1804 mV
2.5 V              2520 mV
3.3 V              3300 mV
3.3 V bias         3300 mV
12.0 V             12200 mV

```

**show chassis environment cb (EX9251 Switch)**

```
user@switch> show chassis environment cb
```

```

CB 0 status:
State                               Online Master
CB 0 Top Right Inlet Sensor29 degrees C / 84 degrees F
CB 0 Top Left Inlet Sensor 28 degrees C / 82 degrees F
CB 0 Top Right Exhaust Sensor40 degrees C / 104 degrees F
CB 0 Top Left Exhaust Sensor59 degrees C / 138 degrees F
CB 0 CPU Core-0 Temp                45 degrees C / 113 degrees F
CB 0 CPU Core-1 Temp                44 degrees C / 111 degrees F
CB 0 CPU Core-2 Temp                44 degrees C / 111 degrees F
CB 0 CPU Core-3 Temp                44 degrees C / 111 degrees F
CB 0 CPU Core-4 Temp                45 degrees C / 113 degrees F
CB 0 CPU Core-5 Temp                44 degrees C / 111 degrees F
CB 0 CPU Core-6 Temp                44 degrees C / 111 degrees F
CB 0 CPU Core-7 Temp                43 degrees C / 109 degrees F
Power
VDD1V5_PCH                         1499 mV
VDDIO                              950 mV
VDD3V3_PCH                         3312 mV
VDD2V5_AB                          2489 mV
VDD1V8_FRMR                        1793 mV
VDD3V3                             3292 mV
VDD2V5_CD                          2508 mV
VDD1V8_PLL                         1793 mV
VDD1V5                             1499 mV
EA0_1V5                            1499 mV
EA0_1V04                           999 mV
EA0_PLL_1V0                        999 mV
EA0_2V5                            2508 mV
BIAS3V                             3292 mV
VDD1V2_CD                          1215 mV
VDD1V2_AB                          1214 mV
VDD1V05                            1050 mV
BIAS3V3                            3309 mV
VDD1V0                             1014 mV
VDD1V8                             1805 mV
VDD1V2                             1200 mV
VDD2V5                             2504 mV
EA0_VDD0V9                         949 mV
EA0_HM1_VDD0V9                     899 mV
EA0_VDD0V9R2                       952 mV
EA0_VDD1V0                         999 mV
VDD3V3                             3305 mV
EA0_XR_VDD1V2                      1199 mV
EA0_XR_VDD0V9                      903 mV
EA0_HM_VDDM1V2                     1199 mV
EA0_HM_VDD1V2                      1199 mV
VDDCPU0                            1770 mV
12V Hotswap A                      11955 mV  4861 mA  59347 mW
12V Hotswap B                      11916 mV  15046 mA 180887 mW

```

#### show chassis environment cb (EX9253 Switch)

```

user@switch> show chassis environment cb
CB 0 status:
State                               Online Master
CB 0 Exhaust Temp Sensor           38 degrees C / 100 degrees F
CB 0 Inlet Temp Sensor              32 degrees C / 89 degrees F
CB 0 CPU DIE Temp Sensor            43 degrees C / 109 degrees F
Power
VDD1V5_PCH                         1489 mV
VDDIO                              940 mV

```



```

VDD3V3_PCH          3332 mV
VDD2V5_AB           2508 mV
VDD1V8_CLC          1783 mV
VDD3V3              3312 mV
VDD2V5_CD           2508 mV
VDD1V2_CBC_GTX      1195 mV
VDD1V8_GLS_GTX      1783 mV
VDD1V2_CBC          1176 mV
VDD1V8_GLS          1783 mV
BIAS3V3_BP          3978 mV
VDD1V2_GH           1200 mV
VDD3V3_CBC          3299 mV
VDD1V2_CD           1200 mV
BIAS3V3              3340 mV
VDD1V2_AB           1199 mV
VDD5V0              5000 mV
VDD1V05             1050 mV
VDD1V05             1050 mV
VCORE                1770 mV
12V                  12061 mV    4806 mA    57841 mW
CB 1 status:
State                Offline
CB 1 Exhaust Temp Sensor 32 degrees C / 89 degrees F
CB 1 Inlet Temp Sensor  29 degrees C / 84 degrees F
CB 1 CPU DIE Temp Sensor 43 degrees C / 109 degrees F
Power                Disabled

```

#### show chassis environment cb (PTX5000 Packet Transport Router)

```

user@host> show chassis environment cb
CB 0 status:
State                Online Master
Intake Temperature    38 degrees C / 100 degrees F
Exhaust A Temperature 45 degrees C / 113 degrees F
Exhaust B Temperature 42 degrees C / 107 degrees F
Power 1
  1.2 V              1200 mV
  1.25 V             1250 mV
  2.5 V              2500 mV
  3.3 V              3300 mV
Power 2
  1.0 V              1000 mV
  3.3 V bias         3293 mV
  3.9 V              3921 mV
Bus Revision          132
FPGA Revision         27
CB 1 status:
State                Online Standby
Intake Temperature    34 degrees C / 93 degrees F
Exhaust A Temperature 39 degrees C / 102 degrees F
Exhaust B Temperature 36 degrees C / 96 degrees F
Power 1
  1.2 V              1199 mV
  1.25 V             1250 mV
  2.5 V              2499 mV
  3.3 V              3299 mV
Power 2
  1.0 V              1000 mV
  3.3 V bias         3312 mV
  3.9 V              3961 mV

```

```

Bus Revision          132
FPGA Revision         28

```

### show chassis environment cb (PTX10008 Router)

```

user@host> show chassis environment cb
CB 0 status:
State                               Online Master
CB 0 Intake Temp Sensor             28 degrees C / 82 degrees F
CB 0 Exhaust Temp Sensor            32 degrees C / 89 degrees F
Power
VDD 2.5V                            2489 mV
Bias 3.3V                           3332 mV
VDD 3.3V                            3292 mV
VCC 1.8V                            1822 mV
VDD 1.2V                            1205 mV
VCC 1V                              999 mV
VCC CPU 1.8V                        1803 mV
VDD 2.5V                            2489 mV
VCC Aux 5V                          5115 mV
VDD DDR 1.5V                        1499 mV
VTT SA CPU 0.8V                     803 mV
VTT CPU 1.05V                       1048 mV
VCC Core CPU                        901 mV
VCC PCH 1.5V                        1519 mV
VDD 1.05V                           1048 mV
VCC 2.5V                            2508 mV
FORT VCCA 1V                        960 mV
VDD .85V                            862 mV
VTT DDRA .75V                       744 mV
VTT DDRB .75V                       744 mV
12V                                12285 mV    3779 mA    46339 mW
CB 1 status:
State                               Online Standby
CB 1 Intake Temp Sensor             27 degrees C / 80 degrees F
CB 1 Exhaust Temp Sensor            32 degrees C / 89 degrees F
Power
VDD 2.5V                            2489 mV
Bias 3.3V                           3332 mV
VDD 3.3V                            3273 mV
VCC 1.8V                            1822 mV
VDD 1.2V                            1195 mV
VCC 1V                              999 mV
VCC CPU 1.8V                        1783 mV
VDD 2.5V                            2489 mV
VCC Aux 5V                          5056 mV
VDD DDR 1.5V                        1499 mV
VTT SA CPU 0.8V                     793 mV
VTT CPU 1.05V                       1048 mV
VCC Core CPU                        882 mV
VCC PCH 1.5V                        1509 mV
VDD 1.05V                           1048 mV
VCC 2.5V                            2489 mV
FORT VCCA 1V                        960 mV
VDD .85V                            862 mV
VTT DDRA .75V                       744 mV
VTT DDRB .75V                       744 mV
12V                                12391 mV    3779 mA    46727 mW

```

**show chassis environment cb (PTX10016 Router)**

```

user@host> show chassis environment cb
CB 0 status:
State                               Online Master
CB 0 Intake Temp Sensor             20 degrees C / 68 degrees F
CB 0 Exhaust Temp Sensor            24 degrees C / 75 degrees F
Power
VDD 2.5V                           2508 mV
Bias 3.3V                           3351 mV
VDD 3.3V                           3292 mV
VCC 1.8V                           1832 mV
VDD 1.2V                           1205 mV
VCC 1V                              999 mV
VCC CPU 1.8V                       1793 mV
VDD 2.5V                           2508 mV
VCC Aux 5V                         5056 mV
VDD DDR 1.5V                       1509 mV
VTT SA CPU 0.8V                    803 mV
VTT CPU 1.05V                      1048 mV
VCC Core CPU                       960 mV
VCC PCH 1.5V                       1519 mV
VDD 1.05V                          1058 mV
VCC 2.5V                           2528 mV
FORT VCCA 1V                       960 mV
VDD .85V                           852 mV
VTT DDRA .75V                      744 mV
VTT DDRB .75V                      744 mV
12V                                12259 mV    3649 mA    45173 mW

CB 1 status:
State                               Online Standby
CB 1 Intake Temp Sensor             20 degrees C / 68 degrees F
CB 1 Exhaust Temp Sensor            23 degrees C / 73 degrees F
Power
VDD 2.5V                           2508 mV
Bias 3.3V                           3312 mV
VDD 3.3V                           3273 mV
VCC 1.8V                           1822 mV
VDD 1.2V                           1195 mV
VCC 1V                              989 mV
VCC CPU 1.8V                       1783 mV
VDD 2.5V                           2489 mV
VCC Aux 5V                         5086 mV
VDD DDR 1.5V                       1499 mV
VTT SA CPU 0.8V                    803 mV
VTT CPU 1.05V                      1048 mV
VCC Core CPU                       1029 mV
VCC PCH 1.5V                       1519 mV
VDD 1.05V                          1048 mV
VCC 2.5V                           2528 mV
FORT VCCA 1V                       960 mV
VDD .85V                           862 mV
VTT DDRA .75V                      744 mV
VTT DDRB .75V                      744 mV
12V                                12285 mV    3952 mA    48447 mW

```

**show chassis environment cb (QFabric System)**

```

user@switch> show chassis environment cb interconnect-device IC-123 O

```

## CB 0 status:

State	Online Master
Left Intake Temperature	33 degrees C / 91 degrees F
Right Intake Temperature	33 degrees C / 91 degrees F
Left Exhaust Temperature	36 degrees C / 96 degrees F
Right Exhaust Temperature	35 degrees C / 95 degrees F
Power	OK
VDD 3V3	3294 mV
VDD 2V5	2436 mV
VDD 1V8	1746 mV
VDD 1V5	1460 mV
VDD 1V25	1210 mV
VDD 1V2	1164 mV
CPU CORE 1V2	1120 mV
VDD 1V0	968 mV
VDD 5V0	5088 mV
CPU MP BIAS 4V3	4050 mV
BIAS 3V3	3180 mV
VTT 0V9	866 mV

## show chassis environment cip

<b>Syntax (TX Matrix Plus Router)</b>	show chassis environment cip <slot-number>
<b>Release Information</b>	Command introduced in Junos OS Release 9.6 for the TX Matrix Plus router.
<b>Description</b>	(TX Matrix Plus router only) Display environmental information about the Connector Interface Panel (CIP).
<b>Options</b>	<p><b>none</b>—Display environmental information about all the CIP.</p> <p><b>slot</b>—Display environmental information about a specific CIP. Replace <b>slot</b> with a value from 0 through 1.</p>
<b>Required Privilege Level</b>	view
<b>Output Fields</b>	Table 14 on page 459 lists the output fields for the <b>show chassis environment cip</b> command. Output fields are listed in the approximate order in which they appear.

Table 14: show chassis environment cip Output Fields

Field Name	Field Description
<b>State</b>	<p>State of the CIP:</p> <ul style="list-style-type: none"> <li>• <b>Online Active:</b> CIP is online and there is active control plane data transfer between the SFC and LCCs in the routing matrix.</li> <li>• <b>Online Inactive:</b> CIP is online, but inactive.</li> <li>• <b>Offline:</b> CIP is offline.</li> </ul>
<b>Temperature</b>	Temperature of the CIP in Celsius (C) and Fahrenheit (F).
<b>Power</b>	<p>Information about the voltage supplied to the CIP. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p> <p><b>NOTE:</b> In case of CIP power failure, one the following reasons is displayed.</p> <ul style="list-style-type: none"> <li>• <b>Voltage failure</b>—Indicates the CIP voltage failure.</li> <li>• <b>Sensor failure</b>—Indicates the CIP voltage sensor device failure.</li> </ul>
<b>Bus Revision</b>	Bus revision number.

## show chassis environment cip (TX Matrix Plus Router)

```

user@host> show chassis environment cip
CIP 0 status:
  State                Online Active
  Temperature          23 degrees C / 73 degrees F

```

Power 1	
1.0 V	1015 mV
1.8 V	1817 mV
2.5 V	2497 mV
3.3 V	3325 mV
3.3 V bias	3300 mV
5.0 V	5001 mV
9.0 V	9049 mV
Bus Revision	74
CIP 1 status:	
State	Online Inactive
Temperature	24 degrees C / 75 degrees F
Power 1	
1.0 V	1008 mV
1.8 V	1820 mV
2.5 V	2504 mV
3.3 V	3325 mV
3.3 V bias	3306 mV
5.0 V	5091 mV
9.0 V	9049 mV
Bus Revision	74

## show chassis environment fpc

<b>List of Syntax</b>	<a href="#">Syntax on page 461</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 461</a> <a href="#">Syntax (MX Series Routers) on page 461</a> <a href="#">Syntax (MX2010, MX10003, MX204, MX2008, MX10008, 3D Universal Edge Routers) on page 461</a> <a href="#">Syntax (MX2020 3D Universal Edge Routers) on page 461</a> <a href="#">Syntax (QFX Series) on page 461</a> <a href="#">Syntax (OCX Series) on page 461</a> <a href="#">Syntax (PTX3000 Series) on page 461</a> <a href="#">Syntax (PTX10008 Series) on page 462</a> <a href="#">Syntax (EX9251, EX9253 Switches) on page 462</a>
<b>Syntax</b>	show chassis environment fpc <slot>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	show chassis environment fpc <lcc number> <slot>
<b>Syntax (MX Series Routers)</b>	show chassis environment fpc <slot> <all-members> <local> <member member-id>
<b>Syntax (MX2010, MX10003, MX204, MX2008, MX10008, 3D Universal Edge Routers)</b>	show chassis environment fpc <slot>
<b>Syntax (MX2020 3D Universal Edge Routers)</b>	show chassis environment fpc <slot> <satellite [fpc-slot slot-id  device-alias alias-name]
<b>Syntax (QFX Series)</b>	show chassis environment fpc <fpc-slot> interconnect-device name
<b>Syntax (OCX Series)</b>	show chassis environment fpc <fpc-slot>
<b>Syntax (PTX3000 Series)</b>	show chassis environment fpc <fpc-slot>

<b>Syntax (PTX10008 Series)</b>	show chassis environment fpc <fpc-slot>
<b>Syntax (EX9251, EX9253 Switches)</b>	show chassis environment fpc <fpc-slot>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.1 for T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX 2010 and MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p><b>satellite</b> option introduced in Junos OS Release 14.2R3.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> <p>Command introduced in Junos OS Release 18.2R1 for MX10008 3D Universal Edge Routers.</p>
<b>Description</b>	(M40e, M120, M160, M320, MX Series, T Series routers, EX Series, QFX Series, and PTX Series routers only) Display environmental information about Flexible PIC Concentrators (FPCs).
<b>Options</b>	<p><b>none</b>—Display environmental information about all FPCs. On a TX Matrix router, display environmental information about all FPCs on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about all FPCs on the TX Matrix Plus router and its attached routers.</p> <p><b>all-members</b>—(MX Series routers only) (Optional) Display environmental information for the FPCs in all the members of the Virtual Chassis configuration.</p> <p><b>interconnect-device <i>name</i></b>—(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.</p> <p><b>lcc <i>number</i></b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> </ul>



- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display environmental information for the FPCs in the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display environmental information for the FPCs in the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**satellite [*fpc-slot slot-id* | *device-alias alias-name*]**—(Junos Fusion only)(Optional) Display environmental information for the FPCs in the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

***slot* or *fpc-slot***—(Optional) Display environmental information about an individual FPC:

- (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, if you specify the number of the T640 router by using only the **lcc *number*** option (the recommended method), replace ***slot*** with a value from 0 through 7. Similarly, on a TX Matrix Plus router, if you specify the number of the router by using only the **lcc *number*** option (the recommended method), replace ***slot*** with a value from 0 through 7. Otherwise, replace ***slot*** with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis environment fpc 1 lcc 1
user@host> show chassis environment fpc 9
```

- M120 router—Replace ***slot*** with a value from 0 through 5.
- MX240 router—Replace ***slot*** with a value from 0 through 2.
- MX480 router—Replace ***slot*** with a value from 0 through 5.
- MX960 router—Replace ***slot*** with a value from 0 through 11.
- MX2010 router—Replace ***slot*** with a value from 0 through 9.
- MX2020 router—Replace ***slot*** with a value from 0 through 19.
- MX2008 router—Replace ***slot*** with a value from 0 through 9.
- Other routers—Replace ***slot*** with a value from 0 through 7.
- EX Series switches:
  - EX3200 switches and EX4200 standalone switches—Replace ***slot*** with 0.
  - EX4200 switches in a Virtual Chassis configuration—Replace ***slot*** with a value from 0 through 9 (switch's member ID).

- EX6210 switches—Replace **slot** with a value from 0 through 3 (line card only), 4 or 5 (line card or Switch Fabric and Routing Engine (SRE) module), or 6 through 9 (line card only).
- EX8208 switches—Replace **slot** with a value from 0 through 7 (line card).
- EX8216 switches—Replace **slot** with a value from 0 through 15 (line card).
- QFX3500 switches —Replace **fpc-slot** with 0 through 15.
- PTX5000 Packet Transport Router—Replace **fpc-slot** with 0 through 7.
- PTX3000 Packet Transport Router—Replace **fpc-slot** with 0 through 15.

**Required Privilege Level** view

- Related Documentation**
- [request chassis fpc on page 279](#)
  - [show chassis fpc on page 822](#)
  - [show chassis fpc-feb-connectivity](#)
  - [Configuring the Junos OS to Resynchronize FPC Sequence Numbers with Active FPCs when an FPC Comes Online](#)
  - [MX960 Flexible PIC Concentrator Description](#)

- List of Sample Output**
- [show chassis environment fpc \(M120 Router\) on page 466](#)
  - [show chassis environment fpc \(M160 Router\) on page 467](#)
  - [show chassis environment fpc \(M320 Router\) on page 467](#)
  - [show chassis environment fpc \(MX2020 Router\) on page 468](#)
  - [show chassis environment fpc \(MX2010 Router\) on page 471](#)
  - [show chassis environment fpc \(MX2008 Router\) on page 474](#)
  - [show chassis environment fpc \(MX240 Router\) on page 477](#)
  - [show chassis environment fpc \(MX480 Router\) on page 478](#)
  - [show chassis environment fpc \(MX960 Router\) on page 479](#)
  - [show chassis environment fpc \(MX480 Router with 100-Gigabit Ethernet CFP\) on page 480](#)
  - [show chassis environment fpc \(MX240, MX480, MX960 with Application Services Modular Line Card on page 481](#)
  - [show chassis environment fpc \(MX10003 Router\) on page 481](#)
  - [show chassis environment fpc \(MX204 Router\) on page 485](#)
  - [show chassis environment fpc \(MX10008 Router\) on page 485](#)
  - [show chassis environment fpc \(T320, T640, and T1600 Routers\) on page 492](#)
  - [show chassis environment fpc \(T4000 Router\) on page 493](#)
  - [show chassis environment fpc lcc \(TX Matrix Router\) on page 498](#)
  - [show chassis environment fpc lcc \(TX Matrix Plus Router\) on page 498](#)
  - [show chassis environment fpc \(QFX Series and OCX Series\) on page 499](#)
  - [show chassis environment fpc interconnect-device \(QFabric Systems\) on page 499](#)
  - [show chassis environment fpc 5\(PTX3000 Packet Transport Router\) on page 500](#)

[show chassis environment fpc 0 \(PTX5000 Packet Transport Router\) on page 500](#)  
[show chassis environment fpc 07 \(PTX5000 Packet Transport Router with FPC2-PTX-P1A\) on page 501](#)  
[show chassis environment fpc \(PTX10008 router\) on page 502](#)  
[show chassis environment fpc \(PTX10016 router\) on page 505](#)  
[show chassis environment FPC 1 \(MX Routers with Media Services Blade \[MSB\]\) on page 508](#)  
[show chassis environment fpc \(EX9251 Switches\) on page 509](#)  
[show chassis environment fpc \(EX9253 Switches\) on page 509](#)

**Output Fields** Table 15 on page 465 lists the output fields for the **show chassis environment fpc** command. Output fields are listed in the approximate order in which they appear.

*Table 15: show chassis environment fpc Output Fields*

Field Name	Field Description
<b>State</b>	<p>Status of the FPC:</p> <ul style="list-style-type: none"> <li>• <b>Unknown</b>—FPC is not detected by the router.</li> <li>• <b>Empty</b>—No FPC is present.</li> <li>• <b>Present</b>—FPC is detected by the chassis daemon but is either not supported by the current version of the Junos OS, or the FPC is coming up but not yet online.</li> <li>• <b>Ready</b>—FPC is in intermediate or transition state.</li> <li>• <b>Announce online</b>—Intermediate state during which the FPC is coming up but not yet online, and the chassis manager acknowledges the chassisd FPC online initiative.</li> <li>• <b>Online</b>—FPC is online and running.</li> <li>• <b>Offline</b>—FPC is powered down.</li> <li>• <b>Diagnostics</b>—FPC is set to operate in diagnostics mode.</li> </ul>
<b>Temperature</b>	(M40e and M160 routers and QFX Series only) Temperature of the air flowing past the FPC.
<b>PMB Temperature</b>	<p>(PTX Series only) Temperature of the air flowing past the PMB (bottom of the FPC).</p> <p>The PTX5000 Packet Transport Router with FPC2-PTX-P1A include multiple temperatures for PMB (<b>TEMPO</b> and <b>TEMP1</b>).</p>
<b>PMB CPU Temperature</b>	(PTX5000 Packet Transport Router with FPC2-PTX-P1A only) Temperature of the air flowing past the PMB CPU.
<b>Temperature Intake</b>	(M320 routers, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Temperature of the air flowing into the chassis.
<b>Temperature Top</b>	(T Series routers only) Temperature of the air flowing past the top of the FPC.
<b>Temperature Exhaust</b>	<p>(M120 and M320 routers, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Temperature of the air flowing out of the chassis.</p> <p>The PTX Series Packet Transport Routers, and the MX2010, MX2020, and MX2008 routers include exhaust temperatures for multiple zones (<b>Exhaust A</b> and <b>Exhaust B</b>).</p>
<b>Temperature Bottom</b>	(T Series routers only) Temperature of the air flowing past the bottom of the FPC.

Table 15: show chassis environment fpc Output Fields (continued)

Field Name	Field Description
<b>TL <i>n</i> Temperature</b>	(PTX Series only) Temperature of the air flowing past the specified TL area of the packet forwarding engine (PFE) on the FPC.
<b>TQ <i>n</i> Temperature</b>	(PTX Series only) Temperature of the air flowing past the specified TQ area of the packet forwarding engine (PFE) on the FPC.
<b>Temperature MMBO</b>	(T640 router only) Temperature of the air flowing past the type 3 FPC.
<b>Temperature MMB1</b>	(M320 and T Series routers only) Temperature of the air flowing past the type 1, type 2, and type 3 FPC.
<b>Power</b>	Information about the voltage supplied to the FPC. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
<b>CMB Revision or BUS revision</b>	Revision level of the chassis management bus device (M Series router) or bus (T Series routers).

## Sample Output

### show chassis environment fpc (M120 Router)

```

user@host> show chassis environment fpc
FPC 2 status:
  State                               Online
  Temperature Exhaust A               32 degrees C / 89 degrees F
  Temperature Exhaust B               31 degrees C / 87 degrees F
  Power A-Board
    1.2 V                             1202 mV
    1.5 V                             1508 mV
    1.8 V                             1798 mV
    2.5 V                             2507 mV
    3.3 V                             3351 mV
    5.0 V                             4995 mV
    3.3 V bias                         3296 mV
    1.2 V Rocket IO                   1205 mV
    1.5 V Rocket IO                   1501 mV
  I2C Slave Revision                 12
FPC 3 status:
  State                               Online
  Temperature Exhaust A               31 degrees C / 87 degrees F
  Temperature Exhaust B               33 degrees C / 91 degrees F
  Power A-Board
    1.2 V                             1211 mV
    1.5 V                             1501 mV
    1.8 V                             1798 mV
    2.5 V                             2471 mV
    3.3 V                             3293 mV
    5.0 V                             4930 mV
    3.3 V bias                         3296 mV
    1.2 V Rocket IO                   1205 mV
    1.5 V Rocket IO                   1501 mV
  Power B-Board
    1.2 V                             1214 mV

```

```

1.5 V          1501 mV
2.5 V          2471 mV
3.3 V          3300 mV
5.0 V          4943 mV
3.3 V bias     3296 mV
1.2 V Rocket IO 1205 mV
1.5 V Rocket IO 1501 mV
I2C Slave Revision 12
FPC 4 status:
State          Online
Temperature Exhaust A 32 degrees C / 89 degrees F
Temperature Exhaust B 30 degrees C / 86 degrees F
Power A-Board
1.2 V          1195 mV
1.5 V          1504 mV
1.8 V          1801 mV
2.5 V          2504 mV
3.3 V          3293 mV
5.0 V          4917 mV
3.3 V bias     3296 mV
1.2 V Rocket IO 1202 mV
1.5 V Rocket IO 1492 mV
I2C Slave Revision 12

```

#### show chassis environment fpc (M160 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State          Online
Temperature     42 degrees C / 107 degrees F
Power:
1.5 V          1500 mV
2.5 V          2509 mV
3.3 V          3308 mV
5.0 V          4991 mV
5.0 V bias     4952 mV
8.0 V bias     8307 mV
CMB Revision    12
FPC 1 status:
State          Online
Temperature     45 degrees C / 113 degrees F
Power:
1.5 V          1498 mV
2.5 V          2501 mV
3.3 V          3319 mV
5.0 V          5020 mV
5.0 V bias     5025 mV
8.0 V bias     8307 mV
CMB Revision    12

```

#### show chassis environment fpc (M320 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State          Online
Temperature Intake 27 degrees C / 80 degrees F
Temperature Exhaust 38 degrees C / 100 degrees F
Temperature MMB1   31 degrees C / 87 degrees F
Power:
1.5 V          1487 mV

```

```

1.5 V *          1494 mV
1.8 V            1821 mV
2.5 V            2533 mV
3.3 V            3323 mV
5.0 V            5028 mV
3.3 V bias       3296 mV
5.0 V bias       4984 mV
CMB Revision     16
FPC 1 status:
State            Online
Temperature Intake 27 degrees C / 80 degrees F
Temperature Exhaust 37 degrees C / 98 degrees F
Temperature MMB1   32 degrees C / 89 degrees F
Power:
1.5 V            1504 mV
1.5 V *          1499 mV
1.8 V            1820 mV
2.5 V            2529 mV
3.3 V            3328 mV
5.0 V            5013 mV
3.3 V bias       3294 mV
5.0 V bias       4984 mV
CMB Revision     16
FPC 2 status:
State            Online
Temperature Intake 28 degrees C / 82 degrees F
Temperature Exhaust 38 degrees C / 100 degrees F
Temperature MMB1   32 degrees C / 89 degrees F
Power:
1.5 V            1498 mV
1.5 V *          1487 mV
1.8 V            1816 mV
2.5 V            2531 mV
3.3 V            3324 mV
5.0 V            5025 mV
3.3 V bias       3277 mV
5.0 V bias       5013 mV
CMB Revision     17
FPC 3 status:
...

```

### show chassis environment fpc (MX2020 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State            Online
Temperature Intake 41 degrees C / 105 degrees F
Temperature Exhaust A 48 degrees C / 118 degrees F
Temperature Exhaust B 60 degrees C / 140 degrees F
Temperature LU 0 TSen 56 degrees C / 132 degrees F
Temperature LU 0 Chip 59 degrees C / 138 degrees F
Temperature LU 1 TSen 56 degrees C / 132 degrees F
Temperature LU 1 Chip 61 degrees C / 141 degrees F
Temperature LU 2 TSen 56 degrees C / 132 degrees F
Temperature LU 2 Chip 52 degrees C / 125 degrees F
Temperature LU 3 TSen 56 degrees C / 132 degrees F
Temperature LU 3 Chip 52 degrees C / 125 degrees F
Temperature MQ 0 TSen 49 degrees C / 120 degrees F
Temperature MQ 0 Chip 49 degrees C / 120 degrees F
Temperature MQ 1 TSen 49 degrees C / 120 degrees F
Temperature MQ 1 Chip 52 degrees C / 125 degrees F

```

```

Temperature MQ 2 TSen      49 degrees C / 120 degrees F
Temperature MQ 2 Chip      45 degrees C / 113 degrees F
Temperature MQ 3 TSen      49 degrees C / 120 degrees F
Temperature MQ 3 Chip      46 degrees C / 114 degrees F
Power
  AS-BIAS3V3-z12105       3299 mV
  AS-VDD1V8-z12006        1807 mV
  AS-VDD2V5-z12006        2512 mV
  AS-AVDD1V0-z12004        997 mV
  AS-PCIE_1V0-z12004        996 mV
  AS-VDD3V3-z12004        3294 mV
  AS-VDD_1V5A-z12004       1501 mV
  AS-VDD_1V5B-z12004       1498 mV
  AS-LU0_1V0-z12004        998 mV
  AS-LU1_1V0-z12004       1002 mV
  AS-MQ0_1V0-z12004        999 mV
  AS-MQ1_1V0-z12004        994 mV
  AS-LU2_1V0-z12004       1000 mV
  AS-LU3_1V0-z12004        998 mV
  AS-MQ2_1V0-z12004       1002 mV
  AS-MQ3_1V0-z12004        999 mV
  AS-PMB_1V1-z12006       1096 mV
I2C Slave Revision        68
FPC 1 status:
  State                    Online
  Temperature Intake        39 degrees C / 102 degrees F
  Temperature Exhaust A     48 degrees C / 118 degrees F
  Temperature Exhaust B     55 degrees C / 131 degrees F
  Temperature LU 0 TSen     52 degrees C / 125 degrees F
  Temperature LU 0 Chip     54 degrees C / 129 degrees F
  Temperature LU 1 TSen     52 degrees C / 125 degrees F
  Temperature LU 1 Chip     56 degrees C / 132 degrees F
  Temperature LU 2 TSen     52 degrees C / 125 degrees F
  Temperature LU 2 Chip     49 degrees C / 120 degrees F
  Temperature LU 3 TSen     52 degrees C / 125 degrees F
  Temperature LU 3 Chip     50 degrees C / 122 degrees F
  Temperature MQ 0 TSen     48 degrees C / 118 degrees F
  Temperature MQ 0 Chip     48 degrees C / 118 degrees F
  Temperature MQ 1 TSen     48 degrees C / 118 degrees F
  Temperature MQ 1 Chip     51 degrees C / 123 degrees F
  Temperature MQ 2 TSen     48 degrees C / 118 degrees F
  Temperature MQ 2 Chip     45 degrees C / 113 degrees F
  Temperature MQ 3 TSen     48 degrees C / 118 degrees F
  Temperature MQ 3 Chip     45 degrees C / 113 degrees F
Power
  AS-BIAS3V3-z12105       3291 mV
  AS-VDD1V8-z12006        1786 mV
  AS-VDD2V5-z12006        2496 mV
  AS-AVDD1V0-z12004       1000 mV
  AS-PCIE_1V0-z12004       1000 mV
  AS-VDD3V3-z12004        3294 mV
  AS-VDD_1V5A-z12004       1500 mV
  AS-VDD_1V5B-z12004       1498 mV
  AS-LU0_1V0-z12004       1003 mV
  AS-LU1_1V0-z12004       1000 mV
  AS-MQ0_1V0-z12004       1000 mV
  AS-MQ1_1V0-z12004        995 mV
  AS-LU2_1V0-z12004       1002 mV
  AS-LU3_1V0-z12004        997 mV
  AS-MQ2_1V0-z12004       1000 mV
  AS-MQ3_1V0-z12004        998 mV

```

AS-PMB_1V1-z12006	1096 mV
I2C Slave Revision	68
FPC 2 status:	
State	Online
Temperature Intake	39 degrees C / 102 degrees F
Temperature Exhaust A	48 degrees C / 118 degrees F
Temperature Exhaust B	58 degrees C / 136 degrees F
Temperature LU 0 TSen	55 degrees C / 131 degrees F
Temperature LU 0 Chip	57 degrees C / 134 degrees F
Temperature LU 1 TSen	55 degrees C / 131 degrees F
Temperature LU 1 Chip	63 degrees C / 145 degrees F
Temperature LU 2 TSen	55 degrees C / 131 degrees F
Temperature LU 2 Chip	51 degrees C / 123 degrees F
Temperature LU 3 TSen	55 degrees C / 131 degrees F
Temperature LU 3 Chip	52 degrees C / 125 degrees F
Temperature MQ 0 TSen	48 degrees C / 118 degrees F
Temperature MQ 0 Chip	50 degrees C / 122 degrees F
Temperature MQ 1 TSen	48 degrees C / 118 degrees F
Temperature MQ 1 Chip	52 degrees C / 125 degrees F
Temperature MQ 2 TSen	48 degrees C / 118 degrees F
Temperature MQ 2 Chip	47 degrees C / 116 degrees F
Temperature MQ 3 TSen	48 degrees C / 118 degrees F
Temperature MQ 3 Chip	47 degrees C / 116 degrees F
Power	
AS-BIAS3V3-z12105	3299 mV
AS-VDD1V8-z12006	1805 mV
AS-VDD2V5-z12006	2510 mV
AS-AVDD1V0-z12004	999 mV
AS-PCIE_1V0-z12004	998 mV
AS-VDD3V3-z12004	3296 mV
AS-VDD_1V5A-z12004	1492 mV
AS-VDD_1V5B-z12004	1497 mV
AS-LU0_1V0-z12004	997 mV
AS-LU1_1V0-z12004	1000 mV
AS-MQ0_1V0-z12004	998 mV
AS-MQ1_1V0-z12004	1001 mV
AS-LU2_1V0-z12004	996 mV
AS-LU3_1V0-z12004	995 mV
AS-MQ2_1V0-z12004	998 mV
AS-MQ3_1V0-z12004	997 mV
AS-PMB_1V1-z12006	1100 mV
I2C Slave Revision	68
FPC 3 status:	
State	Online
Temperature Intake	41 degrees C / 105 degrees F
Temperature Exhaust A	48 degrees C / 118 degrees F
Temperature Exhaust B	58 degrees C / 136 degrees F
Temperature LU 0 TSen	56 degrees C / 132 degrees F
Temperature LU 0 Chip	59 degrees C / 138 degrees F
Temperature LU 1 TSen	56 degrees C / 132 degrees F
Temperature LU 1 Chip	61 degrees C / 141 degrees F
Temperature LU 2 TSen	56 degrees C / 132 degrees F
Temperature LU 2 Chip	51 degrees C / 123 degrees F
Temperature LU 3 TSen	56 degrees C / 132 degrees F
Temperature LU 3 Chip	53 degrees C / 127 degrees F
Temperature MQ 0 TSen	50 degrees C / 122 degrees F
Temperature MQ 0 Chip	51 degrees C / 123 degrees F
Temperature MQ 1 TSen	50 degrees C / 122 degrees F
Temperature MQ 1 Chip	55 degrees C / 131 degrees F
Temperature MQ 2 TSen	50 degrees C / 122 degrees F
Temperature MQ 2 Chip	47 degrees C / 116 degrees F



```

Temperature MQ 3 TSen      50 degrees C / 122 degrees F
Temperature MQ 3 Chip      50 degrees C / 122 degrees F
Power
  AS-BIAS3V3-z12105        3305 mV
  AS-VDD1V8-z12006         1810 mV
  AS-VDD2V5-z12006         2508 mV
  AS-AVDD1V0-z12004         999 mV
  AS-PCIE_1V0-z12004        1001 mV
  AS-VDD3V3-z12004         3294 mV
  AS-VDD_1V5A-z12004        1500 mV
  AS-VDD_1V5B-z12004        1498 mV
  AS-LU0_1V0-z12004         998 mV
  AS-LU1_1V0-z12004         998 mV
  AS-MQ0_1V0-z12004         999 mV
  AS-MQ1_1V0-z12004         998 mV
  AS-LU2_1V0-z12004        1000 mV
  AS-LU3_1V0-z12004        1001 mV
  AS-MQ2_1V0-z12004         996 mV
  AS-MQ3_1V0-z12004         998 mV
  AS-PMB_1V1-z12006        1098 mV
I2C Slave Revision        68
FPC 4 status:
...
```

#### show chassis environment fpc (MX2010 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State      Online
Temperature Intake      36 degrees C / 96 degrees F
Temperature Exhaust A   42 degrees C / 107 degrees F
Temperature Exhaust B   51 degrees C / 123 degrees F
Temperature LU 0 TSen    49 degrees C / 120 degrees F
Temperature LU 0 Chip    50 degrees C / 122 degrees F
Temperature LU 1 TSen    49 degrees C / 120 degrees F
Temperature LU 1 Chip    54 degrees C / 129 degrees F
Temperature LU 2 TSen    49 degrees C / 120 degrees F
Temperature LU 2 Chip    45 degrees C / 113 degrees F
Temperature LU 3 TSen    49 degrees C / 120 degrees F
Temperature LU 3 Chip    46 degrees C / 114 degrees F
Temperature MQ 0 TSen    40 degrees C / 104 degrees F
Temperature MQ 0 Chip    41 degrees C / 105 degrees F
Temperature MQ 1 TSen    40 degrees C / 104 degrees F
Temperature MQ 1 Chip    44 degrees C / 111 degrees F
Temperature MQ 2 TSen    40 degrees C / 104 degrees F
Temperature MQ 2 Chip    38 degrees C / 100 degrees F
Temperature MQ 3 TSen    40 degrees C / 104 degrees F
Temperature MQ 3 Chip    41 degrees C / 105 degrees F
Power
  AS-BIAS3V3-z12105        3300 mV
  AS-VDD1V8-z12006         1805 mV
  AS-VDD2V5-z12006         2505 mV
  AS-AVDD1V0-z12004         998 mV
  AS-PCIE_1V0-z12004        999 mV
  AS-VDD3V3-z12004         3303 mV
  AS-VDD_1V5A-z12004        1497 mV
  AS-VDD_1V5B-z12004        1497 mV
  AS-LU0_1V0-z12004         998 mV
  AS-LU1_1V0-z12004        1003 mV
  AS-MQ0_1V0-z12004         998 mV
  AS-MQ1_1V0-z12004         998 mV
```

```

AS-LU2_1V0-z12004      997 mV
AS-LU3_1V0-z12004      1001 mV
AS-MQ2_1V0-z12004      996 mV
AS-MQ3_1V0-z12004      994 mV
AS-PMB_1V1-z12006      1097 mV
I2C Slave Revision      68
FPC 1 status:
State                    Online
Temperature Intake        34 degrees C / 93 degrees F
Temperature Exhaust A    46 degrees C / 114 degrees F
Temperature Exhaust B    54 degrees C / 129 degrees F
Temperature LU 0 TSen     45 degrees C / 113 degrees F
Temperature LU 0 Chip     55 degrees C / 131 degrees F
Temperature LU 1 TSen     45 degrees C / 113 degrees F
Temperature LU 1 Chip     44 degrees C / 111 degrees F
Temperature LU 2 TSen     45 degrees C / 113 degrees F
Temperature LU 2 Chip     50 degrees C / 122 degrees F
Temperature LU 3 TSen     45 degrees C / 113 degrees F
Temperature LU 3 Chip     58 degrees C / 136 degrees F
Temperature XM 0 TSen     45 degrees C / 113 degrees F
Temperature XM 0 Chip     51 degrees C / 123 degrees F
Temperature XF 0 TSen     45 degrees C / 113 degrees F
Temperature XF 0 Chip     63 degrees C / 145 degrees F
Temperature PLX Switch TSen45 degrees C / 113 degrees F
Temperature PLX Switch Chip47 degrees C / 116 degrees F
Power
MPC-BIAS3V3-z12105      3300 mV
MPC-VDD3V3-z16100       3294 mV
MPC-VDD2V5-z16100       2505 mV
MPC-VDD1V8-z12004       1796 mV
MPC-AVDD1V0-z12004      991 mV
MPC-VDD1V2-z16100       1196 mV
MPC-VDD1V5A-z12004      1491 mV
MPC-VDD1V5B-z12004      1492 mV
MPC-XF_0V9-z12004       996 mV
MPC-PCIE_1V0-z16100     1003 mV
MPC-LU0_1V0-z12004      996 mV
MPC-LU1_1V0-z12004      996 mV
MPC-LU2_1V0-z12004      998 mV
MPC-LU3_1V0-z12004      994 mV
MPC-12VA-BMR453         12031 mV
MPC-12VB-BMR453         12003 mV
MPC-PMB_1V1-z12006      1104 mV
MPC-PMB_1V2-z12106      1194 mV
MPC-XM_0V9-vt273m       911 mV
I2C Slave Revision      110
FPC 8 status:
State                    Online
Temperature Intake        32 degrees C / 89 degrees F
Temperature Exhaust A    44 degrees C / 111 degrees F
Temperature Exhaust B    37 degrees C / 98 degrees F
Temperature LU 0 TCAM TSen 41 degrees C / 105 degrees F
Temperature LU 0 TCAM Chip 49 degrees C / 120 degrees F
Temperature LU 0 TSen     41 degrees C / 105 degrees F
Temperature LU 0 Chip     52 degrees C / 125 degrees F
Temperature MQ 0 TSen     41 degrees C / 105 degrees F
Temperature MQ 0 Chip     47 degrees C / 116 degrees F
Temperature LU 1 TCAM TSen 39 degrees C / 102 degrees F
Temperature LU 1 TCAM Chip 42 degrees C / 107 degrees F
Temperature LU 1 TSen     39 degrees C / 102 degrees F
Temperature LU 1 Chip     46 degrees C / 114 degrees F

```

```

Temperature MQ 1 TSen      39 degrees C / 102 degrees F
Temperature MQ 1 Chip      45 degrees C / 113 degrees F
Power
MPC-BIAS3V3-z12105        3296 mV
MPC-VDD3V3-z12006         3298 mV
MPC-VDD2V5-z12006         2505 mV
MPC-TCAM_1V0-z12004        997 mV
MPC-AVDD1V0-z12006        1007 mV
MPC-VDD1V8-z12006         1803 mV
MPC-PCIE_1V0-z12006        1004 mV
MPC-LU0_1V0-z12004         1000 mV
MPC-MQ0_1V0-z12004         999 mV
MPC-VDD_1V5-z12004        1498 mV
MPC-PMB_1V1-z12006        1102 mV
MPC-9VA-BMR453            9009 mV
MPC-9VB-BMR453            8960 mV
MPC-PMB_1V2-z12105        1202 mV
MPC-LU1_1V0-z12004        1005 mV
MPC-MQ1_1V0-z12004        1000 mV
I2C Slave Revision        70
FPC 9 status:
State                      Online
Temperature Intake         34 degrees C / 93 degrees F
Temperature Exhaust A     41 degrees C / 105 degrees F
Temperature Exhaust B     54 degrees C / 129 degrees F
Temperature LU 0 TSen     51 degrees C / 123 degrees F
Temperature LU 0 Chip     52 degrees C / 125 degrees F
Temperature LU 1 TSen     51 degrees C / 123 degrees F
Temperature LU 1 Chip     55 degrees C / 131 degrees F
Temperature LU 2 TSen     51 degrees C / 123 degrees F
Temperature LU 2 Chip     47 degrees C / 116 degrees F
Temperature LU 3 TSen     51 degrees C / 123 degrees F
Temperature LU 3 Chip     47 degrees C / 116 degrees F
Temperature MQ 0 TSen     40 degrees C / 104 degrees F
Temperature MQ 0 Chip     42 degrees C / 107 degrees F
Temperature MQ 1 TSen     40 degrees C / 104 degrees F
Temperature MQ 1 Chip     44 degrees C / 111 degrees F
Temperature MQ 2 TSen     40 degrees C / 104 degrees F
Temperature MQ 2 Chip     38 degrees C / 100 degrees F
Temperature MQ 3 TSen     40 degrees C / 104 degrees F
Temperature MQ 3 Chip     40 degrees C / 104 degrees F
Power
AS-BIAS3V3-z12105        3302 mV
AS-VDD1V8-z12006         1808 mV
AS-VDD2V5-z12006         2513 mV
AS-AVDD1V0-z12004        997 mV
AS-PCIE_1V0-z12004        999 mV
AS-VDD3V3-z12004         3294 mV
AS-VDD_1V5A-z12004       1503 mV
AS-VDD_1V5B-z12004       1502 mV
AS-LU0_1V0-z12004        996 mV
AS-LU1_1V0-z12004        999 mV
AS-MQ0_1V0-z12004        997 mV
AS-MQ1_1V0-z12004        999 mV
AS-LU2_1V0-z12004        997 mV
AS-LU3_1V0-z12004        998 mV
AS-MQ2_1V0-z12004        1000 mV
AS-MQ3_1V0-z12004        1000 mV
AS-PMB_1V1-z12006        1102 mV
I2C Slave Revision        68

```

## show chassis environment fpc (MX2008 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                               Online
Temperature Intake                  29 degrees C / 84 degrees F
Temperature Exhaust A               43 degrees C / 109 degrees F
Temperature Exhaust B               42 degrees C / 107 degrees F
Temperature XL 0 TSen                38 degrees C / 100 degrees F
Temperature XL 0 Chip                53 degrees C / 127 degrees F
Temperature XL 0 XR2 0 TSen38        38 degrees C / 100 degrees F
Temperature XL 0 XR2 0 Chip60        60 degrees C / 140 degrees F
Temperature XL 0 XR2 1 TSen38        38 degrees C / 100 degrees F
Temperature XL 0 XR2 1 Chip60        60 degrees C / 140 degrees F
Temperature XL 1 TSen                30 degrees C / 86 degrees F
Temperature XL 1 Chip                43 degrees C / 109 degrees F
Temperature XL 1 XR2 0 TSen30        30 degrees C / 86 degrees F
Temperature XL 1 XR2 0 Chip50        50 degrees C / 122 degrees F
Temperature XL 1 XR2 1 TSen30        30 degrees C / 86 degrees F
Temperature XL 1 XR2 1 Chip50        50 degrees C / 122 degrees F
Temperature XM 0 TSen                42 degrees C / 107 degrees F
Temperature XM 0 Chip                49 degrees C / 120 degrees F
Temperature XM 1 TSen                42 degrees C / 107 degrees F
Temperature XM 1 Chip                42 degrees C / 107 degrees F
Temperature XM 2 TSen                42 degrees C / 107 degrees F
Temperature XM 2 Chip                42 degrees C / 107 degrees F
Temperature XM 3 TSen                42 degrees C / 107 degrees F
Temperature XM 3 Chip                40 degrees C / 104 degrees F
Temperature PCIE Switch TSen42       42 degrees C / 107 degrees F
Temperature PCIE Switch Chip22       22 degrees C / 71 degrees F
Power
MPC-VDD_3V3-vt273m                 3304 mV
MPC-VDD_2V5-vt273m                 2503 mV
MPC-VDD_1V5-vt273m                 1499 mV
MPC-PCIE_0V9-vt273m                 900 mV
MPC-VDD_1V8-vt273m                 1799 mV
MPC-VDD_1V2-vt273m                 1203 mV
MPC-XM01_AVDD_1V0-vt273             1001 mV
MPC-XM23_AVDD_1V0-vt273             1001 mV
MPC-XM0_0V9-vt273m                 900 mV
MPC-XM1_0V9-vt273m                 901 mV
MPC-XM2_0V9-vt273m                 903 mV
MPC-XM3_0V9-vt273m                 899 mV
MPC-XL0_XR0_0V9-vt273m             899 mV
MPC-XL0_XR1_0V9-vt273m             903 mV
MPC-XL0_0V9-vt273m                 899 mV
MPC-XL0_AVDD_1V0-vt273m            1000 mV
MPC-XL0_VDD_1V5-vt273m             1498 mV
MPC-XL0_XR_1V2-vt273m              1200 mV
MPC-XL1_XR0_0V9-vt273m             899 mV
MPC-XL1_XR1_0V9-vt273m             899 mV
MPC-XL1_0V9-vt273m                 900 mV
MPC-XL1_AVDD_1V0-vt273m            1000 mV
MPC-XL1_VDD_1V5-vt273m             1501 mV
MPC-XL1_XR_1V2-vt273m              1199 mV
MPC-PMB-1V05-ltc2978               1049 mV
MPC-PMB-1V5-ltc2978                1500 mV
MPC-PMB-2V5-ltc2978                2500 mV
MPC-PMB-3V3-ltc2978                3298 mV
I2C Slave Revision                  20

```

## FPC 1 status:

State	Online
Temperature Intake	29 degrees C / 84 degrees F
Temperature Exhaust A	52 degrees C / 125 degrees F
Temperature Exhaust B	44 degrees C / 111 degrees F
Temperature EA0 TSen	55 degrees C / 131 degrees F
Temperature EA0 Chip	48 degrees C / 118 degrees F
Temperature EA0_XR0 TSen	55 degrees C / 131 degrees F
Temperature EA0_XR0 Chip	57 degrees C / 134 degrees F
Temperature EA0_XR1 TSen	55 degrees C / 131 degrees F
Temperature EA0_XR1 Chip	54 degrees C / 129 degrees F
Temperature EA1 TSen	55 degrees C / 131 degrees F
Temperature EA1 Chip	50 degrees C / 122 degrees F
Temperature EA1_XR0 TSen	55 degrees C / 131 degrees F
Temperature EA1_XR0 Chip	59 degrees C / 138 degrees F
Temperature EA1_XR1 TSen	55 degrees C / 131 degrees F
Temperature EA1_XR1 Chip	59 degrees C / 138 degrees F
Temperature PEX TSen	55 degrees C / 131 degrees F
Temperature PEX Chip	39 degrees C / 102 degrees F
Temperature EA2 TSen	43 degrees C / 109 degrees F
Temperature EA2 Chip	39 degrees C / 102 degrees F
Temperature EA2_XR0 TSen	43 degrees C / 109 degrees F
Temperature EA2_XR0 Chip	45 degrees C / 113 degrees F
Temperature EA2_XR1 TSen	43 degrees C / 109 degrees F
Temperature EA2_XR1 Chip	43 degrees C / 109 degrees F
Temperature EA3 TSen	43 degrees C / 109 degrees F
Temperature EA3 Chip	41 degrees C / 105 degrees F
Temperature EA3_XR0 TSen	43 degrees C / 109 degrees F
Temperature EA3_XR0 Chip	50 degrees C / 122 degrees F
Temperature EA3_XR1 TSen	43 degrees C / 109 degrees F
Temperature EA3_XR1 Chip	46 degrees C / 114 degrees F
Temperature EA0_HMC0 Logic die	61 degrees C / 141 degrees F
Temperature EA0_HMC0 DRAM botm	58 degrees C / 136 degrees F
Temperature EA0_HMC1 Logic die	62 degrees C / 143 degrees F
Temperature EA0_HMC1 DRAM botm	59 degrees C / 138 degrees F
Temperature EA0_HMC2 Logic die	59 degrees C / 138 degrees F
Temperature EA0_HMC2 DRAM botm	56 degrees C / 132 degrees F
Temperature EA1_HMC0 Logic die	67 degrees C / 152 degrees F
Temperature EA1_HMC0 DRAM botm	64 degrees C / 147 degrees F
Temperature EA1_HMC1 Logic die	65 degrees C / 149 degrees F
Temperature EA1_HMC1 DRAM botm	62 degrees C / 143 degrees F
Temperature EA1_HMC2 Logic die	63 degrees C / 145 degrees F
Temperature EA1_HMC2 DRAM botm	60 degrees C / 140 degrees F
Temperature EA2_HMC0 Logic die	51 degrees C / 123 degrees F
Temperature EA2_HMC0 DRAM botm	48 degrees C / 118 degrees F
Temperature EA2_HMC1 Logic die	55 degrees C / 131 degrees F
Temperature EA2_HMC1 DRAM botm	52 degrees C / 125 degrees F
Temperature EA2_HMC2 Logic die	52 degrees C / 125 degrees F
Temperature EA2_HMC2 DRAM botm	49 degrees C / 120 degrees F
Temperature EA3_HMC0 Logic die	51 degrees C / 123 degrees F
Temperature EA3_HMC0 DRAM botm	48 degrees C / 118 degrees F
Temperature EA3_HMC1 Logic die	52 degrees C / 125 degrees F
Temperature EA3_HMC1 DRAM botm	49 degrees C / 120 degrees F
Temperature EA3_HMC2 Logic die	52 degrees C / 125 degrees F
Temperature EA3_HMC2 DRAM botm	49 degrees C / 120 degrees F
Power	
MPC-EA0_0V9-vt1527mb	950 mV
MPC-EA1_0V9-vt1527mb	950 mV
MPC-EA2_0V9-vt1527mb	925 mV
MPC-EA3_0V9-vt1527mb	924 mV
MAX20751-1V0	1020 mV

MAX20731-0V9	891 mV
MAX20751-EA0-AVDD1V0	1000 mV
MAX20731-EA0-1V2	1189 mV
MAX20731-EA0-HMC-1V2	1182 mV
MAX20731-EA0-0V906	899 mV
MAX20731-EA0-HMC-0V9	891 mV
MAX20751-EA1-AVDD1V0	1000 mV
MAX20731-EA1-1V2	1189 mV
MAX20731-EA1-HMC-1V2	1182 mV
MAX20731-EA1-0V906	899 mV
MAX20731-EA1-HMC-0V9	889 mV
MAX20751-EA2-AVDD1V0	1000 mV
MAX20731-EA2-1V2	1186 mV
MAX20731-EA2-HMC-1V2	1193 mV
MAX20731-EA2-0V906	899 mV
MAX20731-EA2-HMC-0V9	889 mV
MAX20751-EA3-AVDD1V0	1000 mV
MAX20731-EA3-1V2	1186 mV
MAX20731-EA3-HMC-1V2	1193 mV
MAX20731-EA3-0V906	897 mV
MAX20731-EA3-HMC-0V9	894 mV
MAX20731-3V3	3268 mV
UCD9090_0-CH_1-EA0_PLL_	1010 mV
UCD9090_0-CH_2-EA0_1V04	1038 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1494 mV
UCD9090_0-CH_5-EA1_PLL_	1012 mV
UCD9090_0-CH_6-EA1_1V04	1038 mV
UCD9090_0-CH_7-EA1_2V5	2497 mV
UCD9090_0-CH_8-EA1_1V5	1498 mV
UCD9090_0-CH_9-VDD_1V8	1804 mV
UCD9090_0-CH_10-VDD_2V5	2499 mV
UCD9090_1-CH_1-EA2_PLL_	1017 mV
UCD9090_1-CH_2-EA2_1V04	1041 mV
UCD9090_1-CH_3-EA2_2V5	2499 mV
UCD9090_1-CH_4-EA2_1V5	1503 mV
UCD9090_1-CH_5-EA3_PLL_	1015 mV
UCD9090_1-CH_6-EA3_1V04	1048 mV
UCD9090_1-CH_7-EA3_2V5	2499 mV
UCD9090_1-CH_8-EA3_1V5	1500 mV
UCD9090_1-CH_9-VDD_1V5	1497 mV
UCD9090_1-CH_10-VDD_1V2	1216 mV
PMB PVCC 0.7V - 1.05V	802 mV
PMB PVNN 0V - 1.02V	976 mV
PMB 1.0V	1002 mV
PMB 1.1V	1076 mV
PMB 1.35V	1347 mV
PMB VDDQ 1.5V	1504 mV
PMB 1.8V	1804 mV
PMB VDD 3.3V	3292 mV
PMB BIAS 5.0V	5008 mV
PMB USB 5.0V	5000 mV
PMB 12V	10866 mV
I2C Slave Revision	112
FPC 7 status:	
State	Online
Temperature Intake	31 degrees C / 87 degrees F
Temperature Exhaust A	46 degrees C / 114 degrees F
Temperature Exhaust B	38 degrees C / 100 degrees F
Temperature QX 0 TSen	49 degrees C / 120 degrees F
Temperature QX 0 Chip	52 degrees C / 125 degrees F

```

Temperature LU 0 TCAM TSen 49 degrees C / 120 degrees F
Temperature LU 0 TCAM Chip 52 degrees C / 125 degrees F
Temperature LU 0 TSen 49 degrees C / 120 degrees F
Temperature LU 0 Chip 51 degrees C / 123 degrees F
Temperature MQ 0 TSen 49 degrees C / 120 degrees F
Temperature MQ 0 Chip 55 degrees C / 131 degrees F
Temperature QX 1 TSen 41 degrees C / 105 degrees F
Temperature QX 1 Chip 42 degrees C / 107 degrees F
Temperature LU 1 TCAM TSen 41 degrees C / 105 degrees F
Temperature LU 1 TCAM Chip 43 degrees C / 109 degrees F
Temperature LU 1 TSen 41 degrees C / 105 degrees F
Temperature LU 1 Chip 46 degrees C / 114 degrees F
Temperature MQ 1 TSen 41 degrees C / 105 degrees F
Temperature MQ 1 Chip 47 degrees C / 116 degrees F
Power
MPC-BIAS3V3-z12105 3302 mV
MPC-VDD3V3-z12006 3307 mV
MPC-VDD2V5-z12006 2505 mV
MPC-TCAM_1V0-z12004 1000 mV
MPC-AVDD1V0-z12006 1006 mV
MPC-VDD1V8-z12006 1800 mV
MPC-PCIE_1V0-z12006 1000 mV
MPC-LU0_1V0-z12004 997 mV
MPC-MQ0_1V0-z12004 999 mV
MPC-VDD_1V5-z12004 1495 mV
MPC-PMB_1V1-z12006 1096 mV
MPC-9VA-BMR453 9051 mV
MPC-9VB-BMR453 8990 mV
MPC-PMB_1V2-z12106 1200 mV
MPC-LU1_1V0-z12004 997 mV
MPC-MQ1_1V0-z12004 998 mV
MPC-QXM0_1V0-z12006 1000 mV
MPC-QXM1_1V0-z12006 999 mV
I2C Slave Revision 70

```

### show chassis environment fpc (MX240 Router)

```

user@host> show chassis environment fpc
FPC 1 status:
State Online
Temperature Intake 34 degrees C / 93 degrees F
Temperature Exhaust A 39 degrees C / 102 degrees F
Temperature Exhaust B 53 degrees C / 127 degrees F
Temperature I3 0 TSensor 51 degrees C / 123 degrees F
Temperature I3 0 Chip 54 degrees C / 129 degrees F
Temperature I3 1 TSensor 50 degrees C / 122 degrees F
Temperature I3 1 Chip 53 degrees C / 127 degrees F
Temperature I3 2 TSensor 48 degrees C / 118 degrees F
Temperature I3 2 Chip 51 degrees C / 123 degrees F
Temperature I3 3 TSensor 45 degrees C / 113 degrees F
Temperature I3 3 Chip 48 degrees C / 118 degrees F
Temperature IA 0 TSensor 45 degrees C / 113 degrees F
Temperature IA 0 Chip 45 degrees C / 113 degrees F
Temperature IA 1 TSensor 45 degrees C / 113 degrees F
Temperature IA 1 Chip 49 degrees C / 120 degrees F
Power
1.5 V 1492 mV
2.5 V 2507 mV
3.3 V 3306 mV
1.8 V PFE 0 1801 mV
1.8 V PFE 1 1804 mV

```

```

1.8 V PFE 2          1798 mV
1.8 V PFE 3          1798 mV
1.2 V PFE 0          1169 mV
1.2 V PFE 1          1189 mV
1.2 V PFE 2          1182 mV
1.2 V PFE 3          1176 mV
I2C Slave Revision   42
FPC 2 status:
State                Online
Temperature Intake    33 degrees C / 91 degrees F
Temperature Exhaust A 41 degrees C / 105 degrees F
Temperature Exhaust B 53 degrees C / 127 degrees F
Temperature I3 0 TSensor 53 degrees C / 127 degrees F
Temperature I3 0 Chip  58 degrees C / 136 degrees F
Temperature I3 1 TSensor 52 degrees C / 125 degrees F
Temperature I3 1 Chip  56 degrees C / 132 degrees F
Temperature I3 2 TSensor 50 degrees C / 122 degrees F
Temperature I3 2 Chip  52 degrees C / 125 degrees F
Temperature I3 3 TSensor 46 degrees C / 114 degrees F
Temperature I3 3 Chip  49 degrees C / 120 degrees F
Temperature IA 0 TSensor 51 degrees C / 123 degrees F
Temperature IA 0 Chip  49 degrees C / 120 degrees F
Temperature IA 1 TSensor 48 degrees C / 118 degrees F
Temperature IA 1 Chip  53 degrees C / 127 degrees F
Power
1.5 V                1492 mV
2.5 V                2445 mV
3.3 V                3293 mV
1.8 V PFE 0          1827 mV
1.8 V PFE 1          1775 mV
1.8 V PFE 2          1788 mV
1.8 V PFE 3          1798 mV
1.2 V PFE 0          1250 mV
1.2 V PFE 1          1234 mV
1.2 V PFE 2          1231 mV
1.2 V PFE 3          1192 mV
I2C Slave Revision   42

```

### show chassis environment fpc (MX480 Router)

```

user@host> show chassis environment fpc
FPC 1 status:
State                Online
Temperature Intake    36 degrees C / 96 degrees F
Temperature Exhaust A 41 degrees C / 105 degrees F
Temperature Exhaust B 55 degrees C / 131 degrees F
Temperature I3 0 TSensor 55 degrees C / 131 degrees F
Temperature I3 0 Chip  57 degrees C / 134 degrees F
Temperature I3 1 TSensor 53 degrees C / 127 degrees F
Temperature I3 1 Chip  53 degrees C / 127 degrees F
Temperature I3 2 TSensor 52 degrees C / 125 degrees F
Temperature I3 2 Chip  49 degrees C / 120 degrees F
Temperature I3 3 TSensor 47 degrees C / 116 degrees F
Temperature I3 3 Chip  47 degrees C / 116 degrees F
Temperature IA 0 TSensor 54 degrees C / 129 degrees F
Temperature IA 0 Chip  58 degrees C / 136 degrees F
Temperature IA 1 TSensor 48 degrees C / 118 degrees F
Temperature IA 1 Chip  53 degrees C / 127 degrees F
Power
1.5 V                1479 mV
2.5 V                2542 mV

```



3.3 V	3319 mV
1.8 V PFE 0	1811 mV
1.8 V PFE 1	1804 mV
1.8 V PFE 2	1804 mV
1.8 V PFE 3	1814 mV
1.2 V PFE 0	1192 mV
1.2 V PFE 1	1202 mV
1.2 V PFE 2	1205 mV
1.2 V PFE 3	1189 mV
I2C Slave Revision	40

### show chassis environment fpc (MX960 Router)

```
user@host> show chassis environment fpc
```

```
FPC 5 status:
```

State	Online
Temperature Intake	27 degrees C / 80 degrees F
Temperature Exhaust A	34 degrees C / 93 degrees F
Temperature Exhaust B	40 degrees C / 104 degrees F
Temperature I3 0 TSensor	39 degrees C / 102 degrees F
Temperature I3 0 Chip	41 degrees C / 105 degrees F
Temperature I3 1 TSensor	38 degrees C / 100 degrees F
Temperature I3 1 Chip	37 degrees C / 98 degrees F
Temperature I3 2 TSensor	37 degrees C / 98 degrees F
Temperature I3 2 Chip	34 degrees C / 93 degrees F
Temperature I3 3 TSensor	32 degrees C / 89 degrees F
Temperature I3 3 Chip	33 degrees C / 91 degrees F
Temperature IA 0 TSensor	39 degrees C / 102 degrees F
Temperature IA 0 Chip	44 degrees C / 111 degrees F
Temperature IA 1 TSensor	36 degrees C / 96 degrees F
Temperature IA 1 Chip	44 degrees C / 111 degrees F
Power	
1.5 V	1479 mV
2.5 V	2523 mV
3.3 V	3254 mV
1.8 V PFE 0	1798 mV
1.8 V PFE 1	1798 mV
1.8 V PFE 2	1807 mV
1.8 V PFE 3	1791 mV
1.2 V PFE 0	1173 mV
1.2 V PFE 1	1179 mV
1.2 V PFE 2	1179 mV
1.2 V PFE 3	1185 mV
I2C Slave Revision	6

```
FPC 6 status:
```

State	Online
Temperature Intake	25 degrees C / 77 degrees F
Temperature Exhaust A	38 degrees C / 100 degrees F
Temperature Exhaust B	38 degrees C / 100 degrees F
Temperature I3 0 TSensor	40 degrees C / 104 degrees F
Temperature I3 0 Chip	40 degrees C / 104 degrees F
Temperature I3 1 TSensor	40 degrees C / 104 degrees F
Temperature I3 1 Chip	38 degrees C / 100 degrees F
Temperature I3 2 TSensor	37 degrees C / 98 degrees F
Temperature I3 2 Chip	32 degrees C / 89 degrees F
Temperature I3 3 TSensor	34 degrees C / 93 degrees F
Temperature I3 3 Chip	33 degrees C / 91 degrees F
Temperature IA 0 TSensor	45 degrees C / 113 degrees F
Temperature IA 0 Chip	47 degrees C / 116 degrees F
Temperature IA 1 TSensor	37 degrees C / 98 degrees F
Temperature IA 1 Chip	42 degrees C / 107 degrees F

```

Power
 1.5 V          1485 mV
 2.5 V          2510 mV
 3.3 V          3332 mV
 1.8 V PFE 0    1801 mV
 1.8 V PFE 1    1814 mV
 1.8 V PFE 2    1804 mV
 1.8 V PFE 3    1820 mV
 1.2 V PFE 0    1192 mV
 1.2 V PFE 1    1189 mV
 1.2 V PFE 2    1202 mV
 1.2 V PFE 3    1156 mV
I2C Slave Revision 40

```

### show chassis environment fpc (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis environment fpc
FPC 0 status:
State      Online
Temperature Intake      32 degrees C / 89 degrees F
Temperature Exhaust A   39 degrees C / 102 degrees F
Temperature Exhaust B   37 degrees C / 98 degrees F
Temperature QX 0 TSen    44 degrees C / 111 degrees F
Temperature QX 0 Chip    48 degrees C / 118 degrees F
Temperature LU 0 TCAM TSen 44 degrees C / 111 degrees F
Temperature LU 0 TCAM Chip 47 degrees C / 116 degrees F
Temperature LU 0 TSen    44 degrees C / 111 degrees F
Temperature LU 0 Chip    48 degrees C / 118 degrees F
Temperature MQ 0 TSen    44 degrees C / 111 degrees F
Temperature MQ 0 Chip    47 degrees C / 116 degrees F
Power
MPC-BIAS3V3-z12105      3297 mV
MPC-VDD3V3-z12105      3306 mV
MPC-VDD2V5-z12105      2498 mV
MPC-TCAM_1V0-z12004     999 mV
MPC-AVDD1V0-z12006      999 mV
MPC-VDD1V8-z12006      1796 mV
MPC-PCIE_1V0-z12006     1002 mV
MPC-LU0_1V0-z12004      997 mV
MPC-MQ0_1V0-z12004      995 mV
MPC-VDD_1V5-z12004      1496 mV
MPC-PMB_1V1-z12006      1094 mV
MPC-9VA-BMR453          9054 mV
MPC-9VB-BMR453          9037 mV
MPC-PMB_1V2-z12106      1191 mV
MPC-QXM0_1V0-z12006     1000 mV
I2C Slave Revision      66
FPC 1 status:
State      Online
Temperature Intake      35 degrees C / 95 degrees F
Temperature Exhaust A   50 degrees C / 122 degrees F
Temperature Exhaust B   56 degrees C / 132 degrees F
Temperature LU 0 TSen    46 degrees C / 114 degrees F
Temperature LU 0 Chip    59 degrees C / 138 degrees F
Temperature LU 1 TSen    46 degrees C / 114 degrees F
Temperature LU 1 Chip    45 degrees C / 113 degrees F
Temperature LU 2 TSen    46 degrees C / 114 degrees F
Temperature LU 2 Chip    60 degrees C / 140 degrees F
Temperature LU 3 TSen    46 degrees C / 114 degrees F
Temperature LU 3 Chip    71 degrees C / 159 degrees F
Temperature XM 0 TSen    46 degrees C / 114 degrees F

```

```

Temperature XM 0 Chip      -18 degrees C / 0 degrees F
Temperature XF 0 TSen      46 degrees C / 114 degrees F
Temperature XF 0 Chip      76 degrees C / 168 degrees F
Power
MPC-BIAS3V3-z12105        3292 mV
MPC-VDD3V3-z16100         3303 mV
MPC-VDD2V5-z16100         2501 mV
MPC-VDD1V8-z12004         1801 mV
MPC-AVDD1V0-z12006         996 mV
MPC-VDD1V2-z16100         1199 mV
MPC-VDD1V5A-z12004        1493 mV
MPC-VDD1V5B-z12004        1498 mV
MPC-XF_0V9-z12006         996 mV
MPC-PCIE_1V0-z16100       1000 mV
MPC-LU0_1V0-z12004         994 mV
MPC-LU1_1V0-z12004         994 mV
MPC-LU2_1V0-z12004         992 mV
MPC-LU3_1V0-z12004         993 mV
MPC-12VA-BMR453           12003 mV
MPC-12VB-BMR453           12043 mV
MPC-PMB_1V1-z12006        1091 mV
MPC-PMB_1V2-z12106        1196 mV
MPC-XM_0V9-vt273m         899 mV
I2C Slave Revision        106

```

#### show chassis environment fpc (MX240, MX480, MX960 with Application Services Modular Line Card)

```

user@host>show chassis environment fpc 1
FPC 1 status:
State                               Online
Temperature Intake                  36 degrees C / 96 degrees F
Temperature Exhaust A               39 degrees C / 102 degrees F
Temperature LU TSen                 52 degrees C / 125 degrees F
Temperature LU Chip                 54 degrees C / 129 degrees F
Temperature XM TSen                 52 degrees C / 125 degrees F
Temperature XM Chip                 60 degrees C / 140 degrees F
Temperature PCIE TSen               52 degrees C / 125 degrees F
Temperature PCIE Chip               69 degrees C / 156 degrees F
Power
MPC-BIAS3V3-z12106                3302 mV
MPC-VDD3V3-z16100                 3325 mV
MPC-AVDD1V0-z16100                1007 mV
MPC-PCIE_1V0-z16100               904 mV
MPC-LU0_1V0-z12004                996 mV
MPC-VDD_1V5-z12004               1498 mV
MPC-12VA-BMR453                   11733 mV
MPC-12VB-BMR453                   11728 mV
MPC-XM_0V9-vt273m                 900 mV
I2C Slave Revision                 81

```

#### show chassis environment fpc (MX10003 Router)

```

user@host> show chassis environment fpc

FPC 0 status:
State                               Online
FPC 0 Intake Temp Sensor           29 degrees C / 84 degrees F
FPC 0 Exhaust-A Temp Sensor        56 degrees C / 132 degrees F
FPC 0 Exhaust-B Temp Sensor        44 degrees C / 111 degrees F
FPC 0 EA0 Chip                     58 degrees C / 136 degrees F

```

FPC 0 EA0-XR0 Chip	61 degrees C / 141 degrees F
FPC 0 EA0-XR1 Chip	62 degrees C / 143 degrees F
FPC 0 EA1 Chip	67 degrees C / 152 degrees F
FPC 0 EA1-XR0 Chip	72 degrees C / 161 degrees F
FPC 0 EA1-XR1 Chip	72 degrees C / 161 degrees F
FPC 0 PEX Chip	77 degrees C / 170 degrees F
FPC 0 EA2 Chip	48 degrees C / 118 degrees F
FPC 0 EA2-XR0 Chip	54 degrees C / 129 degrees F
FPC 0 EA2-XR1 Chip	56 degrees C / 132 degrees F
FPC 0 PF Chip	68 degrees C / 154 degrees F
FPC 0 EA0_HMC0 Logic die	72 degrees C / 161 degrees F
FPC 0 EA0_HMC0 DRAM botm	69 degrees C / 156 degrees F
FPC 0 EA0_HMC1 Logic die	71 degrees C / 159 degrees F
FPC 0 EA0_HMC1 DRAM botm	68 degrees C / 154 degrees F
FPC 0 EA0_HMC2 Logic die	75 degrees C / 167 degrees F
FPC 0 EA0_HMC2 DRAM botm	72 degrees C / 161 degrees F
FPC 0 EA1_HMC0 Logic die	81 degrees C / 177 degrees F
FPC 0 EA1_HMC0 DRAM botm	78 degrees C / 172 degrees F
FPC 0 EA1_HMC1 Logic die	80 degrees C / 176 degrees F
FPC 0 EA1_HMC1 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA1_HMC2 Logic die	82 degrees C / 179 degrees F
FPC 0 EA1_HMC2 DRAM botm	79 degrees C / 174 degrees F
FPC 0 EA2_HMC0 Logic die	60 degrees C / 140 degrees F
FPC 0 EA2_HMC0 DRAM botm	57 degrees C / 134 degrees F
FPC 0 EA2_HMC1 Logic die	61 degrees C / 141 degrees F
FPC 0 EA2_HMC1 DRAM botm	58 degrees C / 136 degrees F
FPC 0 EA2_HMC2 Logic die	63 degrees C / 145 degrees F
FPC 0 EA2_HMC2 DRAM botm	60 degrees C / 140 degrees F
Power	
LTC3887-PF-VDD0V9-RAIL	898 mV
LTC3887-PF-VDD0V9-DEV0-	898 mV
LTC3887-PF-VDD0V9-DEV0-	900 mV
LTC3887-PF-VDD0V9-DEV1-	899 mV
LTC3887-PF-VDD0V9-DEV1-	901 mV
LTC3887-PF-AVDD1V0-RAIL	998 mV
LTC3887-PF-AVDD1V0-CH0	998 mV
LTC3887-PF-AVDD1V0-CH1	999 mV
LTC3887-ETHSW-VDD1V0	1000 mV
LTC3887-VDD2V5	2499 mV
LTC3887-PCIE-VDD0V9	899 mV
LTC3887-V1P0	999 mV
LTC3887-PHY-VDD1V0-A	999 mV
LTC3887-3V3	3300 mV
LTC3887-VDD1V8	1799 mV
UCD9090_0-CH_1-EA0_PLL_	1005 mV
UCD9090_0-CH_2-EA0_1V4	1049 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1499 mV
UCD9090_0-CH_5-EA1_PLL_	999 mV
UCD9090_0-CH_6-EA1_1V4	1037 mV
UCD9090_0-CH_7-EA1_2V5	2499 mV
UCD9090_0-CH_8-EA1_1V5	1510 mV
UCD9090_0-CH_9-PVCC	797 mV
UCD9090_0-CH_10-PVNN	991 mV
UCD9090_1-CH_1-EA2_PLL_	1008 mV
UCD9090_1-CH_2-EA2_1V4	1009 mV
UCD9090_1-CH_3-EA2_2V5	2499 mV
UCD9090_1-CH_4-EA2_1V5	1513 mV
UCD9090_1-CH_5-1V0-PFPL	1009 mV
UCD9090_1-CH_6-V1P1	1075 mV
UCD9090_1-CH_7-V1P5	1531 mV

```

UCD9090_1-CH_8-V1P35      1359 mV
UCD9090_1-CH_9-VDD1V5     1511 mV
UCD9090_1-CH_10-VDD1V2    1210 mV
LTC3887-EA0-VDD0V9-RAIL   949 mV
LTC3887-EA0-VDD0V9-DEV0   949 mV
LTC3887-EA0-VDD0V9-DEV0   951 mV
LTC3887-EA0-VDD0V9-DEV1   949 mV
LTC3887-EA0-VDD0V9-DEV1   951 mV
LTC3887-EA0-VDD0V9R2-RA   947 mV
LTC3887-EA0-VDD0V9R2-CH   947 mV
LTC3887-EA0-VDD0V9R2-CH   949 mV
LTC3887-EA0-VDD1V0-RAIL   999 mV
LTC3887-EA0-VDD1V0-CH0    999 mV
LTC3887-EA0-VDD1V0-CH1    1001 mV
LTC3887-EA0-XR-VDD0V9     900 mV
LTC3887-EA0-XR-VDD1V2     1199 mV
LTC3887-EA0-HM1-VDD0V9    899 mV
LTC3887-EA0-HM-VDD1V2     1200 mV
LTC3887-EA0-HM-VDDM1V2    1199 mV
LTC3887-EA1-VDD0V9-RAIL   949 mV
LTC3887-EA1-VDD0V9-DEV0   952 mV
LTC3887-EA1-VDD0V9-DEV0   952 mV
LTC3887-EA1-VDD0V9-DEV1   951 mV
LTC3887-EA1-VDD0V9-DEV1   951 mV
LTC3887-EA1-VDD0V9R2-RA   948 mV
LTC3887-EA1-VDD0V9R2-CH   948 mV
LTC3887-EA1-VDD0V9R2-CH   950 mV
LTC3887-EA1-VDD1V0-RAIL   1000 mV
LTC3887-EA1-VDD1V0-CH0    1000 mV
LTC3887-EA1-VDD1V0-CH1    1001 mV
I2C Slave Revision        13
FPC 1 status:
State                      Online
FPC 1 Intake Temp Sensor   27 degrees C / 80 degrees F
FPC 1 Exhaust-A Temp Sensor60 degrees C / 140 degrees F
FPC 1 Exhaust-B Temp Sensor46 degrees C / 114 degrees F
FPC 1 EA0 Chip              63 degrees C / 145 degrees F
FPC 1 EA0-XR0 Chip          67 degrees C / 152 degrees F
FPC 1 EA0-XR1 Chip          68 degrees C / 154 degrees F
FPC 1 EA1 Chip              70 degrees C / 158 degrees F
FPC 1 EA1-XR0 Chip          75 degrees C / 167 degrees F
FPC 1 EA1-XR1 Chip          75 degrees C / 167 degrees F
FPC 1 PEX Chip              89 degrees C / 192 degrees F
FPC 1 EA2 Chip              49 degrees C / 120 degrees F
FPC 1 EA2-XR0 Chip          53 degrees C / 127 degrees F
FPC 1 EA2-XR1 Chip          56 degrees C / 132 degrees F
FPC 1 PF Chip               71 degrees C / 159 degrees F
FPC 1 EA0_HMC0 Logic die    74 degrees C / 165 degrees F
FPC 1 EA0_HMC0 DRAM botm    71 degrees C / 159 degrees F
FPC 1 EA0_HMC1 Logic die    78 degrees C / 172 degrees F
FPC 1 EA0_HMC1 DRAM botm    75 degrees C / 167 degrees F
FPC 1 EA0_HMC2 Logic die    78 degrees C / 172 degrees F
FPC 1 EA0_HMC2 DRAM botm    75 degrees C / 167 degrees F
FPC 1 EA1_HMC0 Logic die    84 degrees C / 183 degrees F
FPC 1 EA1_HMC0 DRAM botm    81 degrees C / 177 degrees F
FPC 1 EA1_HMC1 Logic die    82 degrees C / 179 degrees F
FPC 1 EA1_HMC1 DRAM botm    79 degrees C / 174 degrees F
FPC 1 EA1_HMC2 Logic die    85 degrees C / 185 degrees F
FPC 1 EA1_HMC2 DRAM botm    82 degrees C / 179 degrees F
FPC 1 EA2_HMC0 Logic die    62 degrees C / 143 degrees F
FPC 1 EA2_HMC0 DRAM botm    59 degrees C / 138 degrees F

```

FPC 1 EA2_HMC1 Logic die	60 degrees C / 140 degrees F
FPC 1 EA2_HMC1 DRAM botm	57 degrees C / 134 degrees F
FPC 1 EA2_HMC2 Logic die	65 degrees C / 149 degrees F
FPC 1 EA2_HMC2 DRAM botm	62 degrees C / 143 degrees F
Power	
LTC3887-PF-VDD0V9-RAIL	899 mV
LTC3887-PF-VDD0V9-DEV0-	899 mV
LTC3887-PF-VDD0V9-DEV0-	901 mV
LTC3887-PF-VDD0V9-DEV1-	899 mV
LTC3887-PF-VDD0V9-DEV1-	901 mV
LTC3887-PF-AVDD1V0-RAIL	998 mV
LTC3887-PF-AVDD1V0-CH0	998 mV
LTC3887-PF-AVDD1V0-CH1	999 mV
LTC3887-ETHSW-VDD1V0	999 mV
LTC3887-VDD2V5	2499 mV
LTC3887-PCIE-VDD0V9	900 mV
LTC3887-V1P0	1000 mV
LTC3887-PHY-VDD1V0-A	1000 mV
LTC3887-3V3	3300 mV
LTC3887-VDD1V8	1799 mV
UCD9090_0-CH_1-EA0_PLL_	1004 mV
UCD9090_0-CH_2-EA0_1V4	1004 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1511 mV
UCD9090_0-CH_5-EA1_PLL_	999 mV
UCD9090_0-CH_6-EA1_1V4	1008 mV
UCD9090_0-CH_7-EA1_2V5	2499 mV
UCD9090_0-CH_8-EA1_1V5	1510 mV
UCD9090_0-CH_9-PVCC	839 mV
UCD9090_0-CH_10-PVNN	1016 mV
UCD9090_1-CH_1-EA2_PLL_	1011 mV
UCD9090_1-CH_2-EA2_1V4	1046 mV
UCD9090_1-CH_3-EA2_2V5	2499 mV
UCD9090_1-CH_4-EA2_1V5	1501 mV
UCD9090_1-CH_5-1V0_PFP	1000 mV
UCD9090_1-CH_6-V1P1	1037 mV
UCD9090_1-CH_7-V1P5	1530 mV
UCD9090_1-CH_8-V1P35	1360 mV
UCD9090_1-CH_9-VDD1V5	1513 mV
UCD9090_1-CH_10-VDD1V2	1217 mV
LTC3887-EA0-VDD0V9-RAIL	949 mV
LTC3887-EA0-VDD0V9-DEV0	949 mV
LTC3887-EA0-VDD0V9-DEV0	951 mV
LTC3887-EA0-VDD0V9-DEV1	949 mV
LTC3887-EA0-VDD0V9-DEV1	952 mV
LTC3887-EA0-VDD0V9R2-RA	947 mV
LTC3887-EA0-VDD0V9R2-CH	947 mV
LTC3887-EA0-VDD0V9R2-CH	949 mV
LTC3887-EA0-VDD1V0-RAIL	1000 mV
LTC3887-EA0-VDD1V0-CH0	1000 mV
LTC3887-EA0-VDD1V0-CH1	1001 mV
LTC3887-EA0-XR-VDD0V9	899 mV
LTC3887-EA0-XR-VDD1V2	1200 mV
LTC3887-EA0-HM1-VDD0V9	899 mV
LTC3887-EA0-HM-VDD1V2	1199 mV
LTC3887-EA0-HM-VDDM1V2	1199 mV
LTC3887-EA1-VDD0V9-RAIL	948 mV
LTC3887-EA1-VDD0V9-DEV0	950 mV
LTC3887-EA1-VDD0V9-DEV0	950 mV
LTC3887-EA1-VDD0V9-DEV1	951 mV
LTC3887-EA1-VDD0V9-DEV1	951 mV

```

LTC3887-EA1-VDD0V9R2-RA      947 mV
LTC3887-EA1-VDD0V9R2-CH      947 mV
LTC3887-EA1-VDD0V9R2-CH      949 mV
LTC3887-EA1-VDD1V0-RAIL      1000 mV
LTC3887-EA1-VDD1V0-CH0       1000 mV
LTC3887-EA1-VDD1V0-CH1       1002 mV
I2C Slave Revision            99

```

### show chassis environment fpc (MX204 Router)

```
user@host> show chassis environment fpc
```

```

FPC 0 status:
State                               Online
FPC 0 EA0_HMC0 Logic die           77 degrees C / 170 degrees F
FPC 0 EA0_HMC0 DRAM botm           74 degrees C / 165 degrees F
FPC 0 EA0_HMC1 Logic die           80 degrees C / 176 degrees F
FPC 0 EA0_HMC1 DRAM botm           77 degrees C / 170 degrees F
FPC 0 EA0 Chip                      93 degrees C / 199 degrees F
FPC 0 EA0-XR0 Chip                  63 degrees C / 145 degrees F
FPC 0 EA0-XR1 Chip                  64 degrees C / 147 degrees F
Power
I2C Slave Revision                  0

```

### show chassis environment fpc (MX10008 Router)

```
user@host> show chassis environment fpc
```

```

FPC 1 status:
State                               Online
FPC 1 Intake-A Temp Sensor          27 degrees C / 80 degrees F
FPC 1 Exhaust-A Temp Sensor         43 degrees C / 109 degrees F
FPC 1 Exhaust-B Temp Sensor         46 degrees C / 114 degrees F
FPC 1 EA0 Temp Sensor                51 degrees C / 123 degrees F
FPC 1 EA0_XR0 Temp Sensor            58 degrees C / 136 degrees F
FPC 1 EA0_XR1 Temp Sensor            59 degrees C / 138 degrees F
FPC 1 EA1 Temp Sensor                47 degrees C / 116 degrees F
FPC 1 EA1_XR0 Temp Sensor            56 degrees C / 132 degrees F
FPC 1 EA1_XR1 Temp Sensor            54 degrees C / 129 degrees F
FPC 1 EA2 Temp Sensor                54 degrees C / 129 degrees F
FPC 1 EA2_XR0 Temp Sensor            67 degrees C / 152 degrees F
FPC 1 EA2_XR1 Temp Sensor            62 degrees C / 143 degrees F
FPC 1 EA3 Temp Sensor                48 degrees C / 118 degrees F
FPC 1 EA3_XR0 Temp Sensor            58 degrees C / 136 degrees F
FPC 1 EA3_XR1 Temp Sensor            52 degrees C / 125 degrees F
FPC 1 EA4 Temp Sensor                52 degrees C / 125 degrees F
FPC 1 EA4_XR0 Temp Sensor            69 degrees C / 156 degrees F
FPC 1 EA4_XR1 Temp Sensor            60 degrees C / 140 degrees F
FPC 1 EA5 Temp Sensor                45 degrees C / 113 degrees F
FPC 1 EA5_XR0 Temp Sensor            54 degrees C / 129 degrees F
FPC 1 EA5_XR1 Temp Sensor            51 degrees C / 123 degrees F
FPC 1 EA0_HMC0 Logic die            63 degrees C / 145 degrees F
FPC 1 EA0_HMC0 DRAM botm            60 degrees C / 140 degrees F
FPC 1 EA0_HMC1 Logic die            63 degrees C / 145 degrees F
FPC 1 EA0_HMC1 DRAM botm            60 degrees C / 140 degrees F
FPC 1 EA0_HMC2 Logic die            62 degrees C / 143 degrees F
FPC 1 EA0_HMC2 DRAM botm            59 degrees C / 138 degrees F
FPC 1 EA1_HMC0 Logic die            59 degrees C / 138 degrees F
FPC 1 EA1_HMC0 DRAM botm            56 degrees C / 132 degrees F
FPC 1 EA1_HMC1 Logic die            60 degrees C / 140 degrees F

```

FPC 1	EA1_HMC1	DRAM botm	57 degrees C / 134 degrees F
FPC 1	EA1_HMC2	Logic die	59 degrees C / 138 degrees F
FPC 1	EA1_HMC2	DRAM botm	56 degrees C / 132 degrees F
FPC 1	EA2_HMC0	Logic die	64 degrees C / 147 degrees F
FPC 1	EA2_HMC0	DRAM botm	61 degrees C / 141 degrees F
FPC 1	EA2_HMC1	Logic die	64 degrees C / 147 degrees F
FPC 1	EA2_HMC1	DRAM botm	61 degrees C / 141 degrees F
FPC 1	EA2_HMC2	Logic die	64 degrees C / 147 degrees F
FPC 1	EA2_HMC2	DRAM botm	61 degrees C / 141 degrees F
FPC 1	EA3_HMC0	Logic die	63 degrees C / 145 degrees F
FPC 1	EA3_HMC0	DRAM botm	60 degrees C / 140 degrees F
FPC 1	EA3_HMC1	Logic die	61 degrees C / 141 degrees F
FPC 1	EA3_HMC1	DRAM botm	58 degrees C / 136 degrees F
FPC 1	EA3_HMC2	Logic die	59 degrees C / 138 degrees F
FPC 1	EA3_HMC2	DRAM botm	56 degrees C / 132 degrees F
FPC 1	EA4_HMC0	Logic die	66 degrees C / 150 degrees F
FPC 1	EA4_HMC0	DRAM botm	63 degrees C / 145 degrees F
FPC 1	EA4_HMC1	Logic die	63 degrees C / 145 degrees F
FPC 1	EA4_HMC1	DRAM botm	60 degrees C / 140 degrees F
FPC 1	EA4_HMC2	Logic die	64 degrees C / 147 degrees F
FPC 1	EA4_HMC2	DRAM botm	61 degrees C / 141 degrees F
FPC 1	EA5_HMC0	Logic die	56 degrees C / 132 degrees F
FPC 1	EA5_HMC0	DRAM botm	53 degrees C / 127 degrees F
FPC 1	EA5_HMC1	Logic die	57 degrees C / 134 degrees F
FPC 1	EA5_HMC1	DRAM botm	54 degrees C / 129 degrees F
FPC 1	EA5_HMC2	Logic die	55 degrees C / 131 degrees F
FPC 1	EA5_HMC2	DRAM botm	52 degrees C / 125 degrees F

## Power

12V SS 1	12232 mV	8628 mA	105544 mW
12V SS 2	12298 mV	19625 mA	241363 mW
12V SS 3	12325 mV	8931 mA	110075 mW
12V SS 4	12338 mV	20535 mA	253367 mW
12V SS 5	12232 mV	13434 mA	164335 mW
VDD 1.0V_A	999 mV	90125 mA	90036 mW
VDD 1.0V_B	0 mV	0 mA	0 mW
VDD 3.3V	3298 mV	8625 mA	28452 mW
VDD 0.9V	899 mV	3802 mA	3421 mW
ETH SW 1V	0 mV	0 mA	0 mW
VDD 1.8V	1809 mV	1360 mA	2461 mW
PVCC	864 mV	0 mA	0 mW
PVNN	1012 mV	0 mA	0 mW
V1P0	996 mV	0 mA	0 mW
V1P1	1064 mV	0 mA	0 mW
V1P3	1345 mV	0 mA	0 mW
VDDQ	1496 mV	0 mA	0 mW
V1P8	1809 mV	0 mA	0 mW
VDD3V3	3303 mV	0 mA	0 mW
V5V0_BIAS	5012 mV	0 mA	0 mW
VDD12V0	12154 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	36250 mA	32639 mW
EA0 AVDD 1.0V	1000 mV	25125 mA	25125 mW
EA0 HMC Core 0.9V	897 mV	10313 mA	9253 mW
EA0 1.2V	1193 mV	16360 mA	19526 mW
EA01_HMC_VDDM 1.2V	1193 mV	1476 mA	1762 mW
EA0_XR 0.906V	908 mV	14034 mA	12745 mW
EA1 Core 0.9V	900 mV	35875 mA	32301 mW
EA1 AVDD 1.0V	1000 mV	25625 mA	25625 mW
EA1 HMC Core 0.9V	897 mV	9732 mA	8731 mW
EA1 1.2V	1197 mV	16011 mA	19167 mW
EA0_PLL_1V0	1006 mV	0 mA	0 mW
EA0_1V04	1032 mV	0 mA	0 mW



EA0_2V5	2445 mV	0 mA	0 mW
EA0_1V5	1496 mV	0 mA	0 mW
EA1_PLL_1V0	1006 mV	0 mA	0 mW
EA1_1V04	1054 mV	0 mA	0 mW
EA1_2V5	2512 mV	0 mA	0 mW
EA1_1V5	1496 mV	0 mA	0 mW
EA1_XR 0.906V	905 mV	14500 mA	13128 mW
EA2 Core 0.9V	900 mV	37625 mA	33877 mW
EA2 AVDD 1.0V	999 mV	25625 mA	25599 mW
EA2 HMC Core 0.9V	894 mV	9383 mA	8393 mW
EA2 1.2V	1193 mV	15895 mA	18971 mW
EA23_HMC_VDDM 1.2V	1193 mV	1360 mA	1623 mW
EA2_XR 0.906V	908 mV	15546 mA	14118 mW
EA3 Core 0.9V	900 mV	36250 mA	32639 mW
EA3 AVDD 1.0V	1000 mV	25125 mA	25125 mW
EA3 HMC Core 0.9V	897 mV	10081 mA	9044 mW
EA3 1.2V	1197 mV	16360 mA	19585 mW
EA2_PLL_1V0	1009 mV	0 mA	0 mW
EA2_1V04	1041 mV	0 mA	0 mW
EA2_2V5	2516 mV	0 mA	0 mW
EA2_1V5	1493 mV	0 mA	0 mW
EA3_PLL_1V0	993 mV	0 mA	0 mW
EA3_1V04	1054 mV	0 mA	0 mW
EA3_2V5	2496 mV	0 mA	0 mW
EA3_1V5	1474 mV	0 mA	0 mW
EA3_XR 0.906V	908 mV	14034 mA	12745 mW
EA4 Core 0.9V	900 mV	37625 mA	33877 mW
EA4 AVDD 1.0V	1000 mV	30000 mA	30000 mW
EA4 HMC Core 0.9V	894 mV	10313 mA	9225 mW
EA4 1.2V	1193 mV	15662 mA	18693 mW
EA45_HMC_VDDM 1.2V	1197 mV	81 mA	97 mW
EA4_XR 0.906V	910 mV	16244 mA	14796 mW
EA5 Core 0.9V	900 mV	36750 mA	33089 mW
EA5 AVDD 1.0V	1000 mV	26000 mA	26000 mW
EA5 HMC Core 0.9V	894 mV	9500 mA	8497 mW
EA5 1.2V	1189 mV	15546 mA	18498 mW
EA4_PLL_1V0	1006 mV	0 mA	0 mW
EA4_1V04	1041 mV	0 mA	0 mW
EA4_2V5	2519 mV	0 mA	0 mW
EA4_1V5	1509 mV	0 mA	0 mW
EA5_PLL_1V0	1019 mV	0 mA	0 mW
EA5_1V04	1032 mV	0 mA	0 mW
EA5_2V5	2532 mV	0 mA	0 mW
EA5_1V5	1496 mV	0 mA	0 mW
VDD2V5	2474 mV	0 mA	0 mW
VDD1V5	1493 mV	0 mA	0 mW
VDD1V2	1203 mV	0 mA	0 mW
EA5_XR 0.906V	905 mV	15197 mA	13759 mW

FPC 2 status:

State	Offline
FPC 2 Intake-A Temp Sensor	23 degrees C / 73 degrees F
FPC 2 Exhaust-A Temp Sensor	34 degrees C / 93 degrees F
FPC 2 Exhaust-B Temp Sensor	35 degrees C / 95 degrees F
FPC 2 EA0 Temp Sensor	39 degrees C / 102 degrees F
FPC 2 EA0_XR0 Temp Sensor	43 degrees C / 109 degrees F
FPC 2 EA0_XR1 Temp Sensor	50 degrees C / 122 degrees F
FPC 2 EA1 Temp Sensor	36 degrees C / 96 degrees F
FPC 2 EA1_XR0 Temp Sensor	38 degrees C / 100 degrees F
FPC 2 EA1_XR1 Temp Sensor	38 degrees C / 100 degrees F
FPC 2 EA2 Temp Sensor	41 degrees C / 105 degrees F
FPC 2 EA2_XR0 Temp Sensor	46 degrees C / 114 degrees F

FPC 2 EA2_XR1 Temp Sensor	47 degrees C / 116 degrees F
FPC 2 EA3 Temp Sensor	39 degrees C / 102 degrees F
FPC 2 EA3_XR0 Temp Sensor	43 degrees C / 109 degrees F
FPC 2 EA3_XR1 Temp Sensor	36 degrees C / 96 degrees F
FPC 2 EA4 Temp Sensor	43 degrees C / 109 degrees F
FPC 2 EA4_XR0 Temp Sensor	46 degrees C / 114 degrees F
FPC 2 EA4_XR1 Temp Sensor	46 degrees C / 114 degrees F
FPC 2 EA5 Temp Sensor	39 degrees C / 102 degrees F
FPC 2 EA5_XR0 Temp Sensor	46 degrees C / 114 degrees F
FPC 2 EA5_XR1 Temp Sensor	43 degrees C / 109 degrees F
FPC 2 EA0_HMC0 Logic die	0 degrees C / 32 degrees F
FPC 2 EA0_HMC0 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA0_HMC1 Logic die	0 degrees C / 32 degrees F
FPC 2 EA0_HMC1 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA0_HMC2 Logic die	0 degrees C / 32 degrees F
FPC 2 EA0_HMC2 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA1_HMC0 Logic die	0 degrees C / 32 degrees F
FPC 2 EA1_HMC0 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA1_HMC1 Logic die	0 degrees C / 32 degrees F
FPC 2 EA1_HMC1 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA1_HMC2 Logic die	0 degrees C / 32 degrees F
FPC 2 EA1_HMC2 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA2_HMC0 Logic die	0 degrees C / 32 degrees F
FPC 2 EA2_HMC0 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA2_HMC1 Logic die	0 degrees C / 32 degrees F
FPC 2 EA2_HMC1 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA2_HMC2 Logic die	0 degrees C / 32 degrees F
FPC 2 EA2_HMC2 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA3_HMC0 Logic die	0 degrees C / 32 degrees F
FPC 2 EA3_HMC0 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA3_HMC1 Logic die	0 degrees C / 32 degrees F
FPC 2 EA3_HMC1 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA3_HMC2 Logic die	0 degrees C / 32 degrees F
FPC 2 EA3_HMC2 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA4_HMC0 Logic die	0 degrees C / 32 degrees F
FPC 2 EA4_HMC0 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA4_HMC1 Logic die	0 degrees C / 32 degrees F
FPC 2 EA4_HMC1 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA4_HMC2 Logic die	0 degrees C / 32 degrees F
FPC 2 EA4_HMC2 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA5_HMC0 Logic die	0 degrees C / 32 degrees F
FPC 2 EA5_HMC0 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA5_HMC1 Logic die	0 degrees C / 32 degrees F
FPC 2 EA5_HMC1 DRAM botm	0 degrees C / 32 degrees F
FPC 2 EA5_HMC2 Logic die	0 degrees C / 32 degrees F
FPC 2 EA5_HMC2 DRAM botm	0 degrees C / 32 degrees F
Power	
12V SS 1	12232 mV 10403 mA 127257 mW
12V SS 2	12364 mV 6334 mA 78318 mW
12V SS 3	12325 mV 10490 mA 129290 mW
12V SS 4	12298 mV 6940 mA 85353 mW
12V SS 5	12325 mV 5771 mA 71128 mW
VDD 1.0V_A	999 mV 14875 mA 14860 mW
VDD 1.0V_B	0 mV 0 mA 0 mW
VDD 3.3V	3295 mV 6500 mA 21423 mW
VDD 0.9V	897 mV 3104 mA 2785 mW
ETH SW 1V	980 mV 3686 mA 3612 mW
VDD 1.8V	1805 mV 895 mA 1616 mW
PVCC	870 mV 0 mA 0 mW
PVNN	1016 mV 0 mA 0 mW
V1P0	1000 mV 0 mA 0 mW

V1P1	1061 mV	0 mA	0 mW
V1P3	1345 mV	0 mA	0 mW
VDDQ	1493 mV	0 mA	0 mW
V1P8	1806 mV	0 mA	0 mW
VDD3V3	3303 mV	0 mA	0 mW
V5V0_BIAS	4974 mV	0 mA	0 mW
VDD12V0	12193 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	44000 mA	39617 mW
EA0 AVDD 1.0V	1000 mV	750 mA	750 mW
EA0 HMC Core 0.9V	897 mV	6011 mA	5393 mW
EA0 1.2V	1197 mV	4965 mA	5943 mW
EA01_HMC_VDDM 1.2V	1197 mV	313 mA	375 mW
EA0_XR 0.906V	908 mV	6360 mA	5776 mW
EA1 Core 0.9V	900 mV	43500 mA	39166 mW
EA1 AVDD 1.0V	999 mV	750 mA	749 mW
EA1 HMC Core 0.9V	894 mV	5779 mA	5169 mW
EA1 1.2V	1189 mV	4848 mA	5769 mW
EA0_PLL_1V0	996 mV	0 mA	0 mW
EA0_1V04	1029 mV	0 mA	0 mW
EA0_2V5	2451 mV	0 mA	0 mW
EA0_1V5	1500 mV	0 mA	0 mW
EA1_PLL_1V0	1012 mV	0 mA	0 mW
EA1_1V04	1035 mV	0 mA	0 mW
EA1_2V5	2519 mV	0 mA	0 mW
EA1_1V5	1503 mV	0 mA	0 mW
EA1_XR 0.906V	908 mV	4965 mA	4508 mW
EA2 Core 0.9V	899 mV	43500 mA	39124 mW
EA2 AVDD 1.0V	1000 mV	1000 mA	1000 mW
EA2 HMC Core 0.9V	894 mV	6476 mA	5793 mW
EA2 1.2V	1193 mV	5430 mA	6481 mW
EA23_HMC_VDDM 1.2V	1193 mV	197 mA	235 mW
EA2_XR 0.906V	908 mV	5197 mA	4720 mW
EA3 Core 0.9V	900 mV	44375 mA	39954 mW
EA3 AVDD 1.0V	999 mV	1000 mA	999 mW
EA3 HMC Core 0.9V	894 mV	6244 mA	5585 mW
EA3 1.2V	1197 mV	5081 mA	6083 mW
EA2_PLL_1V0	1025 mV	0 mA	0 mW
EA2_1V04	1025 mV	0 mA	0 mW
EA2_2V5	2529 mV	0 mA	0 mW
EA2_1V5	1512 mV	0 mA	0 mW
EA3_PLL_1V0	1016 mV	0 mA	0 mW
EA3_1V04	1032 mV	0 mA	0 mW
EA3_2V5	2532 mV	0 mA	0 mW
EA3_1V5	1496 mV	0 mA	0 mW
EA3_XR 0.906V	908 mV	5895 mA	5353 mW
EA4 Core 0.9V	900 mV	44000 mA	39617 mW
EA4 AVDD 1.0V	1000 mV	1375 mA	1375 mW
EA4 HMC Core 0.9V	894 mV	9034 mA	8081 mW
EA4 1.2V	1193 mV	9151 mA	10922 mW
EA45_HMC_VDDM 1.2V	1193 mV	313 mA	374 mW
EA4_XR 0.906V	908 mV	5430 mA	4931 mW
EA5 Core 0.9V	900 mV	44000 mA	39617 mW
EA5 AVDD 1.0V	1000 mV	1000 mA	1000 mW
EA5 HMC Core 0.9V	897 mV	6825 mA	6123 mW
EA5 1.2V	1197 mV	5895 mA	7057 mW
EA4_PLL_1V0	1019 mV	0 mA	0 mW
EA4_1V04	1054 mV	0 mA	0 mW
EA4_2V5	2548 mV	0 mA	0 mW
EA4_1V5	1516 mV	0 mA	0 mW
EA5_PLL_1V0	1012 mV	0 mA	0 mW
EA5_1V04	1054 mV	0 mA	0 mW

EA5_2V5	2516 mV	0 mA	0 mW
EA5_1V5	1516 mV	0 mA	0 mW
VDD2V5	2487 mV	0 mA	0 mW
VDD1V5	1500 mV	0 mA	0 mW
VDD1V2	1216 mV	0 mA	0 mW
EA5_XR 0.906V	902 mV	4965 mA	4481 mW

## FPC 5 status:

State	Online
FPC 5 Intake-A Temp Sensor	28 degrees C / 82 degrees F
FPC 5 Exhaust-A Temp Sensor	52 degrees C / 125 degrees F
FPC 5 Exhaust-B Temp Sensor	50 degrees C / 122 degrees F
FPC 5 EA0 Temp Sensor	63 degrees C / 145 degrees F
FPC 5 EA0_XR0 Temp Sensor	70 degrees C / 158 degrees F
FPC 5 EA0_XR1 Temp Sensor	69 degrees C / 156 degrees F
FPC 5 EA1 Temp Sensor	56 degrees C / 132 degrees F
FPC 5 EA1_XR0 Temp Sensor	60 degrees C / 140 degrees F
FPC 5 EA1_XR1 Temp Sensor	58 degrees C / 136 degrees F
FPC 5 EA2 Temp Sensor	70 degrees C / 158 degrees F
FPC 5 EA2_XR0 Temp Sensor	75 degrees C / 167 degrees F
FPC 5 EA2_XR1 Temp Sensor	76 degrees C / 168 degrees F
FPC 5 EA3 Temp Sensor	61 degrees C / 141 degrees F
FPC 5 EA3_XR0 Temp Sensor	64 degrees C / 147 degrees F
FPC 5 EA3_XR1 Temp Sensor	63 degrees C / 145 degrees F
FPC 5 EA4 Temp Sensor	73 degrees C / 163 degrees F
FPC 5 EA4_XR0 Temp Sensor	74 degrees C / 165 degrees F
FPC 5 EA4_XR1 Temp Sensor	75 degrees C / 167 degrees F
FPC 5 EA5 Temp Sensor	56 degrees C / 132 degrees F
FPC 5 EA5_XR0 Temp Sensor	60 degrees C / 140 degrees F
FPC 5 EA5_XR1 Temp Sensor	62 degrees C / 143 degrees F
FPC 5 EA0_HMC0 Logic die	74 degrees C / 165 degrees F
FPC 5 EA0_HMC0 DRAM botm	71 degrees C / 159 degrees F
FPC 5 EA0_HMC1 Logic die	71 degrees C / 159 degrees F
FPC 5 EA0_HMC1 DRAM botm	68 degrees C / 154 degrees F
FPC 5 EA0_HMC2 Logic die	75 degrees C / 167 degrees F
FPC 5 EA0_HMC2 DRAM botm	72 degrees C / 161 degrees F
FPC 5 EA1_HMC0 Logic die	69 degrees C / 156 degrees F
FPC 5 EA1_HMC0 DRAM botm	66 degrees C / 150 degrees F
FPC 5 EA1_HMC1 Logic die	67 degrees C / 152 degrees F
FPC 5 EA1_HMC1 DRAM botm	64 degrees C / 147 degrees F
FPC 5 EA1_HMC2 Logic die	68 degrees C / 154 degrees F
FPC 5 EA1_HMC2 DRAM botm	65 degrees C / 149 degrees F
FPC 5 EA2_HMC0 Logic die	83 degrees C / 181 degrees F
FPC 5 EA2_HMC0 DRAM botm	80 degrees C / 176 degrees F
FPC 5 EA2_HMC1 Logic die	81 degrees C / 177 degrees F
FPC 5 EA2_HMC1 DRAM botm	78 degrees C / 172 degrees F
FPC 5 EA2_HMC2 Logic die	82 degrees C / 179 degrees F
FPC 5 EA2_HMC2 DRAM botm	79 degrees C / 174 degrees F
FPC 5 EA3_HMC0 Logic die	74 degrees C / 165 degrees F
FPC 5 EA3_HMC0 DRAM botm	71 degrees C / 159 degrees F
FPC 5 EA3_HMC1 Logic die	73 degrees C / 163 degrees F
FPC 5 EA3_HMC1 DRAM botm	70 degrees C / 158 degrees F
FPC 5 EA3_HMC2 Logic die	73 degrees C / 163 degrees F
FPC 5 EA3_HMC2 DRAM botm	70 degrees C / 158 degrees F
FPC 5 EA4_HMC0 Logic die	84 degrees C / 183 degrees F
FPC 5 EA4_HMC0 DRAM botm	81 degrees C / 177 degrees F
FPC 5 EA4_HMC1 Logic die	84 degrees C / 183 degrees F
FPC 5 EA4_HMC1 DRAM botm	81 degrees C / 177 degrees F
FPC 5 EA4_HMC2 Logic die	82 degrees C / 179 degrees F
FPC 5 EA4_HMC2 DRAM botm	79 degrees C / 174 degrees F
FPC 5 EA5_HMC0 Logic die	68 degrees C / 154 degrees F
FPC 5 EA5_HMC0 DRAM botm	65 degrees C / 149 degrees F

FPC 5 EA5_HMC1 Logic die	69 degrees C / 156 degrees F		
FPC 5 EA5_HMC1 DRAM botm	66 degrees C / 150 degrees F		
FPC 5 EA5_HMC2 Logic die	69 degrees C / 156 degrees F		
FPC 5 EA5_HMC2 DRAM botm	66 degrees C / 150 degrees F		
Power			
12V SS 1	12206 mV	9018 mA	110077 mW
12V SS 2	12232 mV	20794 mA	254368 mW
12V SS 3	12285 mV	9148 mA	112388 mW
12V SS 4	12219 mV	21530 mA	263087 mW
12V SS 5	12245 mV	12871 mA	157617 mW
VDD 1.0V_A	1000 mV	90125 mA	90125 mW
VDD 1.0V_B	0 mV	0 mA	0 mW
VDD 3.3V	3298 mV	6625 mA	21854 mW
VDD 0.9V	894 mV	3453 mA	3088 mW
ETH SW 1V	0 mV	0 mA	0 mW
VDD 1.8V	1812 mV	1476 mA	2676 mW
PVCC	851 mV	0 mA	0 mW
PVNN	1016 mV	0 mA	0 mW
V1P0	996 mV	0 mA	0 mW
V1P1	1064 mV	0 mA	0 mW
V1P3	1345 mV	0 mA	0 mW
VDDQ	1490 mV	0 mA	0 mW
V1P8	1800 mV	0 mA	0 mW
VDD3V3	3296 mV	0 mA	0 mW
V5V0_BIAS	4980 mV	0 mA	0 mW
VDD12V0	12154 mV	0 mA	0 mW
EA0 Core 0.9V	899 mV	37125 mA	33390 mW
EA0 AVDD 1.0V	1000 mV	25750 mA	25750 mW
EA0 HMC Core 0.9V	899 mV	10546 mA	9490 mW
EA0 1.2V	1193 mV	15779 mA	18832 mW
EA01_HMC_VDDM 1.2V	1197 mV	197 mA	236 mW
EA0_XR 0.906V	910 mV	15546 mA	14160 mW
EA1 Core 0.9V	900 mV	37625 mA	33877 mW
EA1 AVDD 1.0V	1000 mV	26000 mA	26000 mW
EA1 HMC Core 0.9V	897 mV	10430 mA	9357 mW
EA1 1.2V	1193 mV	16476 mA	19665 mW
EA0_PLL_1V0	1003 mV	0 mA	0 mW
EA0_1V04	1054 mV	0 mA	0 mW
EA0_2V5	2416 mV	0 mA	0 mW
EA0_1V5	1500 mV	0 mA	0 mW
EA1_PLL_1V0	993 mV	0 mA	0 mW
EA1_1V04	1054 mV	0 mA	0 mW
EA1_2V5	2516 mV	0 mA	0 mW
EA1_1V5	1500 mV	0 mA	0 mW
EA1_XR 0.906V	905 mV	15895 mA	14391 mW
EA2 Core 0.9V	900 mV	36750 mA	33089 mW
EA2 AVDD 1.0V	1000 mV	26000 mA	26025 mW
EA2 HMC Core 0.9V	897 mV	12058 mA	10817 mW
EA2 1.2V	1193 mV	16593 mA	19803 mW
EA23_HMC_VDDM 1.2V	1193 mV	1360 mA	1623 mW
EA2_XR 0.906V	908 mV	16825 mA	15279 mW
EA3 Core 0.9V	900 mV	38000 mA	34214 mW
EA3 AVDD 1.0V	1000 mV	25625 mA	25625 mW
EA3 HMC Core 0.9V	897 mV	10546 mA	9461 mW
EA3 1.2V	1197 mV	16244 mA	19446 mW
EA2_PLL_1V0	1019 mV	0 mA	0 mW
EA2_1V04	1045 mV	0 mA	0 mW
EA2_2V5	2503 mV	0 mA	0 mW
EA2_1V5	1490 mV	0 mA	0 mW
EA3_PLL_1V0	1009 mV	0 mA	0 mW
EA3_1V04	1041 mV	0 mA	0 mW

EA3_2V5	2529 mV	0 mA	0 mW
EA3_1V5	1496 mV	0 mA	0 mW
EA3_XR 0.906V	908 mV	15779 mA	14329 mW
EA4 Core 0.9V	900 mV	37125 mA	33427 mW
EA4 AVDD 1.0V	999 mV	30000 mA	29970 mW
EA4 HMC Core 0.9V	894 mV	11825 mA	10577 mW
EA4 1.2V	1197 mV	16127 mA	19306 mW
EA45_HMC_VDDM 1.2V	1193 mV	779 mA	929 mW
EA4_XR 0.906V	902 mV	16941 mA	15292 mW
EA5 Core 0.9V	899 mV	36750 mA	33053 mW
EA5 AVDD 1.0V	1000 mV	26000 mA	26000 mW
EA5 HMC Core 0.9V	894 mV	10313 mA	9225 mW
EA5 1.2V	1197 mV	16593 mA	19863 mW
EA4_PLL_1V0	1003 mV	0 mA	0 mW
EA4_1V04	1045 mV	0 mA	0 mW
EA4_2V5	2522 mV	0 mA	0 mW
EA4_1V5	1490 mV	0 mA	0 mW
EA5_PLL_1V0	1009 mV	0 mA	0 mW
EA5_1V04	1035 mV	0 mA	0 mW
EA5_2V5	2525 mV	0 mA	0 mW
EA5_1V5	1496 mV	0 mA	0 mW
VDD2V5	2480 mV	0 mA	0 mW
VDD1V5	1503 mV	0 mA	0 mW
VDD1V2	1222 mV	0 mA	0 mW
EA5_XR 0.906V	905 mV	14500 mA	13128 mW

### show chassis environment fpc (T320, T640, and T1600 Routers)

```

user@host> show chassis environment fpc
FPC 0 status:
State                               Online
Temperature Top                     42 degrees C / 107 degrees F
Temperature Bottom                   36 degrees C / 96 degrees F
Temperature MMB1                     39 degrees C / 102 degrees F
Power:
  1.8 V                             1959 mV
  2.5 V                             2495 mV
  3.3 V                             3344 mV
  5.0 V                             5047 mV
  1.8 V bias                         1787 mV
  3.3 V bias                         3291 mV
  5.0 V bias                         4998 mV
  8.0 V bias                         7343 mV
BUS Revision                         40
FPC 1 status:
State                               Online
Temperature Top                     42 degrees C / 107 degrees F
Temperature Bottom                   39 degrees C / 102 degrees F
Temperature MMB1                     40 degrees C / 104 degrees F
Power:
  1.8 V                             1956 mV
  2.5 V                             2498 mV
  3.3 V                             3340 mV
  5.0 V                             5023 mV
  1.8 V bias                         1782 mV
  3.3 V bias                         3277 mV
  5.0 V bias                         4989 mV
  8.0 V bias                         7289 mV
BUS Revision                         40
FPC 2 status:
State                               Online

```

```

Temperature Top          43 degrees C / 109 degrees F
Temperature Bottom       39 degrees C / 102 degrees F
Temperature MMB1         41 degrees C / 105 degrees F
Power:
  1.8 V                  1963 mV
  2.5 V                  2503 mV
  3.3 V                  3340 mV
  5.0 V                  5042 mV
  1.8 V bias             1797 mV
  3.3 V bias             3311 mV
  5.0 V bias             5013 mV
  8.0 V bias             7221 mV
BUS Revision             40

```

### show chassis environment fpc (T4000 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                  Online
Fan Intake              34 degrees C / 93 degrees F
Fan Exhaust             48 degrees C / 118 degrees F
PMB                     47 degrees C / 116 degrees F
LMB0                    50 degrees C / 122 degrees F
LMB1                    41 degrees C / 105 degrees F
LMB2                    35 degrees C / 95 degrees F
PFE1 LU2                46 degrees C / 114 degrees F
PFE1 LU0                41 degrees C / 105 degrees F
PFE0 LU0                57 degrees C / 134 degrees F
XF1                     47 degrees C / 116 degrees F
XF0                     52 degrees C / 125 degrees F
XM1                     41 degrees C / 105 degrees F
XM0                     50 degrees C / 122 degrees F
PFE0 LU1                56 degrees C / 132 degrees F
PFE0 LU2                45 degrees C / 113 degrees F
PFE1 LU1                37 degrees C / 98 degrees F
Power 1
  1.0 V                  991 mV
  1.2 V bias             1195 mV
  1.8 V                  1788 mV
  2.5 V                  2483 mV
  3.3 V                  3289 mV
  3.3 V bias             3299 mV
  12.0 V A               10608 mV
  12.0 V B               10637 mV
Power 2
  0.9 V                  881 mV
  0.9 V PFE0             916 mV
  0.9 V PFE1             903 mV
  1.0 V PFE0             1012 mV
  1.0 V PFE1             1002 mV
  1.1 V                  1095 mV
  1.5 V_0                1494 mV
  1.5 V_1                1479 mV
Power 3
  1.0 V PFE0             1000 mV
  1.0 V PFE1             1002 mV
  1.0 V PFE0 *           995 mV
  1.0 V PFE1 *           995 mV
  1.8 V PFE 0            1788 mV
  1.8 V PFE 1            1789 mV
  2.5 V                  2482 mV

```

12.0 V	11614 mV
Power 4	
1.0 V PFE0 LU0	1003 mV
1.0 V PFE1 LU0	1003 mV
1.0 V PFE1 LU2	1004 mV
1.0 V PFE0 LU0 *	995 mV
1.0 V PFE1 LU0 *	998 mV
1.0 V PFE1 LU2 *	996 mV
12.0 V	11643 mV
12.0 V C	11711 mV
Power (Base/PMB/MMB)	
LMB0 VDD2V5	2488 mV
LMB0 VDD1V8	1788 mV
LMB0 VDD1V5	1496 mV
LMB0 PFE0 LU0 AVDD1V0	1002 mV
LMB0 PFE0 LU0 VDD1V0	1000 mV
LMB0 VDD12V0	10752 mV
LMB1 VDD2V5	2472 mV
LMB1 VDD1V8	1792 mV
LMB1 VDD1V5	1480 mV
LMB1 PFE0 LU2 AVDD1V0	994 mV
LMB1 PFE0 LU2 VDD1V0	1002 mV
LMB1 VDD12V0	10800 mV
LMB2 VDD2V5	2472 mV
LMB2 VDD1V8	1792 mV
LMB2 VDD1V5	1486 mV
LMB2 PFE1 LU1 AVDD1V0	996 mV
LMB2 PFE1 LU1 VDD1V0	998 mV
LMB2 VDD12V0	10704 mV
PMB 1.05v	1049 mV
PMB 1.5v	1500 mV
PMB 2.5v	2500 mV
PMB 3.3v	3299 mV
Bus Revision	113
FPC 3 status:	
State	Online
Fan Intake	37 degrees C / 98 degrees F
Fan Exhaust	51 degrees C / 123 degrees F
PMB	43 degrees C / 109 degrees F
LMB0	57 degrees C / 134 degrees F
LMB1	54 degrees C / 129 degrees F
LMB2	38 degrees C / 100 degrees F
PFE1 LU2	63 degrees C / 145 degrees F
PFE1 LU0	45 degrees C / 113 degrees F
PFE0 LU0	69 degrees C / 156 degrees F
XF1	62 degrees C / 143 degrees F
XF0	63 degrees C / 145 degrees F
XM1	43 degrees C / 109 degrees F
XMO	67 degrees C / 152 degrees F
PFE0 LU1	63 degrees C / 145 degrees F
PFE0 LU2	66 degrees C / 150 degrees F
PFE1 LU1	41 degrees C / 105 degrees F
Power 1	
1.0 V	1002 mV
1.2 V bias	1201 mV
1.8 V	1785 mV
2.5 V	2485 mV
3.3 V	3288 mV
3.3 V bias	3285 mV
12.0 V A	10412 mV
12.0 V B	10515 mV



```

Power 2
0.9 V 882 mV
0.9 V PFE0 920 mV
0.9 V PFE1 905 mV
1.0 V PFE0 1015 mV
1.0 V PFE1 1001 mV
1.1 V 1094 mV
1.5 V_0 1495 mV
1.5 V_1 1478 mV
Power 3
0.92 V PFE1 998 mV
1.0 V PFE0 997 mV
1.0 V PFE0 * 992 mV
1.0 V PFE1 * 991 mV
1.8 V PFE 0 1780 mV
1.8 V PFE 1 1797 mV
2.5 V 2492 mV
12.0 V 11604 mV
Power 4
1.0 V PFE0 LU0 1003 mV
1.0 V PFE1 LU0 1004 mV
1.0 V PFE1 LU2 1003 mV
1.0 V PFE0 LU0 * 1000 mV
1.0 V PFE1 LU0 * 1001 mV
1.0 V PFE1 LU2 * 1003 mV
12.0 V 11653 mV
12.0 V C 11672 mV
Power (Base/PMB/MMB)
LMB0 VDD2V5 2512 mV
LMB0 VDD1V8 1790 mV
LMB0 VDD1V5 1500 mV
LMB0 PFE0 LU0 AVDD1V0 1004 mV
LMB0 PFE0 LU0 VDD1V0 1002 mV
LMB0 VDD12V0 10608 mV
LMB1 VDD2V5 2472 mV
LMB1 VDD1V8 1788 mV
LMB1 VDD1V5 1480 mV
LMB1 PFE0 LU2 AVDD1V0 1000 mV
LMB1 PFE0 LU2 VDD1V0 1004 mV
LMB1 VDD12V0 10672 mV
LMB2 VDD2V5 2488 mV
LMB2 VDD1V8 1798 mV
LMB2 VDD1V5 1494 mV
LMB2 PFE1 LU1 AVDD1V0 1000 mV
LMB2 PFE1 LU1 VDD1V0 1004 mV
LMB2 VDD12V0 10528 mV
PMB 1.05v 1050 mV
PMB 1.5v 1500 mV
PMB 2.5v 2499 mV
PMB 3.3v 3299 mV
Bus Revision 113
FPC 5 status:
State Online
Temperature Top 39 degrees C / 102 degrees F
Temperature Bottom 38 degrees C / 100 degrees F
Power
1.8 V 1804 mV
1.8 V bias 1802 mV
3.3 V 3294 mV
3.3 V bias 3277 mV
5.0 V bias 5008 mV

```

5.0 V TOP	5067 mV
8.0 V bias	6642 mV
Power (Base/PMB/MMB)	
1.2 V	1202 mV
1.5 V	1504 mV
5.0 V BOT	5079 mV
12.0 V TOP Base	11848 mV
12.0 V BOT Base	11780 mV
1.1 V PMB	1111 mV
1.2 V PMB	1189 mV
1.5 V PMB	1494 mV
1.8 V PMB	1819 mV
2.5 V PMB	2503 mV
3.3 V PMB	3294 mV
5.0 V PMB	5035 mV
12.0 V PMB	11788 mV
0.75 MMB TOP	766 mV
1.5 V MMB TOP	1484 mV
1.8 V MMB TOP	1772 mV
2.5 V MMB TOP	2485 mV
1.2 V MMB TOP	1137 mV
5.0 V MMB TOP	4946 mV
12.0 V MMB TOP	11772 mV
3.3 V MMB TOP	3289 mV
0.75 MMB BOT	759 mV
1.5 V MMB BOT	1482 mV
1.8 V MMB BOT	1792 mV
2.5 V MMB BOT	2490 mV
1.2 V MMB BOT	1145 mV
5.0 V MMB BOT	4922 mV
12.0 V MMB BOT	11625 mV
3.3 V MMB BOT	3282 mV
APS 00	2495 mV
APS 01	3308 mV
APS 02	3301 mV
5.0 V PIC 0	4967 mV
APS 10	2512 mV
APS 11	3316 mV
APS 12	3304 mV
5.0 V PIC 1	5081 mV
Bus Revision	49
FPC 6 status:	
State	Online
Fan Intake	34 degrees C / 93 degrees F
Fan Exhaust	49 degrees C / 120 degrees F
PMB	40 degrees C / 104 degrees F
LMB0	60 degrees C / 140 degrees F
LMB1	58 degrees C / 136 degrees F
LMB2	40 degrees C / 104 degrees F
PFE1 LU2	69 degrees C / 156 degrees F
PFE1 LU0	45 degrees C / 113 degrees F
PFE0 LU0	71 degrees C / 159 degrees F
XF1	58 degrees C / 136 degrees F
XF0	65 degrees C / 149 degrees F
XM1	40 degrees C / 104 degrees F
XM0	66 degrees C / 150 degrees F
PFE0 LU1	69 degrees C / 156 degrees F
PFE0 LU2	68 degrees C / 154 degrees F
PFE1 LU1	42 degrees C / 107 degrees F
Power 1	
1.0 V	998 mV

1.2 V bias	1191 mV
1.8 V	1781 mV
2.5 V	2487 mV
3.3 V	3302 mV
3.3 V bias	3300 mV
12.0 V A	10388 mV
12.0 V B	10388 mV
Power 2	
0.9 V	902 mV
0.9 V PFE0	921 mV
0.9 V PFE1	907 mV
1.0 V PFE0	996 mV
1.0 V PFE1	974 mV
1.1 V	1095 mV
1.5 V_0	1495 mV
1.5 V_1	1478 mV
Power 3	
1.0 V PFE0	997 mV
1.0 V PFE1	998 mV
1.0 V PFE0 *	993 mV
1.0 V PFE1 *	991 mV
1.8 V PFE 0	1796 mV
1.8 V PFE 1	1789 mV
2.5 V	2465 mV
12.0 V	11609 mV
Power 4	
1.0 V PFE0 LU0	1003 mV
1.0 V PFE1 LU0	1006 mV
1.0 V PFE1 LU2	1002 mV
1.0 V PFE0 LU0 *	1000 mV
1.0 V PFE1 LU0 *	998 mV
1.0 V PFE1 LU2 *	998 mV
12.0 V	11638 mV
12.0 V C	11702 mV
Power (Base/PMB/MMB)	
LMB0 VDD2V5	2484 mV
LMB0 VDD1V8	1780 mV
LMB0 VDD1V5	1496 mV
LMB0 PFE0 LU0 AVDD1V0	998 mV
LMB0 PFE0 LU0 VDD1V0	1004 mV
LMB0 VDD12V0	10528 mV
LMB1 VDD2V5	2472 mV
LMB1 VDD1V8	1776 mV
LMB1 VDD1V5	1474 mV
LMB1 PFE0 LU2 AVDD1V0	994 mV
LMB1 PFE0 LU2 VDD1V0	1004 mV
LMB1 VDD12V0	10544 mV
LMB2 VDD2V5	2476 mV
LMB2 VDD1V8	1790 mV
LMB2 VDD1V5	1492 mV
LMB2 PFE1 LU1 AVDD1V0	996 mV
LMB2 PFE1 LU1 VDD1V0	1010 mV
LMB2 VDD12V0	10528 mV
PMB 1.05v	1050 mV
PMB 1.5v	1499 mV
PMB 2.5v	2500 mV
PMB 3.3v	3300 mV
Bus Revision	80

**show chassis environment fpc lcc (TX Matrix Router)**

```
user@host> show chassis environment fpc lcc 0
lcc0-re0:
```

-----  
**FPC 1 status:**

State	Online
Temperature Top	30 degrees C / 86 degrees F
Temperature Bottom	25 degrees C / 77 degrees F
Temperature MMB0	Absent
Temperature MMB1	27 degrees C / 80 degrees F
Power:	
1.8 V	1813 mV
2.5 V	2504 mV
3.3 V	3338 mV
5.0 V	5037 mV
1.8 V bias	1797 mV
3.3 V bias	3301 mV
5.0 V bias	5013 mV
8.0 V bias	7345 mV
BUS Revision	40

**FPC 2 status:**

State	Online
Temperature Top	37 degrees C / 98 degrees F
Temperature Bottom	26 degrees C / 78 degrees F
Temperature MMB0	32 degrees C / 89 degrees F
Temperature MMB1	27 degrees C / 80 degrees F
Power:	
1.8 V	1791 mV
2.5 V	2517 mV
3.3 V	3308 mV
5.0 V	5052 mV
1.8 V bias	1797 mV
3.3 V bias	3289 mV
5.0 V bias	4991 mV
8.0 V bias	7477 mV
BUS Revision	40

**show chassis environment fpc lcc (TX Matrix Plus Router)**

```
user@host> show chassis environment fpc lcc 0
lcc0-re0:
```

-----  
**FPC 1 status:**

State	Online
Temperature Top	46 degrees C / 114 degrees F
Temperature Bottom	47 degrees C / 116 degrees F
Power	
1.8 V	1788 mV
1.8 V bias	1787 mV
3.3 V	3321 mV
3.3 V bias	3306 mV
5.0 V bias	5018 mV
5.0 V TOP	5037 mV
8.0 V bias	7223 mV
Power (Base/PMB/MMB)	
1.2 V	1205 mV
1.5 V	1503 mV
5.0 V BOT	5084 mV
12.0 V TOP Base	11775 mV

12.0 V BOT Base	11794 mV
1.1 V PMB	1108 mV
1.2 V PMB	1196 mV
1.5 V PMB	1499 mV
1.8 V PMB	1811 mV
2.5 V PMB	2515 mV
3.3 V PMB	3318 mV
5.0 V PMB	5030 mV
12.0 V PMB	11832 mV
0.75 MMB TOP	752 mV
1.5 V MMB TOP	1489 mV
1.8 V MMB TOP	1782 mV
2.5 V MMB TOP	2498 mV
1.2 V MMB TOP	1155 mV
5.0 V MMB TOP	4902 mV
12.0 V MMB TOP	11721 mV
3.3 V MMB TOP	3316 mV
0.75 MMB BOT	754 mV
1.5 V MMB BOT	1482 mV
1.8 V MMB BOT	1758 mV
2.5 V MMB BOT	2488 mV
1.2 V MMB BOT	1157 mV
5.0 V MMB BOT	4962 mV
12.0 V MMB BOT	11691 mV
3.3 V MMB BOT	3308 mV
APS 00	1484 mV
APS 01	2503 mV
APS 02	3313 mV
5.0 V PIC 0	5025 mV
APS 10	1501 mV
APS 11	2466 mV
APS 12	3311 mV
5.0 V PIC 1	5081 mV
Bus Revision	49

### show chassis environment fpc (QFX Series and OCX Series)

```

user@switch> show chassis environment fpc 0
FPC 0 status:
State                Online
Temperature          42 degrees C / 107 degrees F

```

### show chassis environment fpc interconnect-device (QFabric Systems)

```

user@switch> show chassis environment fpc interconnect-device interconnect1 0
FC 0 FPC 0 status:
State                Online
Left Intake Temperature 24 degrees C / 75 degrees F
Right Intake Temperature 24 degrees C / 75 degrees F
Left Exhaust Temperature 27 degrees C / 80 degrees F
Right Exhaust Temperature 27 degrees C / 80 degrees F
Power
BIAS 3V3             3330 mV
VDD 3V3              3300 mV
VDD 2V5              2502 mV
VDD 1V5              1496 mV
VDD 1V2              1194 mV
VDD 1V0              1000 mV
SW0 VDD 1V0          1020 mV
SW0 CVDD 1V025       1032 mV

```

SW1 VDD 1V0	1022 mV
SW1 CVDD 1V025	1030 mV
VDD 12V0 DIV3_33	3414 mV

#### show chassis environment fpc 5(PTX3000 Packet Transport Router)

```
user@host> show chassis environment fpc 5
FPC 5 status:
State                               Online
Intake Temperature                 31 degrees C / 87 degrees F
Exhaust Temperature                41 degrees C / 105 degrees F
Power
  FPC 12.0v                        12221 mV
  FPC VCC 0.5-1.3v                  1640 mV
  FPC VNN 0.5-1.3v                  1640 mV
  FPC 1.0v                           1640 mV
  FPC 1.1v                           1640 mV
  FPC 1.35v                          1640 mV
  FPC VDDQ 1.5v                     1640 mV
  FPC 1.8v                           1640 mV
  FPC 3.3v                           3280 mV
  FPC 5.0v bias                      5143 mV
  FPC 5.0v usb                       5143 mV
  FPC VCC 12.0v                     12289 mV
  FPC Vref 3.3v                      3280 mV
  MAIN 12.0v-i                       2265 mA
```

#### show chassis environment fpc 0 (PTX5000 Packet Transport Router)

```
user@host> show chassis environment fpc 0
FPC 0 status:
State                               Online
PMB Temperature                    35 degrees C / 95 degrees F
Intake Temperature                  33 degrees C / 91 degrees F
Exhaust A Temperature              51 degrees C / 123 degrees F
Exhaust B Temperature              43 degrees C / 109 degrees F
TL0 Temperature                    48 degrees C / 118 degrees F
TQ0 Temperature                    53 degrees C / 127 degrees F
TL1 Temperature                    56 degrees C / 132 degrees F
TQ1 Temperature                    58 degrees C / 136 degrees F
TL2 Temperature                    55 degrees C / 131 degrees F
TQ2 Temperature                    57 degrees C / 134 degrees F
TL3 Temperature                    59 degrees C / 138 degrees F
TQ3 Temperature                    59 degrees C / 138 degrees F
Power
  PMB 1.05v                         1049 mV
  PMB 1.5v                           1500 mV
  PMB 2.5v                           2500 mV
  PMB 3.3v                           3299 mV
  PFE0 1.5v                          1500 mV
  PFE0 1.0v                           999 mV
  TQ0 0.9v                            900 mV
  TL0 0.9v                            900 mV
  PFE1 1.5v                          1499 mV
  PFE1 1.0v                           999 mV
  TQ1 0.9v                            899 mV
  TL1 0.9v                            900 mV
  PFE2 1.5v                          1500 mV
  PFE2 1.0v                           1000 mV
  TQ2 0.9v                            900 mV
```

TL2	0.9v	900 mV
PFE3	1.5v	1499 mV
PFE3	1.0v	1000 mV
TQ3	0.9v	900 mV
TL3	0.9v	900 mV
Bias	3.3v	3327 mV
FPC	3.3v	3300 mV
FPC	2.5v	2500 mV
SAM	0.9v	900 mV
A	12.0v	2014 mV
B	12.0v	2030 mV

### show chassis environment fpc 07 (PTX5000 Packet Transport Router with FPC2-PTX-PIA)

```
user@host> show chassis environment fpc 07
```

```
FPC 7 status:
```

State	Online
PMB TEMPO Temperature	32 degrees C / 89 degrees F
PMB TEMP1 Temperature	28 degrees C / 82 degrees F
PMB CPU Temperature	46 degrees C / 114 degrees F
Intake Temperature	35 degrees C / 95 degrees F
Exhaust A Temperature	55 degrees C / 131 degrees F
Exhaust B Temperature	54 degrees C / 129 degrees F
TL5 Temperature	59 degrees C / 138 degrees F
TQ5 Temperature	57 degrees C / 134 degrees F
TL6 Temperature	57 degrees C / 134 degrees F
TQ6 Temperature	51 degrees C / 123 degrees F
TL1 Temperature	76 degrees C / 168 degrees F
TQ1 Temperature	58 degrees C / 136 degrees F
TL2 Temperature	75 degrees C / 167 degrees F
TQ2 Temperature	57 degrees C / 134 degrees F
TL4 Temperature	52 degrees C / 125 degrees F
TQ4 Temperature	66 degrees C / 150 degrees F
TL7 Temperature	52 degrees C / 125 degrees F
TQ7 Temperature	60 degrees C / 140 degrees F
TL0 Temperature	72 degrees C / 161 degrees F
TQ0 Temperature	73 degrees C / 163 degrees F
TL3 Temperature	64 degrees C / 147 degrees F
TQ3 Temperature	70 degrees C / 158 degrees F

```
Power
```

PMB	1.05v	1049 mV
PMB	3.3v	3299 mV
PMB	1.1v-a	1100 mV
PMB	1.5v	1499 mV
PMB	1.1v-b	1100 mV
Base	3.3v	3300 mV
FPC Base	2.5v	2499 mV
TL1	0.9v	897 mV
TQ1	0.9v	897 mV
PFE1	1.0v	999 mV
PFE1	1.5v	1499 mV
TL2	0.9v	897 mV
TQ2	0.9v	897 mV
PFE2	1.0v	999 mV
PFE2	1.5v	1499 mV
FPC Base	1.0v	1000 mV
FPC Base	1.2v	1199 mV
TL5	0.9v	898 mV
TQ5	0.9v	898 mV
PFE5	1.0v	1000 mV
PFE5	1.5v	1500 mV

TL6	0.9v	897 mV
TQ6	0.9v	897 mV
PFE6	1.0v	1000 mV
PFE6	1.5v	1499 mV
Mezz Base	2.5v	2500 mV
TL0	0.9v	896 mV
TQ0	0.9v	896 mV
PFE0	1.0v	999 mV
PFE0	1.5v	1499 mV

## show chassis environment fpc (PTX10008 router)

user@host&gt; show chassis environment fpc

FPC 0 status:

State	Online
FPC 0 Intake-A Temp Sensor	37 degrees C / 98 degrees F
FPC 0 Intake-B Temp Sensor	34 degrees C / 93 degrees F
FPC 0 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F
FPC 0 Exhaust-B Temp Sensor	38 degrees C / 100 degrees F
FPC 0 Exhaust-C Temp Sensor	40 degrees C / 104 degrees F
FPC 0 PE0 Temp Sensor	41 degrees C / 105 degrees F
FPC 0 PE1 Temp Sensor	42 degrees C / 107 degrees F
FPC 0 PE2 Temp Sensor	44 degrees C / 111 degrees F
FPC 0 LCPu Temp Sensor	40 degrees C / 104 degrees F

Power

PE0 Core 0.9V	872 mV	28777 mA	25146 mW
PE0 HMC0 Core 0.9V	899 mV	10359 mA	9328 mW
PE1 Core 0.9V	896 mV	29476 mA	26414 mW
PE1 HMC0 Core 0.9V	899 mV	10218 mA	9187 mW
PE2 Core 0.9V	872 mV	28839 mA	25199 mW
PE2 HMC0 Core 0.9V	900 mV	10296 mA	9265 mW
PE0 Serdes 1.0V	1020 mV	29000 mA	29593 mW
PE1 Serdes 1.0V	1019 mV	29109 mA	29718 mW
PE2 Serdes 1.0V	1019 mV	28484 mA	29078 mW
LCPu Platform 1.1V	1099 mV	3515 mA	3867 mW
LCPu Core 1.0V	1000 mV	8750 mA	8703 mW
PHY VDD B 1.0V	1000 mV	17062 mA	17031 mW
PHY VDD A 1.0V	999 mV	15640 mA	15625 mW
BCM Core 1.0V	999 mV	7054 mA	7054 mW
BCM PEX 1.0V	999 mV	3562 mA	3558 mW
HMC Core 1.2V	1199 mV	1280 mA	1513 mW
HMC Serdes 1.2V	1199 mV	32937 mA	39500 mW
VDD 1.5V	1500 mV	2824 mA	4234 mW
VDD 2.5V	2449 mV	3812 mA	9343 mW
VDD 3.3V	3299 mV	5085 mA	16796 mW
12V	12259 mV	29609 mA	368196 mW

FPC 1 status:

State	Online
FPC 1 Intake-A Temp Sensor	37 degrees C / 98 degrees F
FPC 1 Intake-B Temp Sensor	34 degrees C / 93 degrees F
FPC 1 Exhaust-A Temp Sensor	38 degrees C / 100 degrees F
FPC 1 Exhaust-B Temp Sensor	38 degrees C / 100 degrees F
FPC 1 Exhaust-C Temp Sensor	40 degrees C / 104 degrees F
FPC 1 PE0 Temp Sensor	41 degrees C / 105 degrees F
FPC 1 PE1 Temp Sensor	42 degrees C / 107 degrees F
FPC 1 PE2 Temp Sensor	44 degrees C / 111 degrees F
FPC 1 LCPu Temp Sensor	39 degrees C / 102 degrees F

Power

PE0 Core 0.9V	898 mV	29351 mA	26421 mW
PE0 HMC0 Core 0.9V	899 mV	9734 mA	8750 mW
PE1 Core 0.9V	873 mV	28539 mA	24933 mW



PE1 HMC0 Core 0.9V	899 mV	9937 mA	8937 mW
PE2 Core 0.9V	875 mV	28906 mA	25316 mW
PE2 HMC0 Core 0.9V	899 mV	10140 mA	9125 mW
PE0 Serdes 1.0V	1019 mV	28312 mA	28890 mW
PE1 Serdes 1.0V	1020 mV	28656 mA	29234 mW
PE2 Serdes 1.0V	1020 mV	29437 mA	30015 mW
LCPU Platform 1.1V	1100 mV	4617 mA	5078 mW
LCPU Core 1.0V	1000 mV	8781 mA	8781 mW
PHY VDD B 1.0V	1000 mV	15953 mA	15984 mW
PHY VDD A 1.0V	1000 mV	15484 mA	15484 mW
BCM Core 1.0V	999 mV	7945 mA	7937 mW
BCM PEX 1.0V	999 mV	3515 mA	3515 mW
HMC Core 1.2V	1199 mV	1269 mA	1521 mW
HMC Serdes 1.2V	1199 mV	33000 mA	39593 mW
VDD 1.5V	1500 mV	2691 mA	4062 mW
VDD 2.5V	2449 mV	3582 mA	8781 mW
VDD 3.3V	3300 mV	2563 mA	8458 mW
12V	12311 mV	29002 mA	357577 mW

FPC 2 status:

State	Online
FPC 2 Intake-A Temp Sensor	43 degrees C / 109 degrees F
FPC 2 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 2 Exhaust-A Temp Sensor	50 degrees C / 122 degrees F
FPC 2 Exhaust-B Temp Sensor	52 degrees C / 125 degrees F
FPC 2 Exhaust-C Temp Sensor	51 degrees C / 123 degrees F
FPC 2 PE0 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE1 Temp Sensor	56 degrees C / 132 degrees F
FPC 2 PE2 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE3 Temp Sensor	57 degrees C / 134 degrees F
FPC 2 PE4 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE5 Temp Sensor	60 degrees C / 140 degrees F
FPC 2 LCPU Temp Sensor	47 degrees C / 116 degrees F

Power

PE0 Core 0.9V	874 mV	28117 mA	24617 mW
PE1 Core 0.9V	899 mV	29601 mA	26632 mW
PE0 Serdes 1.0V	1019 mV	41031 mA	41843 mW
PE1 Serdes 1.0V	1019 mV	35656 mA	36343 mW
PE0 HMC Core 0.9V	899 mV	8125 mA	7312 mW
PE0,1 HMC Memory 1.2V	1199 mV	565 mA	688 mW
PE1 HMC Core 0.9V	899 mV	7921 mA	7125 mW
PE0,1 HMC Serdes 1.2V	1199 mV	21281 mA	25562 mW
PE2 Core 0.9V	899 mV	29187 mA	26242 mW
PE3 Core 0.9V	899 mV	29976 mA	27074 mW
PE2 Serdes 1.0V	1019 mV	38562 mA	39343 mW
PE3 Serdes 1.0V	1019 mV	34937 mA	35656 mW
PE2 HMC Core 0.9V	899 mV	8093 mA	7281 mW
PE2,3 HMC Memory 1.2V	1199 mV	610 mA	732 mW
PE3 HMC Core 0.9V	899 mV	7710 mA	6937 mW
PE2,3 HMC Serdes 1.2V	1199 mV	21500 mA	25812 mW
VDD 3.3V	3300 mV	7937 mA	26187 mW
VDD 1.5V	1499 mV	3234 mA	4851 mW
VDD 2.5V	2449 mV	4539 mA	11109 mW
PE4 Core 0.9V	874 mV	29914 mA	26183 mW
PE5 Core 0.9V	874 mV	29820 mA	26031 mW
PE4 Serdes 1.0V	1020 mV	43968 mA	44843 mW
PE5 Serdes 1.0V	1019 mV	27453 mA	28031 mW
PE4 HMC Core 0.9V	900 mV	7937 mA	7140 mW
PE4,5 HMC Memory 1.2V	1200 mV	1185 mA	1421 mW
PE5 HMC Core 0.9V	899 mV	8718 mA	7843 mW
PE4,5 HMC Serdes 1.2V	1199 mV	21125 mA	25343 mW
LCPU platform 1.1V	1099 mV	3777 mA	4156 mW

LCPU core 1.0V	1000 mV	9062 mA	9062 mW
BCM core 1.0V	1000 mV	9328 mA	9328 mW
BCM & PEX Serdes 1.0V	999 mV	4125 mA	4125 mW
12V	12311 mV	53347 mA	660345 mW

## FPC 3 status:

State	Online
FPC 3 Intake-A Temp Sensor	43 degrees C / 109 degrees F
FPC 3 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 3 Exhaust-A Temp Sensor	48 degrees C / 118 degrees F
FPC 3 Exhaust-B Temp Sensor	49 degrees C / 120 degrees F
FPC 3 Exhaust-C Temp Sensor	47 degrees C / 116 degrees F
FPC 3 PE0 Temp Sensor	48 degrees C / 118 degrees F
FPC 3 PE1 Temp Sensor	55 degrees C / 131 degrees F
FPC 3 PE2 Temp Sensor	47 degrees C / 116 degrees F
FPC 3 PE3 Temp Sensor	54 degrees C / 129 degrees F
FPC 3 PE4 Temp Sensor	48 degrees C / 118 degrees F
FPC 3 PE5 Temp Sensor	58 degrees C / 136 degrees F
FPC 3 LCPU Temp Sensor	46 degrees C / 114 degrees F

## Power

PE0 Core 0.9V	899 mV	29695 mA	26718 mW
PE1 Core 0.9V	899 mV	29695 mA	26710 mW
PE0 Serdes 1.0V	1020 mV	40156 mA	40906 mW
PE1 Serdes 1.0V	1020 mV	35281 mA	35968 mW
PE0 HMC Core 0.9V	900 mV	7492 mA	6742 mW
PE0,1 HMC Memory 1.2V	1199 mV	569 mA	683 mW
PE1 HMC Core 0.9V	899 mV	7570 mA	6812 mW
PE0,1 HMC Serdes 1.2V	1199 mV	20562 mA	24656 mW
PE2 Core 0.9V	899 mV	29734 mA	26765 mW
PE3 Core 0.9V	900 mV	29960 mA	26968 mW
PE2 Serdes 1.0V	1019 mV	37718 mA	38500 mW
PE3 Serdes 1.0V	1020 mV	35250 mA	35937 mW
PE2 HMC Core 0.9V	899 mV	7750 mA	6976 mW
PE2,3 HMC Memory 1.2V	1200 mV	546 mA	656 mW
PE3 HMC Core 0.9V	899 mV	7718 mA	6945 mW
PE2,3 HMC Serdes 1.2V	1199 mV	20625 mA	24750 mW
VDD 3.3V	3299 mV	5917 mA	19515 mW
VDD 1.5V	1499 mV	4015 mA	6015 mW
VDD 2.5V	2449 mV	4335 mA	10625 mW
PE4 Core 0.9V	899 mV	29835 mA	26875 mW
PE5 Core 0.9V	924 mV	30554 mA	28277 mW
PE4 Serdes 1.0V	1019 mV	43281 mA	44187 mW
PE5 Serdes 1.0V	1020 mV	27140 mA	27703 mW
PE4 HMC Core 0.9V	899 mV	7476 mA	6726 mW
PE4,5 HMC Memory 1.2V	1199 mV	531 mA	637 mW
PE5 HMC Core 0.9V	899 mV	7539 mA	6781 mW
PE4,5 HMC Serdes 1.2V	1199 mV	20375 mA	24468 mW
LCPU platform 1.1V	1099 mV	3453 mA	3796 mW
LCPU core 1.0V	999 mV	8984 mA	8984 mW
BCM core 1.0V	999 mV	7929 mA	7921 mW
BCM & PEX Serdes 1.0V	1000 mV	4046 mA	4046 mW
12V	12351 mV	51918 mA	644880 mW

## FPC 5 status:

State	Online
FPC 5 Intake-A Temp Sensor	Failed
FPC 5 Intake-B Temp Sensor	Failed
FPC 5 Exhaust-A Temp Sensor	41 degrees C / 105 degrees F
FPC 5 Exhaust-B Temp Sensor	41 degrees C / 105 degrees F
FPC 5 Exhaust-C Temp Sensor	42 degrees C / 107 degrees F
FPC 5 PE0 Temp Sensor	47 degrees C / 116 degrees F
FPC 5 PE1 Temp Sensor	49 degrees C / 120 degrees F
FPC 5 PE2 Temp Sensor	53 degrees C / 127 degrees F

```

FPC 5 LCPu Temp Sensor      Failed
Power
  PE0 Core 0.9V              923 mV   30976 mA   28578 mW
  PE0 HMC0 Core 0.9V         899 mV   10093 mA    9078 mW
  PE1 Core 0.9V              897 mV   29398 mA   26414 mW
  PE1 HMC0 Core 0.9V         899 mV    9734 mA    8750 mW
  PE2 Core 0.9V              922 mV   30226 mA   27886 mW
  PE2 HMC0 Core 0.9V         899 mV    9984 mA    8968 mW
  PE0 Serdes 1.0V            1019 mV  29296 mA   29890 mW
  PE1 Serdes 1.0V            1020 mV  28687 mA   29296 mW
  PE2 Serdes 1.0V            1020 mV  28187 mA   28765 mW
  LCPu Platform 1.1V         1100 mV   3664 mA    4031 mW
  LCPu Core 1.0V             999 mV   9125 mA    9125 mW
  PHY VDD B 1.0V             999 mV  15593 mA   15593 mW
  PHY VDD A 1.0V             1000 mV  15453 mA   15453 mW
  BCM Core 1.0V              999 mV   7773 mA    7765 mW
  BCM PEX 1.0V               1000 mV   3460 mA    3464 mW
  HMC Core 1.2V              1199 mV   1328 mA    1628 mW
  HMC Serdes 1.2V            1199 mV  32203 mA   38625 mW
  VDD 1.5V                   1499 mV   2675 mA    4007 mW
  VDD 2.5V                   2450 mV   3675 mA    9000 mW
  VDD 3.3V                   3300 mV   1814 mA     5980 mW
  12V                        12272 mV  29045 mA  361369 mW

FPC 6 status:
State                               Online
FPC 6 Intake-A Temp Sensor 41 degrees C / 105 degrees F
FPC 6 Intake-B Temp Sensor 37 degrees C / 98 degrees F
FPC 6 Exhaust-A Temp Sensor40 degrees C / 104 degrees F
FPC 6 Exhaust-B Temp Sensor40 degrees C / 104 degrees F
FPC 6 Exhaust-C Temp Sensor40 degrees C / 104 degrees F
FPC 6 PE0 Temp Sensor       45 degrees C / 113 degrees F
FPC 6 PE1 Temp Sensor       47 degrees C / 116 degrees F
FPC 6 PE2 Temp Sensor       51 degrees C / 123 degrees F
FPC 6 LCPu Temp Sensor      41 degrees C / 105 degrees F

Power
  PE0 Core 0.9V              897 mV   30214 mA   27179 mW
  PE0 HMC0 Core 0.9V         899 mV   10000 mA    8984 mW
  PE1 Core 0.9V              873 mV   29332 mA   25601 mW
  PE1 HMC0 Core 0.9V         899 mV    9828 mA    8828 mW
  PE2 Core 0.9V              898 mV   30781 mA   27675 mW
  PE2 HMC0 Core 0.9V         899 mV   10328 mA    9296 mW
  PE0 Serdes 1.0V            1019 mV  28921 mA   29531 mW
  PE1 Serdes 1.0V            1020 mV  29437 mA   30046 mW
  PE2 Serdes 1.0V            1019 mV  29671 mA   30281 mW
  LCPu Platform 1.1V         1100 mV   3671 mA    4039 mW
  LCPu Core 1.0V             1000 mV   8218 mA    8187 mW
  PHY VDD B 1.0V             1000 mV  15984 mA   15984 mW
  PHY VDD A 1.0V             999 mV   16093 mA   16093 mW
  BCM Core 1.0V              1000 mV   8046 mA    8062 mW
  BCM PEX 1.0V               1000 mV   3500 mA    3500 mW
  HMC Core 1.2V              1199 mV   1327 mA    1579 mW
  HMC Serdes 1.2V            1199 mV  33031 mA   39593 mW
  VDD 1.5V                   1499 mV   2722 mA    4078 mW
  VDD 2.5V                   2449 mV   3539 mA    8671 mW
  VDD 3.3V                   3299 mV   8082 mA   26656 mW
  12V                        12311 mV  31124 mA  385270 mW

```

`show chassis environment fpc (PTX10016 router)`

```
user@host> show chassis environment fpc
```

## FPC 1 status:

State Online

FPC 1 Intake-A Temp Sensor 36 degrees C / 96 degrees F

FPC 1 Intake-B Temp Sensor 32 degrees C / 89 degrees F

FPC 1 Exhaust-A Temp Sensor 37 degrees C / 98 degrees F

FPC 1 Exhaust-B Temp Sensor 36 degrees C / 96 degrees F

FPC 1 Exhaust-C Temp Sensor 36 degrees C / 96 degrees F

FPC 1 PE0 Temp Sensor 45 degrees C / 113 degrees F

FPC 1 PE1 Temp Sensor 46 degrees C / 114 degrees F

FPC 1 PE2 Temp Sensor 53 degrees C / 127 degrees F

FPC 1 LCPU Temp Sensor 35 degrees C / 95 degrees F

## Power

PE0 Core 0.9V	897 mV	28992 mA	26027 mW
PE0 HMC0 Core 0.9V	899 mV	10156 mA	9156 mW
PE1 Core 0.9V	871 mV	28800 mA	25164 mW
PE1 HMC0 Core 0.9V	899 mV	10125 mA	9109 mW
PE2 Core 0.9V	898 mV	29914 mA	26906 mW
PE2 HMC0 Core 0.9V	899 mV	10343 mA	9296 mW
PE0 Serdes 1.0V	1019 mV	27515 mA	28093 mW
PE1 Serdes 1.0V	1020 mV	27968 mA	28546 mW
PE2 Serdes 1.0V	1019 mV	27796 mA	28359 mW
LCPU Platform 1.1V	1100 mV	3347 mA	3289 mW
LCPU Core 1.0V	1000 mV	7960 mA	7960 mW
PHY VDD B 1.0V	1000 mV	16437 mA	16437 mW
PHY VDD A 1.0V	999 mV	15656 mA	15656 mW
BCM Core 1.0V	1000 mV	7289 mA	7335 mW
BCM PEX 1.0V	999 mV	3453 mA	3453 mW
HMC Core 1.2V	1199 mV	1218 mA	1453 mW
HMC Serdes 1.2V	1199 mV	32093 mA	38562 mW
VDD 1.5V	1500 mV	2859 mA	4289 mW
VDD 2.5V	2449 mV	3875 mA	9500 mW
VDD 3.3V	3299 mV	2806 mA	9257 mW
12V	12351 mV	28569 mA	354877 mW

## FPC 3 status:

State Online

FPC 3 Intake-A Temp Sensor 35 degrees C / 95 degrees F

FPC 3 Intake-B Temp Sensor 31 degrees C / 87 degrees F

FPC 3 Exhaust-A Temp Sensor 36 degrees C / 96 degrees F

FPC 3 Exhaust-B Temp Sensor 34 degrees C / 93 degrees F

FPC 3 Exhaust-C Temp Sensor 33 degrees C / 91 degrees F

FPC 3 PE0 Temp Sensor 43 degrees C / 109 degrees F

FPC 3 PE1 Temp Sensor 45 degrees C / 113 degrees F

FPC 3 PE2 Temp Sensor 49 degrees C / 120 degrees F

FPC 3 LCPU Temp Sensor 35 degrees C / 95 degrees F

## Power

PE0 Core 0.9V	897 mV	28832 mA	25871 mW
PE0 HMC0 Core 0.9V	899 mV	10359 mA	9328 mW
PE1 Core 0.9V	873 mV	28230 mA	24671 mW
PE1 HMC0 Core 0.9V	899 mV	10468 mA	9421 mW
PE2 Core 0.9V	898 mV	29539 mA	26539 mW
PE2 HMC0 Core 0.9V	899 mV	10656 mA	9593 mW
PE0 Serdes 1.0V	1020 mV	27484 mA	28031 mW
PE1 Serdes 1.0V	1019 mV	27515 mA	28078 mW
PE2 Serdes 1.0V	1020 mV	27625 mA	28187 mW
LCPU Platform 1.1V	1099 mV	3050 mA	3355 mW
LCPU Core 1.0V	999 mV	7820 mA	7804 mW
PHY VDD B 1.0V	999 mV	15406 mA	15406 mW
PHY VDD A 1.0V	1000 mV	14953 mA	14953 mW
BCM Core 1.0V	1000 mV	7648 mA	7648 mW
BCM PEX 1.0V	1000 mV	3531 mA	3531 mW
HMC Core 1.2V	1200 mV	1234 mA	1476 mW

HMC Serdes 1.2V	1199 mV	34671 mA	41593 mW
VDD 1.5V	1499 mV	3484 mA	5226 mW
VDD 2.5V	2449 mV	3218 mA	7890 mW
VDD 3.3V	3299 mV	2468 mA	8148 mW
12V	12311 mV	28785 mA	355950 mW

## FPC 6 status:

State	Online
FPC 6 Intake-A Temp Sensor	34 degrees C / 93 degrees F
FPC 6 Intake-B Temp Sensor	31 degrees C / 87 degrees F
FPC 6 Exhaust-A Temp Sensor	34 degrees C / 93 degrees F
FPC 6 Exhaust-B Temp Sensor	35 degrees C / 95 degrees F
FPC 6 Exhaust-C Temp Sensor	35 degrees C / 95 degrees F
FPC 6 PE0 Temp Sensor	42 degrees C / 107 degrees F
FPC 6 PE1 Temp Sensor	43 degrees C / 109 degrees F
FPC 6 PE2 Temp Sensor	47 degrees C / 116 degrees F
FPC 6 LCPU Temp Sensor	34 degrees C / 93 degrees F

## Power

PE0 Core 0.9V	922 mV	29394 mA	27160 mW
PE0 HMC0 Core 0.9V	899 mV	10078 mA	9062 mW
PE1 Core 0.9V	923 mV	29636 mA	27304 mW
PE1 HMC0 Core 0.9V	899 mV	9890 mA	8890 mW
PE2 Core 0.9V	898 mV	29734 mA	26757 mW
PE2 HMC0 Core 0.9V	899 mV	9968 mA	8968 mW
PE0 Serdes 1.0V	1020 mV	26968 mA	27515 mW
PE1 Serdes 1.0V	1019 mV	27421 mA	27984 mW
PE2 Serdes 1.0V	1019 mV	27625 mA	28171 mW
LCPU Platform 1.1V	1099 mV	3230 mA	4742 mW
LCPU Core 1.0V	999 mV	8171 mA	8171 mW
PHY VDD B 1.0V	1000 mV	15671 mA	15687 mW
PHY VDD A 1.0V	999 mV	15703 mA	15703 mW
BCM Core 1.0V	999 mV	7500 mA	7492 mW
BCM PEX 1.0V	1000 mV	3480 mA	3468 mW
HMC Core 1.2V	1199 mV	1199 mA	1440 mW
HMC Serdes 1.2V	1199 mV	31046 mA	37250 mW
VDD 1.5V	1499 mV	2804 mA	4203 mW
VDD 2.5V	2449 mV	3746 mA	9171 mW
VDD 3.3V	3300 mV	3173 mA	10476 mW
12V	12311 mV	28786 mA	355654 mW

## FPC 8 status:

State	Online
FPC 8 Intake-A Temp Sensor	34 degrees C / 93 degrees F
FPC 8 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 8 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F
FPC 8 Exhaust-B Temp Sensor	37 degrees C / 98 degrees F
FPC 8 Exhaust-C Temp Sensor	37 degrees C / 98 degrees F
FPC 8 PE0 Temp Sensor	42 degrees C / 107 degrees F
FPC 8 PE1 Temp Sensor	44 degrees C / 111 degrees F
FPC 8 PE2 Temp Sensor	47 degrees C / 116 degrees F
FPC 8 LCPU Temp Sensor	33 degrees C / 91 degrees F

## Power

PE0 Core 0.9V	897 mV	29382 mA	26437 mW
PE0 HMC0 Core 0.9V	899 mV	10265 mA	9250 mW
PE1 Core 0.9V	872 mV	28867 mA	25175 mW
PE1 HMC0 Core 0.9V	899 mV	10171 mA	9109 mW
PE2 Core 0.9V	899 mV	30210 mA	27214 mW
PE2 HMC0 Core 0.9V	900 mV	10187 mA	9171 mW
PE0 Serdes 1.0V	1020 mV	27843 mA	28421 mW
PE1 Serdes 1.0V	1020 mV	28265 mA	28828 mW
PE2 Serdes 1.0V	1019 mV	28406 mA	29000 mW
LCPU Platform 1.1V	1099 mV	3000 mA	3300 mW
LCPU Core 1.0V	1000 mV	7937 mA	7937 mW

PHY VDD B 1.0V	1000 mV	15843 mA	15843 mW
PHY VDD A 1.0V	1000 mV	15250 mA	15250 mW
BCM Core 1.0V	999 mV	6914 mA	6898 mW
BCM PEX 1.0V	999 mV	3445 mA	3445 mW
HMC Core 1.2V	1199 mV	1162 mA	1390 mW
HMC Serdes 1.2V	1199 mV	33437 mA	40125 mW
VDD 1.5V	1499 mV	2851 mA	4273 mW
VDD 2.5V	2450 mV	3867 mA	9484 mW
VDD 3.3V	3300 mV	3258 mA	10753 mW
12V	12338 mV	28656 mA	356171 mW

FPC 9 status:

State	Online
FPC 9 Intake-A Temp Sensor	44 degrees C / 111 degrees F
FPC 9 Intake-B Temp Sensor	28 degrees C / 82 degrees F
FPC 9 Exhaust-A Temp Sensor	51 degrees C / 123 degrees F
FPC 9 Exhaust-B Temp Sensor	52 degrees C / 125 degrees F
FPC 9 Exhaust-C Temp Sensor	48 degrees C / 118 degrees F
FPC 9 PE0 Temp Sensor	52 degrees C / 125 degrees F
FPC 9 PE1 Temp Sensor	65 degrees C / 149 degrees F
FPC 9 PE2 Temp Sensor	50 degrees C / 122 degrees F
FPC 9 PE3 Temp Sensor	65 degrees C / 149 degrees F
FPC 9 PE4 Temp Sensor	50 degrees C / 122 degrees F
FPC 9 PE5 Temp Sensor	67 degrees C / 152 degrees F
FPC 9 LCPU Temp Sensor	45 degrees C / 113 degrees F

Power

PE0 Core 0.9V	875 mV	28316 mA	24808 mW
PE1 Core 0.9V	875 mV	28546 mA	24996 mW
PE0 Serdes 1.0V	1019 mV	38906 mA	39687 mW
PE1 Serdes 1.0V	1020 mV	33078 mA	33781 mW
PE0 HMC Core 0.9V	899 mV	7718 mA	6945 mW
PE0,1 HMC Memory 1.2V	1199 mV	579 mA	695 mW
PE1 HMC Core 0.9V	899 mV	7289 mA	6570 mW
PE0,1 HMC Serdes 1.2V	1199 mV	20187 mA	24250 mW
PE2 Core 0.9V	924 mV	29062 mA	26894 mW
PE3 Core 0.9V	900 mV	28914 mA	26039 mW
PE2 Serdes 1.0V	1020 mV	36375 mA	37093 mW
PE3 Serdes 1.0V	1019 mV	32640 mA	33296 mW
PE2 HMC Core 0.9V	900 mV	7695 mA	6921 mW
PE2,3 HMC Memory 1.2V	1199 mV	562 mA	674 mW
PE3 HMC Core 0.9V	899 mV	7554 mA	6796 mW
PE2,3 HMC Serdes 1.2V	1199 mV	20156 mA	24218 mW
VDD 3.3V	3300 mV	8964 mA	29609 mW
VDD 1.5V	1499 mV	3968 mA	5945 mW
VDD 2.5V	2449 mV	4414 mA	10890 mW
PE4 Core 0.9V	900 mV	28527 mA	25679 mW
PE5 Core 0.9V	899 mV	28902 mA	26035 mW
PE4 Serdes 1.0V	1019 mV	41281 mA	42125 mW
PE5 Serdes 1.0V	1019 mV	25781 mA	26328 mW
PE4 HMC Core 0.9V	900 mV	7382 mA	6648 mW
PE4,5 HMC Memory 1.2V	1199 mV	626 mA	750 mW
PE5 HMC Core 0.9V	899 mV	7562 mA	6796 mW
PE4,5 HMC Serdes 1.2V	1199 mV	20312 mA	24375 mW
LCPU platform 1.1V	1099 mV	3687 mA	4054 mW
LCPU core 1.0V	1000 mV	9000 mA	9000 mW
BCM core 1.0V	999 mV	7843 mA	7835 mW
BCM & PEX Serdes 1.0V	999 mV	4062 mA	4062 mW
12V	12417 mV	51659 mA	643215 mW

show chassis environment FPC 1 (MX Routers with Media Services Blade [MSB])

user@switch> show chassis environment fpc 1

```

FPC 1 status:
State                               Online
Temperature Intake                  36 degrees C / 96 degrees F
Temperature Exhaust A               39 degrees C / 102 degrees F
Temperature LU TSen                 52 degrees C / 125 degrees F
Temperature LU Chip                 54 degrees C / 129 degrees F
Temperature XM TSen                 52 degrees C / 125 degrees F
Temperature XM Chip                 60 degrees C / 140 degrees F
Temperature PCIe TSen               52 degrees C / 125 degrees F
Temperature PCIe Chip               69 degrees C / 156 degrees F
Power
MPC-BIAS3V3-z12106                 3302 mV
MPC-VDD3V3-z16100                  3325 mV
MPC-AVDD1V0-z16100                 1007 mV
MPC-PCIE_1V0-z16100                 904 mV
MPC-LU0_1V0-z12004                 996 mV
MPC-VDD_1V5-z12004                 1498 mV
MPC-12VA-BMR453                    11733 mV
MPC-12VB-BMR453                    11728 mV
MPC-XM_0V9-vt273m                  900 mV
I2C Slave Revision                  81

```

#### show chassis environment fpc (EX9251 Switches)

```

user@switch> show chassis environment fpc
FPC 0 status:
State                               Online
Power
I2C Slave Revision                  0

```

#### show chassis environment fpc (EX9253 Switches)

```

user@switch> show chassis environment fpc
FPC 0 status:
State                               Online
FPC 0 Intake Temp Sensor            32 degrees C / 89 degrees F
FPC 0 Exhaust-A Temp Sensor         60 degrees C / 140 degrees F
FPC 0 Exhaust-B Temp Sensor         48 degrees C / 118 degrees F
Power
I2C Slave Revision                  13
FPC 1 status:
State                               Online
FPC 1 Intake Temp Sensor            30 degrees C / 86 degrees F
FPC 1 Exhaust-A Temp Sensor         60 degrees C / 140 degrees F
FPC 1 Exhaust-B Temp Sensor         50 degrees C / 122 degrees F
Power
I2C Slave Revision                  13

```

## show chassis environment fpm

---

<b>List of Syntax</b>	<a href="#">Syntax on page 510</a> <a href="#">Syntax (TX Matrix Routers) on page 510</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 510</a>
<b>Syntax</b>	show chassis environment fpm
<b>Syntax (TX Matrix Routers)</b>	show chassis environment fpm <lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Routers)</b>	show chassis environment fpm <lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers. Command introduced in Junos OS Release 12.1 for T4000 Core Routers. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers. Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.
<b>Description</b>	(M40e, M120, M160, M320, MX Series, and T Series routers and the PTX Series Packet Transport Routers only) Display environmental information about the front panel module in the router.
<b>Options</b>	<p><b>none</b>—(TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display environmental information about the front panel modules (craft interfaces) on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about the front panel modules (craft interfaces) on the TX Matrix Plus router and its attached routers.</p> <p><b>lcc <i>number</i></b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"><li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li><li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li><li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li><li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li></ul>



**scc**—(TX Matrix router only) (Optional) Display environmental information about the front panel module (craft interface) on the TX Matrix router (or switch-card chassis).

**sfc number**—(TX Matrix Plus router only) (Optional) Display environmental information about the front panel module (craft interface) on the TX Matrix Plus router (or switch-fabric chassis).

**Required Privilege Level**

view

**Related Documentation**

- [request chassis fpm resync on page 285](#)

**List of Sample Output**

[show chassis environment fpm \(M40e and M160 Routers\) on page 512](#)  
[show chassis environment fpm \(M320 Router\) on page 512](#)  
[show chassis environment fpm \(MX2010 Router\) on page 513](#)  
[show chassis environment fpm \(MX2020 Router\) on page 513](#)  
[show chassis environment fpm \(MX2008 Router\) on page 513](#)  
[show chassis environment fpm \(MX240 Router\) on page 513](#)  
[show chassis environment fpm \(MX480 Router\) on page 513](#)  
[show chassis environment fpm \(T Series Routers\) on page 513](#)  
[show chassis environment fpm lcc \(TX Matrix Router\) on page 513](#)  
[show chassis environment fpm scc \(TX Matrix Router\) on page 514](#)  
[show chassis environment fpm sfc \(TX Matrix Plus Router\) on page 514](#)  
[show chassis environment fpm \(T4000 Core Router\) on page 515](#)  
[show chassis environment fpm \(PTX5000 Packet Transport Router\) on page 516](#)

**Output Fields**

[Table 16 on page 511](#) lists the output fields for the **show chassis environment fpm** command. Output fields are listed in the approximate order in which they appear.

*Table 16: show chassis environment fpm Output Fields*

Field Name	Field Description
<b>State</b>	FPM status: <ul style="list-style-type: none"> <li>• <b>Online</b>—FPM is online and running.</li> <li>• <b>Offline</b>—FPM is powered down.</li> </ul>
<b>FPM CMB Voltage</b>	(M40e and M160 routers only) Information about the voltage supplied to the FPM chassis management bus (CMB) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
<b>FPM GBUS Voltage</b>	(M320 and T Series routers only) Information about the voltage supplied to the FPM generic bus (GBUS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
<b>FPM I2CS Voltage</b>	(PTX Series only) Information about the voltage supplied to the FPM generic bus (I2CS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.

Table 16: show chassis environment fpm Output Fields (continued)

Field Name	Field Description
<b>FPM Display Voltage</b>	Information about the voltage supplied to the FPM display. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
<b>FPM CMB Temperature</b>	(M40e and M160 routers only) Temperature of the air flowing past the FPM CMB device
<b>FPM GBUS Temperature</b>	(M320 and T Series routers only) Temperature of the air flowing past the FPM GBUS device.
<b>FPM I2CS Temperature</b>	(PTX Series only) Temperature of the air flowing past the FPM I2CS device.
<b>FPM Display Temperature</b>	Temperature of the air flowing past the FPM display.
<b>CMB Revision</b>	(M40e and M160 routers only) Revision level of the CMB device.
<b>GBUS Revision</b>	(M320 and T Series routers only) Revision level of the GBUS device.
<b>I2CS Revision</b>	(MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Revision level of the I2CS device.

## Sample Output

### show chassis environment fpm (M40e and M160 Routers)

```

user@host> show chassis environment fpm
FPM status:
  State                               Online
  FPM CMB Voltage:
    5.0 V bias                        5030 mV
    8.0 V bias                        8083 mV
  FPM Display Voltage:
    5.0 V bias                        4998 mV
  FPM CMB temperature                 34 degrees C / 93 degrees F
  FPM Display temperature             35 degrees C / 95 degrees F
  CMB Revision                        12

```

### show chassis environment fpm (M320 Router)

```

user@host> show chassis environment fpm
FPM status:
  State                               Online
  FPM GBUS Voltage:
    5.0 V                             5006 mV
    1.8 V bias                        1799 mV
    3.3 V bias                        3294 mV
    5.0 V bias                        4998 mV
    8.0 V bias                        7682 mV
  FPM GBUS temperature                 30 degrees C / 86 degrees F
  GBUS Revision                        51

```

**show chassis environment fpm (MX2010 Router)**

```

user@host > show chassis environment fpm
FPM status:
  State                Online
  I2CS Revision        4

```

**show chassis environment fpm (MX2020 Router)**

```

user@host > show chassis environment fpm
FPM status:
  State                Online
  I2CS Revision        3

```

**show chassis environment fpm (MX2008 Router)**

```

user@host > show chassis environment fpm
FPM status:
  State                Online
  I2CS Revision        5

```

**show chassis environment fpm (MX240 Router)**

```

user@host> show chassis environment fpm
FPM status:
  State                Online
  I2CS Revision        41

```

**show chassis environment fpm (MX480 Router)**

```

user@host> show chassis environment fpm
FPM status:
  State                Online
  I2CS Revision        41

```

**show chassis environment fpm (T Series Routers)**

```

user@host> show chassis environment fpm
FPM status:
  State                Online
  FPM GBUS Voltage:
    1.8 V bias         1787 mV
    3.3 V bias         3286 mV
    5.0 V bias         4991 mV
    8.0 V bias         7162 mV
  FPM Display Voltage:
    5.0 V              4996 mV
  FPM GBUS temperature 29 degrees C / 84 degrees F
  FPM Display temperature 26 degrees C / 78 degrees F
  GBUS Revision        37

```

**show chassis environment fpm lcc (TX Matrix Router)**

```

user@host> show chassis environment fpm lcc 0
lcc0-re0:
-----
FPM status:
  State                Online

```

```

FPM GBUS Voltage:
  1.8 V bias      1797 mV
  3.3 V bias      3294 mV
  5.0 V bias      5015 mV
  8.0 V bias      7470 mV
FPM Display Voltage:
  5.0 V          5018 mV
FPM GBUS temperature  25 degrees C / 77 degrees F
FPM Display temperature 29 degrees C / 84 degrees F
GBUS Revision        37

```

#### show chassis environment fpm scc (TX Matrix Router)

```

user@host> show chassis environment fpm scc
scc-re0:
-----
FPM status:
State                               Online
FPM GBUS Voltage:
  1.8 V bias      1789 mV
  3.3 V bias      3296 mV
  5.0 V bias      5003 mV
  8.0 V bias      7592 mV
FPM Display Voltage:
  5.0 V          5010 mV
FPM GBUS temperature  22 degrees C / 71 degrees F
FPM Display temperature 27 degrees C / 80 degrees F
GBUS Revision        37

```

#### show chassis environment fpm sfc (TX Matrix Plus Router)

```

user@host> show chassis environment fpm sfc
sfc0-re0:
-----
FPM status:
State                               Online
FPM I2CS Voltage:
  3.3 V          3300 mV
  5.0 V          5001 mV
  9.0 V FPD      8672 mV
FPM I2CS temperature 33 degrees C / 91 degrees F
I2CS Revision        69

```

```

lcc0-re0:
-----
FPM status:
State                               Online
FPM GBUS Voltage:
  1.8 V bias      1802 mV
  3.3 V bias      3301 mV
  5.0 V bias      4984 mV
  8.0 V bias      7377 mV
FPM Display Voltage:
  5.0 V          5015 mV
FPM GBUS temperature 30 degrees C / 86 degrees F
FPM Display temperature 32 degrees C / 89 degrees F
GBUS Revision        37

```

```
lcc1-re0:
```

```

-----
FPM status:
State                               Online
FPM GBUS Voltage:
  1.8 V bias                        1789 mV
  3.3 V bias                        3311 mV
  5.0 V bias                        5013 mV
  8.0 V bias                        7467 mV
FPM Display Voltage:
  5.0 V                             5015 mV
FPM GBUS temperature                29 degrees C / 84 degrees F
FPM Display temperature              31 degrees C / 87 degrees F
GBUS Revision                        37

```

### show chassis environment fpm (T4000 Core Router)

```

user@host> show chassis environment fpm
CB 0 status:
State                               Online Master
Temperature                         34 degrees C / 93 degrees F
Power 1
  1.8 V                             1804 mV
  2.5 V                             2499 mV
  3.3 V                             3317 mV
  3.3 V bias                        3291 mV
  4.6 V                             4663 mV
  5.0 V                             4905 mV
  8.0 V bias                        7658 mV
  12.0 V                            11877 mV
Power 2
  1.0 V                             996 mV
  1.2 V                             1207 mV
  3.3 V RE                          3354 mV
Bus Revision                        51
FPGA Revision                       5
CB 1 status:
State                               Online Standby
Temperature                         36 degrees C / 96 degrees F
Power 1
  1.8 V                             1791 mV
  2.5 V                             2494 mV
  3.3 V                             3321 mV
  3.3 V bias                        3301 mV
  4.6 V                             4666 mV
  5.0 V                             4945 mV
  8.0 V bias                        7645 mV
  12.0 V                            11897 mV
Power 2
  1.0 V                             991 mV
  1.2 V                             1201 mV
  3.3 V RE                          3289 mV
Bus Revision                        51
FPGA Revision                       5

```

```

user@host> show chassis environment fpm
FPM status:
State                               Online
FPM GBUS Voltage:
  1.8 V bias                        1802 mV
  3.3 V bias                        3294 mV
  5.0 V bias                        5003 mV

```

8.0 V bias	7306 mV
FPM Display Voltage:	
5.0 V	5010 mV
FPM GBUS temperature	26 degrees C / 78 degrees F
FPM Display temperature	29 degrees C / 84 degrees F
GBUS Revision	37

#### show chassis environment fpm (PTX5000 Packet Transport Router)

user@host> show chassis environment fpm

FPM status:	
State	Online
FPM I2CS Voltage:	
3.3 V	3300 mV
5.0 V	4975 mV
FPM I2CS temperature	37 degrees C / 98 degrees F
I2CS Revision	109

## show chassis environment lcc

<b>Syntax</b>	<code>show chassis environment lcc</code> <code>&lt;lcc--number&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 13.1 for TX Matrix Plus router with 3D SIBs.
<b>Description</b>	Display chassis environmental information for a specified line-card chassis.
<b>Options</b>	<p><b>lcc <i>number</i></b>—(TX Matrix, TX Matrix Plus routers, and TX Matrix Plus router with 3D SIBs)  On a TX Matrix router, T640 LCC is connected to the TX Matrix router in a routing matrix. On a TX Matrix Plus router, the T1600 LCC is connected to the TX Matrix Plus router in a routing matrix. On a TX Matrix Plus router with 3D SIBs, T1600 LCC or T4000 LCC are connected to the TX Matrix Plus router in a routing matrix.</p> <p><i>lcc number</i> has the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>Replace the <i>number</i> variable with a value from <b>0</b> through <b>3</b>, when the T640 routers are connected to the TX Matrix router in a routing matrix.</li> <li>Replace the <i>number</i> variable with a value from <b>0</b> through <b>3</b>, when the T1600 routers are connected to the TX Matrix Plus router in a routing matrix.</li> <li>Replace the <i>number</i> variable with a value from <b>0</b> through <b>7</b>, when the T1600 routers are connected to the TX matrix Plus router and 3D SIBs in a routing matrix.</li> <li>Replace the <i>number</i> variable with values <b>0</b>, <b>2</b>, <b>4</b>, or <b>6</b>, when T4000 routers are connected to the TX Matrix Plus router and 3D SIBs in a routing matrix.</li> </ul>
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show chassis environment on page 354</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show chassis environment lcc (TX Matrix Plus router) on page 518</a> <a href="#">show chassis environment lcc (TX Matrix Plus router with 3D SIBs) on page 519</a>
<b>Output Fields</b>	<p><a href="#">Table 12 on page 362</a> lists the output fields for the <b>show chassis environment lcc</b> command. Output fields are listed in the approximate order in which they appear.</p>

Field Name	Field Description
<b>Class</b>	<ul style="list-style-type: none"> <li><b>Temp</b>: Temperature of air flowing through the chassis in degrees Celsius (C) and Fahrenheit (F).</li> <li><b>Fan</b>: Fan status: <b>OK</b>, <b>Testing</b> (during initial power-on), <b>Failed</b>, or <b>Absent</b>.</li> <li>On T Series routers, <b>Misc</b> includes <b>CIP</b> and <b>SPMB</b> (Switch Processor Mezzanine Board). <b>OK</b> indicates that the <b>CIP</b> or <b>SPMB</b> is present. <b>Absent</b> indicates that the <b>CIP</b> or <b>SPMB</b> is not present.</li> </ul>

Field Name	Field Description
<b>Item</b>	Information about the chassis component: Power Entry Module (PEM), SONET Clock Generator (SCG), Routing Engines, Controls Boards (CBs), Switch Interface Boards (SIBs), and Flexible PIC Concentrators (FPCs).
<b>Status</b>	<p>Status of the specified chassis component. For example, if the Class is Fan, the fan status can be:</p> <ul style="list-style-type: none"> <li>• <b>OK:</b> The fans are operational.</li> <li>• <b>Testing:</b> The fans are being tested during initial power-on.</li> <li>• <b>Failed:</b> The fans have failed or the fans are not spinning.</li> <li>• <b>Absent:</b> The fan tray is not installed.</li> </ul>
<b>Measurement</b>	Dependant on the Class. For example, if the Class is Temp, indicates the temperature in degree Celsius and degrees Fahrenheit. If the Class is Fan, indicates actual fan RPM.

## Sample Output

### show chassis environment lcc (TX Matrix Plus router)

```
user@host> show chassis environment lcc 0
lcc0-re0:
```

```
-----
Class Item                Status    Measurement
Temp  PEM 0                 OK        31 degrees C / 87 degrees F
      PEM 1                 Check     29 degrees C / 84 degrees F
      SCG 0                 OK        35 degrees C / 95 degrees F
      SCG 1                 OK        35 degrees C / 95 degrees F
      Routing Engine 0      OK        34 degrees C / 93 degrees F
      Routing Engine 0 CPU  OK        52 degrees C / 125 degrees F
      Routing Engine 1      OK        34 degrees C / 93 degrees F
      Routing Engine 1 CPU  OK        48 degrees C / 118 degrees F
      CB 0                  OK        36 degrees C / 96 degrees F
      CB 1                  OK        37 degrees C / 98 degrees F
      SIB 0                 OK        46 degrees C / 114 degrees F
      SIB 0 (B)             OK        36 degrees C / 96 degrees F
      SIB 1                 OK        45 degrees C / 113 degrees F
      SIB 1 (B)             OK        35 degrees C / 95 degrees F
      SIB 2                 OK        45 degrees C / 113 degrees F
      SIB 2 (B)             OK        35 degrees C / 95 degrees F
      SIB 3                 OK        44 degrees C / 111 degrees F
      SIB 3 (B)             OK        35 degrees C / 95 degrees F
      SIB 4                 OK        45 degrees C / 113 degrees F
      SIB 4 (B)             OK        36 degrees C / 96 degrees F
      SIB 0                 OK        46 degrees C / 114 degrees F
      SIB 0 (B)             OK        36 degrees C / 96 degrees F
      SIB 1                 OK        45 degrees C / 113 degrees F
      SIB 1 (B)             OK        35 degrees C / 95 degrees F
      SIB 2                 OK        45 degrees C / 113 degrees F
      SIB 2 (B)             OK        35 degrees C / 95 degrees F
      SIB 3                 OK        44 degrees C / 111 degrees F
      SIB 3 (B)             OK        35 degrees C / 95 degrees F
      SIB 4                 OK        45 degrees C / 113 degrees F
      SIB 4 (B)             OK        36 degrees C / 96 degrees F
      FPC 1 Top             OK        46 degrees C / 114 degrees F
      FPC 1 Bottom          OK        48 degrees C / 118 degrees F
```



	FPC 3 Top	OK	49 degrees C / 120 degrees F
	FPC 3 Bottom	OK	48 degrees C / 118 degrees F
	FPC 4 Top	OK	47 degrees C / 116 degrees F
	FPC 4 Bottom	OK	50 degrees C / 122 degrees F
	FPC 7 Top	OK	48 degrees C / 118 degrees F
	FPC 7 Bottom	OK	48 degrees C / 118 degrees F
	FPM GBUS	OK	29 degrees C / 84 degrees F
	FPM Display	OK	33 degrees C / 91 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Third fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Fifth fan	OK	Spinning at normal speed
	Rear Tray Sixth fan	OK	Spinning at normal speed
	Rear Tray Seventh fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

### show chassis environment lcc (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis environment lcc 0
lcc0-re0:
```

Class	Item	Status	Measurement
Temp	PEM 0	Check	30 degrees C / 86 degrees F
	PEM 1	OK	35 degrees C / 95 degrees F
	SCG 0	OK	32 degrees C / 89 degrees F
	SCG 1	OK	32 degrees C / 89 degrees F
	Routing Engine 0	OK	31 degrees C / 87 degrees F
	Routing Engine 0 CPU	OK	45 degrees C / 113 degrees F
	Routing Engine 1	OK	31 degrees C / 87 degrees F
	Routing Engine 1 CPU	OK	42 degrees C / 107 degrees F
	CB 0	OK	32 degrees C / 89 degrees F
	CB 1	OK	32 degrees C / 89 degrees F
	SIB 0	OK	38 degrees C / 100 degrees F
	SIB 0 (B)	Absent	
	SIB 1	OK	38 degrees C / 100 degrees F
	SIB 1 (B)	Absent	
	SIB 2	OK	38 degrees C / 100 degrees F
	SIB 2 (B)	Absent	
	SIB 3	OK	38 degrees C / 100 degrees F
	SIB 3 (B)	Absent	
	SIB 4	OK	39 degrees C / 102 degrees F
	SIB 4 (B)	Absent	
	SIB 0	OK	38 degrees C / 100 degrees F
	SIB 0 (B)	Absent	
	SIB 1	OK	38 degrees C / 100 degrees F

SIB 1 (B)	Absent	
SIB 2	OK	38 degrees C / 100 degrees F
SIB 2 (B)	Absent	
SIB 3	OK	38 degrees C / 100 degrees F
SIB 3 (B)	Absent	
SIB 4	OK	39 degrees C / 102 degrees F
SIB 4 (B)	Absent	
FPC 0 Fan Intake	OK	34 degrees C / 93 degrees F
FPC 0 Fan Exhaust	OK	47 degrees C / 116 degrees F
FPC 0 PMB	OK	45 degrees C / 113 degrees F
FPC 0 LMB0	OK	52 degrees C / 125 degrees F
FPC 0 LMB1	OK	42 degrees C / 107 degrees F
FPC 0 LMB2	OK	37 degrees C / 98 degrees F
FPC 0 PFE1 LU2	OK	48 degrees C / 118 degrees F
FPC 0 PFE1 LU0	OK	42 degrees C / 107 degrees F
FPC 0 PFE0 LU0	OK	62 degrees C / 143 degrees F
FPC 0 XF1	OK	48 degrees C / 118 degrees F
FPC 0 XF0	OK	55 degrees C / 131 degrees F
FPC 0 XM1	OK	36 degrees C / 96 degrees F
FPC 0 XM0	OK	49 degrees C / 120 degrees F
FPC 0 PFE0 LU1	OK	59 degrees C / 138 degrees F
FPC 0 PFE0 LU2	OK	46 degrees C / 114 degrees F
FPC 0 PFE1 LU1	OK	40 degrees C / 104 degrees F
FPC 3 Fan Intake	OK	36 degrees C / 96 degrees F
FPC 3 Fan Exhaust	OK	50 degrees C / 122 degrees F
FPC 3 PMB	OK	49 degrees C / 120 degrees F
FPC 3 LMB0	OK	52 degrees C / 125 degrees F
FPC 3 LMB1	OK	44 degrees C / 111 degrees F
FPC 3 LMB2	OK	38 degrees C / 100 degrees F
FPC 3 PFE1 LU2	OK	52 degrees C / 125 degrees F
FPC 3 PFE1 LU0	OK	44 degrees C / 111 degrees F
FPC 3 PFE0 LU0	OK	61 degrees C / 141 degrees F
FPC 3 XF1	OK	48 degrees C / 118 degrees F
FPC 3 XF0	OK	54 degrees C / 129 degrees F
FPC 3 XM1	OK	39 degrees C / 102 degrees F
FPC 3 XM0	OK	53 degrees C / 127 degrees F
FPC 3 PFE0 LU1	OK	57 degrees C / 134 degrees F
FPC 3 PFE0 LU2	OK	50 degrees C / 122 degrees F
FPC 3 PFE1 LU1	OK	43 degrees C / 109 degrees F
FPC 4 Fan Intake	OK	36 degrees C / 96 degrees F
FPC 4 Fan Exhaust	OK	48 degrees C / 118 degrees F
FPC 4 PMB	OK	48 degrees C / 118 degrees F
FPC 4 LMB0	OK	50 degrees C / 122 degrees F
FPC 4 LMB1	OK	42 degrees C / 107 degrees F
FPC 4 LMB2	OK	37 degrees C / 98 degrees F
FPC 4 PFE1 LU2	OK	47 degrees C / 116 degrees F
FPC 4 PFE1 LU0	OK	43 degrees C / 109 degrees F
FPC 4 PFE0 LU0	OK	59 degrees C / 138 degrees F
FPC 4 XF1	OK	48 degrees C / 118 degrees F
FPC 4 XF0	OK	54 degrees C / 129 degrees F
FPC 4 XM1	OK	37 degrees C / 98 degrees F
FPC 4 XM0	OK	49 degrees C / 120 degrees F
FPC 4 PFE0 LU1	OK	53 degrees C / 127 degrees F
FPC 4 PFE0 LU2	OK	45 degrees C / 113 degrees F
FPC 4 PFE1 LU1	OK	41 degrees C / 105 degrees F
FPC 5 Fan Intake	OK	34 degrees C / 93 degrees F
FPC 5 Fan Exhaust	OK	44 degrees C / 111 degrees F
FPC 5 PMB	OK	43 degrees C / 109 degrees F
FPC 5 LMB0	OK	50 degrees C / 122 degrees F
FPC 5 LMB1	OK	41 degrees C / 105 degrees F
FPC 5 LMB2	OK	38 degrees C / 100 degrees F

	FPC 5 PFE1 LU2	OK	46 degrees C / 114 degrees F
	FPC 5 PFE1 LU0	OK	44 degrees C / 111 degrees F
	FPC 5 PFE0 LU0	OK	57 degrees C / 134 degrees F
	FPC 5 XF1	OK	47 degrees C / 116 degrees F
	FPC 5 XF0	OK	55 degrees C / 131 degrees F
	FPC 5 XM1	OK	39 degrees C / 102 degrees F
	FPC 5 XM0	OK	49 degrees C / 120 degrees F
	FPC 5 PFE0 LU1	OK	56 degrees C / 132 degrees F
	FPC 5 PFE0 LU2	OK	48 degrees C / 118 degrees F
	FPC 5 PFE1 LU1	OK	42 degrees C / 107 degrees F
	FPC 6 Fan Intake	OK	33 degrees C / 91 degrees F
	FPC 6 Fan Exhaust	OK	48 degrees C / 118 degrees F
	FPC 6 PMB	OK	41 degrees C / 105 degrees F
	FPC 6 LMB0	OK	59 degrees C / 138 degrees F
	FPC 6 LMB1	OK	53 degrees C / 127 degrees F
	FPC 6 LMB2	OK	39 degrees C / 102 degrees F
	FPC 6 PFE1 LU2	OK	62 degrees C / 143 degrees F
	FPC 6 PFE1 LU0	OK	45 degrees C / 113 degrees F
	FPC 6 PFE0 LU0	OK	69 degrees C / 156 degrees F
	FPC 6 XF1	OK	53 degrees C / 127 degrees F
	FPC 6 XF0	OK	59 degrees C / 138 degrees F
	FPC 6 XM1	OK	37 degrees C / 98 degrees F
	FPC 6 XM0	OK	64 degrees C / 147 degrees F
	FPC 6 PFE0 LU1	OK	69 degrees C / 156 degrees F
	FPC 6 PFE0 LU2	OK	60 degrees C / 140 degrees F
	FPC 6 PFE1 LU1	OK	41 degrees C / 105 degrees F
	FPM GBUS	OK	25 degrees C / 77 degrees F
	FPM Display	OK	29 degrees C / 84 degrees F
Fans	Top Left Front fan	OK	Spinning at high speed
	Top Left Middle fan	OK	Spinning at high speed
	Top Left Rear fan	OK	Spinning at high speed
	Top Right Front fan	OK	Spinning at high speed
	Top Right Middle fan	OK	Spinning at high speed
	Top Right Rear fan	OK	Spinning at high speed
	Bottom Left Front fan	OK	Spinning at high speed
	Bottom Left Middle fan	OK	Spinning at high speed
	Bottom Left Rear fan	OK	Spinning at high speed
	Bottom Right Front fan	OK	Spinning at high speed
	Bottom Right Middle fan	OK	Spinning at high speed
	Bottom Right Rear fan	OK	Spinning at high speed
	Rear Tray fan 1 (Top)	OK	Spinning at high speed
	Rear Tray fan 2	OK	Spinning at high speed
	Rear Tray fan 3	OK	Spinning at high speed
	Rear Tray fan 4	OK	Spinning at high speed
Misc	Rear Tray fan 5	OK	Spinning at high speed
	Rear Tray fan 6	OK	Spinning at high speed
	Rear Tray fan 7	OK	Spinning at high speed
	Rear Tray fan 8	OK	Spinning at high speed
	Rear Tray fan 9	OK	Spinning at high speed
	Rear Tray fan 10	OK	Spinning at high speed
	Rear Tray fan 11	OK	Spinning at high speed
	Rear Tray fan 12	OK	Spinning at high speed
	Rear Tray fan 13	OK	Spinning at high speed
	Rear Tray fan 14	OK	Spinning at high speed
	Rear Tray fan 15	OK	Spinning at high speed
	Rear Tray fan 16 (Bottom)	OK	Spinning at high speed
	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

## show chassis environment pem

---

<b>List of Syntax</b>	<a href="#">Syntax on page 522</a> <a href="#">Syntax (ACX4000 Router) on page 522</a> <a href="#">Syntax (TX Matrix Routers) on page 522</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 522</a> <a href="#">Syntax (MX Series Router) on page 522</a> <a href="#">Syntax (PTX Series Router) on page 522</a> <a href="#">Syntax (MX104 3D Universal Edge Routers) on page 522</a> <a href="#">Syntax (MX10003 3D Universal Edge, MX204, MX10008 Routers) on page 522</a> <a href="#">Syntax (QFX Series) on page 523</a> <a href="#">Syntax (OCX Series) on page 523</a> <a href="#">Syntax (EX9251, EX9253 Switches) on page 523</a>
<b>Syntax</b>	show chassis environment pem <slot>
<b>Syntax (ACX4000 Router)</b>	show chassis environment pem
<b>Syntax (TX Matrix Routers)</b>	show chassis environment pem <lcc number   scc> <slot>
<b>Syntax (TX Matrix Plus Routers)</b>	show chassis environment pem <lcc number   sfc number> <slot>
<b>Syntax (MX Series Router)</b>	show chassis environment pem <slot> <all-members> <local> <member member-id>
<b>Syntax (PTX Series Router)</b>	show chassis environment pem <slot> <all-members> <local> <member member-id>
<b>Syntax (MX104 3D Universal Edge Routers)</b>	show chassis environment pem <slot> <satellite [fpc-slot slot-id   device-alias alias-name]>
<b>Syntax (MX10003 3D Universal Edge, MX204, MX10008 Routers)</b>	show chassis environment pem <slot>

**Syntax (QFX Series)** `show chassis environment pem`  
`<slot (interconnect-device name slot ) | (node-device name)>`

**Syntax (OCX Series)** `show chassis environment pem`  
`<slot>`

**Syntax (EX9251, EX9253 Switches)** `show chassis environment pem`  
`<slot>`

**Release Information** Command introduced before Junos OS Release 7.4.  
 Command introduced in Junos OS Release 11.3 for the QFX Series.  
 Command introduced in Junos OS Release 12.3R2 for EX Series.  
 Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.  
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.  
**satellite** option introduced in Junos OS Release 14.2R3.  
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.  
 Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.  
 Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.  
 Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.  
 Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.  
 Command introduced in Junos OS Release 18.2 for EX9253 Switches.  
 Command introduced in Junos OS Release 18.2R1 for MX10008 Routers

**Description** Display Power Entry Module (PEM) environmental status information.



**NOTE:** The new high-capacity (4100W) enhanced DC PEM on MX960 routers includes a new design that can condition the input voltage. This results in the output voltage differing from the input voltage. The earlier generation of DC PEMs coupled the input power directly to the output, thereby making it safe to assume that the output voltage was equal to the input voltage.

**Options** **none**—Display environmental information about both PEMs. For the TX Matrix router, display environmental information about the PEMs, the TX Matrix router, and its attached T640 routers. For the TX Matrix Plus router, display environmental information about the PEMs, the TX Matrix Plus router, and its attached routers.

**all-members**—(MX Series routers only) (Optional) Display environmental information about the PEMs in all the member routers of the Virtual Chassis configuration.

**interconnect-device *name***—(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Interconnect device.

**lcc *number***—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display environmental information about the PEM in the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display environmental information about the PEM in the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**node-device *name***—(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Node device.

**satellite [*fpc-slot slot-id* | device-alias *alias-name*]**—(Junos Fusion only)(Optional) Display environmental information about the PEM in the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

**scc**—(TX Matrix routers only) (Optional) Display environmental information about the PEM in the TX Matrix router (or switch-card chassis).

**sfc**—(TX Matrix Plus routers only) (Optional) Display environmental information about the PEM in the TX Matrix Plus router (or switch-fabric chassis).

**slot** —(Optional) Display environmental information about an individual PEM. Replace *slot* with 0 or 1.

**Required Privilege Level**

view

**Related Documentation**

- [show chassis hardware on page 870](#)

**List of Sample Output**

[show chassis environment pem \(M40e Router\) on page 526](#)  
[show chassis environment pem \(M120 Router\) on page 526](#)  
[show chassis environment pem \(M160 Router\) on page 526](#)  
[show chassis environment pem \(M320 Router\) on page 527](#)  
[show chassis environment pem \(MX150\) on page 527](#)  
[show chassis environment pem \(MX104 Router\) on page 527](#)  
[show chassis environment pem \(MX240 Router\) on page 527](#)

[show chassis environment pem \(MX480 Router\) on page 528](#)  
[show chassis environment pem \(MX960 Router\) on page 528](#)  
[show chassis environment pem \(MX10003 Router\) on page 528](#)  
[show chassis environment pem \(MX204 Router\) on page 529](#)  
[show chassis environment pem \(MX10008 Router\) on page 529](#)  
[show chassis environment pem \(PTX10016 Router\) on page 530](#)  
[show chassis environment pem \(T320 Router\) on page 531](#)  
[show chassis environment pem \(T640 Router\) on page 531](#)  
[show chassis environment pem \(T4000 Router\) on page 531](#)  
[show chassis environment pem \(T640/T1600/T4000 Routers With Six-Input DC Power Supply\) on page 532](#)  
[show chassis environment pem lcc \(TX Matrix Routing Matrix\) on page 532](#)  
[show chassis environment pem scc \(TX Matrix Routing Matrix\) on page 532](#)  
[show chassis environment pem sfc \(TX Matrix Plus Routing Matrix\) on page 533](#)  
[show chassis environment pem lcc \(TX Matrix Plus Routing Matrix\) on page 533](#)  
[show chassis environment pem node-device \(QFabric System\) on page 534](#)  
[show chassis environment pem \(QFX Series and OCX Series\) on page 534](#)  
[show chassis environment pem interconnect-device \(QFabric System\) on page 534](#)  
[show chassis environment pem \(EX9251 Switches\) on page 534](#)  
[show chassis environment pem \(EX9253 Switches\) on page 535](#)

**Output Fields** [Table 17 on page 525](#) lists the output fields for the **show chassis environment pem** command. Output fields are listed in the approximate order in which they appear.

*Table 17: show chassis environment pem Output Fields*

Field Name	Field Description
PEMslotstatus	Number of the PEM slot.
State	Status of the PEM.
Temperature	Temperature of the air flowing past the PEM.
AC Input	Status of the AC input for the specified component
AC Output	Status of the AC output for the specified component.
DC input	Status of the DC input for the specified component.
DC output	Status of the DC output for the specified component.
Load	(Not available on M40e or M160 routers) Information about the load on supply, in percentage of rated current being used.
Voltage	(M120, M160, M320, T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about voltage supplied to the PEM.  (MX104 routers only) Information about voltage supplied by the PEM to the system.
Current	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about the PEM current.

Table 17: show chassis environment pem Output Fields (continued)

Field Name	Field Description
Power	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about the PEM power.
SCG/CB/SIB	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) SONET Clock Generator/Control Board/Switch Interface Board.
FAN	(T640, T1600, and T4000 routers with six-input DC power supply only) Information about the DC output to the fan.

## Sample Output

### show chassis environment pem (M40e Router)

```
user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  AC input              OK
  DC output             OK
```

### show chassis environment pem (M120 Router)

```
user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC Input:            OK
  DC Output:           OK
  Load                Less than 20 percent
  Voltage:
    48.0 V input       52864 mV
    48.0 V fan supply  41655 mV
    3.3 V              3399 mV
PEM 1 status:
  State                Online
  Temperature          OK
  DC Input:            OK
  DC Output:           OK
  Load                Less than 20 percent
  Voltage:
    48.0 V input       54537 mV
    48.0 V fan supply  42910 mV
    3.3 V              3506 mV
```

### show chassis environment pem (M160 Router)

```
user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC input              OK
  DC output             OK
  Load                Less than 20 percent
  Voltage:
```



48.0 V input	54833 mV
48.0 V fan supply	50549 mV
8.0 V bias	8239 mV
5.0 V bias	5006 mV

### show chassis environment pem (M320 Router)

```

user@host> show chassis environment pem
PEM 2 status:
  State                Online
  Temperature          OK
  DC input             OK
  Load                Less than 40 percent
    48.0 V input       51853 mV
    48.0 V fan supply  48877 mV
    8.0 V bias         8449 mV
    5.0 V bias         4998 mV
PEM 3 status:
  State                Online
  Temperature          OK
  DC input             OK
  Load                Less than 40 percent
    48.0 V input       51717 mV
    48.0 V fan supply  49076 mV
    8.0 V bias         8442 mV
    5.0 V bias         4998 mV

```

### show chassis environment pem (MX150)

```

user@host> show chassis environment pem
FPC 0 PEM 0 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK

```

### show chassis environment pem (MX104 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC Output:           OK
  Voltage:
    12.0 V output      12281 mV
    3.3 V output       3353 mV
PEM 1 status:
  State                Empty

```

### show chassis environment pem (MX240 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC Output:           OK
PEM 1 status:
  State                Online
  Temperature          OK
  DC Output:           OK

```

### show chassis environment pem (MX480 Router)

```
user@host> show chassis environment pem
PEM 0 status:
  State           Online
  Temperature      OK
  DC Input:        OK
  DC Output:       OK
  Voltage:
PEM 1 status:
  State           Online
  Temperature      OK
  DC Input:        OK
  DC Output:       OK
  Voltage:
```

### show chassis environment pem (MX960 Router)

```
user@host> show chassis environment pem
PEM 2 status:
  State           Present
PEM 3 status:
  State           Online
  Temperature      OK
  DC Output:       OK
```

### show chassis environment pem (MX10003 Router)

```
user@host> show chassis environment pem

PEM 0 status:
  State           Online
  Airflow          Front to Back
  Temperature      OK    34 degrees C / 93 degrees F
  Temperature      OK    26 degrees C / 78 degrees F
  Temperature      OK    24 degrees C / 75 degrees F
  Firmware version 0x22
  Cooling Fan      8752 RPM
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   12.00      26          312      10

PEM 1 status:
  State           Online
  Airflow          Front to Back
  Temperature      OK    35 degrees C / 95 degrees F
  Temperature      OK    26 degrees C / 78 degrees F
  Temperature      OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan      8480 RPM
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   12.00      27          324      11

PEM 2 status:
  State           Online
  Airflow          Front to Back
  Temperature      OK    37 degrees C / 98 degrees F
  Temperature      OK    29 degrees C / 84 degrees F
  Temperature      OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan      8656 RPM
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   12.00      25          300      10
```

```

PEM 3 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    35 degrees C / 95 degrees F
  Temperature     OK    26 degrees C / 78 degrees F
  Temperature     OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan     8448 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      26          312      10

PEM 4 status:
  State           Empty

PEM 5 status:
  State           Empty

```

### show chassis environment pem (MX204 Router)

```
user@host> show chassis environment pem
```

```

PEM 0 status:
  State           Empty

PEM 1 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    48 degrees C / 118 degrees F
  Temperature     OK    51 degrees C / 123 degrees F
  Fan Sensor      5400 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  11.94      16          191      29

```

### show chassis environment pem (MX10008 Router)

```
user@host> show chassis environment pem
```

```

PEM 0 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    24 degrees C / 75 degrees F
  Firmware version 0x3A
  Fan 0           7680 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      44          528      21

PEM 1 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    30 degrees C / 86 degrees F
  Firmware version 0x3A
  Fan 0           7920 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      45          540      21

PEM 2 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    25 degrees C / 77 degrees F
  Firmware version 0x3A
  Fan 0           7740 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      44          528      21

PEM 3 status:
  State           Online
  Airflow         Front to Back

```

```

Temperature          OK  22 degrees C / 71 degrees F
Firmware version     0x3A
Fan 0                 7860 RPM
DC Output             Voltage(V) Current(A) Power(W) Load(%)
                     12.00      43      516      20
PEM 4 status:
State                Online
Airflow              Front to Back
Temperature           OK  24 degrees C / 75 degrees F
Firmware version     0x3A
Fan 0                 7680 RPM
DC Output             Voltage(V) Current(A) Power(W) Load(%)
                     12.00      43      516      20
PEM 5 status:
State                Present

```

### show chassis environment pem (PTX10016 Router)

```

user@host> show chassis environment pem
PEM 0 status:
State                Online
Airflow              Front to Back
Temperature           OK  21 degrees C / 69 degrees F
Firmware version     0x36
Fan 0                 5760 RPM
DC Output             Voltage(V) Current(A) Power(W) Load(%)
                     12.00      51      612      22
PEM 1 status:
State                Online
Airflow              Front to Back
Temperature           OK  23 degrees C / 73 degrees F
Firmware version     0x36
Fan 0                 5760 RPM
DC Output             Voltage(V) Current(A) Power(W) Load(%)
                     12.00      52      624      23
PEM 2 status:
State                Online
Airflow              Front to Back
Temperature           OK  23 degrees C / 73 degrees F
Firmware version     0x36
Fan 0                 5760 RPM
DC Output             Voltage(V) Current(A) Power(W) Load(%)
                     12.00      51      612      22
PEM 3 status:
State                Online
Airflow              Front to Back
Temperature           OK  21 degrees C / 69 degrees F
Firmware version     0x36
Fan 0                 5760 RPM
DC Output             Voltage(V) Current(A) Power(W) Load(%)
                     12.00      51      612      22
PEM 4 status:
State                Online
Airflow              Front to Back
Temperature           OK  22 degrees C / 71 degrees F
Firmware version     0x36
Fan 0                 5760 RPM
DC Output             Voltage(V) Current(A) Power(W) Load(%)
                     12.00      52      624      23
PEM 5 status:
State                Online

```

```

Airflow                Front to Back
Temperature             OK   24 degrees C / 75 degrees F
Firmware version       0x36
Fan 0                  5700 RPM
DC Output              Voltage(V) Current(A) Power(W) Load(%)
                       12.00      51         612      22
PEM 6 status:
State                  Online
Airflow                Front to Back
Temperature             OK   21 degrees C / 69 degrees F
Firmware version       0x36
Fan 0                  5700 RPM
DC Output              Voltage(V) Current(A) Power(W) Load(%)
                       12.00      50         600      22

```

#### show chassis environment pem (T320 Router)

```

user@host> show chassis environment pem
PEM 0 status:
State                  Online
Temperature            OK
DC input:              OK

```

#### show chassis environment pem (T640 Router)

```

user@host> show chassis environment pem
PEM 0 status:
State                  Online
Temperature            22 degrees C / 71 degrees F
AC input: OK
DC output:             Voltage    Current      Power      Load
FPC 0                  56875      606         34         4
FPC 1                  57016      525         29         3
FPC 2                   0           0           0           0
FPC 3                   0           0           0           0
FPC 4                   0           0           0           0
FPC 5                   0           0           0           0
FPC 6                  57158     1581        90         12
FPC 7                   0           0           0           0
SCG/CB/SIB             56750     1125        63         5

```

#### show chassis environment pem (T4000 Router)

```

user@host> show chassis environment pem
PEM 0 status:
State                  Online
Temperature            33 degrees C / 91 degrees F
DC Input:              OK
                       Voltage(V) Current(A) Power(W) Load(%)
INPUT 0                54.625      9.812     535      22
INPUT 1                54.625     10.250     559      23
INPUT 2                55.125      0.125       6       0
INPUT 3                54.500     10.062     548      22
INPUT 4                54.750      9.375     513      21
INPUT 5                54.750     10.187     557      23
DC Output              Voltage(V) Current(A) Power(W) Load(%)
FPC 0                  55.750     10.125     564      37
FPC 1                  51.625      0.000       0       0
FPC 2                  52.000      0.000       0       0
FPC 3                  55.062     10.437     574      38

```

FPC 4	52.125	0.000	0	0
FPC 5	55.000	9.375	515	34
FPC 6	55.187	9.687	534	35
FPC 7	51.437	0.000	0	0
SCG/CB/SIB	55.375	15.750	872	35
FAN	54.562	14.750	804	42

### show chassis environment pem (T640/TI600/T4000 Routers With Six-Input DC Power Supply)

```

user@host> show chassis environment pem
PEM 1 status:
State                Online
Temperature          36 degrees C / 96 degrees F
DC Input:            OK

```

	Voltage(V)	Current(A)	Power(W)	Load(%)
INPUT 0	0.000	0.000	0	0
INPUT 1	54.875	3.812	209	27
INPUT 2	55.375	3.937	218	29
INPUT 3	54.625	3.750	204	27
INPUT 4	55.125	3.375	186	24
INPUT 5	55.125	3.375	186	24

```

DC Output            Voltage(V)  Current(A)  Power(W)  Load(%)
FPC 0                52.312      0.000      0          0
FPC 1                52.687      0.000      0          0
FPC 2                52.812      0.000      0          0
FPC 3                55.812      7.062     394        52
FPC 4                52.625      0.000      0          0
FPC 5                52.625      0.000      0          0
FPC 6                52.750      0.000      0          0
FPC 7                52.750      0.000      0          0
SCG/CB/SIB           55.937     11.937     667        55
FAN                  55.812      4.937     275        36

```

### show chassis environment pem lcc (TX Matrix Routing Matrix)

```

user@host> show chassis environment pem 0 lcc 0
lcc0-re0:
-----
PEM 0 status:
State                Present
Temperature          27 degrees C / 80 degrees F
DC input:            Check
DC output:           Voltage  Current    Power    Load
FPC 0                0          0          0         0
FPC 1                0          0          0         0
FPC 2                0          0          0         0
FPC 3                0          0          0         0
FPC 4                0          0          0         0
FPC 5                0          0          0         0
FPC 6                0          0          0         0
FPC 7                0          0          0         0
SCG/CB/SIB           0          0          0         0

```

### show chassis environment pem scc (TX Matrix Routing Matrix)

```

user@host> show chassis environment pem scc
scc-re0:
-----
PEM 1 status:
State                Online

```

```

Temperature                24 degrees C / 75 degrees F
DC input:                  OK
DC output:                 Voltage Current      Power      Load
SIB 0                      0         0         0         0
SIB 1                      0         0         0         0
SIB 2                      0         0         0         0
SIB 3                     56550        0         0         0
SIB 4                     55958       6912       386        51

```

#### show chassis environment pem sfc (TX Matrix Plus Routing Matrix)

```

user@host> show chassis environment pem sfc 0
sfc0-re0:

```

```

-----
PEM 0 status:
State                Online
Temperature          35 degrees C / 95 degrees F
DC Input:            OK
DC Output            Voltage Current      Power      Load
Channel 0            53820    14140       761        59
Channel 1            53550    12720       681        53
Channel 2            53840    12930       696        54
Channel 3            53690    14990       804        63
Channel 4            53620    15070       808        63
Channel 5            53900    14820       798        62
Channel 6            54120    5020        271        21

```

#### show chassis environment pem lcc (TX Matrix Plus Routing Matrix)

```

user@host> show chassis environment lcc 0

```

```

lcc0-re1:
-----
PEM 0 status:
State                Online
Temperature          38 degrees C / 100 degrees F
DC Input:            OK
DC Output            Voltage Current      Power      Load
FPC 0                0         0         0         0
FPC 1                0         0         0         0
FPC 2                0         0         0         0
FPC 3                0         0         0         0
FPC 4                56408    7575       427        56
FPC 5                0         0         0         0
FPC 6                56266    7956       447        59
FPC 7                56283    6100       343        45
SCG/CB/SIB           55916    8950       500        41
PEM 1 status:
State                Present
Temperature          35 degrees C / 95 degrees F
DC Input:            Check
DC Output            Voltage Current      Power      Load
FPC 0                0         0         0         0
FPC 1                0         0         0         0
FPC 2                0         0         0         0
FPC 3                0         0         0         0
FPC 4                0         0         0         0
FPC 5                0         0         0         0
FPC 6                0         0         0         0

```

FPC 7	0	0	0	0
SCG/CB/SIB	0	0	0	0

### show chassis environment pem node-device (QFabric System)

```
user@switch> show chassis environment pem node-device node1
FPC 0 PEM 0 status:
  State          Check
  Airflow        Front to Back
  Temperature     OK
  AC Input:      OK
  DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  12          10        120      18
FPC 0 PEM 1 status:
  State          Online
  Airflow        Back to Front
  Temperature     OK
  AC Input:      OK
  DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  11          10        110      17
```

### show chassis environment pem (QFX Series and OCX Series)

```
user@switch> show chassis environment pem
FPC 0 PEM 1 status:
  State          Online
  Airflow        Front to Back
  Temperature     OK
  AC Input:      OK
  DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  12          17        204      31
```

### show chassis environment pem interconnect-device (QFabric System)

```
user@switch> show chassis environment pem interconnect-device IC11
IC1 PEM 1 status:
  State          Online
  Airflow        Front to Back
  Temperature     OK
  AC Input:      OK
  DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  12          18        216      33
```

### show chassis environment pem (EX9251 Switches)

```
user@switch> show chassis environment pem
PEM 0 status:
  State          Present
PEM 1 status:
  State          Online
  Airflow        Front to Back
  Temperature     OK 36 degrees C / 96 degrees F
  Temperature     OK 35 degrees C / 95 degrees F
  Fan Sensor      5940 RPM
  DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  11.85      17        201      30
```



**show chassis environment pem (EX9253 Switches)**

```

user@switch> show chassis environment pem
PEM 0 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   56 degrees C / 132 degrees F
  Temperature          OK   46 degrees C / 114 degrees F
  Temperature          OK   28 degrees C / 82 degrees F
  Firmware version     04.10
  Cooling Fan          9056 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                       12.00      47      564      19
PEM 1 status:
  State                Present
PEM 2 status:
  State                Empty
PEM 3 status:
  State                Empty
PEM 4 status:
  State                Present
PEM 5 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   61 degrees C / 141 degrees F
  Temperature          OK   49 degrees C / 120 degrees F
  Temperature          OK   28 degrees C / 82 degrees F
  Firmware version     04.10
  Cooling Fan          8656 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                       12.00      51      612      21

```

## show chassis environment routing-engine

---

<b>List of Syntax</b>	<a href="#">Syntax on page 536</a> <a href="#">Syntax (TX Matrix Routers) on page 536</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 536</a> <a href="#">Syntax (MX104, MX2010, MX2020, MX10003, MX204, and MX2008 3D Universal Edge Routers) on page 536</a> <a href="#">Syntax (MX Series Routers) on page 536</a> <a href="#">Syntax (PTX Series Routers) on page 536</a> <a href="#">Syntax (QFX Series) on page 536</a> <a href="#">Syntax (OCX Series) on page 536</a> <a href="#">Syntax (ACX5048 and ACX5096 Routers) on page 537</a> <a href="#">Syntax (ACX500 Routers) on page 537</a> <a href="#">Syntax (EX9251, EX9253 Switches) on page 537</a>
<b>Syntax</b>	show chassis environment routing-engine <slot>
<b>Syntax (TX Matrix Routers)</b>	show chassis environment routing-engine <lcc <i>number</i>   scc> <slot>
<b>Syntax (TX Matrix Plus Routers)</b>	show chassis environment routing-engine <lcc <i>number</i>   sfc <i>number</i> > <slot>
<b>Syntax (MX104, MX2010, MX2020, MX10003, MX204, and MX2008 3D Universal Edge Routers)</b>	show chassis environment routing-engine <slot> <satellite [fpc-slot <i>slot-id</i>   device-alias <i>alias-name</i> ]
<b>Syntax (MX Series Routers)</b>	show chassis environment routing-engine <slot> <all-members> <local> <member <i>member-id</i> >
<b>Syntax (PTX Series Routers)</b>	show chassis environment routing-engine <slot> <all-members> <local> <member <i>member-id</i> >
<b>Syntax (QFX Series)</b>	show chassis environment routing-engine interconnect-device <i>name</i>
<b>Syntax (OCX Series)</b>	show chassis environment routing-engine

	<code>interconnect-device <i>name</i></code>
<b>Syntax (ACX5048 and ACX5096 Routers)</b>	<code>show chassis environment routing-engine</code>
<b>Syntax (ACX500 Routers)</b>	<code>show chassis environment routing-engine</code>
<b>Syntax (EX9251, EX9253 Switches)</b>	<code>show chassis environment routing-engine</code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><code>sfc</code> option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Routers and T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> <p>Command introduced in Junos OS Release 18.2R1 for MX10008 Routers.</p>
<b>Description</b>	Display Routing Engine environmental status information.
<b>Options</b>	<p><b>none</b>—Display environmental information about all Routing Engines. For a TX Matrix router, display environmental information about all Routing Engines on the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display environmental information about all Routing Engines on the TX Matrix Plus router and its attached routers.</p> <p><b>all-members</b>—(MX Series routers only) (Optional) Display environmental information about the Routing Engines in all member routers in the Virtual Chassis configuration.</p> <p><b>interconnect-device <i>name</i></b>—(QFabric systems only) (Optional) Display environmental information about the Routing Engines for the Interconnect device.</p> <p><b>lcc <i>number</i></b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the specified member in the Virtual Chassis configuration. Replace *member-id* with the value of 0 or 1.

**satellite [*fpc-slot slot-id* | *device-alias alias-name*]**—(Junos Fusion only)(Optional) Display environmental information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

**scc**—(TX Matrix router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix router (switch-card chassis).

**sfc**—(TX Matrix Plus router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix Plus router (or switch-fabric chassis).

**slot**—(Optional) Display environmental information about an individual Routing Engine. On M10i, M20, M40e, M120, M160, M320, MX Series, MX104 routers, MX2010 routers, MX2020 routers, MX2008 routers, and T Series routers, replace *slot* with 0 or 1. On M5, M7i, M10, and M40 routers, replace *slot* with 0. On EX3200 and EX4200 standalone switches, replace *slot* with 0. On EX4200 switches in a Virtual Chassis configuration and on EX8208 and EX8216 switches, replace *slot* with 0 or 1. On the QFX3500 switch, there is only one Routing Engine, so you do not need to specify the slot number. On PTX Series Packet Transport Routers, replace *slot* with 0 or 1

**Required Privilege Level** view

**Related Documentation**

- [request chassis routing-engine master on page 296](#)
- [show chassis routing-engine on page 1156](#)

**List of Sample Output**

- [show chassis environment routing-engine \(Nonredundant\) on page 539](#)
- [show chassis environment routing-engine \(Redundant\) on page 540](#)
- [show chassis environment routing-engine \(MX150\) on page 540](#)

[show chassis environment routing-engine \(MX104 Router\) on page 540](#)  
[show chassis environment routing-engine \(MX2010 Router\) on page 540](#)  
[show chassis environment routing-engine \(MX2020 Router\) on page 540](#)  
[show chassis environment routing-engine \(MX2008 Router\) on page 541](#)  
[show chassis environment routing-engine \(TX Matrix Plus Router\) on page 541](#)  
[show chassis environment routing-engine \(T4000 Core Router\) on page 541](#)  
[show chassis environment routing-engine \(QFX Series and OCX Series\) on page 541](#)  
[show chassis environment routing-engine interconnect-device \(QFabric System\) on page 541](#)  
[show chassis environment routing-engine \(PTX5000 Packet Transport Router\) on page 542](#)  
[show chassis environment routing-engine \(PTX10008 Router\) on page 542](#)  
[show chassis environment routing-engine \(PTX10016 Router\) on page 542](#)  
[show chassis environment routing-engine \(ACX5048 and ACX5096 Routers\) on page 542](#)  
[show chassis environment routing-engine \(ACX500 Routers\) on page 542](#)  
[show chassis environment routing-engine \(PTX5000 \(RE-PTX-X8-64G\), MX240 \(RE-S-X6-64G\), MX480 \(RE-S-X6-64G\), MX960 \(RE-S-X6-64G\), MX2010 \(RE-MX2K-X8-64G\), MX2020 \(RE-MX2K-X8-64G\) on page 542](#)  
[show chassis environment routing-engine \(MX204 Routers\) on page 543](#)  
[show chassis environment routing-engine \(MX10008 Routers\) on page 543](#)  
[show chassis environment routing-engine \(EX9251 Switches\) on page 543](#)  
[show chassis environment routing-engine \(EX9253 Switches\) on page 543](#)

**Output Fields** Table 18 on page 539 lists the output fields for the **show chassis environment routing-engine** command. Output fields are listed in the approximate order in which they appear.

*Table 18: show chassis environment routing-engine Output Fields*

Field Name	Field Description
Routing engine <i>slot</i> status	Number of the Routing Engine slot: 0 or 1.
State	Status of the Routing Engine: <ul style="list-style-type: none"> <li>• Online Master—Routing Engine is online, operating as Master.</li> <li>• Online Standby—Routing Engine is online, operating as Standby.</li> <li>• Offline—Routing Engine is offline.</li> </ul>
Temperature	Temperature of the air flowing past the Routing Engine.
CPU Temperature	(PTX Series and T4000 Core Routers only) Temperature of the air flowing past the Routing Engine CPU.

## Sample Output

**show chassis environment routing-engine (Nonredundant)**

```
user@host> show chassis environment routing-engine
```

```
Routing Engine 0 status:
  State                Online Master
  Temperature          27 degrees C / 80 degrees
```

#### show chassis environment routing-engine (Redundant)

```
user@host> show chassis environment routing-engine
Route Engine 0 status:
  State                Online Master
  Temperature          26 degrees C / 78 degrees F
Route Engine 1 status:
  State                Online Standby
  Temperature          26 degrees C / 78 degrees F
```

#### show chassis environment routing-engine (MX150)

```
user@ host >show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  CPU Temperature      42 degrees C / 107 degrees F
```

#### show chassis environment routing-engine (MX104 Router)

```
user@ host >show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          34 degrees C / 93 degrees F
  CPU Temperature      43 degrees C / 109 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          33 degrees C / 91 degrees F
  CPU Temperature      39 degrees C / 102 degrees F
```

#### show chassis environment routing-engine (MX2010 Router)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          37 degrees C / 98 degrees F
  CPU Temperature      37 degrees C / 98 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          35 degrees C / 95 degrees F
  CPU Temperature      34 degrees C / 93 degrees F
```

#### show chassis environment routing-engine (MX2020 Router)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          35 degrees C / 95 degrees F
  CPU Temperature      34 degrees C / 93 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          44 degrees C / 111 degrees F
  CPU Temperature      43 degrees C / 109 degrees F
```

**show chassis environment routing-engine (MX2008 Router)**

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  CPU Temperature       75 degrees C / 167 degrees F
Routing Engine 1 status:
  State                Online Standby
  CPU Temperature       47 degrees C / 116 degrees F

```

**show chassis environment routing-engine (TX Matrix Plus Router)**

```

user@host> show chassis environment routing-engine
sfc0-re0:
-----
Routing Engine 0 status:
  State                Online Master
  Temperature          26 degrees C / 78 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          28 degrees C / 82 degrees F

lcc0-re0:
-----
Routing Engine 0 status:
  State                Online Master
  Temperature          30 degrees C / 86 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          29 degrees C / 84 degrees F

```

**show chassis environment routing-engine (T4000 Core Router)**

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          33 degrees C / 91 degrees F
  CPU Temperature      50 degrees C / 122 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          33 degrees C / 91 degrees F
  CPU Temperature      46 degrees C / 114 degrees F

```

**show chassis environment routing-engine (QFX Series and OCX Series)**

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          42 degrees C / 107 degrees F

```

**show chassis environment routing-engine interconnect-device (QFabric System)**

```

user@switch> show chassis environment routing-engine interconnect-device interconnect1
routing-engine interconnect-device interconnect1
Routing Engine 0 status:
  State                Online Standby
  Temperature          52 degrees C / 125 degrees F
Routing Engine 1 status:

```

State	Online Master
Temperature	57 degrees C / 134 degrees F

#### show chassis environment routing-engine (PTX5000 Packet Transport Router)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State      Online Master
  Temperature 55 degrees C / 131 degrees F
  CPU Temperature 66 degrees C / 150 degrees F
Routing Engine 1 status:
  State      Online Standby
  Temperature 52 degrees C / 125 degrees F
  CPU Temperature 64 degrees C / 147 degrees F
```

#### show chassis environment routing-engine (PTX10008 Router)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State      Online Master
  CPU Temperature 40 degrees C / 104 degrees F
Routing Engine 1 status:
  State      Online Standby
  CPU Temperature 40 degrees C / 104 degrees F
```

#### show chassis environment routing-engine (PTX10016 Router)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State      Online Master
  CPU Temperature 33 degrees C / 91 degrees F
Routing Engine 1 status:
  State      Online Standby
  CPU Temperature 38 degrees C / 100 degrees F
```

#### show chassis environment routing-engine (ACX5048 and ACX5096 Routers)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State      Online Master
  Temperature 33 degrees C / 91 degrees F
```

#### show chassis environment routing-engine (ACX500 Routers)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State      Online Master
  Temperature 54 degrees C / 129 degrees F
```

## Sample Output

#### show chassis environment routing-engine (PTX5000 (RE-PTX-X8-64G), MX240 (RE-S-X6-64G), MX480 (RE-S-X6-64G), MX960 (RE-S-X6-64G), MX2010 (RE-MX2K-X8-64G), MX2020 (RE-MX2K-X8-64G))

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State      Online Master
  Temperature 37 degrees C / 98 degrees F
  CPU Temperature 52 degrees C / 125 degrees F
```



```
Routing Engine 1 status:
  State           Online Standby
  Temperature      37 degrees C / 98 degrees F
  CPU Temperature  51 degrees C / 123 degrees F
```

#### show chassis environment routing-engine (MX204 Routers)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
```

#### show chassis environment routing-engine (MX10008 Routers)

```
Routing Engine 0 status:
  State           Online Master
  CPU Temperature  39 degrees C / 102 degrees F
Routing Engine 1 status:
  State           Online Standby
  CPU Temperature  36 degrees C / 96 degrees F
```

#### show chassis environment routing-engine (EX9251 Switches)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
```

#### show chassis environment routing-engine (EX9253 Switches)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
Routing Engine 1 status:
  State           Present
```

## show chassis environment scg

---

**List of Syntax**    [Syntax on page 544](#)  
                         [Syntax \(TX Matrix and TX Matrix Plus Router\) on page 544](#)

**Syntax**    show chassis environment scg  
                 <slot>

**Syntax (TX Matrix and TX Matrix Plus Router)**    show chassis environment scg  
                         <lcc number>  
                         <slot>

**Release Information**    Command introduced before Junos OS Release 7.4.  
                         Command introduced in Junos OS Release 12.1 for the T4000 Core Routers.

**Description**    Display SONET Clock Generator (SCG) environmental information.

**Options**    **none**—(TX Matrix and TX Matrix Plus routers only) Display environmental information about all SCGs. On a TX Matrix router, display environmental information about all SCGs on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about all SCGs on the TX Matrix Plus router and its attached routers.

**lcc number**—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**slot**—(Optional) Display environmental information about the SCG. Replace **slot** with 0 or 1.

**Required Privilege Level**    view

**Related Documentation**    • [request chassis scg on page 301](#)  
                         • [Configuring the Clock Source](#)

- *T320 SONET Clock Generator (SCG) Description*

**List of Sample Output** [show chassis environment scg \(T Series Routers\) on page 545](#)  
[show chassis environment scg \(T4000 Core Routers\) on page 546](#)  
[show chassis environment scg lcc \(TX Matrix Router\) on page 546](#)  
[show chassis environment scg lcc \(TX Matrix Plus Router\) on page 547](#)  
[show chassis environment scg \(TX Matrix Plus Router\) on page 547](#)

**Output Fields** [Table 19 on page 545](#) lists the output fields for the **show chassis environment scg** command. Output fields are listed in the approximate order in which they appear.

*Table 19: show chassis environment scg Output Fields*

Field Name	Field Description
<b>SCG slot status</b>	Number of the SCG slot: 0 or 1.
<b>State</b>	Status of the SCG: <ul style="list-style-type: none"> <li>• <b>Online</b>—SCG is online and running.</li> <li>• <b>Offline</b>—SCG is powered down.</li> </ul> <p>If two SCGs are installed and online, one is functioning as the master, and the other is the standby.</p>
<b>Temperature</b>	Temperature of the air flowing past the SCG.
<b>Power</b>	Power on the SCG. The left column displays required power, in volts. The right column displays measured power, in millivolts.
<b>BUS Revision</b>	Revision level of the generic bus device.

## Sample Output

### show chassis environment scg (T Series Routers)

```

user@host> show chassis environment scg
SCG 0 status:
  State                Online - Master clock
  Temperature          29 degrees C / 84 degrees F
  Power:
    GROUND              0 mV
    3.3 V               3297 mV
    5.0 V               5050 mV
    5.6 V               5682 mV
    1.8 V bias          1787 mV
    3.3 V bias          3277 mV
    5.0 V bias          4984 mV
    8.0 V bias          8400 mV
  BUS Revision         40
SCG 1 status:
  State                Online - Standby
  Temperature          28 degrees C / 82 degrees F
  Power:

```

GROUND	0 mV
3.3 V	3317 mV
5.0 V	5057 mV
5.6 V	5689 mV
1.8 V bias	1794 mV
3.3 V bias	3296 mV
5.0 V bias	4991 mV
8.0 V bias	8410 mV
BUS Revision	40

#### show chassis environment scg (T4000 Core Routers)

```
user@host> show chassis environment scg
SCG 0 status:
  State           Online - Master clock
  Temperature      33 degrees C / 91 degrees F
  Power
    GROUND         0 mV
    1.8 V bias     1794 mV
    3.3 V          3310 mV
    3.3 V bias     3299 mV
    5.0 V          5040 mV
    5.0 V bias     5003 mV
    5.6 V          5780 mV
    8.0 V bias     7416 mV
  Bus Revision     40
SCG 1 status:
  State           Online - Standby
  Temperature      33 degrees C / 91 degrees F
  Power
    GROUND         0 mV
    1.8 V bias     1794 mV
    3.3 V          3319 mV
    3.3 V bias     3286 mV
    5.0 V          5047 mV
    5.0 V bias     5013 mV
    5.6 V          5758 mV
    8.0 V bias     7347 mV
  Bus Revision     40
```

#### show chassis environment scg lcc (TX Matrix Router)

```
user@host> show chassis environment scg lcc 0 0
lcc0-re0:
-----
SCG 0 status:
  State           Online - Master clock
  Temperature      30 degrees C / 86 degrees F
  Power:
    GROUND         0 mV
    3.3 V          3321 mV
    5.0 V          5062 mV
    5.6 V          5682 mV
    1.8 V bias     1789 mV
    3.3 V bias     3289 mV
    5.0 V bias     4993 mV
    8.0 V bias     7807 mV
  BUS Revision     40
```

**show chassis environment scg lcc (TX Matrix Plus Router)**

```

user@host> show chassis environment scg lcc 0
lcc0-re0:
-----
SCG 0 status:
State          Online - Master clock
Temperature    42 degrees C / 107 degrees F
Power
  GROUND        0 mV
  1.8 V bias    1800 mV
  3.3 V         3290 mV
  3.3 V bias    3304 mV
  5.0 V         5042 mV
  5.0 V bias    4979 mV
  5.6 V         5765 mV
  8.0 V bias    7682 mV
Bus Revision    40

```

**show chassis environment scg (TX Matrix Plus Router)**

```

user@host> show chassis environment scg
lcc0-re0:
-----
SCG 0 status:
State          Online - Master clock
Temperature    40 degrees C / 104 degrees F
Power
  GROUND        0 mV
  1.8 V bias    1800 mV
  3.3 V         3291 mV
  3.3 V bias    3304 mV
  5.0 V         5042 mV
  5.0 V bias    4979 mV
  5.6 V         5765 mV
  8.0 V bias    7643 mV
Bus Revision    40

lcc1-re0:
-----
SCG 0 status:
State          Online - Master clock
Temperature    37 degrees C / 98 degrees F
Power
  GROUND        0 mV
  1.8 V bias    1788 mV
  3.3 V         3305 mV
  3.3 V bias    3284 mV
  5.0 V         5042 mV
  5.0 V bias    5010 mV
  5.6 V         5748 mV
  8.0 V bias    7692 mV
Bus Revision    40

lcc2-re0:
-----
SCG 0 status:
State          Online - Master clock
Temperature    39 degrees C / 102 degrees F
Power

```

GROUND	0 mV
1.8 V bias	1785 mV
3.3 V	3306 mV
3.3 V bias	3301 mV
5.0 V	5045 mV
5.0 V bias	4993 mV
5.6 V	5765 mV
8.0 V bias	7838 mV
Bus Revision	40

1cc3-re0:

-----  
SCG 0 status:

State	Online - Master clock
Temperature	39 degrees C / 102 degrees F
Power	
GROUND	0 mV
1.8 V bias	1800 mV
3.3 V	3290 mV
3.3 V bias	3294 mV
5.0 V	5050 mV
5.0 V bias	4984 mV
5.6 V	5780 mV
8.0 V bias	7716 mV
Bus Revision	40

## show chassis environment sfc

<b>Syntax</b>	<code>show chassis environment sfc</code> <code>&lt;-number&gt;</code>
<b>Release Information</b>	Command introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced for the TX Matrix Plus router with 3D SIBs in Junos OS Release 13.1.
<b>Description</b>	Display chassis environmental information about the respective TX Matrix Plus router or TX matrix Plus router with 3D SIBs ( switch-fabric chassis).
<b>Options</b>	<b>sfc number</b> —(TX Matrix Plus routers and TX Matrix Plus routers with 3D SIBs only) (Optional) Display chassis environmental information about the respective TX Matrix Plus router or TX matrix Plus router with 3D SIBs ( switch-fabric chassis). Replace <i>number</i> variable with <b>0</b> .
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show chassis environment on page 354</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show chassis environment sfc (TX Matrix Plus router) on page 550</a> <a href="#">show chassis environment sfc (TX Matrix Plus router with 3D SIBs) on page 551</a>
<b>Output Fields</b>	Table 12 on page 362 lists the output fields for the <b>show chassis environment lcc</b> command. Output fields are listed in the approximate order in which they appear.

Field Name	Field Description
<b>Class</b>	<ul style="list-style-type: none"> <li>• <b>Temp</b>: Temperature of air flowing through the chassis in degrees Celsius (C) and Fahrenheit (F).</li> <li>• <b>Fan</b>: Fan status: <b>OK</b>, <b>Testing</b> (during initial power-on), <b>Failed</b>, or <b>Absent</b>.</li> <li>• <b>Misc</b> includes <b>SPMB</b> (Switch Processor Mezzanine Board). <b>OK</b> indicates that the <b>SPMB</b> is present. <b>Absent</b> indicates that the <b>SPMB</b> is not present.</li> </ul>
<b>Item</b>	Information about the chassis component: Power Entry Module (PEM), Routing Engines, Controls Boards (CBs), Switch Interface Boards (SIBs), and Connector Interface Panel (CIP).
<b>Status</b>	<p>Status of the specified chassis component. For example, if the <b>Class</b> is <b>Fan</b>, the fan status can be:</p> <ul style="list-style-type: none"> <li>• <b>OK</b>: The fans are operational.</li> <li>• <b>Testing</b>: The fans are being tested during initial power-on.</li> <li>• <b>Failed</b>: The fans have failed or the fans are not spinning.</li> <li>• <b>Absent</b>: The fan tray is not installed.</li> </ul>

Field Name	Field Description
Measurement	Dependant on the <b>Class</b> . For example, if the <b>Class</b> is <b>Temp</b> , indicates the temperature in degree Celsius and degrees Fahrenheit. If the <b>Class</b> is <b>Fan</b> , indicates actual fan RPM.

## Sample Output

### show chassis environment sfc (TX Matrix Plus router)

```
user@host> show chassis environment sfc 0
sfc0-re0:
```

```
-----
Class Item                               Status Measurement
Temp PEM 0                               OK          31 degrees C / 87 degrees F
      PEM 1                               Check       32 degrees C / 89 degrees F
      Routing Engine 0                     OK          32 degrees C / 89 degrees F
      Routing Engine 0 CPU                   OK          46 degrees C / 114 degrees F
      Routing Engine 1                     OK          32 degrees C / 89 degrees F
      Routing Engine 1 CPU                   OK          47 degrees C / 116 degrees F
      CB 0 Intake                           OK          35 degrees C / 95 degrees F
      CB 0 Exhaust A                       OK          31 degrees C / 87 degrees F
      CB 0 Exhaust B                       OK          33 degrees C / 91 degrees F
      CB 1 Intake                           OK          34 degrees C / 93 degrees F
      CB 1 Exhaust A                       OK          31 degrees C / 87 degrees F
      CB 1 Exhaust B                       OK          34 degrees C / 93 degrees F
      SIB F13 0                             OK          50 degrees C / 122 degrees F
      SIB F13 0 (B)                         OK          58 degrees C / 136 degrees F
      SIB F13 3                             OK          48 degrees C / 118 degrees F
      SIB F13 3 (B)                         OK          47 degrees C / 116 degrees F
      SIB F13 6                             OK          49 degrees C / 120 degrees F
      SIB F13 6 (B)                         OK          46 degrees C / 114 degrees F
[Output Truncated]
      SIB F2S 4/0                           OK          28 degrees C / 82 degrees F
      SIB F2S 4/2                           OK          28 degrees C / 82 degrees F
      SIB F2S 4/4                           OK          28 degrees C / 82 degrees F
      SIB F2S 4/6                           OK          28 degrees C / 82 degrees F
      CIP 0 Intake                           OK          28 degrees C / 82 degrees F
      CIP 0 Exhaust A                       OK          29 degrees C / 84 degrees F
      CIP 0 Exhaust B                       OK          29 degrees C / 84 degrees F
      CIP 1 Intake                           OK          28 degrees C / 82 degrees F
      CIP 1 Exhaust A                       OK          29 degrees C / 84 degrees F
      CIP 1 Exhaust B                       OK          29 degrees C / 84 degrees F
Fans  Fan Tray 0 Fan 1                     OK          Spinning at normal speed
      Fan Tray 0 Fan 2                     OK          Spinning at normal speed
      Fan Tray 0 Fan 3                     OK          Spinning at normal speed
      Fan Tray 0 Fan 4                     OK          Spinning at normal speed
      Fan Tray 0 Fan 5                     OK          Spinning at normal speed
      Fan Tray 0 Fan 6                     OK          Spinning at normal speed
[Output Truncated]
      Fan Tray 5 Fan 4                     OK          Spinning at normal speed
      Fan Tray 5 Fan 5                     OK          Spinning at normal speed
      Fan Tray 5 Fan 6                     OK          Spinning at normal speed
      Fan Tray 5 Fan 7                     OK          Spinning at normal speed
      Fan Tray 5 Fan 8                     OK          Spinning at normal speed
      Fan Tray 5 Fan 9                     Check
Misc  SPMB 0                               OK
      SPMB 1                               OK
```



## show chassis environment sfc (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis environment sfc 0
sfc0-re0:
```

```
-----
Class Item                               Status Measurement
Temp PEM 0                              OK          34 degrees C / 93 degrees F
      PEM 1                              Absent
      Routing Engine 0                    OK          28 degrees C / 82 degrees F
      Routing Engine 0 CPU                  OK          41 degrees C / 105 degrees F
      Routing Engine 1                    OK          28 degrees C / 82 degrees F
      Routing Engine 1 CPU                  OK          42 degrees C / 107 degrees F
      CB 0 Intake                          OK          30 degrees C / 86 degrees F
      CB 0 Exhaust A                       OK          27 degrees C / 80 degrees F
      CB 0 Exhaust B                       OK          30 degrees C / 86 degrees F
      CB 1 Intake                          OK          30 degrees C / 86 degrees F
      CB 1 Exhaust A                       OK          27 degrees C / 80 degrees F
      CB 1 Exhaust B                       OK          32 degrees C / 89 degrees F
      SIB F13 0 Board                      OK          49 degrees C / 120 degrees F
      SIB F13 0 XF Junction                 OK          68 degrees C / 154 degrees F
      SIB F13 1 Board                      OK          47 degrees C / 116 degrees F
      SIB F13 1 XF Junction                 OK          62 degrees C / 143 degrees F
      SIB F13 3 Board                      OK          52 degrees C / 125 degrees F
      SIB F13 3 XF Junction                 OK          71 degrees C / 159 degrees F
      [Output Truncated]
      SIB F2S 3/0 Board                    OK          31 degrees C / 87 degrees F
      SIB F2S 3/0 XF Junction               OK          45 degrees C / 113 degrees F
      SIB F2S 3/2 Board                    OK          30 degrees C / 86 degrees F
      SIB F2S 3/2 XF Junction               OK          49 degrees C / 120 degrees F
      SIB F2S 3/4 Board                    OK          30 degrees C / 86 degrees F
      SIB F2S 3/4 XF Junction               OK          50 degrees C / 122 degrees F
      SIB F2S 3/6 Board                    OK          30 degrees C / 86 degrees F
      SIB F2S 3/6 XF Junction               OK          49 degrees C / 120 degrees F
      SIB F2S 4/0 Board                    OK          29 degrees C / 84 degrees F
      SIB F2S 4/0 XF Junction               OK          43 degrees C / 109 degrees F
      SIB F2S 4/2 Board                    OK          28 degrees C / 82 degrees F
      SIB F2S 4/2 XF Junction               OK          47 degrees C / 116 degrees F
      SIB F2S 4/4 Board                    OK          28 degrees C / 82 degrees F
      SIB F2S 4/4 XF Junction               OK          49 degrees C / 120 degrees F
      SIB F2S 4/6 Board                    OK          28 degrees C / 82 degrees F
      SIB F2S 4/6 XF Junction               OK          49 degrees C / 120 degrees F
      CIP 0 Intake                         OK          25 degrees C / 77 degrees F
      CIP 0 Exhaust A                      OK          26 degrees C / 78 degrees F
      CIP 0 Exhaust B                      OK          26 degrees C / 78 degrees F
      CIP 1 Intake                         OK          26 degrees C / 78 degrees F
      CIP 1 Exhaust A                      OK          27 degrees C / 80 degrees F
      CIP 1 Exhaust B                      OK          27 degrees C / 80 degrees F
Fans  Fan Tray 0 Fan 1                    OK          Spinning at high speed
      Fan Tray 0 Fan 2                    OK          Spinning at high speed
      Fan Tray 0 Fan 3                    OK          Spinning at high speed
      Fan Tray 0 Fan 4                    OK          Spinning at high speed
      Fan Tray 0 Fan 5                    OK          Spinning at high speed
      Fan Tray 0 Fan 6                    OK          Spinning at high speed
      [Output Truncated]
      Fan Tray 5 Fan 1                    OK          Spinning at high speed
      Fan Tray 5 Fan 2                    OK          Spinning at high speed
      Fan Tray 5 Fan 3                    OK          Spinning at high speed
      Fan Tray 5 Fan 4                    OK          Spinning at high speed
      Fan Tray 5 Fan 5                    OK          Spinning at high speed
      Fan Tray 5 Fan 6                    OK          Spinning at high speed
      Fan Tray 5 Fan 7                    OK          Spinning at high speed
```

	Fan Tray 5 Fan 8	OK	Spinning at high speed
	Fan Tray 5 Fan 9	OK	Spinning at high speed
Misc	SPMB 0	OK	
	SPMB 1	OK	

## show chassis environment sib

<b>List of Syntax</b>	<a href="#">Syntax on page 553</a> <a href="#">Syntax (TX Matrix router) on page 553</a> <a href="#">Syntax (TX Matrix Plus Router) on page 553</a>
<b>Syntax</b>	show chassis environment sib <slot>
<b>Syntax (TX Matrix router)</b>	show chassis environment sib <lcc number   scc   slot>
<b>Syntax (TX Matrix Plus Router)</b>	show chassis environment sib <sib-slot   lcc number   sfc number   f13 sib-slot   f2s sib-slot/sib-f2s-slot-number>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>sfc</b> option introduced in Junos OS Release 9.6. for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS 12.1X48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS 12.1 for T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p>
<b>Description</b>	Display Switch Interface Board (SIB) environmental information.
<b>Options</b>	<p><b>none</b>—Display environmental information about all SIBs. On a TX Matrix router, display environmental information about all SIBs on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about all SIBs on the TX Matrix Plus router and its attached routers .</p> <p><b>f13 sib-slot</b>—(TX Matrix Plus routers only) (Optional) Display SIB F13 environmental information only. Replace <b>sib-slot</b> with one of the following values: <b>0, 1, 3, 4, 6, 7, 8, 9, 11, or 12</b>. (Slots 2, 5, 10, 13, 14, and 15 are unused).</p> <p><b>f2s sib-slot/sib-f2s-slot-number</b>—(TX Matrix Plus routers only) (Optional) Display SIB F2s environmental information only. Replace <b>sib-slot</b> with a value from <b>0</b> through <b>4</b>, followed by a <b>sib-f2s-slot-number</b> value of <b>0, 2, 4 or 6</b>.</p> <p><b>lcc number</b>—(TX Matrix router, and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> </ul>

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**scc**—(TX Matrix routers only) (Optional) Display environmental information about the SIB in the TX Matrix router (switch-card chassis).

**sfc**—(TX Matrix Plus routers only) (Optional) On a TX Matrix Plus router, display environmental information about the SIB in the TX Matrix Plus router (switch-fabric chassis).

**sib-slot**—(Optional) Display environmental information about the specified SIB. For the M320 router, replace **sib-slot** with a value from 0 through 3. For the T640, T1600, T4000, and TX Matrix routers, replace **sib-slot** with a value from 0 through 4. For the TX Matrix Plus router, see f13 *sib-slot* and f2s *sib-slot/sib-f2s-slot-number*. For the T320 router, replace **sib-slot** with a value from 0 through 2. For the PTX5000 Packet Transport Router, replace **sib-slot** with a value from 0 through 8.

**Required Privilege Level** view

**Related Documentation**

- [request chassis sib on page 303](#)
- [show chassis sibs on page 1185](#)
- *Configuring Junos OS to Upgrade and Downgrade Switch Interface Boards on a TX Matrix Router*
- *M320 SIB Description*

**List of Sample Output**

[show chassis environment sib \(M320 Router\) on page 555](#)  
[show chassis environment sib 1 \(T640 Router\) on page 556](#)  
[show chassis environment sib 1 \(T4000 Router\) on page 556](#)  
[show chassis environment sib scc \(TX Matrix Router\) on page 557](#)  
[show chassis environment sib \(TX Matrix Plus Router\) on page 558](#)  
[show chassis environment sib sfc \(TX Matrix Plus Router\) on page 567](#)  
[show chassis environment sib f13 \(TX Matrix Plus Router\) on page 573](#)  
[show chassis environment sib f2s \(TX Matrix Plus Router\) on page 573](#)  
[show chassis environment sib \(TX Matrix Plus router with 3D SIBs\) on page 574](#)  
[show chassis environment sib \(PTX5000 Packet Transport Router with SIB-I-8S\) on page 576](#)  
[show chassis environment sib \(PTX5000 Packet Transport Router with SIB-I-8SE\) on page 578](#)  
[show chassis environment sib \(PTX10008 Router\) on page 580](#)  
[show chassis environment sib \(PTX10016 Router\) on page 582](#)

**Output Fields** Table 20 on page 555 lists the output fields for the **show chassis environment sib** command. Output fields are listed in the approximate order in which they appear.

Table 20: show chassis environment sib Output Fields

Field Name	Field Description
<b>SIB slot status</b>	<p>SIB slot number:</p> <ul style="list-style-type: none"> <li>• 0 through 3 on an M320 router.</li> <li>• 0 or 2 on a T320 router.</li> <li>• 0 through 4 on a T640, T1600, T4000, or TX Matrix router.</li> <li>• 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12 for F13 SIBs on a TX Matrix Plus router. (Slots 2, 5, 10, 13, 14, and 15 are unused).</li> <li>• 0 through 4, followed by 0, 2, 4, or 6 for F2S SIBs on a TX Matrix Plus router. For example, <b>SIB F2S 0/4</b>.</li> <li>• 0 through 8 on a PTX5000 Packet Transport Router.</li> </ul>
<b>State</b>	<p>Status of the SIB:</p> <ul style="list-style-type: none"> <li>• <b>Online</b>—SIB is online and running.</li> <li>• <b>Offline</b>—SIB is powered down.</li> <li>• <b>Spare</b> (T640, T1600, T4000, and TX Matrix routers only)—SIB is redundant and will move to active state if one of the working SIBs fails.</li> </ul> <p>Only four of the SIBs are active at any time. The fifth one is marked <b>Spare</b>. It is activated if there is a fault on one of the active SIBs.</p> <p>Online standby (TX Matrix Plus router only).</p>
<b>Temperature</b>	<p>Temperature of the air flowing past the SIB.</p> <p>On PTX Series Packet Transport Routers, separate temperatures are displayed for <b>Intake</b>, <b>Exhaust</b>, and <b>Junction</b>.</p>
<b>Power</b>	<p>Information about the voltage supplied to the SIB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p>

## Sample Output

### show chassis environment sib (M320 Router)

```

user@host> show chassis environment sib
SIB 0 status:
  State           Online
  Temperature     34 degrees C / 93 degrees F
  Power:
    GROUND         0 mV
    1.8 V          1805 mV
    2.5 V          2498 mV
    3.3 V          3306 mV
    1.8 V bias     1789 mV
    3.3 V bias     3299 mV
    5.0 V bias     5003 mV
    8.0 V bias     7374 mV
SIB 1 status:

```

```
State                               Online
Temperature                         35 degrees C / 95 degrees F
Power:
  GROUND                            0 mV
  1.8 V                             1814 mV
  2.5 V                             2477 mV
  3.3 V                             3319 mV
  1.8 V bias                        1792 mV
  3.3 V bias                        3291 mV
  5.0 V bias                        4981 mV
  8.0 V bias                        7335 mV
SIB 2 status:
State                               Online
Temperature                         33 degrees C / 91 degrees F
Power:
  GROUND                            0 mV
  1.8 V                             1811 mV
  2.5 V                             2489 mV
  3.3 V                             3330 mV
  1.8 V bias                        1797 mV
  3.3 V bias                        3304 mV
  5.0 V bias                        5025 mV
  8.0 V bias                        7330 mV
SIB 3 status:
State                               Online
Temperature                         37 degrees C / 98 degrees F
Power:
  GROUND                            0 mV
  1.8 V                             1798 mV
  2.5 V                             2481 mV
  3.3 V                             3328 mV
  1.8 V bias                        1792 mV
  3.3 V bias                        3313 mV
  5.0 V bias                        5013 mV
  8.0 V bias                        7467 mV
```

#### show chassis environment sib 1 (T640 Router)

```
user@host> show chassis environment sib 1
SIB 1 status:
State                               Online
Temperature                         39 degrees C / 102 degrees F
Power:
  GROUND                            0 mV
  1.8 V                             1809 mV
  2.5 V                             2478 mV
  3.3 V                             3308 mV
  1.8 V bias                        1794 mV
  3.3 V bias                        3274 mV
  5.0 V bias                        4996 mV
  8.0 V bias                        7247 mV
```

#### show chassis environment sib 1 (T4000 Router)

```
user@host> show chassis environment sib 1
SIB 1 status:
State                               Online
Temperature                         42 degrees C / 107 degrees F
Power
  8.0 V bias                        8100 mV
```

3.3 V bias	3284 mV
0.9 V bias	904 mV
1.1 V bias	1090 mV
1.5 V bias	1488 mV
2.5 V bias	2504 mV
9.0 V	8940 mV
3.3 V	3288 mV
XF0 1.0 V	998 mV
XF0 1.0 V LDO	994 mV
PCIe SW 1.0 V	990 mV
XF0 1.8 V	1788 mV
XF1 1.0 V	1002 mV
XF2 1.0 V	1002 mV
XF3 1.0 V	998 mV
1.2 V	1194 mV
XF1 1.0 V LDO	1000 mV
XF2 1.0 V LDO	998 mV
XF3 1.0 V LDO	998 mV
XF1 1.8 V	1798 mV
XF2 1.8 V	1800 mV
XF3 1.8 V	1794 mV
1.5 V	1488 mV
SW 3.3 V	3320 mV

#### show chassis environment sib scc (TX Matrix Router)

```
user@host> show chassis environment sib scc
scc-re0:
```

##### SIB 3 status:

State	Offline
Reason	Offlined by button press
Temperature	0 degrees C / 32 degrees F
Power:	
GROUND	0 mV
1.8 V	0 mV
2.5 V	0 mV
3.3 V	0 mV
1.8 V bias	0 mV
3.3 V bias	0 mV
5.0 V bias	0 mV
8.0 V bias	0 mV

##### SIB 4 status:

State	Online
Temperature	42 degrees C / 107 degrees F
Temperature (B)	41 degrees C / 105 degrees F
Power:	
GROUND	0 mV
1.8 V	1787 mV
2.5 V	2488 mV
3.3 V	3294 mV
1.8 V bias	1787 mV
3.3 V bias	3306 mV
5.0 V bias	5010 mV
8.0 V bias	7418 mV
Power (B):	
GROUND	0 mV
1.8 V	1785 mV
2.5 V	2485 mV
3.3 V	3289 mV
1.8 V bias	1799 mV

3.3 V bias	3284 mV
5.0 V bias	4979 mV
8.0 V bias	7882 mV

### show chassis environment sib (TX Matrix Plus Router)

```
user@host> show chassis environment sib
sfc0-re0:
```

#### SIB F13 0 status:

State	Online - Standby
Temperature	54 degrees C / 129 degrees F
Temperature (B)	50 degrees C / 122 degrees F
Power	
1.2 V_0	1205 mV
1.2 V_1	1202 mV
1.2 V_2	1205 mV
1.2 V_3	1208 mV
1.5 V_0	1501 mV
1.5 V_1	1508 mV
1.8 V	1798 mV
2.5 V	2510 mV
3.3 V	3312 mV
9.0 V	8991 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2510 mV
3.3 V	3318 mV
9.0 V	9024 mV

#### SIB F13 1 status:

State	Online - Standby
Temperature	45 degrees C / 113 degrees F
Temperature (B)	42 degrees C / 107 degrees F
Power	
1.2 V_0	1202 mV
1.2 V_1	1198 mV
1.2 V_2	1202 mV
1.2 V_3	1202 mV
1.5 V_0	1498 mV
1.5 V_1	1501 mV
1.8 V	1811 mV
2.5 V	2504 mV
3.3 V	3292 mV
9.0 V	8991 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2507 mV
3.3 V	3306 mV
9.0 V	8970 mV

#### SIB F13 3 status:

State	Online
Temperature	48 degrees C / 118 degrees F
Temperature (B)	44 degrees C / 111 degrees F
Power	
1.2 V_0	1205 mV
1.2 V_1	1202 mV
1.2 V_2	1202 mV
1.2 V_3	1202 mV
1.5 V_0	1508 mV
1.5 V_1	1504 mV
1.8 V	1798 mV



2.5 V	2520 mV
3.3 V	3300 mV
9.0 V	9009 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2504 mV
3.3 V	3312 mV
9.0 V	9006 mV
SIB F13 4 status:	
State	Online
Temperature	44 degrees C / 111 degrees F
Temperature (B)	40 degrees C / 104 degrees F
Power	
1.2 V_0	1205 mV
1.2 V_1	1205 mV
1.2 V_2	1202 mV
1.2 V_3	1205 mV
1.5 V_0	1508 mV
1.5 V_1	1508 mV
1.8 V	1811 mV
2.5 V	2510 mV
3.3 V	3312 mV
9.0 V	8970 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2513 mV
3.3 V	3318 mV
9.0 V	9048 mV
SIB F13 6 status:	
State	Online
Temperature	50 degrees C / 122 degrees F
Temperature (B)	46 degrees C / 114 degrees F
Power	
1.2 V_0	1195 mV
1.2 V_1	1205 mV
1.2 V_2	1202 mV
1.2 V_3	1202 mV
1.5 V_0	1495 mV
1.5 V_1	1495 mV
1.8 V	1801 mV
2.5 V	2494 mV
3.3 V	3300 mV
9.0 V	8991 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2500 mV
3.3 V	3300 mV
9.0 V	9006 mV
SIB F13 7 status:	
State	Online
Temperature	52 degrees C / 125 degrees F
Temperature (B)	49 degrees C / 120 degrees F
Power	
1.2 V_0	1202 mV
1.2 V_1	1202 mV
1.2 V_2	1198 mV
1.2 V_3	1185 mV
1.5 V_0	1501 mV
1.5 V_1	1492 mV
1.8 V	1795 mV
2.5 V	2491 mV

3.3 V	3286 mV
9.0 V	8892 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2507 mV
3.3 V	3306 mV
9.0 V	8952 mV
SIB F13 8 status:	
State	Online
Temperature	55 degrees C / 131 degrees F
Temperature (B)	50 degrees C / 122 degrees F
Power	
1.2 V_0	1208 mV
1.2 V_1	1205 mV
1.2 V_2	1205 mV
1.2 V_3	1211 mV
1.5 V_0	1514 mV
1.5 V_1	1508 mV
1.8 V	1807 mV
2.5 V	2516 mV
3.3 V	3324 mV
9.0 V	9027 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2520 mV
3.3 V	3318 mV
9.0 V	9066 mV
SIB F13 9 status:	
State	Online
Temperature	46 degrees C / 114 degrees F
Temperature (B)	41 degrees C / 105 degrees F
Power	
1.2 V_0	1208 mV
1.2 V_1	1202 mV
1.2 V_2	1208 mV
1.2 V_3	1202 mV
1.5 V_0	1504 mV
1.5 V_1	1504 mV
1.8 V	1817 mV
2.5 V	2516 mV
3.3 V	3312 mV
9.0 V	9009 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2510 mV
3.3 V	3312 mV
9.0 V	9024 mV
SIB F13 11 status:	
State	Online
Temperature	47 degrees C / 116 degrees F
Temperature (B)	42 degrees C / 107 degrees F
Power	
1.2 V_0	1202 mV
1.2 V_1	1205 mV
1.2 V_2	1202 mV
1.2 V_3	1202 mV
1.5 V_0	1501 mV
1.5 V_1	1501 mV
1.8 V	1801 mV
2.5 V	2510 mV
3.3 V	3312 mV

```

9.0 V          8979 mV
9.0 V bias     0 mV
Power (B)
2.5 V          2252 mV
3.3 V          5014 mV
9.0 V          9954 mV
SIB F13 12 status:
State          Online
Temperature     45 degrees C / 113 degrees F
Temperature (B) 40 degrees C / 104 degrees F
Power
1.2 V_0        1211 mV
1.2 V_1        1208 mV
1.2 V_2        1205 mV
1.2 V_3        1205 mV
1.5 V_0        1511 mV
1.5 V_1        1501 mV
1.8 V          1817 mV
2.5 V          2504 mV
3.3 V          3318 mV
9.0 V          9027 mV
9.0 V bias     0 mV
Power (B)
2.5 V          2520 mV
3.3 V          3338 mV
9.0 V          9006 mV
SIB F2S 0/0 status:
State          Online - Standby
Temperature     40 degrees C / 104 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1198 mV
1.2 V_ASF_B    1198 mV
1.2 V_ASF_D    1202 mV
1.5 V          1498 mV
1.8 V          1814 mV
3.3 V          3300 mV
3.3 V bias     3300 mV
3.3 V ASF      3286 mV
9.0 V          8250 mV
SIB F2S 0/2 status:
State          Online - Standby
Temperature     40 degrees C / 104 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1198 mV
1.2 V_ASF_B    1195 mV
1.2 V_ASF_D    1202 mV
1.5 V          1498 mV
1.8 V          1807 mV
3.3 V          3300 mV
3.3 V bias     3300 mV
3.3 V ASF      3286 mV
9.0 V          8250 mV
SIB F2S 0/4 status:
State          Online - Standby
Temperature     40 degrees C / 104 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1202 mV
1.2 V_ASF_B    1198 mV

```

1.2 V_ASF_D	1202 mV
1.5 V	1504 mV
1.8 V	1817 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3306 mV
9.0 V	8250 mV
SIB F2S 0/6 status:	
State	Online - Standby
Temperature	39 degrees C / 102 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1202 mV
1.2 V_ASF_B	1198 mV
1.2 V_ASF_D	1202 mV
1.5 V	1495 mV
1.8 V	1814 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3280 mV
9.0 V	8250 mV
SIB F2S 1/0 status:	
State	Online
Temperature	39 degrees C / 102 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1195 mV
1.2 V_ASF_B	1192 mV
1.2 V_ASF_D	1195 mV
1.5 V	1488 mV
1.8 V	1798 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3280 mV
9.0 V	8250 mV
SIB F2S 1/2 status:	
State	Online
Temperature	39 degrees C / 102 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1205 mV
1.2 V_ASF_B	1202 mV
1.2 V_ASF_D	1205 mV
1.5 V	1501 mV
1.8 V	1820 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3306 mV
9.0 V	8250 mV
SIB F2S 1/4 status:	
State	Online
Temperature	39 degrees C / 102 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1198 mV
1.2 V_ASF_B	1195 mV
1.2 V_ASF_D	1195 mV
1.5 V	1498 mV
1.8 V	1811 mV
3.3 V	3300 mV
3.3 V bias	3300 mV

```

3.3 V ASF          3300 mV
9.0 V              8250 mV
SIB F2S 1/6 status:
State              Online
Temperature        39 degrees C / 102 degrees F
Power
  1.2 V_1          0 mV
  1.2 V_ASF        1195 mV
  1.2 V_ASF_B      1195 mV
  1.2 V_ASF_D      1198 mV
  1.5 V            1498 mV
  1.8 V            1807 mV
  3.3 V            3306 mV
  3.3 V bias       3300 mV
  3.3 V ASF        3292 mV
  9.0 V            8250 mV
SIB F2S 2/0 status:
State              Online
Temperature        39 degrees C / 102 degrees F
Power
  1.2 V_1          0 mV
  1.2 V_ASF        1195 mV
  1.2 V_ASF_B      1195 mV
  1.2 V_ASF_D      1198 mV
  1.5 V            1498 mV
  1.8 V            1804 mV
  3.3 V            3300 mV
  3.3 V bias       3300 mV
  3.3 V ASF        3286 mV
  9.0 V            8250 mV
SIB F2S 2/2 status:
State              Online
Temperature        38 degrees C / 100 degrees F
Power
  1.2 V_1          0 mV
  1.2 V_ASF        1195 mV
  1.2 V_ASF_B      1195 mV
  1.2 V_ASF_D      1198 mV
  1.5 V            1495 mV
  1.8 V            1807 mV
  3.3 V            3300 mV
  3.3 V bias       3300 mV
  3.3 V ASF        3300 mV
  9.0 V            8250 mV
SIB F2S 2/4 status:
State              Online
Temperature        38 degrees C / 100 degrees F
Power
  1.2 V_1          0 mV
  1.2 V_ASF        1198 mV
  1.2 V_ASF_B      1195 mV
  1.2 V_ASF_D      1198 mV
  1.5 V            1501 mV
  1.8 V            1804 mV
  3.3 V            3286 mV
  3.3 V bias       3292 mV
  3.3 V ASF        3300 mV
  9.0 V            8230 mV
SIB F2S 2/6 status:
State              Online
Temperature        38 degrees C / 100 degrees F

```

```

Power
  1.2 V_1                0 mV
  1.2 V_ASF              1202 mV
  1.2 V_ASF_B            1198 mV
  1.2 V_ASF_D            1202 mV
  1.5 V                  1501 mV
  1.8 V                  1817 mV
  3.3 V                  3300 mV
  3.3 V bias             3300 mV
  3.3 V ASF              3318 mV
  9.0 V                  8250 mV
SIB F2S 3/0 status:
State                    Online
Temperature              38 degrees C / 100 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1195 mV
  1.2 V_ASF_B            1195 mV
  1.2 V_ASF_D            1198 mV
  1.5 V                  1501 mV
  1.8 V                  1814 mV
  3.3 V                  3300 mV
  3.3 V bias             3300 mV
  3.3 V ASF              3274 mV
  9.0 V                  8250 mV
SIB F2S 3/2 status:
State                    Online
Temperature              37 degrees C / 98 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1202 mV
  1.2 V_ASF_B            1195 mV
  1.2 V_ASF_D            1195 mV
  1.5 V                  1495 mV
  1.8 V                  1804 mV
  3.3 V                  3300 mV
  3.3 V bias             3300 mV
  3.3 V ASF              3286 mV
  9.0 V                  8250 mV
SIB F2S 3/4 status:
State                    Online
Temperature              37 degrees C / 98 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1205 mV
  1.2 V_ASF_B            1198 mV
  1.2 V_ASF_D            1202 mV
  1.5 V                  1501 mV
  1.8 V                  1811 mV
  3.3 V                  3300 mV
  3.3 V bias             3300 mV
  3.3 V ASF              3318 mV
  9.0 V                  8250 mV
SIB F2S 3/6 status:
State                    Online
Temperature              37 degrees C / 98 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1205 mV
  1.2 V_ASF_B            1202 mV
  1.2 V_ASF_D            1202 mV

```

```

1.5 V          1511 mV
1.8 V          1820 mV
3.3 V          3306 mV
3.3 V bias     3306 mV
3.3 V ASF      3318 mV
9.0 V          8265 mV
SIB F2S 4/0 status:
State          Online
Temperature     36 degrees C / 96 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1198 mV
1.2 V_ASF_B    1198 mV
1.2 V_ASF_D    1198 mV
1.5 V          1501 mV
1.8 V          1814 mV
3.3 V          3292 mV
3.3 V bias     3292 mV
3.3 V ASF      3312 mV
9.0 V          8230 mV
SIB F2S 4/2 status:
State          Online
Temperature     37 degrees C / 98 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1198 mV
1.2 V_ASF_B    1192 mV
1.2 V_ASF_D    1195 mV
1.5 V          1495 mV
1.8 V          1807 mV
3.3 V          3300 mV
3.3 V bias     3300 mV
3.3 V ASF      3300 mV
9.0 V          8250 mV
SIB F2S 4/4 status:
State          Online
Temperature     36 degrees C / 96 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1202 mV
1.2 V_ASF_B    1195 mV
1.2 V_ASF_D    1202 mV
1.5 V          1501 mV
1.8 V          1814 mV
3.3 V          3300 mV
3.3 V bias     3300 mV
3.3 V ASF      3312 mV
9.0 V          8250 mV
SIB F2S 4/6 status:
State          Online
Temperature     36 degrees C / 96 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1198 mV
1.2 V_ASF_B    1195 mV
1.2 V_ASF_D    1198 mV
1.5 V          1498 mV
1.8 V          1820 mV
3.3 V          3292 mV
3.3 V bias     3292 mV
3.3 V ASF      3286 mV

```

9.0 V 8230 mV

lcc0-re0:

SIB 0 status:

State	Online - Standby
Temperature	49 degrees C / 120 degrees F
Temperature (B)	42 degrees C / 107 degrees F
Power	
1.2 V	1204 mV
1.5 V	1484 mV
2.5 V	2500 mV
3.3 V	3312 mV
3.3 V bias	3312 mV
5.0 V bias	4956 mV
8.0 V bias	7740 mV
9.0 V	8880 mV
Power (B)	
1.2 V	1206 mV
2.5 V	2500 mV
3.3 V	3316 mV
9.0 V	8988 mV

SIB 1 status:

State	Online
Temperature	49 degrees C / 120 degrees F
Temperature (B)	42 degrees C / 107 degrees F
Power	
1.2 V	1202 mV
1.5 V	1482 mV
2.5 V	2500 mV
3.3 V	3296 mV
3.3 V bias	3288 mV
5.0 V bias	4986 mV
8.0 V bias	7800 mV
9.0 V	8868 mV
Power (B)	
1.2 V	1206 mV
2.5 V	2512 mV
3.3 V	3312 mV
9.0 V	8952 mV

SIB 2 status:

State	Online
Temperature	49 degrees C / 120 degrees F
Temperature (B)	42 degrees C / 107 degrees F
Power	
1.2 V	1202 mV
1.5 V	1480 mV
2.5 V	2476 mV
3.3 V	3292 mV
3.3 V bias	3308 mV
5.0 V bias	5010 mV
8.0 V bias	7800 mV
9.0 V	8880 mV
Power (B)	
1.2 V	1204 mV
2.5 V	2516 mV
3.3 V	3308 mV
9.0 V	8988 mV

SIB 3 status:

State	Online
Temperature	48 degrees C / 118 degrees F



```

Temperature (B)          42 degrees C / 107 degrees F
Power
  1.2 V                  1204 mV
  1.5 V                  1480 mV
  2.5 V                  2500 mV
  3.3 V                  3292 mV
  3.3 V bias             3292 mV
  5.0 V bias             4986 mV
  8.0 V bias             7812 mV
  9.0 V                  8892 mV
Power (B)
  1.2 V                  1198 mV
  2.5 V                  2512 mV
  3.3 V                  3308 mV
  9.0 V                  8892 mV
SIB 4 status:
State                    Online
Temperature              48 degrees C / 118 degrees F
Temperature (B)         42 degrees C / 107 degrees F
Power
  1.2 V                  1206 mV
  1.5 V                  1482 mV
  2.5 V                  2484 mV
  3.3 V                  3324 mV
  3.3 V bias             3340 mV
  5.0 V bias             4980 mV
  8.0 V bias             7764 mV
  9.0 V                  8784 mV
Power (B)
  1.2 V                  1202 mV
  2.5 V                  2504 mV
  3.3 V                  3308 mV
  9.0 V                  8820 mV
lcc1-re0:
-----
SIB 0 status:
State                    Online - Standby
Temperature              49 degrees C / 120 degrees F
Temperature (B)         43 degrees C / 109 degrees F
Power
  1.2 V                  1206 mV
  1.5 V                  1506 mV
  2.5 V                  2496 mV
  3.3 V                  3308 mV
  3.3 V bias             3296 mV
  5.0 V bias             4974 mV
  8.0 V bias             7884 mV
  9.0 V                  8820 mV
Power (B)
  1.2 V                  1200 mV
  2.5 V                  2508 mV
  3.3 V                  3292 mV
  9.0 V                  8892 mV
...

```

#### show chassis environment sib sfc (TX Matrix Plus Router)

```

user@host> show chassis environment sib sfc
sfc0-re0:
-----

```

```

SIB F13 0 status:

```

State	Online - Standby
Temperature	54 degrees C / 129 degrees F
Temperature (B)	50 degrees C / 122 degrees F
Power	
1.2 V_0	1205 mV
1.2 V_1	1205 mV
1.2 V_2	1208 mV
1.2 V_3	1208 mV
1.5 V_0	1501 mV
1.5 V_1	1508 mV
1.8 V	1804 mV
2.5 V	2504 mV
3.3 V	3312 mV
9.0 V	8991 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2516 mV
3.3 V	3318 mV
9.0 V	9048 mV
SIB F13 1 status:	
State	Online - Standby
Temperature	45 degrees C / 113 degrees F
Temperature (B)	42 degrees C / 107 degrees F
Power	
1.2 V_0	1202 mV
1.2 V_1	1205 mV
1.2 V_2	1198 mV
1.2 V_3	1205 mV
1.5 V_0	1498 mV
1.5 V_1	1495 mV
1.8 V	1801 mV
2.5 V	2507 mV
3.3 V	3306 mV
9.0 V	8970 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2507 mV
3.3 V	3306 mV
9.0 V	8970 mV
SIB F13 3 status:	
State	Online
Temperature	48 degrees C / 118 degrees F
Temperature (B)	43 degrees C / 109 degrees F
Power	
1.2 V_0	1208 mV
1.2 V_1	1195 mV
1.2 V_2	1202 mV
1.2 V_3	1198 mV
1.5 V_0	1504 mV
1.5 V_1	1504 mV
1.8 V	1801 mV
2.5 V	2510 mV
3.3 V	3312 mV
9.0 V	8970 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2500 mV
3.3 V	3332 mV
9.0 V	8970 mV
SIB F13 4 status:	
State	Online

```

Temperature          44 degrees C / 111 degrees F
Temperature (B)      40 degrees C / 104 degrees F
Power
  1.2 V_0            1205 mV
  1.2 V_1            1202 mV
  1.2 V_2            1205 mV
  1.2 V_3            1202 mV
  1.5 V_0            1508 mV
  1.5 V_1            1511 mV
  1.8 V              1811 mV
  2.5 V              2510 mV
  3.3 V              3312 mV
  9.0 V              8952 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2510 mV
  3.3 V              3306 mV
  9.0 V              9024 mV
SIB F13 6 status:
State                Online
Temperature          49 degrees C / 120 degrees F
Temperature (B)      46 degrees C / 114 degrees F
Power
  1.2 V_0            1195 mV
  1.2 V_1            1198 mV
  1.2 V_2            1202 mV
  1.2 V_3            1202 mV
  1.5 V_0            1501 mV
  1.5 V_1            1495 mV
  1.8 V              1801 mV
  2.5 V              2507 mV
  3.3 V              3306 mV
  9.0 V              8979 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2497 mV
  3.3 V              3318 mV
  9.0 V              9006 mV
SIB F13 7 status:
State                Online
Temperature          52 degrees C / 125 degrees F
Temperature (B)      48 degrees C / 118 degrees F
Power
  1.2 V_0            1198 mV
  1.2 V_1            1198 mV
  1.2 V_2            1202 mV
  1.2 V_3            1189 mV
  1.5 V_0            1498 mV
  1.5 V_1            1498 mV
  1.8 V              1804 mV
  2.5 V              2491 mV
  3.3 V              3292 mV
  9.0 V              8904 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2500 mV
  3.3 V              3306 mV
  9.0 V              8952 mV
SIB F13 8 status:
State                Online
Temperature          54 degrees C / 129 degrees F

```

Temperature (B)	49 degrees C / 120 degrees F
Power	
1.2 V_0	1211 mV
1.2 V_1	1208 mV
1.2 V_2	1208 mV
1.2 V_3	1211 mV
1.5 V_0	1508 mV
1.5 V_1	1511 mV
1.8 V	1801 mV
2.5 V	2513 mV
3.3 V	3324 mV
9.0 V	9048 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2516 mV
3.3 V	3318 mV
9.0 V	9102 mV
SIB F13 9 status:	
State	Online
Temperature	46 degrees C / 114 degrees F
Temperature (B)	41 degrees C / 105 degrees F
Power	
1.2 V_0	1205 mV
1.2 V_1	1202 mV
1.2 V_2	1205 mV
1.2 V_3	1198 mV
1.5 V_0	1504 mV
1.5 V_1	1504 mV
1.8 V	1817 mV
2.5 V	2507 mV
3.3 V	3306 mV
9.0 V	8991 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2510 mV
3.3 V	3332 mV
9.0 V	9006 mV
SIB F13 11 status:	
State	Online
Temperature	47 degrees C / 116 degrees F
Temperature (B)	42 degrees C / 107 degrees F
Power	
1.2 V_0	1202 mV
1.2 V_1	1205 mV
1.2 V_2	1202 mV
1.2 V_3	1198 mV
1.5 V_0	1501 mV
1.5 V_1	1504 mV
1.8 V	1807 mV
2.5 V	2510 mV
3.3 V	3306 mV
9.0 V	8991 mV
9.0 V bias	0 mV
Power (B)	
2.5 V	2249 mV
3.3 V	4994 mV
9.0 V	9936 mV
SIB F13 12 status:	
State	Online
Temperature	44 degrees C / 111 degrees F
Temperature (B)	40 degrees C / 104 degrees F

```

Power
  1.2 V_0          1208 mV
  1.2 V_1          1202 mV
  1.2 V_2          1208 mV
  1.2 V_3          1205 mV
  1.5 V_0          1511 mV
  1.5 V_1          1508 mV
  1.8 V            1814 mV
  2.5 V            2507 mV
  3.3 V            3318 mV
  9.0 V            9039 mV
  9.0 V bias       0 mV
Power (B)
  2.5 V            2516 mV
  3.3 V            3344 mV
  9.0 V            9006 mV
SIB F2S 0/0 status:
  State            Online - Standby
  Temperature       40 degrees C / 104 degrees F
  Power
    1.2 V_1         0 mV
    1.2 V_ASF       1198 mV
    1.2 V_ASF_B     1198 mV
    1.2 V_ASF_D     1202 mV
    1.5 V           1498 mV
    1.8 V           1814 mV
    3.3 V           3300 mV
    3.3 V bias      3300 mV
    3.3 V ASF       3286 mV
    9.0 V           8250 mV
SIB F2S 0/2 status:
  State            Online - Standby
  Temperature       40 degrees C / 104 degrees F
  Power
    1.2 V_1         0 mV
    1.2 V_ASF       1198 mV
    1.2 V_ASF_B     1195 mV
    1.2 V_ASF_D     1202 mV
    1.5 V           1498 mV
    1.8 V           1807 mV
    3.3 V           3300 mV
    3.3 V bias      3300 mV
    3.3 V ASF       3292 mV
    9.0 V           8250 mV
SIB F2S 0/4 status:
  State            Online - Standby
  Temperature       40 degrees C / 104 degrees F
  Power
    1.2 V_1         0 mV
    1.2 V_ASF       1198 mV
    1.2 V_ASF_B     1195 mV
    1.2 V_ASF_D     1202 mV
    1.5 V           1501 mV
    1.8 V           1817 mV
    3.3 V           3300 mV
    3.3 V bias      3300 mV
    3.3 V ASF       3306 mV
    9.0 V           8250 mV
SIB F2S 0/6 status:
  State            Online - Standby
  Temperature       39 degrees C / 102 degrees F

```

```

Power
  1.2 V_1                0 mV
  1.2 V_ASF             1202 mV
  1.2 V_ASF_B           1198 mV
  1.2 V_ASF_D           1198 mV
  1.5 V                 1495 mV
  1.8 V                 1814 mV
  3.3 V                 3300 mV
  3.3 V bias            3300 mV
  3.3 V ASF             3280 mV
  9.0 V                8250 mV
SIB F2S 1/0 status:
State                    Online
Temperature              39 degrees C / 102 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF             1195 mV
  1.2 V_ASF_B           1192 mV
  1.2 V_ASF_D           1195 mV
  1.5 V                 1492 mV
  1.8 V                 1798 mV
  3.3 V                 3300 mV
  3.3 V bias            3300 mV
  3.3 V ASF             3280 mV
  9.0 V                8250 mV
SIB F2S 1/2 status:
State                    Online
Temperature              39 degrees C / 102 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF             1205 mV
  1.2 V_ASF_B           1202 mV
  1.2 V_ASF_D           1205 mV
  1.5 V                 1504 mV
  1.8 V                 1820 mV
  3.3 V                 3300 mV
  3.3 V bias            3300 mV
  3.3 V ASF             3306 mV
  9.0 V                8250 mV
SIB F2S 1/4 status:
State                    Online
Temperature              39 degrees C / 102 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF             1202 mV
  1.2 V_ASF_B           1195 mV
  1.2 V_ASF_D           1198 mV
  1.5 V                 1498 mV
  1.8 V                 1811 mV
  3.3 V                 3300 mV
  3.3 V bias            3300 mV
  3.3 V ASF             3300 mV
  9.0 V                8250 mV
SIB F2S 1/6 status:
State                    Online
Temperature              39 degrees C / 102 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF             1195 mV
  1.2 V_ASF_B           1192 mV
  1.2 V_ASF_D           1198 mV

```

```

1.5 V          1498 mV
1.8 V          1807 mV
3.3 V          3306 mV
3.3 V bias     3300 mV
3.3 V ASF      3292 mV
9.0 V          8250 mV
SIB F2S 2/0 status:
State          Online
Temperature     38 degrees C / 100 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1195 mV
1.2 V_ASF_B    1195 mV
1.2 V_ASF_D    1198 mV
1.5 V          1498 mV
1.8 V          1804 mV
3.3 V          3300 mV
3.3 V bias     3300 mV
3.3 V ASF      3292 mV
9.0 V          8250 mV
...

```

#### show chassis environment sib f13 (TX Matrix Plus Router)

```

user@host> show chassis environment sib f13 0
SIB F13 0 status:
State          Online - Standby
Temperature     54 degrees C / 129 degrees F
Temperature (B) 50 degrees C / 122 degrees F
Power
1.2 V_0        1202 mV
1.2 V_1        1202 mV
1.2 V_2        1208 mV
1.2 V_3        1208 mV
1.5 V_0        1501 mV
1.5 V_1        1504 mV
1.8 V          1801 mV
2.5 V          2504 mV
3.3 V          3318 mV
9.0 V          8991 mV
9.0 V bias     0 mV
Power (B)
2.5 V          2510 mV
3.3 V          3318 mV
9.0 V          9024 mV

```

#### show chassis environment sib f2s (TX Matrix Plus Router)

```

user@host> show chassis environment sib f2s 0/2
SIB F2S 0/2 status:
State          Online - Standby
Temperature     40 degrees C / 104 degrees F
Power
1.2 V_1        0 mV
1.2 V_ASF      1198 mV
1.2 V_ASF_B    1195 mV
1.2 V_ASF_D    1202 mV
1.5 V          1501 mV
1.8 V          1807 mV
3.3 V          3300 mV

```

3.3 V bias	3300 mV
3.3 V ASF	3286 mV
9.0 V	8250 mV

**show chassis environment sib (TX Matrix Plus router with 3D SIBs)**

```
user@host> show chassis environment sib
sfc0-re0:
```

```
-----
SIB F13 0 status:
```

State	Online
Board Temperature	44 degrees C / 111 degrees F
XF Junction Temperature	62 degrees C / 143 degrees F
Power	
XF F1 LCC0 1.0 V	999 mV
PCIe Switch 1.0 V	1000 mV
XF F3 LCC0 1.0 V	1000 mV
XF F1/F3 LCC0 1.2 V	1199 mV
XF F1 LCC1 1.0 V	1000 mV
XF F1/F3 LCC1 1.2 V	1199 mV
XF F3 LCC1 1.0 V	1000 mV
XF F1/F3 1.5 V	1499 mV
XF RC LCC0 Base 1.0	1000 mV
XF RC Base 1.2 V	1200 mV
XF RC LCC1 Base 1.0	1000 mV
XF RC Base 1.5 V	1499 mV
3.3 V Base	3300 mV
VSC8248 Base 1.8V	1796 mV
FPGA Core 0.9 V	899 mV
2.5 V Base	2500 mV
1tc3880-3.3v-bias	3343 mV
CXP Base 4.0 V	3999 mV
XF RC LCC0 Mezz 1.0	1000 mV
XF RC Mezz 1.2 V	1199 mV
XF RC LCC1 Mezz 1.0	999 mV
XF RC Mezz 1.5 V	1499 mV
3.3 V Mezz	3299 mV
VSC8248 Mezz 1.8V	1800 mV
CXP Mezz 4.0 V	3999 mV

```
[...Output Truncated...]
```

```
SIB F2S 0/0 status:
```

State	Online
Board Temperature	32 degrees C / 89 degrees F
XF Junction Temperature	41 degrees C / 105 degrees F
Power	
XF F2S 1.8 V LD0	1775 mV
XF F2S 1.0 V AN	992 mV
XF F2S 1.0 V	1002 mV
XF F2S 1.5 V	1488 mV
1.5 V Base	2500 mV
3.3 V bias	3306 mV
3.3 V Base	3280 mV
12.0 V Base	11928 mV

```
[...Output Truncated...]
```

```
SIB F2S 2/6 status:
```

State	Online
Board Temperature	28 degrees C / 82 degrees F
XF Junction Temperature	40 degrees C / 104 degrees F
Power	
XF F2S 1.8 V LD0	1782 mV
XF F2S 1.0 V AN	999 mV



XF F2S 1.0 V	1005 mV
XF F2S 1.5 V	1498 mV
1.5 V Base	2510 mV
3.3 V bias	3292 mV
3.3 V Base	3292 mV
12.0 V Base	12024 mV

1cc0-re0:

SIB 0 status:

State	Online
Temperature	41 degrees C / 105 degrees F
Temperature (B)	Absent
Max Jn Temperature	48 degrees C / 118 degrees F
Power	
8.0 V bias	8156 mV
3.3 V bias	3284 mV
FPGA 0.9 V bias	908 mV
FPGA 1.1 V bias	1086 mV
FPGA 1.5 V bias	1487 mV
FPGA 2.5 V bias	2525 mV
3.3 V	3282 mV
1.5 V	1487 mV
XF HSS 1.5 V	1501 mV
XF1 1.0 V	1001 mV
XF2 1.0 V	1003 mV
XF3 1.0 V	998 mV
XF1 1.8 V LDO	1782 mV
XF2 1.8 V LDO	1792 mV
XF3 1.8 V LDO	1782 mV
CLK BUF 2.5 V LDO	2493 mV
XF1 1.0 V LDO	991 mV
XF2 1.0 V LDO	991 mV
XF3 1.0 V LDO	991 mV
PCIE SW 3.3 V	3274 mV
PCIE 1.0 V	996 mV
RETIMER 1.2 V	1174 mV
RETIMER IO 1.8 V	1770 mV
	0 mV
Power (B)	
1.2 V	0 mV
2.5 V	0 mV
3.3 V	0 mV
9.0 V	0 mV

[...Output Truncated...]

1cc2-re0:

SIB 0 status:

State	Online
Temperature	42 degrees C / 107 degrees F
Temperature (B)	Absent
Max Jn Temperature	51 degrees C / 123 degrees F
Power	
8.0 V bias	8146 mV
3.3 V bias	3277 mV
FPGA 0.9 V bias	903 mV
FPGA 1.1 V bias	1089 mV
FPGA 1.5 V bias	1479 mV
FPGA 2.5 V bias	2515 mV
3.3 V	3277 mV
1.5 V	1482 mV

XF HSS 1.5 V	1501 mV
XF1 1.0 V	1001 mV
XF2 1.0 V	1003 mV
XF3 1.0 V	998 mV
XF1 1.8 V LDO	1787 mV
XF2 1.8 V LDO	1792 mV
XF3 1.8 V LDO	1792 mV
CLK BUF 2.5 V LDO	2481 mV
XF1 1.0 V LDO	986 mV
XF2 1.0 V LDO	993 mV
XF3 1.0 V LDO	991 mV
PCIE SW 3.3 V	3279 mV
PCIE 1.0 V	991 mV
RETIMER 1.2 V	1179 mV
RETIMER IO 1.8 V	1772 mV
	0 mV

Power (B)	
1.2 V	0 mV
2.5 V	0 mV
3.3 V	0 mV
9.0 V	0 mV

[...Output Truncated...]

**show chassis environment sib (PTX5000 Packet Transport Router with SIB-I-8S)**

user@host&gt; show chassis environment sib

SIB 0 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	40 degrees C / 104 degrees F
Power	
1.0 V	1000 mV
1.5 V	1499 mV
1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3313 mV
12.0 V	12296 mV
12.0 V i	2908 mA

SIB 1 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	40 degrees C / 104 degrees F
Power	
1.0 V	1000 mV
1.5 V	1499 mV
1.2 V	1200 mV
3.3 V	3299 mV
0.9 V	900 mV
2.5 V	2500 mV
3.3 V bias	3313 mV
12.0 V	12312 mV
12.0 V i	2979 mA

SIB 2 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	999 mV
1.5 V	1499 mV

1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2500 mV
3.3 V bias	3324 mV
12.0 V	12312 mV
12.0 V i	2990 mA

SIB 3 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	39 degrees C / 102 degrees F
Power	
1.0 V	999 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3307 mV
12.0 V	12296 mV
12.0 V i	3144 mA

SIB 4 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	899 mV
2.5 V	2499 mV
3.3 V bias	3341 mV
12.0 V	12328 mV
12.0 V i	2836 mA

SIB 5 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	1000 mV
1.5 V	1499 mV
1.2 V	1199 mV
3.3 V	3299 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3327 mV
12.0 V	12296 mV
12.0 V i	2919 mA

SIB 6 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3299 mV
0.9 V	899 mV
2.5 V	2500 mV
3.3 V bias	3294 mV

```

12.0 V          12296 mV
12.0 V i        2825 mA
SIB 7 status:
State           Online
Exhaust Temperature 30 degrees C / 86 degrees F
Junction Temperature 36 degrees C / 96 degrees F
Power
1.0 V          1000 mV
1.5 V          1500 mV
1.2 V          1200 mV
3.3 V          3300 mV
0.9 V          899 mV
2.5 V          2499 mV
3.3 V bias     3316 mV
12.0 V         12312 mV
12.0 V i       2844 mA
SIB 8 status:
State           Online
Exhaust Temperature 31 degrees C / 87 degrees F
Junction Temperature 38 degrees C / 100 degrees F
Power
1.0 V          1000 mV
1.5 V          1499 mV
1.2 V          1199 mV
3.3 V          3299 mV
0.9 V          900 mV
2.5 V          2500 mV
3.3 V bias     3333 mV
12.0 V         12328 mV
12.0 V i       2900 mA

```

#### show chassis environment sib (PTX5000 Packet Transport Router with SIB-I-8SE)

```

user@host> show chassis environment sib
SIB 0 status:
State           Online
Exhaust Temperature 29 degrees C / 84 degrees F
Junction Temperature 42 degrees C / 107 degrees F
Power
1.0 V          999 mV
1.5 V          1500 mV
1.2 V          1200 mV
3.3 V          3300 mV
0.9 V          900 mV
2.5 V          2500 mV
3.3 V bias     3289 mV
12.0 V         12484 mV
2.5 V LDO      2502 mV
12.0 V i       3494 mA
SIB 1 status:
State           Online
Exhaust Temperature 28 degrees C / 82 degrees F
Junction Temperature 33 degrees C / 91 degrees F
Power
1.0 V          1000 mV
1.5 V          1500 mV
1.2 V          1199 mV
3.3 V          3300 mV
0.9 V          899 mV
2.5 V          2500 mV
3.3 V bias     3313 mV

```

```

12.0 V          12484 mV
2.5 V LDO       2513 mV
12.0 V i        3099 mA
SIB 2 status:
State           Online
Exhaust Temperature 29 degrees C / 84 degrees F
Junction Temperature 39 degrees C / 102 degrees F
Power
1.0 V           1000 mV
1.5 V           1500 mV
1.2 V           1199 mV
3.3 V           3300 mV
0.9 V           900 mV
2.5 V           2500 mV
3.3 V bias      3307 mV
12.0 V          12484 mV
2.5 V LDO       2512 mV
12.0 V i        3336 mA
SIB 3 status:
State           Online
Exhaust Temperature 28 degrees C / 82 degrees F
Junction Temperature 34 degrees C / 93 degrees F
Power
1.0 V           999 mV
1.5 V           1500 mV
1.2 V           1200 mV
3.3 V           3300 mV
0.9 V           900 mV
2.5 V           2500 mV
3.3 V bias      3299 mV
12.0 V          12500 mV
2.5 V LDO       2494 mV
12.0 V i        3479 mA
SIB 4 status:
State           Online
Exhaust Temperature 28 degrees C / 82 degrees F
Junction Temperature 38 degrees C / 100 degrees F
Power
1.0 V           1000 mV
1.5 V           1500 mV
1.2 V           1199 mV
3.3 V           3299 mV
0.9 V           900 mV
2.5 V           2499 mV
3.3 V bias      3309 mV
12.0 V          12484 mV
2.5 V LDO       2499 mV
12.0 V i        3159 mA
SIB 5 status:
State           Online
Exhaust Temperature 27 degrees C / 80 degrees F
Junction Temperature 33 degrees C / 91 degrees F
Power
1.0 V           1000 mV
1.5 V           1500 mV
1.2 V           1200 mV
3.3 V           3299 mV
0.9 V           900 mV
2.5 V           2499 mV
3.3 V bias      3308 mV
12.0 V          12468 mV

```

```

2.5 V LDO                2495 mV
12.0 V i                 3054 mA
SIB 6 status:
State                    Online
Exhaust Temperature      28 degrees C / 82 degrees F
Junction Temperature      38 degrees C / 100 degrees F
Power
1.0 V                    999 mV
1.5 V                    1500 mV
1.2 V                    1199 mV
3.3 V                    3299 mV
0.9 V                    899 mV
2.5 V                    2499 mV
3.3 V bias               3313 mV
12.0 V                   12468 mV
2.5 V LDO                2510 mV
12.0 V i                 3122 mA
SIB 7 status:
State                    Online
Exhaust Temperature      26 degrees C / 78 degrees F
Junction Temperature      34 degrees C / 93 degrees F
Power
1.0 V                    999 mV
1.5 V                    1499 mV
1.2 V                    1199 mV
3.3 V                    3300 mV
0.9 V                    900 mV
2.5 V                    2499 mV
3.3 V bias               3278 mV
12.0 V                   12468 mV
2.5 V LDO                2504 mV
12.0 V i                 3234 mA
SIB 8 status:
State                    Online
Exhaust Temperature      26 degrees C / 78 degrees F
Junction Temperature      34 degrees C / 93 degrees F
Power
1.0 V                    999 mV
1.5 V                    1499 mV
1.2 V                    1199 mV
3.3 V                    3300 mV
0.9 V                    900 mV
2.5 V                    2499 mV
3.3 V bias               3278 mV
12.0 V                   12468 mV
2.5 V LDO                2504 mV
12.0 V i                 3234 mA

```

#### show chassis environment sib (PTX10008 Router)

```

user@host> show chassis environment sib
SIB 0 status:
State                    Online
SIB 0 Intake-A Temp Sensor 37 degrees C / 98 degrees F
SIB 0 Intake-B Temp Sensor 31 degrees C / 87 degrees F
SIB 0 Exhaust-A Temp Sensor 34 degrees C / 93 degrees F
SIB 0 Exhaust-B Temp Sensor 38 degrees C / 100 degrees F
SIB 0 PF0 Temp Sensor      47 degrees C / 116 degrees F
SIB 0 PF1 Temp Sensor      40 degrees C / 104 degrees F
Power
PF0 Core 0.9V              925 mV   28929 mA   26835 mW

```

PF0 AVDD 1V	1000 mV	32656 mA	32718 mW
PF1 Core 0.9V	922 mV	28351 mA	26210 mW
PF1 AVDD 1V	1000 mV	30890 mA	30937 mW
12V	12311 mV	10880 mA	134744 mW

SIB 1 status:

State	Online		
SIB 1 Intake-A Temp Sensor	43 degrees C / 109 degrees F		
SIB 1 Intake-B Temp Sensor	35 degrees C / 95 degrees F		
SIB 1 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F		
SIB 1 Exhaust-B Temp Sensor	45 degrees C / 113 degrees F		
SIB 1 PF0 Temp Sensor	54 degrees C / 129 degrees F		
SIB 1 PF1 Temp Sensor	42 degrees C / 107 degrees F		
Power			
PF0 Core 0.9V	951 mV	30468 mA	29007 mW
PF0 AVDD 1V	999 mV	32921 mA	32921 mW
PF1 Core 0.9V	924 mV	29046 mA	26828 mW
PF1 AVDD 1V	1000 mV	30796 mA	30796 mW
12V	12298 mV	11356 mA	140682 mW

SIB 2 status:

State	Online		
SIB 2 Intake-A Temp Sensor	45 degrees C / 113 degrees F		
SIB 2 Intake-B Temp Sensor	36 degrees C / 96 degrees F		
SIB 2 Exhaust-A Temp Sensor	38 degrees C / 100 degrees F		
SIB 2 Exhaust-B Temp Sensor	46 degrees C / 114 degrees F		
SIB 2 PF0 Temp Sensor	55 degrees C / 131 degrees F		
SIB 2 PF1 Temp Sensor	43 degrees C / 109 degrees F		
Power			
PF0 Core 0.9V	924 mV	28273 mA	26140 mW
PF0 AVDD 1V	1000 mV	32562 mA	32625 mW
PF1 Core 0.9V	925 mV	29351 mA	27265 mW
PF1 AVDD 1V	999 mV	31812 mA	31859 mW
12V	12351 mV	11010 mA	137481 mW

SIB 3 status:

State	Online		
SIB 3 Intake-A Temp Sensor	44 degrees C / 111 degrees F		
SIB 3 Intake-B Temp Sensor	36 degrees C / 96 degrees F		
SIB 3 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F		
SIB 3 Exhaust-B Temp Sensor	45 degrees C / 113 degrees F		
SIB 3 PF0 Temp Sensor	54 degrees C / 129 degrees F		
SIB 3 PF1 Temp Sensor	43 degrees C / 109 degrees F		
Power			
PF0 Core 0.9V	924 mV	28820 mA	26695 mW
PF0 AVDD 1V	999 mV	32265 mA	32281 mW
PF1 Core 0.9V	923 mV	28933 mA	26757 mW
PF1 AVDD 1V	999 mV	31281 mA	31265 mW
12V	12285 mV	11096 mA	137296 mW

SIB 4 status:

State	Online		
SIB 4 Intake-A Temp Sensor	45 degrees C / 113 degrees F		
SIB 4 Intake-B Temp Sensor	36 degrees C / 96 degrees F		
SIB 4 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F		
SIB 4 Exhaust-B Temp Sensor	46 degrees C / 114 degrees F		
SIB 4 PF0 Temp Sensor	54 degrees C / 129 degrees F		
SIB 4 PF1 Temp Sensor	43 degrees C / 109 degrees F		
Power			
PF0 Core 0.9V	950 mV	29757 mA	28281 mW
PF0 AVDD 1V	999 mV	32109 mA	32093 mW
PF1 Core 0.9V	948 mV	29460 mA	27921 mW
PF1 AVDD 1V	999 mV	30687 mA	30671 mW
12V	12193 mV	11183 mA	137352 mW

SIB 5 status:

```

State                               Online
SIB 5 Intake-A Temp Sensor 38 degrees C / 100 degrees F
SIB 5 Intake-B Temp Sensor 32 degrees C / 89 degrees F
SIB 5 Exhaust-A Temp Sensor 35 degrees C / 95 degrees F
SIB 5 Exhaust-B Temp Sensor 39 degrees C / 102 degrees F
SIB 5 PF0 Temp Sensor      45 degrees C / 113 degrees F
SIB 5 PF1 Temp Sensor      43 degrees C / 109 degrees F
Power
  PF0 Core 0.9V            951 mV   29546 mA   28156 mW
  PF0 AVDD 1V              999 mV   31468 mA   31468 mW
  PF1 Core 0.9V            948 mV   30007 mA   28515 mW
  PF1 AVDD 1V              999 mV   31812 mA   31859 mW
  12V                      12179 mV  11399 mA   139720 mW

```

### show chassis environment sib (PTX10016 Router)

```
user@host> show chassis environment sib
```

```
SIB 0 status:
```

```

State                               Online
SIB 0 Intake-A Temp Sensor 22 degrees C / 71 degrees F
SIB 0 Intake-B Temp Sensor 21 degrees C / 69 degrees F
SIB 0 Intake-C Temp Sensor 17 degrees C / 62 degrees F
SIB 0 Exhaust-A Temp Sensor 29 degrees C / 84 degrees F
SIB 0 Exhaust-B Temp Sensor 30 degrees C / 86 degrees F
SIB 0 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
SIB 0 PF0 Temp Sensor      31 degrees C / 87 degrees F
SIB 0 PF1 Temp Sensor      31 degrees C / 87 degrees F
SIB 0 PF2 Temp Sensor      32 degrees C / 89 degrees F
SIB 0 PF3 Temp Sensor      33 degrees C / 91 degrees F
SIB 0 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 0 PF5 Temp Sensor      27 degrees C / 80 degrees F
Power
  PF0 Core 0.9V            924 mV   24429 mA   22664 mW
  PF0 AVDD 1V              999 mV   19515 mA   19531 mW
  PF1 Core 0.9V            924 mV   24531 mA   22679 mW
  PF1 AVDD 1V              999 mV   17796 mA   17812 mW
  PF2 Core 0.9V            924 mV   24308 mA   22503 mW
  PF2 AVDD 1V              999 mV   16250 mA   16265 mW
  PF3 Core 0.9V            925 mV   24414 mA   22601 mW
  PF3 AVDD 1V              999 mV   15023 mA   15023 mW
  PF4 Core 0.9V            924 mV   24089 mA   22285 mW
  PF4 AVDD 1V              1000 mV  15148 mA   15156 mW
  PF5 Core 0.9V            898 mV   23601 mA   21273 mW
  PF5 AVDD 1V              999 mV   15453 mA   15453 mW
  12V                      12311 mV  11399 mA   141366 mW
  12V_1                    12325 mV  11053 mA   137204 mW

```

```
SIB 1 status:
```

```

State                               Online
SIB 1 Intake-A Temp Sensor 23 degrees C / 73 degrees F
SIB 1 Intake-B Temp Sensor 23 degrees C / 73 degrees F
SIB 1 Intake-C Temp Sensor 18 degrees C / 64 degrees F
SIB 1 Exhaust-A Temp Sensor 30 degrees C / 86 degrees F
SIB 1 Exhaust-B Temp Sensor 32 degrees C / 89 degrees F
SIB 1 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
SIB 1 PF0 Temp Sensor      33 degrees C / 91 degrees F
SIB 1 PF1 Temp Sensor      32 degrees C / 89 degrees F
SIB 1 PF2 Temp Sensor      34 degrees C / 93 degrees F
SIB 1 PF3 Temp Sensor      39 degrees C / 102 degrees F
SIB 1 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 1 PF5 Temp Sensor      28 degrees C / 82 degrees F
Power

```



PF0 Core 0.9V	949 mV	24101 mA	22910 mW
PF0 AVDD 1V	1000 mV	19046 mA	19062 mW
PF1 Core 0.9V	924 mV	24375 mA	22546 mW
PF1 AVDD 1V	999 mV	17843 mA	17859 mW
PF2 Core 0.9V	923 mV	24183 mA	22355 mW
PF2 AVDD 1V	999 mV	16109 mA	16117 mW
PF3 Core 0.9V	949 mV	24246 mA	23097 mW
PF3 AVDD 1V	1000 mV	14632 mA	14632 mW
PF4 Core 0.9V	925 mV	23613 mA	21882 mW
PF4 AVDD 1V	1000 mV	14742 mA	14710 mW
PF5 Core 0.9V	924 mV	24328 mA	22515 mW
PF5 AVDD 1V	1000 mV	14640 mA	14664 mW
12V	12351 mV	11096 mA	138036 mW
12V_1	12219 mV	11226 mA	137500 mW

## SIB 2 status:

State	Online
SIB 2 Intake-A Temp Sensor	25 degrees C / 77 degrees F
SIB 2 Intake-B Temp Sensor	22 degrees C / 71 degrees F
SIB 2 Intake-C Temp Sensor	18 degrees C / 64 degrees F
SIB 2 Exhaust-A Temp Sensor	29 degrees C / 84 degrees F
SIB 2 Exhaust-B Temp Sensor	33 degrees C / 91 degrees F
SIB 2 Exhaust-C Temp Sensor	24 degrees C / 75 degrees F
SIB 2 PF0 Temp Sensor	33 degrees C / 91 degrees F
SIB 2 PF1 Temp Sensor	31 degrees C / 87 degrees F
SIB 2 PF2 Temp Sensor	34 degrees C / 93 degrees F
SIB 2 PF3 Temp Sensor	42 degrees C / 107 degrees F
SIB 2 PF4 Temp Sensor	28 degrees C / 82 degrees F
SIB 2 PF5 Temp Sensor	27 degrees C / 80 degrees F

## Power

PF0 Core 0.9V	899 mV	24046 mA	21656 mW
PF0 AVDD 1V	999 mV	19265 mA	19250 mW
PF1 Core 0.9V	900 mV	24234 mA	21867 mW
PF1 AVDD 1V	999 mV	18000 mA	18015 mW
PF2 Core 0.9V	900 mV	23250 mA	20953 mW
PF2 AVDD 1V	999 mV	16328 mA	16343 mW
PF3 Core 0.9V	899 mV	23976 mA	21570 mW
PF3 AVDD 1V	999 mV	14976 mA	15007 mW
PF4 Core 0.9V	924 mV	23718 mA	21976 mW
PF4 AVDD 1V	1000 mV	14781 mA	14765 mW
PF5 Core 0.9V	899 mV	23265 mA	20937 mW
PF5 AVDD 1V	999 mV	15125 mA	15132 mW
12V	12298 mV	10750 mA	133523 mW
12V_1	12245 mV	10880 mA	134041 mW

## SIB 3 status:

State	Online
SIB 3 Intake-A Temp Sensor	23 degrees C / 73 degrees F
SIB 3 Intake-B Temp Sensor	25 degrees C / 77 degrees F
SIB 3 Intake-C Temp Sensor	17 degrees C / 62 degrees F
SIB 3 Exhaust-A Temp Sensor	30 degrees C / 86 degrees F
SIB 3 Exhaust-B Temp Sensor	32 degrees C / 89 degrees F
SIB 3 Exhaust-C Temp Sensor	25 degrees C / 77 degrees F
SIB 3 PF0 Temp Sensor	33 degrees C / 91 degrees F
SIB 3 PF1 Temp Sensor	31 degrees C / 87 degrees F
SIB 3 PF2 Temp Sensor	32 degrees C / 89 degrees F
SIB 3 PF3 Temp Sensor	40 degrees C / 104 degrees F
SIB 3 PF4 Temp Sensor	28 degrees C / 82 degrees F
SIB 3 PF5 Temp Sensor	27 degrees C / 80 degrees F

## Power

PF0 Core 0.9V	924 mV	24558 mA	22734 mW
PF0 AVDD 1V	999 mV	19500 mA	19515 mW
PF1 Core 0.9V	925 mV	24570 mA	22750 mW

PF1 AVDD 1V	999 mV	17609 mA	17625 mW
PF2 Core 0.9V	899 mV	23144 mA	20832 mW
PF2 AVDD 1V	1000 mV	16375 mA	16390 mW
PF3 Core 0.9V	925 mV	24203 mA	22414 mW
PF3 AVDD 1V	1000 mV	15039 mA	15023 mW
PF4 Core 0.9V	899 mV	23523 mA	21183 mW
PF4 AVDD 1V	999 mV	15273 mA	15296 mW
PF5 Core 0.9V	924 mV	24125 mA	22367 mW
PF5 AVDD 1V	1000 mV	14953 mA	14968 mW
12V	12245 mV	10880 mA	133652 mW
12V_1	12259 mV	11053 mA	136464 mW

## SIB 4 status:

State	Online
SIB 4 Intake-A Temp Sensor	23 degrees C / 73 degrees F
SIB 4 Intake-B Temp Sensor	26 degrees C / 78 degrees F
SIB 4 Intake-C Temp Sensor	18 degrees C / 64 degrees F
SIB 4 Exhaust-A Temp Sensor	30 degrees C / 86 degrees F
SIB 4 Exhaust-B Temp Sensor	33 degrees C / 91 degrees F
SIB 4 Exhaust-C Temp Sensor	24 degrees C / 75 degrees F
SIB 4 PF0 Temp Sensor	34 degrees C / 93 degrees F
SIB 4 PF1 Temp Sensor	32 degrees C / 89 degrees F
SIB 4 PF2 Temp Sensor	33 degrees C / 91 degrees F
SIB 4 PF3 Temp Sensor	41 degrees C / 105 degrees F
SIB 4 PF4 Temp Sensor	28 degrees C / 82 degrees F
SIB 4 PF5 Temp Sensor	27 degrees C / 80 degrees F
Power	

PF0 Core 0.9V	925 mV	24644 mA	22824 mW
PF0 AVDD 1V	999 mV	19375 mA	19390 mW
PF1 Core 0.9V	900 mV	24109 mA	21703 mW
PF1 AVDD 1V	999 mV	17687 mA	17695 mW
PF2 Core 0.9V	899 mV	24085 mA	21710 mW
PF2 AVDD 1V	999 mV	16578 mA	16570 mW
PF3 Core 0.9V	949 mV	24652 mA	23410 mW
PF3 AVDD 1V	1000 mV	14445 mA	14453 mW
PF4 Core 0.9V	924 mV	23902 mA	22097 mW
PF4 AVDD 1V	999 mV	14750 mA	14742 mW
PF5 Core 0.9V	925 mV	24082 mA	22308 mW
PF5 AVDD 1V	999 mV	14671 mA	14671 mW
12V	12338 mV	11139 mA	138277 mW
12V_1	12325 mV	11356 mA	140978 mW

## SIB 5 status:

State	Online
SIB 5 Intake-A Temp Sensor	22 degrees C / 71 degrees F
SIB 5 Intake-B Temp Sensor	22 degrees C / 71 degrees F
SIB 5 Intake-C Temp Sensor	18 degrees C / 64 degrees F
SIB 5 Exhaust-A Temp Sensor	28 degrees C / 82 degrees F
SIB 5 Exhaust-B Temp Sensor	28 degrees C / 82 degrees F
SIB 5 Exhaust-C Temp Sensor	25 degrees C / 77 degrees F
SIB 5 PF0 Temp Sensor	32 degrees C / 89 degrees F
SIB 5 PF1 Temp Sensor	31 degrees C / 87 degrees F
SIB 5 PF2 Temp Sensor	32 degrees C / 89 degrees F
SIB 5 PF3 Temp Sensor	33 degrees C / 91 degrees F
SIB 5 PF4 Temp Sensor	29 degrees C / 84 degrees F
SIB 5 PF5 Temp Sensor	28 degrees C / 82 degrees F
Power	

PF0 Core 0.9V	924 mV	25093 mA	23210 mW
PF0 AVDD 1V	999 mV	19781 mA	19796 mW
PF1 Core 0.9V	899 mV	24113 mA	21753 mW
PF1 AVDD 1V	1000 mV	17968 mA	17984 mW
PF2 Core 0.9V	925 mV	24218 mA	22437 mW
PF2 AVDD 1V	1000 mV	16539 mA	16531 mW

PF3 Core 0.9V	898 mV	23511 mA	21164 mW
PF3 AVDD 1V	999 mV	15015 mA	15023 mW
PF4 Core 0.9V	975 mV	25328 mA	24718 mW
PF4 AVDD 1V	1000 mV	14578 mA	14601 mW
PF5 Core 0.9V	923 mV	24175 mA	22367 mW
PF5 AVDD 1V	1000 mV	14789 mA	14765 mW
12V	12259 mV	11053 mA	136464 mW
12V_1	12272 mV	11226 mA	138221 mW

## show chassis ethernet-switch

---

<b>List of Syntax</b>	<a href="#">Syntax on page 586</a> <a href="#">Syntax (EX8200 Switch) on page 586</a> <a href="#">Syntax (T4000 Router) on page 586</a> <a href="#">Syntax (TX Matrix Router) on page 586</a> <a href="#">Syntax (TX Matrix Plus Router) on page 586</a> <a href="#">Syntax (MX Series Router) on page 586</a> <a href="#">Syntax (MX2010, MX2020, and MX2008 3D Universal Edge Routers) on page 586</a> <a href="#">Syntax (MX10008 3D Universal Edge Routers) on page 586</a> <a href="#">Syntax (PTX Series Packet Transport Routers) on page 586</a>
<b>Syntax</b>	<code>show chassis ethernet-switch &lt;errors &lt;port&gt;&gt;</code>
<b>Syntax (EX8200 Switch)</b>	<code>show chassis ethernet-switch &lt;statistics &lt;port&gt;   switch &lt;number&gt;</code>
<b>Syntax (T4000 Router)</b>	<code>show chassis ethernet-switch &lt;errors &lt;port&gt;   statistics &lt;port&gt;&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>show chassis ethernet-switch &lt;errors &lt;port&gt;   statistics &lt;port&gt;&gt; &lt;lcc &lt;number&gt;   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show chassis ethernet-switch &lt;errors &lt;port&gt;   switch &lt;number&gt; &lt;lcc number   sfc number&gt; &lt;statistics &lt;port&gt;   switch &lt;number&gt;</code>
<b>Syntax (MX Series Router)</b>	<code>show chassis ethernet-switch &lt;all-members&gt; &lt;errors &lt;port&gt;&gt; &lt;local&gt; &lt;member member-id&gt;</code>
<b>Syntax (MX2010, MX2020, and MX2008 3D Universal Edge Routers)</b>	<code>show chassis ethernet-switch &lt;errors &lt;port&gt;   statistics &lt;port&gt;&gt; &lt;old-rom-packet-count&gt;</code>
<b>Syntax (MX10008 3D Universal Edge Routers)</b>	<code>statistics &lt;port&gt;&gt;</code>
<b>Syntax (PTX Series Packet Transport Routers)</b>	<code>show chassis ethernet-switch &lt;errors &lt;port&gt;&gt; &lt;statistics &lt;port&gt;&gt;</code>

`<port-state <port>>`

<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p><b>sfc</b> option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 3D Universal Edge Routers.</p>
<b>Description</b>	<p>(M10i, M40e, M120, M160, M320, MX Series, and T Series routers and EX8200 and PTX Series routers only) Display information about the ports on the Control Board (CB) Ethernet switch.</p>
<b>Options</b>	<p><b>none</b>—Display information about each connected port on the Ethernet switch. On a TX Matrix router, display information about each connected port on the Ethernet switch on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display information about each connected port on the Ethernet switch on the TX Matrix Plus router and its attached routers.</p> <p><b>all-members</b>—(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on all the members of the Virtual Chassis configuration.</p> <p><b>errors</b>—(Optional) Display the numbers and types of errors accumulated on all ports of the Ethernet switch.</p> <p><b>errors port</b>—(Optional) Display the numbers and types of errors accumulated on the specified port (0 through 15) of the Ethernet switch. On the TX Matrix router, replace <b>port</b> with a value from 0 through 15. On the TX Matrix Plus router and EX8200 switch, replace <b>port</b> with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace <b>port</b> with a value from 0 through 25. On the T4000 routers, MX2020 routers, MX2010 routers, and MX2008 routers, replace <b>port</b> with a value from 0 through 27.</p> <p><b>errors switch number</b>—(TX Matrix Plus router only) (Optional) Display the numbers and types of errors accumulated on the specified switch. Replace <b>number</b> with a value from 0 through 2.</p> <p><b>lcc number</b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**old-rom-packet-count**—(MX 2020 Routers only) (Optional) Display information about installed linecards. A non-zero number indicates that the bootrom on that linecard needs to be updated.

**port-state**—(PTX Series only) (Optional) Display information about current port operation (**Blocking**, **Listening**, or **Disabled**).

**scc**—(TX Matrix router only) (Optional) Display information about the ports on the CB's Ethernet switch on the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus router only) (Optional) Display information about the ports on the CB's Ethernet switch on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**statistics**—(Optional) Display traffic statistics for each connected port on the Ethernet switch.

**statistics *port***—(Optional) Display traffic statistics for the specified port on the Ethernet switch. On the TX Matrix router, replace *port* with a value from 0 through 25. On the TX Matrix Plus router or EX8200 switch, replace *port* with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace *port* with a value from 0 through 25. On the T4000 routers, MX2020 routers, MX2010 routers, and MX2008 routers, replace *port* with a value from 0 through 27.

**statistics switch *number***—(TX Matrix Plus routers and EX8200 switch only) (Optional) Display traffic statistics for the specified Ethernet switch number. On the TX Matrix Plus router and EX8216 switch, replace *number* with a value from 0 through 2. On the EX8208 switch, replace *number* with a value from 0 through 1.

**Required Privilege Level** view

**List of Sample Output**

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- [show chassis ethernet-switch \(MX480 Router with MPC4E\) on page 594](#)
- [show chassis ethernet-switch \(MX2010 Router\) on page 595](#)
- [show chassis ethernet-switch statistics \(MX2010 Router\) on page 596](#)
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- [show chassis ethernet-switch \(PTX5000 Packet Transport Router\) on page 629](#)
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- [show chassis ethernet-switch port-state \(PTX5000 Packet Transport Router\) on page 633](#)

**Output Fields** [Table 21 on page 589](#) lists the output fields for the **show chassis ethernet-switch** command. Output fields are listed in the approximate order in which they appear.

*Table 21: show chassis ethernet-switch Output Fields*

Field Name	Field Description
Link is good on port n connected to device	Information about the link between each port on the CB's Ethernet switch and one of the following devices:
or	<ul style="list-style-type: none"> <li>FPC0 (Flexible PIC Concentrator 0) through FPC7</li> </ul>
Link is good on Fast Ethernet port n connected to device	<ul style="list-style-type: none"> <li>Local controller</li> <li>Routing Engine</li> <li>Other Routing Engine (on a system with two Routing Engines)</li> <li>SPMB (Switch Processor Mezzanine Board)</li> </ul>
or	<ul style="list-style-type: none"> <li>(TX Matrix router only) LCC0 (line-card chassis 0) through LCC3</li> </ul>
Link is good on Gigabit Ethernet port n connected to device	
or	
Link is down on Gigabit Ethernet port connected to device	

Table 21: show chassis ethernet-switch Output Fields (continued)

Field Name	Field Description
Speed is	Speed at which the Ethernet link is running: <b>10 Mb</b> or <b>100 Mb</b> . When the device is <b>RE</b> or <b>Other RE</b> on the TX Matrix router, the speed is <b>1000 Mb</b> .  <b>NOTE:</b> Irrespective of the device, the speed is <b>1000 Mb</b> on the MX2010, MX2020, and MX2008 routers.
Duplex is	Duplex type of the Ethernet link: <b>full</b> or <b>half</b> .
Autonegotiate is Enabled (or Disabled)	By default, built-in Fast Ethernet ports on a PIC autonegotiate whether to operate at 10 Mbps or 100 Mbps. All other interfaces automatically choose the correct speed based on the PIC type and whether the PIC is configured to operate in multiplexed mode (using the <b>no-concatenate</b> statement at the <b>[edit chassis]</b> hierarchy level, as described in the <i>Junos OS System Basics Configuration Guide</i> ).
Flow Control TX is Enabled (or Disabled)	(MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series) Flow control in the transmit direction is enabled (or disabled). Flow control regulates the flow of packets from the switch to the remote side of the connection.
Flow Control RX is Enabled (or Disabled)	(MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series) Flow control in the receive direction is enabled (or disabled). Flow control regulates the flow of packets from the remote side of the connection to the switch.
MLT3	Number of multilevel threshold-3 (MLT-3) Fast Ethernet errors detected.
Accumulated error counts for port <i>n</i> connected to device FPC <i>n</i> : (error output only)	
Lock	Number of lock errors detected.
Xmit	Number of transmission errors detected.
ESD	Number of electrostatic discharge (ESD) errors detected.
False Carrier	Number of false carrier errors detected. This number is increased by one if a FRU is removed.
Disconnects	Number of disconnect errors detected.
FX mode	Number of errors detected on an Ethernet link over optical fiber.
Statistics for port <i>n</i> connected to device FPC <i>n</i> (statistics output only)	
TX Packets 64 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets transmitted.
TX Packets 65 - 127 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets transmitted.
TX Packets 128 - 255 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets transmitted.
TX Packets 256 - 511 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets transmitted.



*Table 21: show chassis ethernet-switch Output Fields (continued)*

Field Name	Field Description
<b>TX Packets 512 - 1023 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets transmitted.
<b>TX Packets 1024 - 1518 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets transmitted.
<b>TX Packets 1519 - 2047 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets transmitted.
<b>TX Packets 2048 - 4095 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets transmitted.
<b>TX Packets 4096 - 9216 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets transmitted.
<b>TX 1519 - 1522 Good Vlan frms</b>	(MX2010, MX2020, and MX2008 routers) Number of transmitted frames of size 1519 through 1522 octets that are good VLAN frames.
<b>TX Octets</b>	Number of octets sent.
<b>TX Unicast packets</b>	Number of unicast packets sent.
<b>TX Multicast packets</b>	Number of multicast packets sent.
<b>TX Broadcast packets</b>	Number of broadcast packets sent.
<b>TX Single Collision frames</b>	(MX2010, MX2020, and MX2008 routers) Number of packets sent after one collision.
<b>TX Mult. Collision frames</b>	(MX2010, MX2020, and MX2008 routers) Number of packets sent after multiple collisions.
<b>TX Late collisions</b>	Number of packets aborted during sending because of collisions after 64 bytes.
<b>TX Excessive collisions</b>	Number of packets not sent because of too many collisions.
<b>TX Dropped packets</b>	Number of transmitted packets that were dropped.
<b>TX PAUSEMAC Ctrl Frames</b>	Number of Media Access Control (MAC) frames containing PAUSE commands that were sent.
<b>TX Oversize Packets</b>	Number of oversize packets that were sent.
<b>TX FCS Error Counter</b>	Number of packets discarded because of frame check sequence errors.
<b>TX Fragment Counter</b>	Number of fragmented packets sent.
<b>TX Byte Counter</b>	Number of bytes sent.

Table 21: show chassis ethernet-switch Output Fields (continued)

Field Name	Field Description
TX Packet OK Counter	Number of viable packets sent.
TX Pause Packet Counter	Number of PAUSE packets sent.
RX Packets 64 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets received.
RX Packets 65 - 127 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets received.
RX Packets 128 - 255 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets received.
RX Packets 256 - 511 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets received.
RX Packets 512 - 1023 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets received.
RX Packets 1024 - 1518 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets received.
RX Packets 1519 - 2047 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets received.
RX Packets 2048 - 4095 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets received.
RX Packets 4096 - 9216 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets received.
RX Octets	Number of octets received.
RX Unicast packets	Number of unicast packets received.
RX Multicast packets	Number of multicast packets received.
RX Broadcast packets	Number of broadcast packets received.
RX FCS Errors	Number of packets discarded because of frame check sequence errors.
RX Alignment Errors	Number of incomplete octets received.
RX Dropped Packets	Number of incoming packets that were dropped.
RX Fragments	Number of fragmented packets received.
RX Symbol Errors	Number of symbols received that the router did not correctly decode.

Table 21: show chassis ethernet-switch Output Fields (continued)

Field Name	Field Description
RX MAC Control	Number of Media Access Control (MAC) packets received.
RX Oversize Packets	Number of oversize packets received.
RX Undersize Packets	Number of undersize packets received.
RX Jabbers	Total number of frames received that exceed the maximum byte count and contain CRC errors .
RX Control Frame Counter	Number of control frames received.
RX Pause Frame Counter	Number of pause frames received.
RX FCS Errors	Number of packets discarded because of frame check sequence errors.
RX Fragments	Number of fragmented packets received.
RX Byte Counter	Number of bytes received.
RX Packet OK Counter	Number of viable packets received.

## Sample Output

### show chassis ethernet-switch

```

user@host> show chassis ethernet-switch
Link is good on port 0 connected to device: FPC0
  Speed is 100 MB
  Duplex is full

Link is good on port 1 connected to device: FPC1
  Speed is 100 MB
  Duplex is full

Link is good on port 2 connected to device: FPC2
  Speed is 100 MB
  Duplex is full

Link is good on port 3 connected to device: FPC3
  Speed is 100 MBb
  Duplex is full

Link is good on port 7 connected to device: Local controller
  Speed is 100 MB
  Duplex is full

Link is good on port 9 connected to device: SPMB
  Speed is 100 MB
  Duplex is full

```

```
Link is good on port 13 connected to device: FPC5
Speed is 100 MB
Duplex is full
```

#### show chassis ethernet-switch (MX480 Router with MPC4E)

```
user@host > show chassis ethernet-switch
Displaying summary for switch 0
Link is down on GE port 0 connected to device: FPC0

Link is down on GE port 1 connected to device: FPC1

Link is good on GE port 2 connected to device: FPC2
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 3 connected to device: FPC3
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 4 connected to device: FPC4
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 5 connected to device: FPC5

Link is down on GE port 6 connected to device: FPC6

Link is down on GE port 7 connected to device: FPC7

Link is down on GE port 8 connected to device: FPC8

Link is down on GE port 9 connected to device: FPC9

Link is down on GE port 10 connected to device: FPC10

Link is down on GE port 11 connected to device: FPC11

Link is good on GE port 12 connected to device: Other RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 13 connected to device: RE-GigE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled
```

Link is down on GE port 14 connected to device: Debug-GigE

#### show chassis ethernet-switch (MX2010 Router)

```
user@host > show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 1 connected to device: FPC1
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 2 connected to device: FPC3
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 3 connected to device: FPC2
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 4 connected to device: FPC5
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 5 connected to device: FPC4
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 6 connected to device: FPC6
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 7 connected to device: FPC7
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
```

```
Flow Control RX is Disabled

Link is good on GE port 8 connected to device: FPC8
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 9 connected to device: FPC9
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 21 connected to device: RE-GigE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE
```

#### show chassis ethernet-switch statistics (MX2010 Router)

```
user@host > show chassis ethernet-switch statistics
Displaying port statistics for switch 0
Statistics for port 0 connected to device FPC0:
TX Packets 64 Octets      5088623
TX Packets 65-127 Octets  2637257
TX Packets 128-255 Octets 84829
TX Packets 256-511 Octets 120193
TX Packets 512-1023 Octets 252371
TX Packets 1024-1518 Octets 7189736
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
```

```

TX 1519-1522 Good Vlan frms 0
TX Octets 15373009
TX Multicast Packets 14
TX Broadcast Packets 1679654
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xmsns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 3041239292
RX Packets 64 Octets 874260
RX Packets 65-127 Octets 26066124
RX Packets 128-255 Octets 1386532
RX Packets 256-511 Octets 150539
RX Packets 512-1023 Octets 4636799
RX Packets 1024-1518 Octets 92601
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 33206855
RX Multicast Packets 0
RX Broadcast Packets 279416
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 958929187
Statistics for port 1 connected to device FPC1:
TX Packets 64 Octets 5109146
TX Packets 65-127 Octets 2779473
TX Packets 128-255 Octets 2441286
TX Packets 256-511 Octets 173102
TX Packets 512-1023 Octets 1547504
TX Packets 1024-1518 Octets 7190581
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 19241092
TX Multicast Packets 14
TX Broadcast Packets 1673369
TX Single Collision frames 0
TX Mult. Collision frames 0

```

TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xms	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	4213380187
RX Packets 64 Octets	865914
RX Packets 65-127 Octets	26612151
RX Packets 128-255 Octets	1090153
RX Packets 256-511 Octets	25126
RX Packets 512-1023 Octets	101158
RX Packets 1024-1518 Octets	78092
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	28772594
RX Multicast Packets	0
RX Broadcast Packets	285669
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	2327283837

Link is down on GE port 2 connected to device: FPC3

Link is down on GE port 3 connected to device: FPC2

Link is down on GE port 4 connected to device: FPC5

Link is down on GE port 5 connected to device: FPC4

Link is down on GE port 6 connected to device: FPC6

Link is down on GE port 7 connected to device: FPC7

Statistics for port 8 connected to device FPC8:

TX Packets 64 Octets	5341094
TX Packets 65-127 Octets	2625310
TX Packets 128-255 Octets	3315158
TX Packets 256-511 Octets	174805
TX Packets 512-1023 Octets	976908
TX Packets 1024-1518 Octets	7181498
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0



```

TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 19614773
TX Multicast Packets 14
TX Broadcast Packets 1673831
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xmsns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 3946762991
RX Packets 64 Octets 955509
RX Packets 65-127 Octets 27568588
RX Packets 128-255 Octets 1460936
RX Packets 256-511 Octets 153248
RX Packets 512-1023 Octets 2856206
RX Packets 1024-1518 Octets 76419
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 33070906
RX Multicast Packets 0
RX Broadcast Packets 285183
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 4256093824

```

Statistics for port 9 connected to device FPC9:

```

TX Packets 64 Octets 5237213
TX Packets 65-127 Octets 3268775
TX Packets 128-255 Octets 2320476
TX Packets 256-511 Octets 1789844
TX Packets 512-1023 Octets 501022
TX Packets 1024-1518 Octets 7800455
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 20917785
TX Multicast Packets 14
TX Broadcast Packets 1673368

```

TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xms	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	747012161
RX Packets 64 Octets	1036527
RX Packets 65-127 Octets	27590367
RX Packets 128-255 Octets	1590059
RX Packets 256-511 Octets	328257
RX Packets 512-1023 Octets	75975
RX Packets 1024-1518 Octets	73556
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	30694741
RX Multicast Packets	0
RX Broadcast Packets	285586
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	2727836941

## Statistics for port 20 connected to device Other RE-GigE:

TX Packets 64 Octets	1682540
TX Packets 65-127 Octets	3454
TX Packets 128-255 Octets	659
TX Packets 256-511 Octets	0
TX Packets 512-1023 Octets	1
TX Packets 1024-1518 Octets	0
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1686654
TX Multicast Packets	6
TX Broadcast Packets	1673798
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0

TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xtns	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	108042476
RX Packets 64 Octets	710214
RX Packets 65-127 Octets	35785510
RX Packets 128-255 Octets	4616
RX Packets 256-511 Octets	232
RX Packets 512-1023 Octets	565
RX Packets 1024-1518 Octets	28798
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	36529935
RX Multicast Packets	8
RX Broadcast Packets	285546
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	2676440958

## Statistics for port 21 connected to device RE-GigE:

TX Packets 64 Octets	4805310
TX Packets 65-127 Octets	143798628
TX Packets 128-255 Octets	5532385
TX Packets 256-511 Octets	671059
TX Packets 512-1023 Octets	7684123
TX Packets 1024-1518 Octets	344021
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	162835526
TX Multicast Packets	8
TX Broadcast Packets	1673409
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xtns	0
TX Frame excessive deferl	0
TX Oversize Packets	0

TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	105857355
RX Packets 64 Octets	14537137
RX Packets 65-127 Octets	11445505
RX Packets 128-255 Octets	8161767
RX Packets 256-511 Octets	2257944
RX Packets 512-1023 Octets	3277807
RX Packets 1024-1518 Octets	29373209
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	69053369
RX Multicast Packets	6
RX Broadcast Packets	285935
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	2980410755

Link is down on GE port 22 connected to device: Debug-GigE

Statistics for port 23 connected to device SPMB:

TX Packets 64 Octets	1885878
TX Packets 65-127 Octets	138845
TX Packets 128-255 Octets	18
TX Packets 256-511 Octets	1
TX Packets 512-1023 Octets	2
TX Packets 1024-1518 Octets	16391
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	2041135
TX Multicast Packets	14
TX Broadcast Packets	1707267
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xms	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	148066476

```

RX Packets 64 Octets      374994
RX Packets 65-127 Octets 183398
RX Packets 128-255 Octets 749
RX Packets 256-511 Octets 13658
RX Packets 512-1023 Octets 13421
RX Packets 1024-1518 Octets 9
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                586229
RX Multicast Packets      0
RX Broadcast Packets      252034
RX FCS Errors             0
RX Align Errors           0
RX Fragments              0
RX Symbol errors          0
RX Unsupported opcodes    0
RX Out of Range Length    0
RX False Carrier Errors   0
RX Undersize Packets      0
RX Oversize Packets       0
RX Jabbers                0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter     0
RX Control Frame Counter  0
RX Pause Frame Counter    0
RX Byte Counter           51431942

```

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE

#### show chassis ethernet-switch (MX2020 Router)

```

user@host > show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 1 connected to device: FPC1
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 2 connected to device: FPC3
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

```

Link is good on GE port 3 connected to device: FPC2  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 4 connected to device: FPC5  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 5 connected to device: FPC4  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 6 connected to device: FPC6  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 7 connected to device: FPC7  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 8 connected to device: FPC8  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 9 connected to device: FPC9  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 10 connected to device: FPC10  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 11 connected to device: FPC11  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 12 connected to device: FPC13  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 13 connected to device: FPC12  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 14 connected to device: FPC14  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 15 connected to device: FPC15  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 16 connected to device: FPC17  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 17 connected to device: FPC16  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 18 connected to device: FPC18  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 19 connected to device: FPC19  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE  
Speed is 1000Mb  
Duplex is full

```
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 21 connected to device: RE-GigE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE
```

#### show chassis ethernet-switch statistics (MX2020 Router)

```
user@host > show chassis ethernet-switch statistics
Displaying port statistics for switch 0
Statistics for port 0 connected to device FPC0:
TX Packets 64 Octets      1468564
TX Packets 65-127 Octets  153896
TX Packets 128-255 Octets 237
TX Packets 256-511 Octets 286
TX Packets 512-1023 Octets 599
TX Packets 1024-1518 Octets 22803
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                1646385
TX Multicast Packets      6
TX Broadcast Packets      970939
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions        0
TX Excessive Collisions   0
TX Collision frames       0
TX PAUSEMAC Ctrl Frames   0
TX MAC ctrl frames        0
TX Frame deferred Xmsns   0
TX Frame excessive deferl 0
TX Oversize Packets       0
TX Jabbers                0
TX FCS Error Counter      0
TX Fragment Counter       0
TX Byte Counter           130470290
RX Packets 64 Octets      180266
```



```

RX Packets 65-127 Octets      519030
RX Packets 128-255 Octets     1390
RX Packets 256-511 Octets     42857
RX Packets 512-1023 Octets    3482
RX Packets 1024-1518 Octets   8147
RX Packets 1519-2047 Octets   0
RX Packets 2048-4095 Octets   0
RX Packets 4096-9216 Octets   0
RX Octets                     755172
RX Multicast Packets          0
RX Broadcast Packets          42822
RX FCS Errors                  0
RX Align Errors                0
RX Fragments                   0
RX Symbol errors               0
RX Unsupported opcodes         0
RX Out of Range Length         0
RX False Carrier Errors        0
RX Undersize Packets           0
RX Oversize Packets            0
RX Jabbers                     0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter          0
RX Control Frame Counter       0
RX Pause Frame Counter         0
RX Byte Counter                75374021
Statistics for port 1 connected to device FPC1:
TX Packets 64 Octets           1493739
TX Packets 65-127 Octets       126996
TX Packets 128-255 Octets      241
TX Packets 256-511 Octets      283
TX Packets 512-1023 Octets     604
TX Packets 1024-1518 Octets    33687
TX Packets 1519-2047 Octets    0
TX Packets 2048-4095 Octets    0
TX Packets 4096-9216 Octets    0
TX 1519-1522 Good Vlan frms 0
TX Octets                      1655550
TX Multicast Packets           6
TX Broadcast Packets           969032
TX Single Collision frames     0
TX Mult. Collision frames      0
TX Late Collisions              0
TX Excessive Collisions        0
TX Collision frames            0
TX PAUSEMAC Ctrl Frames        0
TX MAC ctrl frames             0
TX Frame deferred Xtns         0
TX Frame excessive deferl      0
TX Oversize Packets            0
TX Jabbers                     0
TX FCS Error Counter           0
TX Fragment Counter            0
TX Byte Counter                141832690
RX Packets 64 Octets           155655
RX Packets 65-127 Octets       545561
RX Packets 128-255 Octets      1394
RX Packets 256-511 Octets      42811
RX Packets 512-1023 Octets     3514
RX Packets 1024-1518 Octets    8171
RX Packets 1519-2047 Octets    0

```

```
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 757106
RX Multicast Packets 0
RX Broadcast Packets 44509
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 75691392
Statistics for port 2 connected to device FPC3:
TX Packets 64 Octets 1465749
TX Packets 65-127 Octets 152849
TX Packets 128-255 Octets 238
TX Packets 256-511 Octets 289
TX Packets 512-1023 Octets 602
TX Packets 1024-1518 Octets 38903
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 1658630
TX Multicast Packets 6
TX Broadcast Packets 968873
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xmsns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 147427010
RX Packets 64 Octets 181636
RX Packets 65-127 Octets 517526
RX Packets 128-255 Octets 1405
RX Packets 256-511 Octets 42806
RX Packets 512-1023 Octets 3515
RX Packets 1024-1518 Octets 8168
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 755056
RX Multicast Packets 0
RX Broadcast Packets 44490
RX FCS Errors 0
```

```

RX Align Errors          0
RX Fragments             0
RX Symbol errors         0
RX Unsupported opcodes   0
RX Out of Range Length   0
RX False Carrier Errors  0
RX Undersize Packets     0
RX Oversize Packets      0
RX Jabbers               0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter    0
RX Control Frame Counter 0
RX Pause Frame Counter   0
RX Byte Counter          75381869
Statistics for port 3 connected to device FPC2:
TX Packets 64 Octets     1473828
TX Packets 65-127 Octets 145643
TX Packets 128-255 Octets 253
TX Packets 256-511 Octets 285
TX Packets 512-1023 Octets 612
TX Packets 1024-1518 Octets 26603
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                1647224
TX Multicast Packets      6
TX Broadcast Packets      968925
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions        0
TX Excessive Collisions   0
TX Collision frames       0
TX PAUSEMAC Ctrl Frames   0
TX MAC ctrl frames        0
TX Frame deferred Xmsns   0
TX Frame excessive deferl 0
TX Oversize Packets       0
TX Jabbers                0
TX FCS Error Counter      0
TX Fragment Counter       0
TX Byte Counter           134293832
RX Packets 64 Octets      174230
RX Packets 65-127 Octets  525756
RX Packets 128-255 Octets 1404
RX Packets 256-511 Octets 42815
RX Packets 512-1023 Octets 3530
RX Packets 1024-1518 Octets 8176
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                 755911
RX Multicast Packets      0
RX Broadcast Packets      44499
RX FCS Errors             0
RX Align Errors           0
RX Fragments              0
RX Symbol errors          0
RX Unsupported opcodes    0
RX Out of Range Length    0
RX False Carrier Errors   0

```

```
RX Undersize Packets      0
RX Oversize Packets      0
RX Jabbers                0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter    0
RX Control Frame Counter  0
RX Pause Frame Counter    0
RX Byte Counter          75517355
Statistics for port 4 connected to device FPC5:
TX Packets 64 Octets      1466664
TX Packets 65-127 Octets  151155
TX Packets 128-255 Octets 238
TX Packets 256-511 Octets 277
TX Packets 512-1023 Octets 615
TX Packets 1024-1518 Octets 54674
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                 1673623
TX Multicast Packets      6
TX Broadcast Packets      968610
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions        0
TX Excessive Collisions   0
TX Collision frames       0
TX PAUSEMAC Ctrl Frames   0
TX MAC ctrl frames        0
TX Frame deferred Xmsns   0
TX Frame excessive deferl 0
TX Oversize Packets       0
TX Jabbers                0
TX FCS Error Counter      0
TX Fragment Counter       0
TX Byte Counter           164247790
RX Packets 64 Octets      180006
RX Packets 65-127 Octets  518217
RX Packets 128-255 Octets 1406
RX Packets 256-511 Octets 42787
RX Packets 512-1023 Octets 3515
RX Packets 1024-1518 Octets 8164
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                 754095
RX Multicast Packets      0
RX Broadcast Packets      44457
RX FCS Errors             0
RX Align Errors           0
RX Fragments              0
RX Symbol errors          0
RX Unsupported opcodes    0
RX Out of Range Length    0
RX False Carrier Errors   0
RX Undersize Packets      0
RX Oversize Packets       0
RX Jabbers                0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter    0
RX Control Frame Counter  0
```

```

RX Pause Frame Counter      0
RX Byte Counter             75311970
Statistics for port 5 connected to device FPC4:
TX Packets 64 Octets        1464770
TX Packets 65-127 Octets    154498
TX Packets 128-255 Octets   225
TX Packets 256-511 Octets   280
TX Packets 512-1023 Octets  637
TX Packets 1024-1518 Octets 26355
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                   1646765
TX Multicast Packets        6
TX Broadcast Packets        968730
TX Single Collision frames  0
TX Mult. Collision frames   0
TX Late Collisions          0
TX Excessive Collisions     0
TX Collision frames         0
TX PAUSEMAC Ctrl Frames    0
TX MAC ctrl frames         0
TX Frame deferred Xtns      0
TX Frame excessive deferl   0
TX Oversize Packets         0
TX Jabbers                  0
TX FCS Error Counter        0
TX Fragment Counter         0
TX Byte Counter             134058606
RX Packets 64 Octets        169269
RX Packets 65-127 Octets    515285
RX Packets 128-255 Octets   1527
RX Packets 256-511 Octets   42804
RX Packets 512-1023 Octets  3521
RX Packets 1024-1518 Octets 9142
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                   741548
RX Multicast Packets        0
RX Broadcast Packets        44470
RX FCS Errors               0
RX Align Errors             0
RX Fragments                0
RX Symbol errors            0
RX Unsupported opcodes      0
RX Out of Range Length      0
RX False Carrier Errors     0
RX Undersize Packets        0
RX Oversize Packets         0
RX Jabbers                  0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter       0
RX Control Frame Counter    0
RX Pause Frame Counter      0
RX Byte Counter             75498393
Statistics for port 6 connected to device FPC6:
TX Packets 64 Octets        1475260
TX Packets 65-127 Octets    143324
TX Packets 128-255 Octets   260

```

TX Packets 256-511 Octets	274
TX Packets 512-1023 Octets	603
TX Packets 1024-1518 Octets	40631
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1660352
TX Multicast Packets	6
TX Broadcast Packets	968466
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xms	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	149212764
RX Packets 64 Octets	172275
RX Packets 65-127 Octets	526519
RX Packets 128-255 Octets	1394
RX Packets 256-511 Octets	42777
RX Packets 512-1023 Octets	3514
RX Packets 1024-1518 Octets	8161
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	754640
RX Multicast Packets	0
RX Broadcast Packets	44443
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	75386517

Statistics for port 7 connected to device FPC7:

TX Packets 64 Octets	1472361
TX Packets 65-127 Octets	145646
TX Packets 128-255 Octets	251
TX Packets 256-511 Octets	250
TX Packets 512-1023 Octets	580
TX Packets 1024-1518 Octets	49530
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0

```

TX 1519-1522 Good Vlan frms 0
TX Octets 1668618
TX Multicast Packets 6
TX Broadcast Packets 968317
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xmsns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 158689814
RX Packets 64 Octets 174618
RX Packets 65-127 Octets 523421
RX Packets 128-255 Octets 1393
RX Packets 256-511 Octets 42764
RX Packets 512-1023 Octets 3514
RX Packets 1024-1518 Octets 8158
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 753868
RX Multicast Packets 0
RX Broadcast Packets 44429
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 75309863
Statistics for port 8 connected to device FPC8:
...
```

#### show chassis ethernet-switch (MX2020 Router with MPC4E)

```

user@ host > show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 1 connected to device: FPC1
```

Link is down on GE port 2 connected to device: FPC3

Link is down on GE port 3 connected to device: FPC2

Link is down on GE port 4 connected to device: FPC5

Link is down on GE port 5 connected to device: FPC4

Link is down on GE port 6 connected to device: FPC6

Link is down on GE port 7 connected to device: FPC7

Link is down on GE port 8 connected to device: FPC8

Link is good on GE port 9 connected to device: FPC9  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 10 connected to device: FPC10  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is down on GE port 11 connected to device: FPC11

Link is down on GE port 12 connected to device: FPC13

Link is down on GE port 13 connected to device: FPC12

Link is good on GE port 14 connected to device: FPC14  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is down on GE port 15 connected to device: FPC15

Link is down on GE port 16 connected to device: FPC17

Link is down on GE port 17 connected to device: FPC16

Link is down on GE port 18 connected to device: FPC18

Link is good on GE port 19 connected to device: FPC19  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled  
Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE  
Speed is 1000Mb  
Duplex is full  
Autonegotiate is Enabled  
Flow Control TX is Disabled



```

Flow Control RX is Disabled

Link is good on GE port 21 connected to device: RE-GigE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE

```

#### show chassis ethernet-switch (MX2008 Router)

```

user@host> show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 1 connected to device: FPC1

Link is good on GE port 2 connected to device: FPC3
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 3 connected to device: FPC2

Link is good on GE port 4 connected to device: FPC5
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 5 connected to device: FPC4

Link is down on GE port 6 connected to device: FPC6

Link is good on GE port 7 connected to device: FPC7
Speed is 1000Mb

```

```
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 8 connected to device: FPC8

Link is good on GE port 9 connected to device: FPC9
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 20 connected to device: CB-to-CB-GigE 1
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 21 connected to device: CB-to-CB-GigE 2
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 22 connected to device: (null)

Link is down on GE port 23 connected to device: (null)

Link is good on XE port 24 connected to device: Other RE-10GigE
Speed is 10000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 25 connected to device: RE-10GigE
Speed is 10000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on XE port 26 connected to device: SFP+ 0

Link is down on XE port 27 connected to device: SFP+ 1
```

#### show chassis ethernet-switch (Mx10008 Router)

```
user@host> show chassis ethernet-switch
Vendor name : Broadcom
Chip name   : BCM56045_B0
Vendor id   : 0x14e4

Port connected to QPHY_0
Switch port id : 5
Switch port name : xe0
Switch port type : XE
```

```
Port connected to QPHY_1
    Switch port id   : 6
    Switch port name : xe1
    Switch port type : XE

Port connected to PTP_FPGA
    Switch port id   : 7
    Switch port name : xe2
    Switch port type : XE

Port connected to Unused
    Switch port id   : 8
    Switch port name : xe3
    Switch port type : XE

Port connected to LC0
    Switch port id   : 9
    Switch port name : xe4
    Switch port type : XE

Port connected to LC1
    Switch port id   : 10
    Switch port name : xe5
    Switch port type : XE

Port connected to LC2
    Switch port id   : 11
    Switch port name : xe6
    Switch port type : XE

Port connected to LC3
    Switch port id   : 12
    Switch port name : xe7
    Switch port type : XE

Port connected to LC8
    Switch port id   : 13
    Switch port name : xe8
    Switch port type : XE

Port connected to LC4
    Switch port id   : 14
    Switch port name : xe9
    Switch port type : XE

Port connected to LC12
    Switch port id   : 15
    Switch port name : xe10
    Switch port type : XE

Port connected to LC9
    Switch port id   : 16
    Switch port name : xe11
    Switch port type : XE

Port connected to LC5
    Switch port id   : 21
    Switch port name : xe12
    Switch port type : XE
```

```
Port connected to LC13
  Switch port id   : 22
  Switch port name : xe13
  Switch port type : XE

Port connected to LC10
  Switch port id   : 23
  Switch port name : xe14
  Switch port type : XE

Port connected to LC6
  Switch port id   : 24
  Switch port name : xe15
  Switch port type : XE

Port connected to LC14
  Switch port id   : 25
  Switch port name : xe16
  Switch port type : XE

Port connected to LC11
  Switch port id   : 26
  Switch port name : xe17
  Switch port type : XE

Port connected to LC7
  Switch port id   : 27
  Switch port name : xe18
  Switch port type : XE

Port connected to LC15
  Switch port id   : 28
  Switch port name : xe19
  Switch port type : XE

Port connected to OCB_SW
  Switch port id   : 29
  Switch port name : xe20
  Switch port type : XE

Port connected to Unused
  Switch port id   : 30
  Switch port name : xe21
  Switch port type : XE

Port connected to Fortville_1
  Switch port id   : 31
  Switch port name : xe22
  Switch port type : XE

Port connected to Fortville_0
  Switch port id   : 32
  Switch port name : xe23
  Switch port type : XE
```

#### show chassis ethernet-switch (TX Matrix Router)

```
user@host> show chassis ethernet-switch
scc-re0:
-----
Link is good on FE port 4 connected to device: LCC0
```

```
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 6 connected to device: LCC2
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 8 connected to device: SPMB
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
lcc0-re0:
```

```
-----
Link is good on FE port 1 connected to device: FPC1
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 2 connected to device: FPC2
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 8 connected to device: SPMB
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 10 connected to device: SCC
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
lcc2-re0:
```

```
-----
Link is good on FE port 0 connected to device: FPC0
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 1 connected to device: FPC1
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 2 connected to device: FPC2
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 8 connected to device: SPMB
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled

Link is good on FE port 10 connected to device: SCC
Speed is 100 MB
```

```
Duplex is full
Autonegotiate is Enabled
```

### show chassis ethernet-switch errors

```
user@host> show chassis ethernet-switch errors
Accumulated error counts for port 0 connected to device FPC0:
  MLT3      2
  Lock      0
  Xmit      0
  ESD       0
  False carrier 2
  Disconnects 0
  FX mode   0
Accumulated error counts for port 1 connected to device FPC1:
  MLT3      2
  Lock      0
  Xmit      0
  ESD       0
  False carrier 2
  Disconnects 0
  FX mode   0
Accumulated error counts for port 2 connected to device FPC2:
  MLT3      2
  Lock      0
  Xmit      0
  ESD       0
  False carrier 3
  Disconnects 0
  FX mode   0
Accumulated error counts for port 3 connected to device FPC3:
  MLT3      0
  Lock      0
  Xmit      0
  ESD       0
  False carrier 0
  Disconnects 0
Accumulated error counts for port 4 connected to device Nothing:
  MLT3      0
  Lock      0
  Xmit      0
  ESD       0
  False carrier 0
  Disconnects 0
  FX mode   0
...
```

### show chassis ethernet-switch statistics

```
user@host> show chassis ethernet-switch statistics
Statistics for port 0 connected to device FPC0:
  TX Unicast packets      68113
  TX Multicast packets    0
  TX Broadcast packets    20851
  TX Late collisions      0
  TX Excessive collisions 0
  TX Dropped packets      0

  RX Unicast packets      67410
  RX Multicast packets    0
```

```

RX Broadcast packets      20852
RX FCS Errors              0
RX Alignment Errors        0
RX Dropped Packets         0
RX Fragments               0
RX Symbol Errors           0

Statistics for port 1 connected to device FPC1:
TX Unicast packets        66496
TX Multicast packets       0
TX Broadcast packets       20080
TX Late collisions         0
TX Excessive collisions    0
TX Dropped packets         0

RX Unicast packets        66037
RX Multicast packets       0
RX Broadcast packets       20080
RX FCS Errors              0
RX Alignment Errors        0
RX Dropped Packets         0
RX Fragments               0
RX Symbol Errors           0

Statistics for port 2 connected to device FPC2:
TX Unicast packets        64206
TX Multicast packets       0
TX Broadcast packets       21183
TX Late collisions         0
TX Excessive collisions    0
TX Dropped packets         0

RX Unicast packets        63671
RX Multicast packets       0
RX Broadcast packets       21183
RX FCS Errors              0
RX Alignment Errors        0
RX Dropped Packets         0
RX Fragments               0
RX Symbol Errors           0

Statistics for port 3 connected to device FPC3:
...

```

### show chassis ethernet-switch errors (TX Matrix Plus Router)

```

user@host> show chassis ethernet-switch errors
sfc0-re0:
-----
Displaying error for switch 0

Displaying error for switch 1
Accumulated error counts for port 0 connected to device LCC0:
MLT3          0
Lock           0
Xmit           0
ESD            0
False carrier  0
Disconnects    0
FX mode        0

lcc0-re0:

```

```
-----
Displaying error for switch 0
Accumulated error counts for port 6 connected to device FPC0:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier  5
Disconnects    0
FX mode       0
Accumulated error counts for port 7 connected to device FPC1:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier  7
Disconnects    0
FX mode       0
Accumulated error counts for port 19 connected to device Other RE:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier  0
Disconnects    0
FX mode       0
Accumulated error counts for port 20 connected to device SFC0:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier  0
Disconnects    0
FX mode       0
```

#### show chassis ethernet-switch sfc errors (TX Matrix Plus Router)

```
user@host> show chassis ethernet-switch errors switch sfc
sfc0-re0:
-----
Displaying error for switch 1
Accumulated error counts for port 0 connected to device LCC0:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier  0
Disconnects    0
FX mode       0
Accumulated error counts for port 2 connected to device LCC1:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier  0
Disconnects    0
FX mode       0
Accumulated error counts for port 4 connected to device LCC2:
MLT3          0
Lock          0
Xmit          0
```



```

ESD          0
False carrier 0
Disconnects   0
FX mode       0
Accumulated error counts for port 6 connected to device LCC3:
MLT3         0
Lock         0
Xmit         0
ESD          0
False carrier 0
Disconnects   0
FX mode       0

```

```
lcc0-re0:
```

```
-----
error: command is not valid on the t1600
```

```
lcc1-re0:
```

```
-----
error: command is not valid on the t1600
```

```
lcc2-re0:
```

```
-----
error: command is not valid on the t1600
```

```
lcc3-re0:
```

```
-----
error: command is not valid on the t1600
```

#### show chassis ethernet-switch statistics (TX Matrix Plus Router)

```
user@host> show chassis ethernet-switch statistics
sfc0-re0:
```

```
-----
Displaying port statistics for switch 0
Statistics for port 1 connected to device 1GSW:
```

```

TX Packets 64 Octets      5183577
TX Packets 65-127 Octets  67820
TX Packets 128-255 Octets 772
TX Packets 256-511 Octets 136
TX Packets 512-1023 Octets 68
TX Packets 1024-1518 Octets 10881
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets                5263254
TX Multicast Packets      16
TX Broadcast Packets      723403
TX PAUSEMAC Ctrl Frames   0
TX Oversize Packets       0
TX FCS Error Counter      0
TX Fragment Counter       0
TX Byte Counter           349922253
TX Packet OK Counter      5263254
TX Pause Packet Counter   0
TX Unicast Counter        4539835
RX Packets 64 Octets      6513629
RX Packets 65-127 Octets  88761
RX Packets 128-255 Octets 6382
RX Packets 256-511 Octets 22027

```

```
RX Packets 512-1023 Octets 4319
RX Packets 1024-1518 Octets 49922
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets 6685040
RX Multicast Packets 4
RX Broadcast Packets 2137376
RX FCS Errors 0
RX Fragments 0
RX MAC Control Packets 0
RX Out of Range Length 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 509224602
RX Unicast Frame Count 4547660
RX Packet OK Count 6685040
Statistics for port 9 connected to device RE1:
TX Packets 64 Octets 2500318
TX Packets 65-127 Octets 443
TX Packets 128-255 Octets 0
TX Packets 256-511 Octets 0
TX Packets 512-1023 Octets 0
TX Packets 1024-1518 Octets 0
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets 2500761
TX Multicast Packets 4
TX Broadcast Packets 2500757
TX PAUSEMAC Ctrl Frames 0
TX Oversize Packets 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 160049670
TX Packet OK Counter 0
TX Pause Packet Counter 0
TX Unicast Counter 0
RX Packets 64 Octets 701191
RX Packets 65-127 Octets 5882
RX Packets 128-255 Octets 2
RX Packets 256-511 Octets 0
RX Packets 512-1023 Octets 17965
RX Packets 1024-1518 Octets 7
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets 725047
RX Multicast Packets 8
RX Broadcast Packets 2500757
RX FCS Errors 0
RX Fragments 0
RX MAC Control Packets 0
RX Out of Range Length 0
RX Undersize Packets 0
```

```

RX Oversize Packets      0
RX Jabbers               0
RX Control Frame Counter 0
RX Pause Frame Counter   0
RX Byte Counter          62402656
RX Unicast Frame Count    0
RX Packet OK Count       0
Statistics for port 17 connected to device RE0:
TX Packets 64 Octets      7214818
TX Packets 65-127 Octets  94640
TX Packets 128-255 Octets 6384
TX Packets 256-511 Octets 22027
TX Packets 512-1023 Octets 22284
TX Packets 1024-1518 Octets 49929
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets                7410082
TX Multicast Packets      12
TX Broadcast Packets      2497247
TX PAUSEMAC Ctrl Frames  0
TX Oversize Packets       0
TX FCS Error Counter      0
TX Fragment Counter       0
TX Byte Counter           571626932
TX Packet OK Counter      0
TX Pause Packet Counter   0
TX Unicast Counter        0
RX Packets 64 Octets      4823701
RX Packets 65-127 Octets  67812
RX Packets 128-255 Octets  772
RX Packets 256-511 Octets  136
RX Packets 512-1023 Octets 68
RX Packets 1024-1518 Octets 10881
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets                4903370
RX Multicast Packets      8
RX Broadcast Packets      2497247
RX FCS Errors             0
RX Fragments              0
RX MAC Control Packets    0
RX Out of Range Length    0
RX Undersize Packets      0
RX Oversize Packets       0
RX Jabbers                0
RX Control Frame Counter  0
RX Pause Frame Counter    0
RX Byte Counter           326889517
RX Unicast Frame Count    0
RX Packet OK Count       0

```

```

Displaying port statistics for switch 1
Statistics for port 0 connected to device LCC0:
TX Packets 64 Octets      5053443
TX Packets 65-127 Octets  59737
TX Packets 128-255 Octets  768
TX Packets 256-511 Octets  87

```

TX Packets 512-1023 Octets	68
TX Packets 1024-1518 Octets	85
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	5114188
TX Multicast Packets	16
TX Broadcast Packets	1125742
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xms	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	329291449
RX Packets 64 Octets	5640175
RX Packets 65-127 Octets	79875
RX Packets 128-255 Octets	6338
RX Packets 256-511 Octets	165
RX Packets 512-1023 Octets	4317
RX Packets 1024-1518 Octets	10
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	5730880
RX Multicast Packets	4
RX Broadcast Packets	1735007
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	371282850

Statistics for port 18 connected to device SPMB:

TX Packets 64 Octets	2990326
TX Packets 65-127 Octets	8572
TX Packets 128-255 Octets	4
TX Packets 256-511 Octets	49
TX Packets 512-1023 Octets	0
TX Packets 1024-1518 Octets	10793
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0

```

TX Octets                               3009744
TX Multicast Packets                     20
TX Broadcast Packets                     2458322
TX Single Collision frames               0
TX Mult. Collision frames                0
TX Late Collisions                       0
TX Excessive Collisions                  0
TX Collision frames                      0
TX PAUSEMAC Ctrl Frames                  0
TX MAC ctrl frames                       0
TX Frame deferred Xtns                   0
TX Frame excessive deferl                0
TX Oversize Packets                      0
TX Jabbers                              0
TX FCS Error Counter                     0
TX Fragment Counter                      0
TX Byte Counter                          203712524
RX Packets 64 Octets                     873454
RX Packets 65-127 Octets                 8886
RX Packets 128-255 Octets                 44
RX Packets 256-511 Octets                 21862
RX Packets 512-1023 Octets                2
RX Packets 1024-1518 Octets               49912
RX Packets 1519-2047 Octets               0
RX Packets 2048-4095 Octets               0
RX Packets 4096-9216 Octets               0
RX Octets                               954160
RX Multicast Packets                     0
RX Broadcast Packets                     402369
RX FCS Errors                           0
RX Align Errors                          0
RX Fragments                            0
RX Symbol errors                         0
RX Unsupported opcodes                   0
RX Out of Range Length                   0
RX False Carrier Errors                  0
RX Undersize Packets                     0
RX Oversize Packets                      0
RX Jabbers                              0
RX 1519-1522 Good Vlan frms             0
RX MTU Exceed Counter                    0
RX Control Frame Counter                  0
RX Pause Frame Counter                   0
RX Byte Counter                          137941752
...

```

#### show chassis ethernet-switch (T4000 Router)

```

user@host> show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 6 connected to device: FPC0
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 04

Link is good on GE port 9 connected to device: FPC3
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 03

```

```
Link is good on GE port 11 connected to device: FPC5
Speed is 100Mb
Duplex is full
Autonegotiate is Enabled
False carrier sense count = 03

Link is good on GE port 12 connected to device: FPC6
Speed is 100Mb
Duplex is full
Autonegotiate is Enabled
False carrier sense count = 03

Link is good on GE port 14 connected to device: SPMB
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled

Link is good on GE port 18 connected to device: RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled

Link is good on GE port 19 connected to device: Other RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
```

#### show chassis ethernet-switch errors (T4000 Router)

```
user@host> show chassis ethernet-switch errors

Displaying error for switch 0
Accumulated error counts for port 6 connected to device FPC0:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 4
Disconnects   0
FX mode       0
Accumulated error counts for port 9 connected to device FPC3:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 3
Disconnects   0
FX mode       0
Accumulated error counts for port 11 connected to device FPC5:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 3
Disconnects   0
FX mode       0
Accumulated error counts for port 12 connected to device FPC6:
MLT3          0
Lock          0
Xmit          0
```

```

ESD          0
False carrier 3
Disconnects   0
FX mode       0
Accumulated error counts for port 19 connected to device Other RE:
MLT3         0
Lock         0
Xmit         0
ESD          0
False carrier 0
Disconnects   0
FX mode       0

```

### show chassis ethernet-switch (PTX5000 Packet Transport Router)

```

user@host> show chassis ethernet-switch
Displaying summary for switch 0
Link is good on XE port 2 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 11 connected to device: FPC7
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 12 connected to device: FPC6
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 13 connected to device: FPC5
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 15 connected to device: FPC3
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 16 connected to device: FPC2
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 18 connected to device: FPC0
  Speed is 1000Mb

```

```
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled
```

```
Link is good on XE port 19 connected to device: OTHER RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled
```

```
Link is good on XE port 20 connected to device: RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled
```

#### show chassis ethernet-switch statistics (PTX5000 Packet Transport Router)

```
user@host> show chassis ethernet-switch statistics
Displaying port statistics for switch 0
Statistics for port 2 connected to device SPMB:
```

TX Packets 64 Octets	10942
TX Packets 65-127 Octets	843
TX Packets 128-255 Octets	2
TX Packets 256-511 Octets	2
TX Packets 512-1023 Octets	0
TX Packets 1024-1518 Octets	6862
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX Packets 9217-16383 Octets	0
TX Octets	18651
TX Multicast Packets	6
TX Broadcast Packets	10331
TX PAUSEMAC Ctrl Frames	0
TX Oversize Packets	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	8105166
TX Packet OK Counter	0
TX Pause Packet Counter	0
TX Unicast Counter	0
RX Packets 64 Octets	8679
RX Packets 65-127 Octets	2364
RX Packets 128-255 Octets	531
RX Packets 256-511 Octets	112
RX Packets 512-1023 Octets	26
RX Packets 1024-1518 Octets	8
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Packets 9217-16383 Octets	0
RX Octets	11720
RX Multicast Packets	0
RX Broadcast Packets	10331
RX FCS Errors	0
RX Fragments	0
RX MAC Control Packets	0



```

RX Out of Range Length      0
RX Undersize Packets        0
RX Oversize Packets         0
RX Jabbers                  0
RX Control Frame Counter    0
RX Pause Frame Counter      0
RX Byte Counter              938105
RX Unicast Frame Count      0
RX Packet OK Count          0
Statistics for port 11 connected to device FPC7:
TX Packets 64 Octets        14492
TX Packets 65-127 Octets    3542
TX Packets 128-255 Octets   6
TX Packets 256-511 Octets   45
TX Packets 512-1023 Octets  60

```

Continued...

```

Statistics for port 18 connected to device FPC0:
TX Packets 64 Octets        15212
TX Packets 65-127 Octets    3810
TX Packets 128-255 Octets   6
TX Packets 256-511 Octets   43
TX Packets 512-1023 Octets  66
TX Packets 1024-1518 Octets 169
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets                    19306
TX Multicast Packets         0
TX Broadcast Packets         10886
TX PAUSEMAC Ctrl Frames     0
TX Oversize Packets         0
TX FCS Error Counter        0
TX Fragment Counter         0
TX Byte Counter              1569412
TX Packet OK Counter         0
TX Pause Packet Counter      0
TX Unicast Counter           0
RX Packets 64 Octets        17994
RX Packets 65-127 Octets    8006
RX Packets 128-255 Octets   230
RX Packets 256-511 Octets   19
RX Packets 512-1023 Octets  53
RX Packets 1024-1518 Octets 11
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets                    26313
RX Multicast Packets         0
RX Broadcast Packets         10886
RX FCS Errors                0
RX Fragments                 0
RX MAC Control Packets       0
RX Out of Range Length      0
RX Undersize Packets        0
RX Oversize Packets         0
RX Jabbers                   0
RX Control Frame Counter     2

```

```
RX Pause Frame Counter      2
RX Byte Counter             1836287
RX Unicast Frame Count      0
RX Packet OK Count          0
Statistics for port 19 connected to device OTHER RE:
TX Packets 64 Octets        10234
TX Packets 65-127 Octets    162
TX Packets 128-255 Octets   0
TX Packets 256-511 Octets   0
TX Packets 512-1023 Octets  0
TX Packets 1024-1518 Octets 0
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets                   10396
TX Multicast Packets        8
TX Broadcast Packets        10317
TX PAUSEMAC Ctrl Frames     0
TX Oversize Packets         0
TX FCS Error Counter        0
TX Fragment Counter         0
TX Byte Counter             666260
TX Packet OK Counter        0
TX Pause Packet Counter     0
TX Unicast Counter          0
RX Packets 64 Octets        4073
RX Packets 65-127 Octets    325
RX Packets 128-255 Octets   1
RX Packets 256-511 Octets   0
RX Packets 512-1023 Octets  0
RX Packets 1024-1518 Octets 72
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets                   4471
RX Multicast Packets        0
RX Broadcast Packets        10317
RX FCS Errors               0
RX Fragments                0
RX MAC Control Packets      0
RX Out of Range Length      0
RX Undersize Packets        0
RX Oversize Packets         0
RX Jabbers                  0
RX Control Frame Counter    0
RX Pause Frame Counter      0
RX Byte Counter             387333
RX Unicast Frame Count      0
RX Packet OK Count          0
Statistics for port 20 connected to device RE:
TX Packets 64 Octets        658856
TX Packets 65-127 Octets    45535
TX Packets 128-255 Octets   1900
TX Packets 256-511 Octets   532
TX Packets 512-1023 Octets  372
TX Packets 1024-1518 Octets 191
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
```

```

TX Packets 9217-16383 Octets 0
TX Octets 707386
TX Multicast Packets 0
TX Broadcast Packets 10421
TX PAUSEMAC Ctrl Frames 0
TX Oversize Packets 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 46608676
TX Packet OK Counter 0
TX Pause Packet Counter 0
TX Unicast Counter 0
RX Packets 64 Octets 27394
RX Packets 65-127 Octets 20271
RX Packets 128-255 Octets 78
RX Packets 256-511 Octets 215
RX Packets 512-1023 Octets 269
RX Packets 1024-1518 Octets 253370
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets 301597
RX Multicast Packets 8
RX Broadcast Packets 10421
RX FCS Errors 0
RX Fragments 0
RX MAC Control Packets 0
RX Out of Range Length 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 275043436
RX Unicast Frame Count 0
RX Packet OK Count 0

```

Continued ...

#### show chassis ethernet-switch port-state (PTX5000 Packet Transport Router)

```

user@host> show chassis ethernet-switch port-state
Displaying port state for switch 0
Port      : 02
Target    : SPMB

Error reading port 2 connected to device: SPMB

```

## show chassis fabric errors

**List of Syntax**    [Syntax on page 634](#)  
                               [Syntax \(PTX Series Packet Transport Routers\) on page 634](#)

**Syntax** show chassis fabric errors  
 <autoheal>  
 <fpc slot-number lcc number>  
 <sib (slot | f13 sib-slot | f2s sib-slot/sib-f2s-slot-number | lcc number)>

Syntax (PTX Series Packet Transport Routers)	show chassis fabric errors (autoheal   fpc slot-number   sib sib-slot)
--	---

<b>Release Information</b>	Command introduced in Junos OS Release 10.0.
	Command introduced in Junos OS Release 12.1X48 for the PTX Series Packet Transport Routers.
	Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

<b>Description</b>	Display the first ten and last ten fabric errors for the FPC or Switch Interface Boards (SIBs).
--------------------	---



**NOTE:** This command can only be issued on a master Routing Engine.

**Options** **autoheal**—(TX Matrix Plus routers and PTX Series Packet Transport Routers only) Show an error log of the first 100 autoheal actions taken on the system.

**fpc slot-number**—Show error log of the first ten and last ten errors for the specified FPC.

(PTX3000 routers only)—Replace **slot-number** with an FPC slot number: **0, 2, 4, 6, 8, 10, 12, or 14**.

(PTX5000 routers only)—Replace *slot-number* with a value from 0 through 7.

(TX Matrix Plus routers only)—Replace **fpc slot-number** with the following values depending on the LCC configuration:

- On a TX Matrix Plus router with the TXP-T1600 configuration, if you specify the number of a T1600 LCC by using the **lcc number** option (the recommended method), replace **fpc slot-number** with a value from 0 through 7. Otherwise, use a value from 0 through 31.
- On a TX Matrix Plus router with the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 LCC by using the **lcc number** option (the recommended method), replace **fpc slot-number** with a value from 0 through 7. Otherwise, use a value from 0 through 63.

- **lcc number**—Show error log of the first ten and last ten errors for the specified FPC on a specific network device (line-card chassis) that is part of the routing matrix.

Replace **lcc number** with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

If you specify the number of the network device by using only the **lcc number** option (the recommended method), replace *slot-number* with a value from **0** through **7**. Otherwise, replace *slot-number* with a value from **0** through **31**. For example, the following commands have the same result:

```
user@host> show chassis fabric errors fpc 1 lcc 1
user@host> show chassis fabric errors fpc 9
```

**sib**—Show error log of the first ten and last ten errors for the specified SIB. This option has the following suboptions:

- (TX Matrix Plus routers only) **sib-slot**—Specify a value ranging from **0** through **4**.
- (PTX3000 and PTX5000 routers) **sib-slot**—Specify a value ranging from **0** through **8**.
- (TX Matrix Plus routers only) **f13 sib-slot**—(Optional) Show SIB F13 errors. Specify a valid SIB value number: **0, 1, 3, 4, 6, 7, 8, 9, 11, or 12**.
- (TX Matrix Plus routers only) **f2s sib-slot/sib-f2s-slot-number**—(Optional) Show SIB F2S errors. Replace **sib-slot** with a value from **0** through **4**, followed by a **sib-f2s-slot-number** value **0, 2, 4 or 6**.
- (TX Matrix Plus routers only) **lcc number**—(Optional) Show error log of the first ten and last ten SIB errors for the specified network device (line-card chassis).

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.



**NOTE:** The `lcc number` suboption is mandatory when using the following format for the command: `show chassis fabric errors sib lcc number sib slot-number`. For instance, issuing `show chassis fabric errors sib lcc 2 3` displays errors detected on LCC 2, SIB 3.

This suboption is not required when the `f13` or `f2s` suboptions are used with the `sib slot-number` option.

**Required Privilege Level** view

**List of Sample Output**

- [show chassis fabric errors \(F13 SIB Errors on a TX Matrix Plus Router\) on page 637](#)
- [show chassis fabric errors \(F2S SIB Errors on a TX Matrix Plus Router\) on page 637](#)
- [show chassis fabric errors \(SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router\) on page 637](#)
- [show chassis fabric errors \(FPC Errors Specific to an LCC Connected to a TX Matrix Plus Router\) on page 638](#)
- [show chassis fabric errors \(SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router with 3D SIBs\) on page 638](#)
- [show chassis fabric errors fpc or sib \(PTX Series Packet Transport Routers\) on page 638](#)
- [show chassis fabric errors autoheal \(PTX Series Packet Transport Routers\) on page 638](#)
- [show chassis fabric errors autoheal \(TX Matrix Plus Router with 3D SIBs\) on page 638](#)

**Output Fields** Table 22 on page 636 lists the output fields for the `show chassis fabric errors` command. Output fields are listed in the approximate order in which they appear.

*Table 22: show chassis fabric errors Output Fields*

Field Name	Field Description
Time	Time the error was logged.  (TX Matrix Plus routers and PTX Series Packet Transport Routers only) For the <code>autoheal</code> option, shows the timestamp when autoheal was attempted on a SIB that was in fault state.
Error log of first 10 errors	List of the first ten errors.
Error log of last 10 errors	List of the last ten errors.

Table 22: show chassis fabric errors Output Fields (continued)

Field Name	Field Description
<b>Error log of first 100 errors</b>	<p>Indicates the autoheal action taken on the SIB. The following actions can occur:</p> <ul style="list-style-type: none"> <li>• Req—A SIB autoheal request was made on a faulty SIB.</li> <li>• Action—Autohealing (taking the SIB offline and then online) is initiated.</li> <li>• Denied—Autohealing (taking the SIB offline and then online) is denied because the SIB went to a fault state before the autoheal configuration period completed.</li> <li>• Set info—Setting information to force skipping autoheal on the SIB so that no further attempts to autoheal the faulty SIB are made.</li> <li>• Clear info— if a user takes a SIB offline and then online, then the autoheal information of the SIB is cleared. If the SIB goes to a fault state, autoheal is attempted on the SIB.</li> <li>• (PTX3000 and PTX5000 routers only) Completed—Autohealing is completed. This message is displayed whether autohealing is succesful or not.</li> </ul>
<b>fpc slot number</b>	(PTX5000 Packet Transport Router only)—Range is 0 through 7.
<b>sib slot number</b>	(PTX Series Packet Transport Routers only)—Range is 0 through 8.
<b>lcc number</b>	Not supported on PTX Series Packet Transport Routers.

## Sample Output

### show chassis fabric errors (F13 SIB Errors on a TX Matrix Plus Router)

```
user@host> show chassis fabric errors sib f13 11
```

```
Time                               Error log of first 10 errors
2009-10-06 02:21:17 PDT           LOS on Cable-D(1,0)
```

### show chassis fabric errors (F2S SIB Errors on a TX Matrix Plus Router)

```
user@host> show chassis fabric errors sib f2s 0/0
```

```
Time                               Error log of first 10 errors
2009-10-06 13:51:42 PDT           Cell drop errors on CL0S F2 SF 0 Port 0 link
```

### show chassis fabric errors (SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router)

```
user@host> show chassis fabric errors sib 1 lcc 0
lcc0-re0:
```

```
-----
Time                               Error log of first 10 errors
2009-10-06 02:23:16 PDT           Cell drop errors on FPC7_T link
```

2009-10-06 02:23:16 PDT      Cell drop errors on FPC7\_B link

#### show chassis fabric errors (FPC Errors Specific to an LCC Connected to a TX Matrix Plus Router)

```
user@host> show chassis fabric errors fpc 5 lcc 0
lcc0-re0:
```

```
-----
Time                               Error log of first 10 errors
2009-10-06 13:56:59 PDT           PFE_T has link error on plane 1
```

#### show chassis fabric errors (SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric errors sib 1 lcc 0
lcc0-re0:
```

```
-----
Time                               Error log of first 10 errors
2013-02-11 04:46:42 PST           CRC errors on XC link SIB01_XF3#11,0
```

#### show chassis fabric errors fpc or sib (PTX Series Packet Transport Routers)

```
user@host> show chassis fabric errors fpc 1
```

```
Time                               Error log of first 10 errors
2012-01-06 16:27:03 PST           Link errs on PFE 2, SIB 0, Plane 0
```

```
user@host> show chassis fabric errors sib 1
```

```
Time                               Error log of first 10 errors
2015-01-16 15:34:33 PST           Link errs on PFE 0, FPC 0, Plane 2
2015-01-16 15:44:33 PST           CM set ASIC 1 to FAULT (Fault due to PIO errors)
```

#### show chassis fabric errors autoheal (PTX Series Packet Transport Routers)

```
user@host> show chassis fabric errors autoheal
```

```
Mar 30 01:43:00
Time                               Error log of first 100 errors
2016-03-29 23:46:23 PDT           Req: sib 0
2016-03-29 23:46:23 PDT           Action: SIB 0 (autohealing)
2016-03-29 23:54:52 PDT           Completed: SIB 0 (autoheal)
```

#### show chassis fabric errors autoheal (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric errors autoheal
```

```
Time                               Error log of first 100 errors
2013-03-25 00:16:10 PDT           Req: Plane 3 F13 8 Cbl 4 (tx) LCC0-SIB3 Cbl 4 (rx)
2013-03-25 00:16:12 PDT           Action: Plane 3 F13 8 Cbl 4 (autohealing)
2013-03-25 00:17:24 PDT           Req: Plane 3 F13 8 Cbl 4 (tx) LCC0-SIB3 Cbl 4 (rx)
2013-03-25 00:17:24 PDT           Denied: Plane 3 F13 8 Cbl 4 (time < configured)
2013-03-25 00:17:24 PDT           Set info: Plane 3 F13 8 Cbl 4 (skip autoheal)
2013-03-25 01:20:17 PDT           Clear info: Plane 3
```



## show chassis fabric fpcs

<b>List of Syntax</b>	<a href="#">Syntax on page 639</a> <a href="#">Syntax (MX Series Routers) on page 639</a> <a href="#">Syntax (MX2010, MX2020, MX10003, MX10008, and MX2008 3D Universal Edge Routers) on page 639</a> <a href="#">Syntax (T4000 Core Router) on page 639</a> <a href="#">Syntax (PTX Series Packet Transport Routers) on page 639</a> <a href="#">Syntax (TX Matrix Plus Router) on page 639</a> <a href="#">Syntax (QFX Series Switches) on page 639</a> <a href="#">Syntax (EX9253 Switches) on page 639</a>
<b>Syntax</b>	<code>show chassis fabric fpcs</code> <code>&lt;fcc number&gt;</code>
<b>Syntax (MX Series Routers)</b>	<code>show chassis fabric fpcs</code> <code>&lt;extended&gt;</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member member-id&gt;</code>
<b>Syntax (MX2010, MX2020, MX10003, MX10008, and MX2008 3D Universal Edge Routers)</b>	<code>show chassis fabric fpcs</code>
<b>Syntax (T4000 Core Router)</b>	<code>show chassis fabric fpcs</code>
<b>Syntax (PTX Series Packet Transport Routers)</b>	<code>show chassis fabric fpcs &lt;slot fpc-slot&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show chassis fabric fpcs</code> <code>&lt;fcc number&gt;</code>
<b>Syntax (QFX Series Switches)</b>	<code>show chassis fabric fpcs &lt;slot fpc-slot&gt;</code>
<b>Syntax (EX9253 Switches)</b>	<code>show chassis fabric fpcs</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.4 for EX Series switches. Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.

Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches.

**extended** option introduced in JunosOS Release 16.1 for MX2020 and MX2010 Routers.

Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.

Command introduced in Junos OS Release 18.2 for EX9253 Switches.

**Description** Display the state of the electrical switch fabric links between the Flexible PIC Concentrators (FPCs) and the Switch Interface Boards (SIBs).

**Options** **none**—Display the switch fabric link state. On a TX Matrix router, display the switching fabric link states for the FPCs in all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display the switching fabric link states for the FPCs in all routers connected to the TX Matrix Plus router.

**extended**—(MX2020 and MX2010 Routers with SFB2) (Optional) Display the fabric link state for all 24 fabric planes.

**all-members**—(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in all members of the Virtual Chassis configuration.

**lcc *number***—(TX Matrix router and TX Matrix Plus router only) (Optional) On a TX Matrix router, display the switch fabric link state for the FPCs in the specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the switch fabric link state for the FPCs in the specified router (line-card chassis) that is connected to the TX Matrix Plus router. Replace ***number*** with a following value depending on the LCC configurations:

- From **0** through **3** on a T640 router on the routing matrix with TX Matrix routers.
- From **0** through **3** on a T1600 router on the routing matrix with TX Matrix Plus routers.
- From **0** through **7** on a T1600 router in a routing matrix with TX Matrix Plus router with 3D SIBs.
- **0, 2, 4, 6** on a T4000 router in a routing matrix with TX Matrix Plus router with 3D SIBs.

**local**—(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the specified member of the Virtual Chassis configuration. Replace ***member-id*** with a value of 0 or 1.

**slot *fpc-slot***—(PTX Series Packet Transport Routers and QFX Series switches only) (Optional) Display the fabric state of the specified FPC slot. If no value is provided, display the status of all FPCs.

**Required Privilege Level** view

**Related Documentation**

- [request chassis fabric fpc](#)
- [show chassis fpc on page 822](#)
- [Displaying Information About DPCs or FPCs in an MX Series Router](#)

**List of Sample Output**

- [show chassis fabric fpcs \(M320 Router\) on page 642](#)
- [show chassis fabric fpcs \(MX240 Router\) on page 643](#)
- [show chassis fabric fpcs \(MX10008 Router\) on page 643](#)
- [show chassis fabric fpcs \(MX480 Router\) on page 645](#)
- [show chassis fabric fpcs \(MX960 Router\) on page 646](#)
- [show chassis fabric fpcs \(MX240 with AS MLC Modular Carrier Card\) on page 647](#)
- [show chassis fabric fpcs \(MX480 with AS MLC Modular Carrier Card\) on page 648](#)
- [show chassis fabric fpcs \(MX480 Router with MPC4E\) on page 648](#)
- [show chassis fabric fpcs \(MX960 with AS MLC Modular Carrier Card on page 650](#)
- [show chassis fabric fpcs \(MX2010 Router\) on page 651](#)
- [show chassis fabric fpcs \(MX2020 Router\) on page 655](#)
- [show chassis fabric fpcs \(MX2020 Router with MPC4E\) on page 657](#)
- [show chassis fabric fpcs \(MX2020 Router with SFB2\) on page 659](#)
- [show chassis fabric fpcs \(MX2008 Router\) on page 663](#)
- [show chassis fabric fpcs \(MX10003 Router\) on page 665](#)
- [show chassis fabric fpcs \(T320 Router\) on page 666](#)
- [show chassis fabric fpcs \(T640 Router\) on page 666](#)
- [show chassis fabric fpcs \(TX Matrix Router\) on page 667](#)
- [show chassis fabric fpcs \(TX Matrix Router with 3D SIBs\) on page 668](#)
- [show chassis fabric fpcs lcc \(TX Matrix Router with 3D SIBs\) on page 671](#)
- [show chassis fabric fpcs \(T1600 Router\) on page 672](#)
- [show chassis fabric fpcs \(T4000 Core Router\) on page 673](#)
- [show chassis fabric fpcs \(TX Matrix Plus Router\) on page 675](#)
- [show chassis fabric fpcs lcc \(TX Matrix Plus Router\) on page 682](#)
- [show chassis fabric fpcs \(EX8200 Switch\) on page 683](#)
- [show chassis fabric fpcs \(EX9253 Switch\) on page 684](#)
- [show chassis fabric fpcs \(PTX3000 Router\) on page 686](#)
- [show chassis fabric fpcs \(PTX10008 Router\) on page 687](#)
- [show chassis fabric fpcs \(PTX10016 Router\) on page 688](#)
- [show chassis fabric fpcs \(QFX10008 Switch\) on page 690](#)

**Output Fields** [Table 23 on page 642](#) lists the output fields for the **show chassis fabric fpcs** command. Output fields are listed in the approximate order in which they appear.

Table 23: show chassis fabric fpcs Output Fields

Field Name	Field Description
<b>Fabric management FPC state</b>	<p>Switching fabric link (link from SIB to FPC) state for each FPC:</p> <ul style="list-style-type: none"> <li>• <b>Unused</b>—FPC is not present. (On MX240 and MX480 routers with AS- MLC modular carrier card or MPC4E only) the fabric plane from the pair that share physical links (1 and 5, and 3 and 7) is inactive.</li> <li>• <b>Destination error on PFEs <i>list of PFE numbers</i></b>—Destination errors to the listed Packet Forwarding Engines. Indicates that the link is not carrying traffic to the listed Packet Forwarding Engines.  <b>NOTE:</b> In Junos OS Release 9.6 and later, the list of Packet Forwarding Engines with destination errors is displayed in the output.  In Junos OS Releases before 9.6, the output only indicates that there are destination errors. However, the list of Packet Forwarding Engines with destination errors is not displayed.</li> <li>• <b>Links ok</b>—Link between the spare SIB and FPC is eligible to carry traffic.</li> <li>• <b>Link error</b>—Link between the SIB and FPC has CRC errors. However, the link is still eligible to carry traffic.</li> <li>• <b>Plane disabled</b>—Fabric plane has been disabled for the following reasons: <ul style="list-style-type: none"> <li>• Destination errors have exceeded the thresholds.</li> <li>• Run-time link errors have exceeded the thresholds.</li> <li>• Initialization time link errors detected, and link training was unsuccessful.</li> <li>• <b>Plane Disabled, Links Error</b> (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the FPC RX.</li> </ul> </li> <li>• <b>Plane Disabled, Links Down</b> (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the SIB RX.</li> <li>• <b>Plane enabled</b>—Link between the active SIB and FPC is eligible to carry traffic.  <b>NOTE:</b> On the Enhanced MX SCB with MPC, a maximum of 4 planes are operational and running. On all the other SCBs with MPC, all the planes are operational and running.</li> <li>• <b>Plane Enabled, Links OK</b> (PTX Series Packet Transport Routers and QFX Series switches only)—The FPC CCL RX link is eligible to carry traffic.</li> <li>• <b>Plane Enabled, Links OK</b> (TX Matrix and TX Matrix Plus routers only)—The FPC HSL RX link is eligible to carry traffic.</li> </ul>

## Sample Output

### show chassis fabric fpcs (M320 Router)

```
user@host> show chassis fabric fpcs
```

```

Fabric management FPC state:
FPC #2
  PFE #1
    SIB #0      Plane enabled
    SIB #1      Plane enabled
    SIB #2      Plane enabled
    SIB #3      Plane enabled

```

#### show chassis fabric fpcs (MX240 Router)

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok

```

#### show chassis fabric fpcs (MX10008 Router)

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC 1
  PFE #0

```

```

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #4
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #5
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
FPC 5
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled

```

```

Plane 4: Unused
Plane 5: Unused
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #4
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused
PFE #5
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Unused
Plane 5: Unused

```

#### show chassis fabric fpcs (MX480 Router)

```
user@host> show chassis fabric fpcs
```

```

FPC 0
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled

```

```

        Plane 4: Links ok
        Plane 5: Links ok
        Plane 6: Links ok
        Plane 7: Links ok
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled

```

#### show chassis fabric fpcs (MX960 Router)

```

user@host> show chassis fabric fpcs
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled

```



```

        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
    PFE #1
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
FPC 2
    PFE #0
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Links ok
        Plane 5: Links ok
    PFE #1
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Links ok
        Plane 5: Links ok
    PFE #2
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Links ok
    ...

```

### show chassis fabric fpcs (MX240 with AS MLC Modular Carrier Card)

In the following output, FPC 1 is the AS MLC modular carrier card (AS MCC).

```

user@host>show chassis fabric fpcs
FPC 1
    PFE #0
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Unused
        Plane 6: Plane enabled
        Plane 7: Unused
FPC 2
    PFE #0
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled

```

### show chassis fabric fpcs (MX480 with AS MLC Modular Carrier Card)

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 4
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
FPC 5
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Unused
    Plane 6: Plane enabled
    Plane 7: Unused
```

### show chassis fabric fpcs (MX480 Router with MPC4E)

In the following output, **FPC4** is the MPC4E (MPC4E-3D-32XGE-SFPP) card.

```
user@host > show chassis fabric fpcs
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Links ok
    Plane 1: Links ok
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Links ok
    Plane 6: Plane enabled
```

```
Plane 7: Links ok
PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
FPC 1
PFE #0
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #2
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #3
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
FPC 3
PFE #0
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
FPC 4
PFE #0
Plane 0: Links ok
Plane 1: Links ok
```

```
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused
PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused
```

### show chassis fabric fpcs (MX960 with AS MLC Modular Carrier Card)

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
FPC 4
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
PFE #2
```

```

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
FPC 5
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
FPC 8
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok

```

### show chassis fabric fpcs (MX2010 Router)

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC 0
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled

```

```

Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 1
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 2
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 3
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

```

```
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

FPC 4
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

FPC 5
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

FPC 6
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
```

```

Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 7
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 8
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 9
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled

```



```

    Plane 7: Plane enabled
PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled

```

### show chassis fabric fpcs (MX2020 Router)

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled

```

```

    Plane 7: Plane enabled
PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 2
PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled

```

```

Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 3
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 4
...
```

#### show chassis fabric fpcs (MX2020 Router with MPC4E)

```

user@host > show chassis fabric fpcs
Fabric management FPC state:
FPC 0
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
```

```

Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 9
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 10
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 14
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 19
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled

```

```

Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

```

#### show chassis fabric fpcs (MX2020 Router with SFB2)

```

user@host> show chassis fabric fpcs extended
Fabric management FPC state:
FPC 0
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Destination error
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Destination error
Plane 9: Destination error
Plane 10: Destination error
Plane 11: Destination error
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Destination error
Plane 22: Plane enabled
Plane 23: Plane enabled

```

FPC 1

PFE #0

Plane 0: Plane enabled  
 Plane 1: Plane enabled  
 Plane 2: Plane enabled  
 Plane 3: Plane enabled  
 Plane 4: Plane enabled  
 Plane 5: Plane enabled  
 Plane 6: Plane enabled  
 Plane 7: Plane enabled  
 Plane 8: Plane enabled  
 Plane 9: Plane enabled  
 Plane 10: Plane enabled  
 Plane 11: Plane enabled  
 Plane 12: Plane enabled  
 Plane 13: Plane enabled  
 Plane 14: Plane enabled  
 Plane 15: Plane enabled  
 Plane 16: Plane enabled  
 Plane 17: Plane enabled  
 Plane 18: Plane disabled  
 Plane 19: Plane disabled  
 Plane 20: Plane disabled  
 Plane 21: Plane enabled  
 Plane 22: Plane enabled  
 Plane 23: Plane enabled

PFE #1

Plane 0: Plane enabled  
 Plane 1: Plane enabled  
 Plane 2: Plane enabled  
 Plane 3: Plane enabled  
 Plane 4: Plane enabled  
 Plane 5: Plane enabled  
 Plane 6: Plane enabled  
 Plane 7: Plane enabled  
 Plane 8: Plane enabled  
 Plane 9: Plane enabled  
 Plane 10: Plane enabled  
 Plane 11: Plane enabled  
 Plane 12: Plane enabled  
 Plane 13: Plane enabled  
 Plane 14: Plane enabled  
 Plane 15: Plane enabled  
 Plane 16: Plane enabled  
 Plane 17: Plane enabled  
 Plane 18: Plane disabled  
 Plane 19: Plane disabled  
 Plane 20: Plane disabled  
 Plane 21: Plane enabled  
 Plane 22: Plane enabled  
 Plane 23: Plane enabled

PFE #2

Plane 0: Plane enabled  
 Plane 1: Plane enabled  
 Plane 2: Plane enabled  
 Plane 3: Plane enabled  
 Plane 4: Plane enabled  
 Plane 5: Plane enabled  
 Plane 6: Plane enabled  
 Plane 7: Plane enabled  
 Plane 8: Plane enabled

```
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
...
FPC 19
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
```

```

Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled

```



```

Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

```

#### show chassis fabric fpcs (MX2008 Router)

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #1
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #2
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #3
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled

```

```

        Plane 6: Plane enabled
        Plane 7: Plane disabled
FPC 1
  PFE #0
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #1
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #2
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #3
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
FPC 3
  PFE #0
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
FPC 5
  PFE #0
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled

```

### show chassis fabric fpcs (MX10003 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC 1
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled
```

```
PFE #1
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled
```

```
PFE #2
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
```

```
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled
```

### show chassis fabric fpcs (T320 Router)

```
user@host> show chassis fabric fpcs
FPC #3
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
FPC #5
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
FPC #7
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
```

### show chassis fabric fpcs (T640 Router)

```
user@host> show chassis fabric fpcs
Fabric management FPC state:

FPC #2
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
```

```

FPC #3
  PFE #1
    SIB #2
      Plane enabled
    SIB #3
      Link error
      Destination error on PFEs
        0  1  2  3  4  5  6  7
        8  9 10 11 12 13 14 15 16 17 18 19 20 21
    SIB #4
      Destination error on PFEs
        0  1  2  3  4  5  6  7
        8  9 10 11 12 13 14 15 16 17 18 19 20 21
...

```

### show chassis fabric fpcs (TX Matrix Router)

```

user@host> show chassis fabric fpcs
lcc0-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #1
    SIB #0
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #2
  PFE #1
    SIB #0
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #3
  PFE #1
    SIB #2
      Plane enabled
    SIB #3
      Link error
      Destination error on PFEs
        0  1  2  3  4  5  6  7
        8  9 10 11 12 13 14 15 16 17 18 19 20 21
    SIB #4
      Destination error on PFEs
        0  1  2  3  4  5  6  7
        8  9 10 11 12 13 14 15 16 17 18 19 20 21
...
FPC #4
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #5
  PFE #1
    SIB #4 Links ok
FPC #6
  PFE #1
    SIB #4 Links ok

```

```
lcc2-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #1
    SIB #4 Links ok
FPC #1
  PFE #1
    SIB #4 Links ok
FPC #2
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #4
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #5
  PFE #1
    SIB #4 Links ok
```

#### show chassis fabric fpcs (TX Matrix Router with 3D SIBs)

```
user@host> show chassis fabric fpcs
lcc0-re0:
```

```
-----
Fabric management FPC state:
FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #3
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
```

```
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #4
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #5
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
```

```

FPC #6
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok

```

lcc2-re0:

lcc4-re0:

Fabric management FPC state:

```

FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #3
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok

```



```

SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok

```

```
lcc6-re0:
```

### show chassis fabric fpcs lcc (TX Matrix Router with 3D SIBs)

```
user@host> show chassis fabric fpcs lcc 4
lcc4-re0:
```

```
-----
Fabric management FPC state:
```

```

FPC #2
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #3
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1

```

```
SIB #0
      Links ok
SIB #1
      Links ok
SIB #2
      Links ok
SIB #3
      Links ok
SIB #4
      Links ok
```

### show chassis fabric fpcs (T1600 Router)

```
user@host> show chassis fabric fpcs
Fabric management FPC state:
```

```
FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #1
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
```

```

FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #4
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #3
  PFE #1
    SIB #2
      Plane enabled
    SIB #3
      Link error
      Destination error on PFES
      8   9   10  11  12  13  14  15  16  17  18  19  20  21
    SIB #4
      Destination error on PFES
      8   9   10  11  12  13  14  15  16  17  18  19  20  21

```

### show chassis fabric fpcs (T4000 Core Router)

Fabric management FPC state:

```

FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4

```

```

Plane enabled
FPC #3
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #5
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #6
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled

```

**show chassis fabric fpcs (TX Matrix Plus Router)**

```
user@host> show chassis fabric fpcs
1cc0-re0:
```

```
-----
Fabric management FPC state:
```

```
FPC #0
```

```
  PFE #1
```

```
    SIB #0
```

```
      Unused
```

```
    SIB #1
```

```
      Links ok
```

```
    SIB #2
```

```
      Links ok
```

```
    SIB #3
```

```
      Links ok
```

```
    SIB #4
```

```
      Links ok
```

```
FPC #2
```

```
  PFE #0
```

```
    SIB #0
```

```
      Unused
```

```
    SIB #1
```

```
      Links ok
```

```
    SIB #2
```

```
      Links ok
```

```
    SIB #3
```

```
      Links ok
```

```
    SIB #4
```

```
      Links ok
```

```
  PFE #1
```

```
    SIB #0
```

```
      Unused
```

```
    SIB #1
```

```
      Links ok
```

```
    SIB #2
```

```
      Links ok
```

```
    SIB #3
```

```
      Links ok
```

```
    SIB #4
```

```
      Links ok
```

```
FPC #3
```

```
  PFE #1
```

```
    SIB #2
```

```
      Plane enabled
```

```
    SIB #3
```

```
      Link error
```

```
      Destination error on PFES      0   1   2   3   4   5   6   7
      8   9  10  11  12  13  14  15  16  17  18  19  20  21
```

```
    SIB #4
```

```
      Destination error on PFES      0   1   2   3   4   5   6   7
      8   9  10  11  12  13  14  15  16  17  18  19  20  21
```

```
FPC #4
```

```
  PFE #0
```

```
    SIB #0
```

```
      Unused
```

```
    SIB #1
```

```
      Links ok
```

```
    SIB #2
```

```
      Links ok
```

```
    SIB #3
```

```

        Links ok
    SIB #4
        Links ok
PFE #1
    SIB #0
        Unused
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
FPC #6
PFE #0
    SIB #0
        Unused
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
PFE #1
    SIB #0
        Unused
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
FPC #7
PFE #0
    SIB #0
        Unused
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok

```

```
lcc1-re0:
```

```
-----
Fabric management FPC state:
```

```

FPC #2
PFE #0
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok

```

```

SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #4
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Destination error on PFES      1      8      9     29     40     65     72     73
93 104
SIB #4
Links ok
FPC #6
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok

```

```

        SIB #4
FPC #7   Links ok
        PFE #0
          SIB #0
            Links ok
          SIB #1
            Links ok
          SIB #2
            Links ok
          SIB #3
            Links ok
          SIB #4
            Links ok

```

1cc2-re0:

-----  
Fabric management FPC state:

```

FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3

```



```

SIB #4 Links ok
SIB #4 Links ok
FPC #4
PFE #0
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
FPC #5
PFE #0
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
PFE #1
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
FPC #6
PFE #0
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
PFE #1
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
```

```

FPC #7
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok

```

1cc3-re0:

-----  
Fabric management FPC state:

```

FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4

```

```
Links ok
FPC #4
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #5
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #6
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
```

```

SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
FPC #7
PFE #0
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok

```

#### show chassis fabric fpcs lcc (TX Matrix Plus Router)

```

user@host> show chassis fabric fpcs lcc 0
lcc0-re1:
-----
Fabric management FPC state:
FPC #3
PFE #1
SIB #2 Plane enabled
SIB #3 Link error
Destination error on PFES
8 9 10 11 12 13 14 15 16 17 18 19 20 21
SIB #4
Destination error on PFES
8 9 10 11 12 13 14 15 16 17 18 19 20 21
FPC #4
PFE #0
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
PFE #1
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
FPC #6
PFE #0
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
PFE #1
SIB #0 Links ok

```

```

SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok
FPC #7
PFE #0
SIB #0 Links ok
SIB #1 Links ok
SIB #2 Links ok
SIB #3 Links ok
SIB #4 Links ok

```

### show chassis fabric fpcs (EX8200 Switch)

```

user@host> show chassis fabric fpcs
Fabric management FPC state
FPC 6
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
FPC 7
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled

```

```
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
```

#### show chassis fabric fpcs (EX9253 Switch)

```
user@switch> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC 0
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled
```

```
PFE #1
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled
```

## PFE #2

Plane 0: Plane enabled  
Plane 1: Plane enabled  
Plane 2: Plane enabled  
Plane 3: Plane enabled  
Plane 4: Plane enabled  
Plane 5: Plane enabled  
Plane 6: Plane enabled  
Plane 7: Plane enabled  
Plane 8: Plane enabled  
Plane 9: Plane enabled  
Plane 10: Plane enabled  
Plane 11: Plane enabled  
Plane 12: Plane enabled  
Plane 13: Plane enabled  
Plane 14: Plane enabled  
Plane 15: Plane enabled  
Plane 16: Plane enabled  
Plane 17: Plane enabled  
Plane 18: Plane enabled  
Plane 19: Plane enabled  
Plane 20: Plane enabled  
Plane 21: Plane enabled

## FPC 1

## PFE #0

Plane 0: Plane enabled  
Plane 1: Plane enabled  
Plane 2: Plane enabled  
Plane 3: Plane enabled  
Plane 4: Plane enabled  
Plane 5: Plane enabled  
Plane 6: Plane enabled  
Plane 7: Plane enabled  
Plane 8: Plane enabled  
Plane 9: Plane enabled  
Plane 10: Plane enabled  
Plane 11: Plane enabled  
Plane 12: Plane enabled  
Plane 13: Plane enabled  
Plane 14: Plane enabled  
Plane 15: Plane enabled  
Plane 16: Plane enabled  
Plane 17: Plane enabled  
Plane 18: Plane enabled  
Plane 19: Plane enabled  
Plane 20: Plane enabled  
Plane 21: Plane enabled

## PFE #1

Plane 0: Plane enabled  
Plane 1: Plane enabled  
Plane 2: Plane enabled  
Plane 3: Plane enabled  
Plane 4: Plane enabled  
Plane 5: Plane enabled  
Plane 6: Plane enabled  
Plane 7: Plane enabled  
Plane 8: Plane enabled  
Plane 9: Plane enabled  
Plane 10: Plane enabled  
Plane 11: Plane enabled  
Plane 12: Plane enabled

```

Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled

```

### show chassis fabric fpcs (PTX3000 Router)

```

user@host> show chassis fabric fpcs slot 8
Fabric management FPC state:
FPC #8
PFE #0
SIB0_Fcore0 (plane 0) Plane Enabled, Links OK
SIB0_Fcore1 (plane 1) Plane Enabled, Links OK
SIB1_Fcore0 (plane 2) Plane Enabled, Links OK
SIB1_Fcore1 (plane 3) Plane Enabled, Links OK
SIB2_Fcore0 (plane 4) Plane Enabled, Links OK
SIB2_Fcore1 (plane 5) Plane Enabled, Links OK
SIB3_Fcore0 (plane 6) Plane Enabled, Links OK
SIB3_Fcore1 (plane 7) Plane Enabled, Links OK
SIB4_Fcore0 (plane 8) Plane Enabled, Links OK
SIB4_Fcore1 (plane 9) Plane Enabled, Links OK
SIB5_Fcore0 (plane 10) Plane Enabled, Links OK
SIB5_Fcore1 (plane 11) Plane Enabled, Links OK
SIB6_Fcore0 (plane 12) Plane Enabled, Links OK
SIB6_Fcore1 (plane 13) Plane Enabled, Links OK
SIB7_Fcore0 (plane 14) Plane Enabled, Links OK
SIB7_Fcore1 (plane 15) Plane Enabled, Links OK
SIB8_Fcore0 (plane 16) Plane Enabled, Links OK
SIB8_Fcore1 (plane 17) Plane Enabled, Links OK
PFE #1
SIB0_Fcore0 (plane 0) Plane Enabled, Links OK
SIB0_Fcore1 (plane 1) Plane Enabled, Links OK
SIB1_Fcore0 (plane 2) Plane Enabled, Links OK

```



```

SIB1_Fcore1 (plane 3) Plane Enabled, Links OK
SIB2_Fcore0 (plane 4) Plane Enabled, Links OK
SIB2_Fcore1 (plane 5) Plane Enabled, Links OK
SIB3_Fcore0 (plane 6) Plane Enabled, Links OK
SIB3_Fcore1 (plane 7) Plane Enabled, Links OK
SIB4_Fcore0 (plane 8) Plane Enabled, Links OK
SIB4_Fcore1 (plane 9) Plane Enabled, Links OK
SIB5_Fcore0 (plane 10) Plane Enabled, Links OK
SIB5_Fcore1 (plane 11) Plane Enabled, Links OK
SIB6_Fcore0 (plane 12) Plane Enabled, Links OK
SIB6_Fcore1 (plane 13) Plane Enabled, Links OK
SIB7_Fcore0 (plane 14) Plane Enabled, Links OK
SIB7_Fcore1 (plane 15) Plane Enabled, Links OK
SIB8_Fcore0 (plane 16) Plane Enabled, Links OK
SIB8_Fcore1 (plane 17) Plane Enabled, Links OK

```

### show chassis fabric fpcs (PTX10008 Router)

```
user@host> show chassis fabric fpcs slot 8
```

```
Fabric management FPC state:
```

```
FPC #0
```

```
PFE #0
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

```
PFE #1
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

```
PFE #2
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

```
FPC #5
```

```
PFE #0
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

```
PFE #1
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

```
PFE #2
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

```
PFE #3
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

```
PFE #4
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK

```

```

SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #5
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
FPC #6
PFE #0
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #1
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #2
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #3
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #4
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #5
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

### show chassis fabric fpcs (PTX10016 Router)

```
user@host> show chassis fabric fpcs slot 8
```

```
Fabric management FPC state:
```

```
FPC #8
```

```
PFE #0
```

```

SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB0_FASIC2 (plane 2) Plane Enabled, Links OK
SIB0_FASIC3 (plane 3) Plane Enabled, Links OK
SIB0_FASIC4 (plane 4) Plane Enabled, Links OK
SIB0_FASIC5 (plane 5) Plane Enabled, Links OK
SIB1_FASIC0 (plane 6) Plane Enabled, Links OK
SIB1_FASIC1 (plane 7) Plane Enabled, Links OK
SIB1_FASIC2 (plane 8) Plane Enabled, Links OK
SIB1_FASIC3 (plane 9) Plane Enabled, Links OK
SIB1_FASIC4 (plane 10) Plane Enabled, Links OK
SIB1_FASIC5 (plane 11) Plane Enabled, Links OK
SIB2_FASIC0 (plane 12) Plane Enabled, Links OK
SIB2_FASIC1 (plane 13) Plane Enabled, Links OK
SIB2_FASIC2 (plane 14) Plane Enabled, Links OK
SIB2_FASIC3 (plane 15) Plane Enabled, Links OK
SIB2_FASIC4 (plane 16) Plane Enabled, Links OK

```

```

SIB2_FASIC5 (plane 17) Plane Enabled, Links OK
SIB3_FASIC0 (plane 18) Plane Enabled, Links OK
SIB3_FASIC1 (plane 19) Plane Enabled, Links OK
SIB3_FASIC2 (plane 20) Plane Enabled, Links OK
SIB3_FASIC3 (plane 21) Plane Enabled, Links OK
SIB3_FASIC4 (plane 22) Plane Enabled, Links OK
SIB3_FASIC5 (plane 23) Plane Enabled, Links OK
SIB4_FASIC0 (plane 24) Plane Enabled, Links OK
SIB4_FASIC1 (plane 25) Plane Enabled, Links OK
SIB4_FASIC2 (plane 26) Plane Enabled, Links OK
SIB4_FASIC3 (plane 27) Plane Enabled, Links OK
SIB4_FASIC4 (plane 28) Plane Enabled, Links OK
SIB4_FASIC5 (plane 29) Plane Enabled, Links OK
SIB5_FASIC0 (plane 30) Plane Enabled, Links OK
SIB5_FASIC1 (plane 31) Plane Enabled, Links OK
SIB5_FASIC2 (plane 32) Plane Enabled, Links OK
SIB5_FASIC3 (plane 33) Plane Enabled, Links OK
SIB5_FASIC4 (plane 34) Plane Enabled, Links OK
SIB5_FASIC5 (plane 35) Plane Enabled, Links OK
PFE #1
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB0_FASIC2 (plane 2) Plane Enabled, Links OK
SIB0_FASIC3 (plane 3) Plane Enabled, Links OK
SIB0_FASIC4 (plane 4) Plane Enabled, Links OK
SIB0_FASIC5 (plane 5) Plane Enabled, Links OK
SIB1_FASIC0 (plane 6) Plane Enabled, Links OK
SIB1_FASIC1 (plane 7) Plane Enabled, Links OK
SIB1_FASIC2 (plane 8) Plane Enabled, Links OK
SIB1_FASIC3 (plane 9) Plane Enabled, Links OK
SIB1_FASIC4 (plane 10) Plane Enabled, Links OK
SIB1_FASIC5 (plane 11) Plane Enabled, Links OK
SIB2_FASIC0 (plane 12) Plane Enabled, Links OK
SIB2_FASIC1 (plane 13) Plane Enabled, Links OK
SIB2_FASIC2 (plane 14) Plane Enabled, Links OK
SIB2_FASIC3 (plane 15) Plane Enabled, Links OK
SIB2_FASIC4 (plane 16) Plane Enabled, Links OK
SIB2_FASIC5 (plane 17) Plane Enabled, Links OK
SIB3_FASIC0 (plane 18) Plane Enabled, Links OK
SIB3_FASIC1 (plane 19) Plane Enabled, Links OK
SIB3_FASIC2 (plane 20) Plane Enabled, Links OK
SIB3_FASIC3 (plane 21) Plane Enabled, Links OK
SIB3_FASIC4 (plane 22) Plane Enabled, Links OK
SIB3_FASIC5 (plane 23) Plane Enabled, Links OK
SIB4_FASIC0 (plane 24) Plane Enabled, Links OK
SIB4_FASIC1 (plane 25) Plane Enabled, Links OK
SIB4_FASIC2 (plane 26) Plane Enabled, Links OK
SIB4_FASIC3 (plane 27) Plane Enabled, Links OK
SIB4_FASIC4 (plane 28) Plane Enabled, Links OK
SIB4_FASIC5 (plane 29) Plane Enabled, Links OK
SIB5_FASIC0 (plane 30) Plane Enabled, Links OK
SIB5_FASIC1 (plane 31) Plane Enabled, Links OK
SIB5_FASIC2 (plane 32) Plane Enabled, Links OK
SIB5_FASIC3 (plane 33) Plane Enabled, Links OK
SIB5_FASIC4 (plane 34) Plane Enabled, Links OK
SIB5_FASIC5 (plane 35) Plane Enabled, Links OK
PFE #2
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB0_FASIC2 (plane 2) Plane Enabled, Links OK
SIB0_FASIC3 (plane 3) Plane Enabled, Links OK

```

```

SIB0_FASIC4 (plane 4)  Plane Enabled, Links OK
SIB0_FASIC5 (plane 5)  Plane Enabled, Links OK
SIB1_FASIC0 (plane 6)  Plane Enabled, Links OK
SIB1_FASIC1 (plane 7)  Plane Enabled, Links OK
SIB1_FASIC2 (plane 8)  Plane Enabled, Links OK
SIB1_FASIC3 (plane 9)  Plane Enabled, Links OK
SIB1_FASIC4 (plane 10) Plane Enabled, Links OK
SIB1_FASIC5 (plane 11) Plane Enabled, Links OK
SIB2_FASIC0 (plane 12) Plane Enabled, Links OK
SIB2_FASIC1 (plane 13) Plane Enabled, Links OK
SIB2_FASIC2 (plane 14) Plane Enabled, Links OK
SIB2_FASIC3 (plane 15) Plane Enabled, Links OK
SIB2_FASIC4 (plane 16) Plane Enabled, Links OK
SIB2_FASIC5 (plane 17) Plane Enabled, Links OK
SIB3_FASIC0 (plane 18) Plane Enabled, Links OK
SIB3_FASIC1 (plane 19) Plane Enabled, Links OK
SIB3_FASIC2 (plane 20) Plane Enabled, Links OK
SIB3_FASIC3 (plane 21) Plane Enabled, Links OK
SIB3_FASIC4 (plane 22) Plane Enabled, Links OK
SIB3_FASIC5 (plane 23) Plane Enabled, Links OK
SIB4_FASIC0 (plane 24) Plane Enabled, Links OK
SIB4_FASIC1 (plane 25) Plane Enabled, Links OK
SIB4_FASIC2 (plane 26) Plane Enabled, Links OK
SIB4_FASIC3 (plane 27) Plane Enabled, Links OK
SIB4_FASIC4 (plane 28) Plane Enabled, Links OK
SIB4_FASIC5 (plane 29) Plane Enabled, Links OK
SIB5_FASIC0 (plane 30) Plane Enabled, Links OK
SIB5_FASIC1 (plane 31) Plane Enabled, Links OK
SIB5_FASIC2 (plane 32) Plane Enabled, Links OK
SIB5_FASIC3 (plane 33) Plane Enabled, Links OK
SIB5_FASIC4 (plane 34) Plane Enabled, Links OK
SIB5_FASIC5 (plane 35) Plane Enabled, Links OK

```

### show chassis fabric fpcs (QFX10008 Switch)

```
user@host> show chassis fabric fpcs slot 0
```

```
Fabric management FPC state:
```

```
FPC #0
```

```
PFE #0
```

```

SIB0_PFO (plane 0)  Plane Enabled, Links OK
SIB0_PFO (plane 1)  Plane Enabled, Links OK
SIB1_PFO (plane 2)  Plane Enabled, Links OK
SIB1_PFO (plane 3)  Plane Enabled, Links OK
SIB2_PFO (plane 4)  Plane Enabled, Links OK
SIB2_PFO (plane 5)  Plane Enabled, Links OK
SIB3_PFO (plane 6)  Plane Enabled, Links OK
SIB3_PFO (plane 7)  Plane Enabled, Links OK
SIB4_PFO (plane 8)  Plane Enabled, Links OK
SIB4_PFO (plane 9)  Plane Enabled, Links OK
SIB5_PFO (plane 10) Plane Enabled, Links OK
SIB5_PFO (plane 11) Plane Enabled, Links OK

```

```
PFE #1
```

```

SIB0_PFO (plane 0)  Plane Enabled, Links OK
SIB0_PFO (plane 1)  Plane Enabled, Links OK
SIB1_PFO (plane 2)  Plane Enabled, Links OK
SIB1_PFO (plane 3)  Plane Enabled, Links OK
SIB2_PFO (plane 4)  Plane Enabled, Links OK
SIB2_PFO (plane 5)  Plane Enabled, Links OK
SIB3_PFO (plane 6)  Plane Enabled, Links OK
SIB3_PFO (plane 7)  Plane Enabled, Links OK
SIB4_PFO (plane 8)  Plane Enabled, Links OK

```

```

SIB4_PF1 (plane 9) Plane Enabled, Links OK
SIB5_PF0 (plane 10) Plane Enabled, Links OK
SIB5_PF1 (plane 11) Plane Enabled, Links OK
PFE #2
SIB0_PF0 (plane 0) Plane Enabled, Links OK
SIB0_PF1 (plane 1) Plane Enabled, Links OK
SIB1_PF0 (plane 2) Plane Enabled, Links OK
SIB1_PF1 (plane 3) Plane Enabled, Links OK
SIB2_PF0 (plane 4) Plane Enabled, Links OK
SIB2_PF1 (plane 5) Plane Enabled, Links OK
SIB3_PF0 (plane 6) Plane Enabled, Links OK
SIB3_PF1 (plane 7) Plane Enabled, Links OK
SIB4_PF0 (plane 8) Plane Enabled, Links OK
SIB4_PF1 (plane 9) Plane Enabled, Links OK
SIB5_PF0 (plane 10) Plane Enabled, Links OK
SIB5_PF1 (plane 11) Plane Enabled, Links OK
PFE #3
SIB0_PF0 (plane 0) Plane Enabled, Links OK
SIB0_PF1 (plane 1) Plane Enabled, Links OK
SIB1_PF0 (plane 2) Plane Enabled, Links OK
SIB1_PF1 (plane 3) Plane Enabled, Links OK
SIB2_PF0 (plane 4) Plane Enabled, Links OK
SIB2_PF1 (plane 5) Plane Enabled, Links OK
SIB3_PF0 (plane 6) Plane Enabled, Links OK
SIB3_PF1 (plane 7) Plane Enabled, Links OK
SIB4_PF0 (plane 8) Plane Enabled, Links OK
SIB4_PF1 (plane 9) Plane Enabled, Links OK
SIB5_PF0 (plane 10) Plane Enabled, Links OK
SIB5_PF1 (plane 11) Plane Enabled, Links OK

```

## show chassis fabric optics

---

<b>Syntax (TX Matrix Plus Router with 3D SIBs)</b>	<pre>show chassis fabric optics &lt;sib-slot&gt; &lt;lcc number   sfc number&gt; &lt;brief   detail&gt;</pre>
<b>Release Information</b>	Command introduced in Junos OS Release 13.1 for the TX Matrix Plus router with 3D SIBs.
<b>Description</b>	(TX Matrix Plus routers with 3D SIBs only) Display information about the optical ports on the TX Matrix Plus router (or the switch-fabric chassis (SFC)) and on the T1600 or T4000 line-card chassis (LCCs) connected to it in a routing matrix.
<b>Options</b>	<p><b>none</b>—Display brief information about the optical ports on the SFC and LCCs in the routing matrix.</p> <p><b>sib-number</b>—(Optional) Display information about the optical ports for the specified SIB number.</p> <p><b>lcc number</b>—(Optional) Display information about the optical ports for the specified T1600 or T4000 LCC that is connected to a TX Matrix Plus router with 3D SIBs. Replace <b>number</b> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"><li>• From 0 through 7 on a T1600 router connected to a TX Matrix Plus router with 3D SIBs.</li><li>• 0, 2, 4, or 6 on a T4000 router connected to a TX Matrix Plus router with 3D SIBs.</li></ul> <p><b>sfc number</b>—(Optional) Display information about the optical ports for the specified SFC number. Replace <b>number</b> with 0.</p> <p><b>brief</b>—(Optional) Display brief information about the optical ports.</p> <p><b>detail</b>—(Optional) Display detailed information about the optical ports.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">Overview of a Routing Matrix with a TX Matrix Plus Router on page 3</a></li></ul>
<b>List of Sample Output</b>	<p><a href="#">show chassis fabric optics (TX Matrix Plus Router with 3D SIBs) on page 693</a></p> <p><a href="#">show chassis fabric optics (TX Matrix Plus Router with 3D SIBs) on page 698</a></p> <p><a href="#">show chassis fabric optics sfc (TX Matrix Plus Router with 3D SIBs) on page 699</a></p> <p><a href="#">show chassis fabric optics lcc (TX Matrix Plus Router with 3D SIBs) on page 701</a></p>
<b>Output Fields</b>	<p><a href="#">Table 24 on page 693</a> lists the output fields for the <b>show chassis fabric optics</b> command. Output fields are listed in the approximate order in which they appear.</p>

Table 24: show chassis fabric optics Output Fields

Field Name	Field Description
<b>Port</b>	Indicates port number.
<b>Cable state</b>	<p>Indicates the cable state:</p> <ul style="list-style-type: none"> <li>• <b>CABLE_CONNECTED</b>—Cable is connected properly and is in an operable state.</li> <li>• <b>CABLE_LOOPBACK</b>—A loopback cable is connected to the port.</li> <li>• <b>CABLE_NOT_CONNECTED</b>—The optical port is not connected with any cable or all the channels are powered off on the remote side.</li> <li>• <b>CABLE_MIS_CONNECTED</b>—Cable is connected to an incorrect optical port.</li> <li>• <b>CABLE_CONNECTED_WITH_ERROR</b>—Cable is connected to the optical port, but indicates a cable issue. Refer to the optical cable fault alarms to identify the cable issue.</li> <li>• <b>CABLE_NOT_SUPPORTED</b>—The connected optics module is not supported. Only optics modules having Juniper Networks part numbers are supported.</li> <li>• <b>CABLE_MODULE_ABSENT</b>—No optics module is connected.</li> <li>• <b>CABLE_MODULE_FAULT</b>—The connected optics module has an irrecoverable fault. The optics module must be replaced for the device to recover from this error. This state can be caused by a device failure during initialization, a device crossing the high-temperature threshold, or a voltage failure on the optics module during normal operation.</li> <li>• <b>CABLE_ELEC_LOOPBACK</b>—An electrical loopback module is connected to the optics port.</li> </ul> <p><b>NOTE:</b> Only electrical loopback modules from ELPEUS are supported.</p> <ul style="list-style-type: none"> <li>• <b>CABLE_ERROR</b>—Cable cannot be detected, probably because the SIB is not online yet.</li> </ul>
<b>Module Type</b>	Indicates module type.

## Sample Output

### show chassis fabric optics (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric optics
sfc0-re0:
```

```
-----
Port      Cable state      Module Type
sfc0-f13sib0:
0         MODULE_ABSENT    No Module
1         MODULE_ABSENT    No Module
2         CABLE_CONNECTED  CXP Module
3         CABLE_CONNECTED  CXP Module
4         MODULE_ABSENT    No Module
5         MODULE_ABSENT    No Module
6         MODULE_ABSENT    No Module
7         MODULE_ABSENT    No Module
8         CABLE_CONNECTED  CXP Module
9         MODULE_ABSENT    No Module
10        MODULE_ABSENT    No Module
```

11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	MODULE_ABSENT	No Module
sfc0-f13sib1:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	CABLE_CONNECTED	CXP Module
5	CABLE_CONNECTED	CXP Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	MODULE_ABSENT	No Module
9	CABLE_CONNECTED	CXP Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	CABLE_CONNECTED	CXP Module
sfc0-f13sib2: SIB slot invalid		
sfc0-f13sib3:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	CABLE_CONNECTED	CXP Module
3	CABLE_CONNECTED	CXP Module
4	MODULE_ABSENT	No Module
5	MODULE_ABSENT	No Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	CABLE_CONNECTED	CXP Module
9	MODULE_ABSENT	No Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	MODULE_ABSENT	No Module
sfc0-f13sib4:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	CABLE_CONNECTED	CXP Module
5	CABLE_CONNECTED	CXP Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	MODULE_ABSENT	No Module
9	CABLE_CONNECTED	CXP Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	CABLE_CONNECTED	CXP Module
sfc0-f13sib5: SIB slot invalid		
sfc0-f13sib6:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module



2	CABLE_CONNECTED	CXP Module
3	CABLE_CONNECTED	CXP Module
4	MODULE_ABSENT	No Module
5	MODULE_ABSENT	No Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	CABLE_CONNECTED	CXP Module
9	MODULE_ABSENT	No Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	MODULE_ABSENT	No Module
sfc0-f13sib7:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	CABLE_CONNECTED	CXP Module
5	CABLE_CONNECTED	CXP Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	MODULE_ABSENT	No Module
9	CABLE_CONNECTED	CXP Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	CABLE_CONNECTED	CXP Module
sfc0-f13sib8:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	CABLE_CONNECTED	CXP Module
3	CABLE_CONNECTED	CXP Module
4	MODULE_ABSENT	No Module
5	MODULE_ABSENT	No Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	CABLE_CONNECTED	CXP Module
9	MODULE_ABSENT	No Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	MODULE_ABSENT	No Module
sfc0-f13sib9:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	CABLE_CONNECTED	CXP Module
5	CABLE_CONNECTED	CXP Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	MODULE_ABSENT	No Module
9	CABLE_CONNECTED	CXP Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module

```

12      MODULE_ABSENT      No Module
13      MODULE_ABSENT      No Module
14      MODULE_ABSENT      No Module
15      CABLE_CONNECTED    CXP Module
sfc0-f13sib10: SIB slot invalid
sfc0-f13sib11: SIB slot empty
sfc0-f13sib12: SIB slot empty
sfc0-f13sib13: SIB slot invalid
sfc0-f13sib14: SIB slot invalid
sfc0-f13sib15: SIB slot invalid

```

lcc0-re0:

```

-----
Port      Cable state      Module Type
lcc0-sib0:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib1:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib2:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib3:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib4: SIB slot empty

```

lcc4-re0:

```

-----
Port      Cable state      Module Type
lcc4-sib0:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          MODULE_ABSENT      No Module
3          MODULE_ABSENT      No Module
4          CABLE_CONNECTED    CXP Module

```

```

5      CABLE_CONNECTED      CXP Module
6      MODULE_ABSENT        No Module
7      MODULE_ABSENT        No Module
lcc4-sib1:
0      MODULE_ABSENT        No Module
1      MODULE_ABSENT        No Module
2      MODULE_ABSENT        No Module
3      MODULE_ABSENT        No Module
4      CABLE_CONNECTED      CXP Module
5      CABLE_CONNECTED      CXP Module
6      MODULE_ABSENT        No Module
7      MODULE_ABSENT        No Module
lcc4-sib2:
0      MODULE_ABSENT        No Module
1      MODULE_ABSENT        No Module
2      MODULE_ABSENT        No Module
3      MODULE_ABSENT        No Module
4      CABLE_CONNECTED      CXP Module
5      CABLE_CONNECTED      CXP Module
6      MODULE_ABSENT        No Module
7      MODULE_ABSENT        No Module
lcc4-sib3:
0      MODULE_ABSENT        No Module
1      MODULE_ABSENT        No Module
2      MODULE_ABSENT        No Module
3      MODULE_ABSENT        No Module
4      CABLE_CONNECTED      CXP Module
5      CABLE_CONNECTED      CXP Module
6      MODULE_ABSENT        No Module
7      MODULE_ABSENT        No Module
lcc4-sib4: SIB slot empty

```

```
lcc7-re0:
```

```

-----
Port    Cable state      Module Type
lcc7-sib0:
0      CABLE_CONNECTED  CXP Module
1      MODULE_ABSENT    No Module
2      MODULE_ABSENT    No Module
3      MODULE_ABSENT    No Module
4      MODULE_ABSENT    No Module
5      MODULE_ABSENT    No Module
6      CABLE_CONNECTED  CXP Module
7      MODULE_ABSENT    No Module
lcc7-sib1:
0      CABLE_CONNECTED  CXP Module
1      MODULE_ABSENT    No Module
2      MODULE_ABSENT    No Module
3      MODULE_ABSENT    No Module
4      MODULE_ABSENT    No Module
5      MODULE_ABSENT    No Module
6      CABLE_CONNECTED  CXP Module
7      MODULE_ABSENT    No Module
lcc7-sib2:
0      CABLE_CONNECTED  CXP Module
1      MODULE_ABSENT    No Module
2      MODULE_ABSENT    No Module
3      MODULE_ABSENT    No Module
4      MODULE_ABSENT    No Module
5      MODULE_ABSENT    No Module
6      CABLE_CONNECTED  CXP Module

```

```

7          MODULE_ABSENT          No Module
lcc7-sib3:
0          CABLE_CONNECTED        CXP Module
1          MODULE_ABSENT          No Module
2          MODULE_ABSENT          No Module
3          MODULE_ABSENT          No Module
4          MODULE_ABSENT          No Module
5          MODULE_ABSENT          No Module
6          CABLE_CONNECTED        CXP Module
7          MODULE_ABSENT          No Module
lcc7-sib4: SIB slot empty

```

### show chassis fabric optics (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric optics 0
sfc0-re0:

```

```

-----
Port      Cable state      Module Type
sfc0-f13sib0:
0          MODULE_ABSENT          No Module
1          MODULE_ABSENT          No Module
2          CABLE_CONNECTED        CXP Module
3          CABLE_CONNECTED        CXP Module
4          MODULE_ABSENT          No Module
5          MODULE_ABSENT          No Module
6          MODULE_ABSENT          No Module
7          MODULE_ABSENT          No Module
8          CABLE_CONNECTED        CXP Module
9          MODULE_ABSENT          No Module
10         MODULE_ABSENT          No Module
11         MODULE_ABSENT          No Module
12         MODULE_ABSENT          No Module
13         MODULE_ABSENT          No Module
14         MODULE_ABSENT          No Module
15         MODULE_ABSENT          No Module

```

```
lcc0-re0:
```

```

-----
Port      Cable state      Module Type
lcc0-sib0:
0          MODULE_ABSENT          No Module
1          MODULE_ABSENT          No Module
2          CABLE_CONNECTED        CXP Module
3          CABLE_CONNECTED        CXP Module
4          MODULE_ABSENT          No Module
5          MODULE_ABSENT          No Module
6          MODULE_ABSENT          No Module
7          MODULE_ABSENT          No Module

```

```
lcc4-re0:
```

```

-----
Port      Cable state      Module Type
lcc4-sib0:
0          MODULE_ABSENT          No Module
1          MODULE_ABSENT          No Module
2          MODULE_ABSENT          No Module
3          MODULE_ABSENT          No Module
4          CABLE_CONNECTED        CXP Module
5          CABLE_CONNECTED        CXP Module
6          MODULE_ABSENT          No Module
7          MODULE_ABSENT          No Module

```

```
lcc7-re0:
```

```
-----
Port      Cable state      Module Type
lcc7-sib0:
0          CABLE_CONNECTED  CXP Module
1          MODULE_ABSENT  No Module
2          MODULE_ABSENT  No Module
3          MODULE_ABSENT  No Module
4          MODULE_ABSENT  No Module
5          MODULE_ABSENT  No Module
6          CABLE_CONNECTED  CXP Module
7          MODULE_ABSENT  No Module
```

### show chassis fabric optics sfc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric optics sfc 0
sfc0-re0:
```

```
-----
Port      Cable state      Module Type
sfc0-f13sib0:
0          MODULE_ABSENT  No Module
1          MODULE_ABSENT  No Module
2          CABLE_CONNECTED  CXP Module
3          CABLE_CONNECTED  CXP Module
4          MODULE_ABSENT  No Module
5          MODULE_ABSENT  No Module
6          MODULE_ABSENT  No Module
7          MODULE_ABSENT  No Module
8          CABLE_CONNECTED  CXP Module
9          MODULE_ABSENT  No Module
10         MODULE_ABSENT  No Module
11         MODULE_ABSENT  No Module
12         MODULE_ABSENT  No Module
13         MODULE_ABSENT  No Module
14         MODULE_ABSENT  No Module
15         MODULE_ABSENT  No Module
sfc0-f13sib1:
0          MODULE_ABSENT  No Module
1          MODULE_ABSENT  No Module
2          MODULE_ABSENT  No Module
3          MODULE_ABSENT  No Module
4          CABLE_CONNECTED  CXP Module
5          CABLE_CONNECTED  CXP Module
6          MODULE_ABSENT  No Module
7          MODULE_ABSENT  No Module
8          MODULE_ABSENT  No Module
9          CABLE_CONNECTED  CXP Module
10         MODULE_ABSENT  No Module
11         MODULE_ABSENT  No Module
12         MODULE_ABSENT  No Module
13         MODULE_ABSENT  No Module
14         MODULE_ABSENT  No Module
15         CABLE_CONNECTED  CXP Module
sfc0-f13sib2: SIB slot invalid
sfc0-f13sib3:
0          MODULE_ABSENT  No Module
1          MODULE_ABSENT  No Module
2          CABLE_CONNECTED  CXP Module
3          CABLE_CONNECTED  CXP Module
4          MODULE_ABSENT  No Module
```

5	MODULE_ABSENT	No Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	CABLE_CONNECTED	CXP Module
9	MODULE_ABSENT	No Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	MODULE_ABSENT	No Module
sfc0-f13sib4:		
sfc0-f13sib4:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	CABLE_CONNECTED	CXP Module
5	CABLE_CONNECTED	CXP Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	MODULE_ABSENT	No Module
9	CABLE_CONNECTED	CXP Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	CABLE_CONNECTED	CXP Module
sfc0-f13sib5: SIB slot invalid		
sfc0-f13sib6:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	CABLE_CONNECTED	CXP Module
3	CABLE_CONNECTED	CXP Module
4	MODULE_ABSENT	No Module
5	MODULE_ABSENT	No Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	CABLE_CONNECTED	CXP Module
9	MODULE_ABSENT	No Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module
13	MODULE_ABSENT	No Module
14	MODULE_ABSENT	No Module
15	MODULE_ABSENT	No Module
sfc0-f13sib7:		
0	MODULE_ABSENT	No Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	CABLE_CONNECTED	CXP Module
5	CABLE_CONNECTED	CXP Module
6	MODULE_ABSENT	No Module
7	MODULE_ABSENT	No Module
8	MODULE_ABSENT	No Module
9	CABLE_CONNECTED	CXP Module
10	MODULE_ABSENT	No Module
11	MODULE_ABSENT	No Module
12	MODULE_ABSENT	No Module

```

13      MODULE_ABSENT      No Module
14      MODULE_ABSENT      No Module
15      CABLE_CONNECTED    CXP Module
sfc0-f13sib8:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      CABLE_CONNECTED    CXP Module
3      CABLE_CONNECTED    CXP Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      CABLE_CONNECTED    CXP Module
9      MODULE_ABSENT      No Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     MODULE_ABSENT      No Module
sfc0-f13sib9:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      MODULE_ABSENT      No Module
9      CABLE_CONNECTED    CXP Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     CABLE_CONNECTED    CXP Module
sfc0-f13sib10: SIB slot invalid
sfc0-f13sib11: SIB slot empty
sfc0-f13sib12: SIB slot empty
sfc0-f13sib13: SIB slot invalid
sfc0-f13sib14: SIB slot invalid
sfc0-f13sib15: SIB slot invalid

```

### show chassis fabric optics lcc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric topology lcc 7
lcc7-re0:
-----
Port      Cable state      Module Type
lcc7-sib0:
0      CABLE_CONNECTED    CXP Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      CABLE_CONNECTED    CXP Module
7      MODULE_ABSENT      No Module
lcc7-sib1:
0      CABLE_CONNECTED    CXP Module

```

1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	MODULE_ABSENT	No Module
5	MODULE_ABSENT	No Module
6	CABLE_CONNECTED	CXP Module
7	MODULE_ABSENT	No Module
1cc7-sib2:		
0	CABLE_CONNECTED	CXP Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	MODULE_ABSENT	No Module
5	MODULE_ABSENT	No Module
6	CABLE_CONNECTED	CXP Module
7	MODULE_ABSENT	No Module
1cc7-sib3:		
0	CABLE_CONNECTED	CXP Module
1	MODULE_ABSENT	No Module
2	MODULE_ABSENT	No Module
3	MODULE_ABSENT	No Module
4	MODULE_ABSENT	No Module
5	MODULE_ABSENT	No Module
6	CABLE_CONNECTED	CXP Module
7	MODULE_ABSENT	No Module
1cc7-sib4: SIB slot empty		



## show chassis fabric optical-links

**Syntax (TX Matrix Plus Router with 3D SIBs)** show chassis fabric optical-links  
<detail>  
<lcc number>

**Release Information** Command introduced in Junos OS Release 13.1.

**Description** Display optical link connectivity and its current status. Display the status of all the optical links on online SIBs along with the state of optical-link, high-speed link status and mapped FPCs. Show the cable connectivity based on mode of operation of line-card chassis (LCC) and flag the problems with cable connectivity, if any.

**Options** **detail**—(TX Matrix Plus routers with 3D SIBs only) (Optional) Display detailed output for optical link connectivity and current status of all the optical links. Also, highlight the FPC slots that are impacted in case of an error on a particular optical link.

**lcc number**—(Optional) Display information for the LCC that is connected to the TX Matrix Plus router. Replace **number** with the following values depending on the LCC configuration:

- From 0 through 7 on T1600 routers connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6 on T4000 routers connected to TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [show chassis fabric optics on page 692](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show chassis fabric optical-links on page 704](#)  
[show chassis fabric optical-links detail on page 706](#)  
[show chassis fabric optical-links lcc on page 707](#)

**Output Fields** [Table 25 on page 703](#) lists the output fields for the **show chassis fabric optical-links** command. Output fields are listed in the approximate order in which they appear.

*Table 25: show chassis fabric optical-links Output Fields*

Field Name	Field Description
Lcc optical link	Line Card chassis links are shown as <b>LCCxx_SIByy_CXPzz</b> , where xx is LCC number, yy is the LCC SIB slot ID, and zz is the optics number within that LCC SIB.

Table 25: show chassis fabric optical-links Output Fields (continued)

Field Name	Field Description
<b>Link</b>	<p>The status of the optical link.</p> <ul style="list-style-type: none"> <li>• <b>-----&lt;?&gt;-----</b> Transceiver is not inserted in the SIB or not recognized.</li> <li>• <b>-----&lt;U&gt;-----</b> The connected transceiver is not supported.</li> <li>• <b>-----&lt;F&gt;-----</b> The connected transceiver is faulty or it has exceeded the operating limits.</li> <li>• <b>-----&lt; &gt;-----</b> The transceiver is inserted, but the cable is not connected. Loss of Light (LOL) is observed in the optics.</li> <li>• <b>-----&lt;///&gt;-----</b> The transceiver is not connected to the correct port. The link status indicates where it is wrongly connected.</li> <li>• <b>-----&lt;O&gt;-----</b> Indicates a bad or dirty cable or an issue with transceiver. Some channels show error.</li> <li>• <b>-----&lt;E&gt;-----</b> The cable is connected properly but high-speed link errors are present on this link.</li> <li>• <b>-----&lt;L&gt;-----</b> A loopback transceiver is inserted.</li> <li>• <b>-----&lt;X&gt;-----</b> Error due to high-speed links links being down.</li> <li>• <b>-----&lt; &gt;-----</b> The cable is connected but optical link is disabled.</li> <li>• <b>-----&lt; &gt;-----</b> The cable is connected properly with the requisite power settings. High-speed links on the port are up and running.</li> </ul>
<b>Sc optical link</b>	<p>Switch-fabric chassis links are shown as <b>SFCa_F13bb_LCCcc_CXPdd</b>, where <i>a</i> is the SFC chassis 0, <i>bb</i> is F13 SIB slot, <i>cc</i> is the LCC this cable is connected to, and <i>dd</i> is the optics number within that F13 SIB.</p>
<b>State</b>	<p>Link status:</p> <ul style="list-style-type: none"> <li>• <b>Up</b>—Link is online and fully functional.</li> <li>• <b>Connected</b>—The cable is connected but optical link is disabled.</li> <li>• <b>Link Down</b>—High speed links are down in the system.</li> <li>• <b>Loopback</b>—A loopback transceiver is inserted in the system.</li> <li>• <b>Link Error</b>—The cable is properly connected but high speed link error exists in the system.</li> <li>• <b>Optical Error</b>—Indicates a bad cable.</li> <li>• <b>Mis connected</b>—The transceiver is not connected to correct port.</li> <li>• <b>Module Absent</b>—The transceiver is not inserted in the SIB or the transceiver is not recognized.</li> <li>• <b>Not Connected</b>—The transceiver is inserted but cable is not connected to the system.</li> <li>• <b>Faulty Module</b>—The connected transceiver is faulty or it has exceeded the operating limits.</li> </ul>

## Sample Output

### show chassis fabric optical-links

```
user@host> show chassis fabric optical-links
```

Lcc optical link State	Link	Sc optical link
LCC02_SIB00_CXP00 Module Absent	-----<?>-----	SFC0_F1300_CXP08
LCC02_SIB00_CXP01 Up	----->	SFC0_F1300_CXP09
LCC02_SIB00_CXP01 Up	<-----	SFC0_F1300_CXP09
LCC02_SIB00_CXP02 Up	----->	SFC0_F1300_CXP10
LCC02_SIB00_CXP02 Up	<-----	SFC0_F1300_CXP10
LCC02_SIB00_CXP03 Module Absent	-----<?>-----	SFC0_F1300_CXP11
LCC02_SIB00_CXP04 Module Absent	-----<?>-----	SFC0_F1300_CXP12
LCC02_SIB00_CXP05 Module Absent	-----<?>-----	SFC0_F1300_CXP13
LCC02_SIB00_CXP06 Module Absent	-----<?>-----	SFC0_F1300_CXP14
LCC02_SIB00_CXP06 Module Absent	-----<?>-----	SFC0_F1300_CXP15
LCC04_SIB00_CXP00 Up	----->	SFC0_F1301_CXP00
LCC04_SIB00_CXP00 Up	<-----	SFC0_F1301_CXP00
LCC05_SIB00_CXP00 Up	----->	SFC0_F1301_CXP01
LCC05_SIB00_CXP00 Up	<-----	SFC0_F1301_CXP01
LCC04_SIB00_CXP02 Up	----->	SFC0_F1301_CXP02
LCC04_SIB00_CXP02 Up	<-----	SFC0_F1301_CXP02
LCC05_SIB00_CXP02 Up	----->	SFC0_F1301_CXP03
LCC05_SIB00_CXP02 Up	<-----	SFC0_F1301_CXP03
LCC04_SIB00_CXP04 Up	----->	SFC0_F1301_CXP04
LCC04_SIB00_CXP04 Up	<-----	SFC0_F1301_CXP04
LCC05_SIB00_CXP04 Up	----->	SFC0_F1301_CXP05
LCC05_SIB00_CXP04 Up	<-----	SFC0_F1301_CXP05
LCC04_SIB00_CXP06 Up	----->	SFC0_F1301_CXP06
LCC04_SIB00_CXP06 Up	<-----	SFC0_F1301_CXP06
LCC05_SIB00_CXP06 Up	----->	SFC0_F1301_CXP07
LCC05_SIB00_CXP06 Up	<-----	SFC0_F1301_CXP07
LCC06_SIB00_CXP00 Up	----->	SFC0_F1301_CXP08
LCC06_SIB00_CXP00 Up	<-----	SFC0_F1301_CXP08
LCC07_SIB00_CXP00 Up	----->	SFC0_F1301_CXP09
LCC07_SIB00_CXP00	<-----	SFC0_F1301_CXP09

```

Up
LCC06_SIB00_CXP02 -----> SFC0_F1301_CXP10
Up
LCC06_SIB00_CXP02 <----- SFC0_F1301_CXP10
Up
LCC07_SIB00_CXP02 -----> SFC0_F1301_CXP11
Up
LCC07_SIB00_CXP02 <----- SFC0_F1301_CXP11
Up
LCC06_SIB00_CXP04 -----> SFC0_F1301_CXP12
Up
LCC06_SIB00_CXP04 <----- SFC0_F1301_CXP12
Up
LCC07_SIB00_CXP04 -----> SFC0_F1301_CXP13
Up
LCC07_SIB00_CXP04 <----- SFC0_F1301_CXP13
Up
LCC06_SIB00_CXP06 -----> SFC0_F1301_CXP14
Up
LCC06_SIB00_CXP06 <----- SFC0_F1301_CXP14
Up
LCC07_SIB00_CXP06 -----> SFC0_F1301_CXP15
Up
LCC07_SIB00_CXP06 <----- SFC0_F1301_CXP15
Up
LCC02_SIB01_CXP07 -----> SFC0_F1303_CXP15
Up
LCC02_SIB01_CXP07 <----- SFC0_F1303_CXP15
Up
LCC04_SIB01_CXP00 -----> SFC0_F1304_CXP00
Up
LCC04_SIB01_CXP00 <----- SFC0_F1304_CXP00
Up
LCC05_SIB01_CXP00 -----> SFC0_F1304_CXP01
Up
LCC05_SIB01_CXP00 <----- SFC0_F1304_CXP01
Up
LCC04_SIB01_CXP02 -----> SFC0_F1304_CXP02
Up
LCC04_SIB01_CXP02 <----- SFC0_F1304_CXP02
Up
..

```

## Sample Output

### show chassis fabric optical-links detail

```

user@host> show chassis fabric optical-links detail
Lcc optical link          Link          Sc optical link
State
LCC02_SIB00_CXP00 ----- SFC0_F1300_CXP08
Module Absent
Mapped FPC Slot 23 (Plane 0)
HSL2 Channel 0 status Reset
HSL2 Channel 1 status Reset

LCC02_SIB00_CXP01 -----> SFC0_F1300_CXP09
Up
Mapped FPC Slot 22 (Plane 0)
HSL2 Channel 0 status Up
HSL2 Channel 1 status Up

```

```

LCC02_SIB00_CXP01 <----- SFC0_F1300_CXP09
Up
Mapped FPC Slot 22 (Plane 0)
HSL2 Channel 0 status Up
HSL2 Channel 1 status Up

LCC02_SIB00_CXP02 -----> SFC0_F1300_CXP10
Up
Mapped FPC Slot 21 (Plane 0)
HSL2 Channel 0 status Up
HSL2 Channel 1 status Up

```

## Sample Output

### show chassis fabric optical-links lcc

```
user@host> show chassis fabric optical-links lcc 0
```

Lcc optical link State	Link	Sc optical link
LCC00_SIB00_CXP00 Module Absent	-----	SFC0_F1300_CXP08
LCC00_SIB00_CXP01 Up	----->	SFC0_F1300_CXP09
LCC00_SIB00_CXP01 Up	<-----	SFC0_F1300_CXP09
LCC00_SIB00_CXP02 Up	----->	SFC0_F1300_CXP10
LCC00_SIB00_CXP02 Up	<-----	SFC0_F1300_CXP10
LCC00_SIB00_CXP03 Module Absent	-----	SFC0_F1300_CXP11
LCC00_SIB00_CXP04 Module Absent	-----	SFC0_F1300_CXP12
LCC00_SIB00_CXP05 Module Absent	-----	SFC0_F1300_CXP13

## show chassis fabric plane

---

<b>List of Syntax</b>	<a href="#">Syntax on page 708</a> <a href="#">Syntax (TX Matrix Plus Router) on page 708</a> <a href="#">Syntax (MX Series Routers) on page 708</a> <a href="#">Syntax (MX2010, MX2020, MX10008, and MX2008 3D Universal Edge Routers) on page 708</a> <a href="#">Syntax (EX9253 Switches) on page 708</a>
<b>Syntax</b>	show chassis fabric plane
<b>Syntax (TX Matrix Plus Router)</b>	show chassis fabric plane <detail   extensive   terse> <lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (MX Series Routers)</b>	show chassis fabric plane <extended> <detail   extensive   terse> <all-members> <local> <member <i>member-id</i> >
<b>Syntax (MX2010, MX2020, MX10008, and MX2008 3D Universal Edge Routers)</b>	show chassis fabric plane
<b>Syntax (EX9253 Switches)</b>	show chassis fabric plane
<b>Release Information</b>	Command introduced in Junos OS Release 8.0. Command introduced in Junos OS Release 9.4 for EX Series switches. detail, extensive, lcc, sfc, and terse options introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers. <b>extended</b> option introduced in Junos OS Release 16.1 for MX2020 and MX2010 Routers. Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers. Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers. Command introduced in Junos OS Release 18.2 for MX10008 3D Universal Edge Routers. Command introduced in Junos OS Release 18.2 for EX9253 Switches.
<b>Description</b>	(TX Matrix Plus router, T4000, T1600, M120, and MX Series routers and EX8200 switches only) On the M120 router, display the state of all fabric plane connections to the Forwarding Engine Boards (FEBs). On MX Series routers, display the state of all fabric plane connections to the Dense Port Concentrators (DPCs) and Packet Forwarding Engines (PFEs) on the Flexible PIC Concentrators (FPCs). On the TX Matrix Plus router,

and on T1600 or T4000 routers in a routing matrix, display the state of the fabric management plane and the logical planes on the switch-fabric chassis (SFC) and line-card chassis (LCC). On EX8200 switches, display the state of all fabric planes. This command can be used on the master Routing Engine only.

**Options** **none**—(MX2010, MX2020, and MX2008 Routers only) (Optional) Display the state of the fabric management plane.

**extended**—(MX2020, MX2010, and MX2008 Routers only) (Optional) Display the state of the fabric management planes (all 24 fabric planes).

**detail**—(TX Matrix Plus routers, T1600 or T4000 routers in a routing matrix, and MX Series routers only) (Optional) Display detailed output for the fabric management plane. Show Switch Interface Board (SIB) states for the TXP-F13 SIB and the TXP-F2S SIB.

**extensive**—(TX Matrix Plus routers, T1600 or T4000 routers in a routing matrix, and MX Series routers only) (Optional) Display extensive output for the fabric management plane.

**terse**—(TX Matrix Plus routers and MX Series routers only) (Optional) Display terse output for the fabric management plane.

**all-members**—(MX Series routers only) (Optional) Display the state of all fabric plane connections on all members of the Virtual Chassis configuration.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display the state of all fabric plane connections on the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display the state of all fabric plane connections on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**sfc *number***—(TX Matrix Plus router only) (Optional) Show information about the TX Matrix Plus router (SFC). Replace *number* with 0.

**Required Privilege Level** view

**Related Documentation**

- [request chassis fabric plane](#)
- [show chassis fabric plane-location on page 762](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

- [show chassis fabric plane \(M120 Router\) on page 717](#)
- [show chassis fabric plane \(MX240 Router\) on page 718](#)
- [show chassis fabric plane \(MX10008 Router\) on page 719](#)
- [show chassis fabric plane \(MX480 Router\) on page 720](#)
- [show chassis fabric plane \(MX960 Router\) on page 721](#)
- [show chassis fabric plane \(MX240 with AS MLC Modular Carrier Card\) on page 722](#)
- [show chassis fabric plane \(MX480 with AS MLC Modular Carrier Card\) on page 723](#)
- [show chassis fabric plane \(MX480 Router with MPC4E\) on page 724](#)
- [show chassis fabric plane \(MX960 with AS-MLC Modular Carrier Card\) on page 726](#)
- [show chassis fabric plane \(MX2010 Router\) on page 728](#)
- [show chassis fabric plane \(MX2020 Router\) on page 732](#)
- [show chassis fabric plane \(MX2020 Router with MPC4E\) on page 737](#)
- [show chassis fabric plane \(MX2020 Routers with SFB2\) on page 740](#)
- [show chassis fabric plane \(MX2008\) on page 743](#)
- [show chassis fabric plane \(TX Matrix Plus Router\) on page 745](#)
- [show chassis fabric plane \(TX Matrix Plus Router with 3D SIBs\) on page 745](#)
- [show chassis fabric plane detail \(TX Matrix Plus Router\) on page 746](#)
- [show chassis fabric plane extensive \(TX Matrix Plus Router \) on page 747](#)
- [show chassis fabric plane extensive \(TX Matrix Plus Router with 3D SIBs\) on page 749](#)
- [show chassis fabric plane terse \(TX Matrix Plus Router\) on page 751](#)
- [show chassis fabric plane terse \(TX Matrix Plus Router with 3D SIBs\) on page 752](#)
- [show chassis fabric plane lcc \(TX Matrix Plus Router\) on page 753](#)
- [show chassis fabric plane lcc \(TX Matrix Plus Router with 3D SIBs\) on page 753](#)
- [show chassis fabric plane sfc \(TX Matrix Plus Router\) on page 753](#)
- [show chassis fabric plane sfc \(TX Matrix Plus Router with 3D SIBs\) on page 753](#)
- [show chassis fabric plane \(T1600 Router\) on page 753](#)
- [show chassis fabric plane extensive \(T1600 Router\) on page 754](#)
- [show chassis fabric plane detail \(T1600 Router\) on page 756](#)
- [show chassis fabric plane \(EX8200 Switch\) on page 756](#)
- [show chassis fabric plane \(EX9253 Switch\) on page 757](#)

**Output Fields** Table 26 on page 710 lists the output fields for the **show chassis fabric plane** command. Output fields are listed in the approximate order in which they appear.

*Table 26: show chassis fabric plane Output Fields*

Field Name	Field Description	Level of output
Plane	(TX Matrix Plus, MX Series routers, M120 routers, and EX8200 switches only) Number of the plane.	none



Table 26: show chassis fabric plane Output Fields (continued)

Field Name	Field Description	Level of output
Plane state	<p>(MX Series and M120 routers and EX8200 switches only) State of each plane:</p> <ul style="list-style-type: none"> <li>ACTIVE—SIB is operational and running.</li> </ul> <p><b>NOTE:</b> On the Enhanced MX SCB with MPCs, a maximum of 4 planes are operational and running. On all the other SCBs with MPCs, all the planes are operational and running.</p> <ul style="list-style-type: none"> <li>FAULTY— SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> <li>On-board fabric ASIC is not operational.</li> <li>Fiber optic connector faults.</li> <li>FPC connector faults.</li> <li>SIB midplane connector faults.</li> </ul> </li> </ul> <p>(MX2010, MX2020, MX10003, and MX2008 Routers only) State of each plane:</p> <ul style="list-style-type: none"> <li>ACTIVE—SFB is operational and running.</li> <li>OFFLINE— SFB is in offline.</li> </ul>	none
FEB	<p>(M120 routers only) FEB number and state of links to each FEB:</p> <ul style="list-style-type: none"> <li>Link error—Link between SIB and FPC is not operational.</li> <li>Links ok—Link between SIB and FPC is active.</li> <li>Unused—No FPC is present.</li> </ul>	none
FPC	<p>(MX Series routers only) Slot number of each Dense Port Concentrator (DPC) or Flexible PIC Concentrator (FPC). An FPC occupies two DPC slots on an MX Series router. The interface corresponds to the lowest numbered DPC slot for which the FPC is installed.</p>	none

Table 26: show chassis fabric plane Output Fields (continued)

Field Name	Field Description	Level of output
PFE	<p>(MX Series and M120 routers only) Slot number of each Packet Forwarding Engine and the state of the links to the DCP: <b>Links ok</b>, <b>Link error</b>, or <b>Unused</b>. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> <li>• <b>Links ok</b>: Link between SIB and FPC is active.</li> <li>• <b>Link error</b>: Link between SIB and FPC is not operational.</li> <li>• <b>Unused</b>: No FPC is present.</li> </ul> <p>(On MX240 and MX480 routers with AS MLC modular carrier card and MPC4E only) Indicates that the link between the fabric plane and the hardware link on the modular carrier card or MPC4E is not operational.</p> <p>(MX2010, MX2020, and MX2008 routers only) Slot number of each Packet Forwarding Engine and the state of the links to the DPC: <b>Links ok</b>, <b>Link error</b>, or <b>Unused</b>. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> <li>• <b>Links ok</b>: Link between SFB and FPC is active.</li> <li>• <b>Link error</b>: Link between SFB and FPC is not operational.</li> <li>• <b>Unused</b>: No FPC is present.</li> </ul>	none
State	<p>(TX Matrix Plus, and T1600 or T4000 routers in a routing matrix only)—State of the fabric plane:</p> <ul style="list-style-type: none"> <li>• <b>Online</b>: Fabric plane is operational and running and links on the SIB are operational.</li> <li>• <b>Offline</b>: Fabric plane state is <b>Offline</b> because the plane does not have four or more F2S and one F13 online.</li> <li>• <b>Empty</b>: Fabric plane state is <b>Empty</b> if all SIBs in the plane are absent.</li> <li>• <b>Spare</b>: Fabric plane is redundant and can be operational if the operational fabric plane encounters an error.</li> <li>• <b>Check</b>: Fabric plane is in alarmed state due to the following reason and the cause of the error must be resolved: <ul style="list-style-type: none"> <li>• One or more SIBs (belonging to the fabric plane) in the <b>Online</b> or <b>Spare</b> states has transitioned to the <b>Check</b> state. <b>Check</b> state of the SIB can be caused by link errors or destination errors.</li> </ul> </li> <li>• <b>Fault</b>: Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the <b>Fault</b> state. A SIB can be in the <b>Fault</b> state because of the following reasons: <ul style="list-style-type: none"> <li>• On-board fabric ASIC is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> <li>• Link errors have exceeded the threshold.</li> </ul> </li> </ul>	none
Link Errors	<p>(TX Matrix Plus routers with 3D SIBs only) indicate the number of links which are marked faulty because the errors on them have crossed threshold.</p>	none

Table 26: show chassis fabric plane Output Fields (continued)

Field Name	Field Description	Level of output
<b>Cable Errors</b>	(TX Matrix Plus routers with 3D SIBs only) Indicate the number of mandatory cables that are not connected, or in up state for that plane	none
<b>Destination Errors</b>	(TX Matrix Plus routers with 3D SIBs only) Indicates the number of destinations that are not reachable on this plane.	none
<b>Uptime</b>	(TX Matrix Plus, and T1600 or T4000 routers in a routing matrix only)—Time the fabric plane has been up and running.	none

#### Fabric Management Plane State Output Fields for the show chassis fabric plane extensive Command on a TX Matrix Plus Router

<b>PLANE <i>number</i></b>	<p>State of the fabric plane:</p> <ul style="list-style-type: none"> <li>• <b>Online:</b> Fabric plane is operational and running and links on the SIB are operational.</li> <li>• <b>Offline:</b> Fabric plane state is <b>Offline</b> because the plane does not have 4 or more F2S and 1 F13 online.</li> <li>• <b>Empty:</b> Fabric plane state is <b>Empty</b> if all SIBs in the plane are absent.</li> <li>• <b>Spare:</b> Fabric plane is redundant and can be operational if the operational fabric plane encounters an error.</li> <li>• <b>Check:</b> Fabric plane is in alarmed state due to the following reasons and the cause of the error must be resolved: <ul style="list-style-type: none"> <li>• One or more SIBs (belonging to the fabric plane) in the <b>Online</b> or <b>Spare</b> states has transitioned to the <b>Check</b> state. <b>Check</b> state of the SIB can be caused because of link errors or destination errors.</li> </ul> </li> <li>• <b>Fault:</b> Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the <b>Fault</b> state. A SIB can be in the <b>Fault</b> state because of the following reasons: <ul style="list-style-type: none"> <li>• On-board fabric ASIC is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> <li>• Link errors have exceeded the threshold.</li> </ul> </li> </ul>	<b>extensive</b>
----------------------------	---	------------------

Table 26: show chassis fabric plane Output Fields (continued)

Field Name	Field Description	Level of output
SIB F13/F2S slot-number	<p>State of the TXP-F13 SIB or TXP-F2S SIB:</p> <ul style="list-style-type: none"> <li>• <b>Activating</b>—Transitional state when the SIB is transitioning to the <b>Online</b> or <b>Spare</b> state.</li> <li>• <b>Deactivating</b>—Transitional state when the SIB is going offline.</li> <li>• <b>Online</b>—SIB is operational and running.</li> <li>• <b>Offline</b>—SIB is powered down.</li> <li>• <b>Spare</b>—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic.</li> <li>• <b>Empty</b>—No SIB is present.</li> <li>• <b>Fault</b>—SIB is in alarmed state because of the following reasons and the cause of the error must be resolved: <ul style="list-style-type: none"> <li>• On-board fabric ASIC is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> <li>• Link errors have exceeded the threshold</li> </ul> </li> <li>• <b>Check</b>—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is <b>Online</b> or <b>Spare</b> can transition to the <b>Check</b> state.</li> </ul> <p><b>NOTE:</b> If a SIB is not inserted properly, the SIB cannot transition to the <b>Online</b> or <b>Spare</b> state, and therefore cannot transition to the <b>Check</b> state.</p>	extensive
SIB F13 slot-number Odd/Even	<p>State of the TXP-F13 SIB even and odd port connection optical links from the TX Matrix Plus router (SFC) to the router (LCC) in the routing matrix. The left four ports on the SFC are labeled <b>Even</b> and provide connections to one even-numbered LCC—LCC0 or LCC2. The right four ports on the SFC are labeled <b>Odd</b> and provide connections to one odd-numbered LCC—LCC1 or LCC3.</p>	extensive
LCC number, SIB slot-number	<p>State of the SIB on the LCC that is connected to the <b>Even</b> or <b>Odd</b> port on the TXP-F13 SIB faceplate:</p> <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Links between the TXP-F13 SIB on the SFC and the LCC are active.</li> <li>• <b>Links error</b>—One or more links between the TXP-F13 SIB on the SFC and the LCC, have experienced an error, but the affected links remain operational.</li> <li>• <b>Unused</b>—No SIB is present.</li> </ul>	extensive

Table 26: *show chassis fabric plane Output Fields (continued)*

Field Name	Field Description	Level of output
<b>SG number Port number</b>	State of the SG chip ports on the LCC: <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Link is active.</li> <li>• <b>Link error</b>—Link is operational with errors.</li> <li>• <b>Link error crc saturated</b>—CRC has exceeded the rate threshold and reached saturation without optical issues—that is, a cable has not been cut, removed, or otherwise experienced an error.</li> <li>• <b>Link error crc saturated with optical errors</b>—CRC has exceeded the rate threshold and reached saturation with optical issues—that is, a cable has been cut, removed, or otherwise experienced an error.</li> <li>• <b>Unused</b>—Port is not in use.</li> </ul>	<b>extensive</b>
<b>SIB F2S slot-number</b>	State of the intra-chassis links between the TXP-F2S and TXP-F13 SIBs.	<b>extensive</b>

Fabric Management SIB State Output Fields for the *show chassis fabric plane extensive* Command on a TX Matrix Plus Router

Table 26: show chassis fabric plane Output Fields (continued)

Field Name	Field Description	Level of output
<b>SIB slot-number</b>	<p>State of the SIBs on the T1600/T4000 router (LCC) in the routing matrix:</p> <ul style="list-style-type: none"> <li>• <b>Activating</b>—Transitional state when the SIB is coming online.</li> <li>• <b>Deactivating</b>—Transitional state when the SIB is going offline.</li> <li>• <b>Connected</b>—SIBs on an LCC are connected and trained, but are either not online or are spare, because the plane on the the TX Matrix Plus router (SFC) is still offline. The LCC SIB transitions to the <b>Connected</b> state when the F13 SIB to which it connects is online but the SFC plane (to which the LCC SIB connects) is offline for some reason; for instance, when there are insufficient number of F2 SIBs in the plane.</li> <li>• <b>Disconnected</b>—If an F13 SIB on the TX Matrix Plus router (SFC) goes offline, then the SIBs on the LCCs connected to the F13 SIB get disconnected. On the TX Matrix Plus router with 3D SIBs, the LCC SIB is also disconnected if the F13 SIB is online, but none of the cables are connected or trained. The <b>Disconnected</b> state is valid only for SIBs on an LCC. An LCC SIB transitions to the <b>Disconnected</b> state when the F13 SIB to which it connects goes <b>Offline</b>, irrespective of the state of the SFC plane. <b>SFC Error</b>—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the <b>Fault</b> state (because of link errors, for instance), and if an LCC SIB connected to the F13 SIB comes online, the LCC SIB transitions to the <b>SFC Error</b> state. This state indicates that the F13 SIB to which the LCC SIB is connected has errors. <b>NOTE:</b> The <b>Connected</b>, <b>Disconnected</b>, and <b>SFC Error</b> states are applicable only to the SIBs on an LCC.</li> <li>• <b>Online</b>—SIB is operational and running.</li> <li>• <b>Offline</b>—SIB is powered down.</li> <li>• <b>Spare</b>—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic.</li> <li>• <b>Empty</b>—No SIB is present.</li> <li>• <b>Fault</b>—SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> <li>• On-board fabric ASIC is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> <li>• Link errors have exceeded the threshold</li> </ul> </li> <li>• <b>Check</b>—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is <b>Online</b> or <b>Spare</b> can transition to the <b>Check</b> state. <b>NOTE:</b> If a SIB is not inserted properly, the SIB cannot transition to the <b>Online</b> or <b>Spare</b> state, and therefore cannot transition to the <b>Check</b> state.</li> </ul>	<b>extensive</b>

Table 26: show chassis fabric plane Output Fields (continued)

Field Name	Field Description	Level of output
<b>LCC SIB Link State</b>	State of the LCC SIB link: <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Link is active.</li> <li>• <b>Links error</b>—A link error has occurred, but the link remains operational.</li> <li>• <b>Unused</b>—SIB is not in use.</li> </ul>	<b>extensive</b>
<b>SG number Port number</b>	State of the SG chip ports on the LCC: <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Link is active.</li> <li>• <b>Link error</b>—Link is operational with errors.</li> <li>• <b>Link error crc saturated</b>—CRC has exceeded the rate threshold and reached saturation without optical issues—that is, a cable has not been cut, removed, or otherwise experienced an error.</li> <li>• <b>Link error crc saturated with optical errors</b>—CRC has exceeded the rate threshold and reached saturation with optical issues—that is, a cable has been cut, removed, or otherwise experienced an error.</li> <li>• <b>Unused</b>—Port is not in use.</li> </ul>	<b>extensive</b>

## Sample Output

### show chassis fabric plane (M120 Router)

```

user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
Plane state: ACTIVE
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
Plane 1
Plane state: ACTIVE
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
Plane 2
Plane state: ACTIVE
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
Plane 3
Plane state: ACTIVE
FEB 0: Links ok

```

```
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
```

### show chassis fabric plane (MX240 Router)

```
user@host> show chassis fabric plane
Plane 0
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 4
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
```



```

        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 5
  Plane state: SPARE
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 6
  Plane state: SPARE
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 7
  Plane state: SPARE
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok

```

### show chassis fabric plane (MX10008 Router)

```
user@host> show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
  Plane state: ACTIVE
```

```
    FPC 1
```

```
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
```

```
    FPC 5
```

```
      PFE 0 :Links ok
```

```

PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
PFE 4 :Links ok
PFE 5 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok

```

#### show chassis fabric plane (MX480 Router)

```

user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 1

```

```

        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 4
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 5
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 6
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 7
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok

```

#### show chassis fabric plane (MX960 Router)

```

user@host> show chassis fabric plane
Plane 0
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok

```

```
        FPC 2
          PFE 0 :Links ok
          PFE 1 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
```

#### show chassis fabric plane (MX240 with AS MLC Modular Carrier Card)

In the following output, FPC 1 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 1
  Plane state: ACTIVE
    Plane state: ACTIVE
      FPC 1
        PFE 0 :Links ok
      FPC 2
        PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 3
  Plane state: ACTIVE
    Plane state: ACTIVE
      FPC 1
        PFE 0 :Links ok
      FPC 2
        PFE 0 :Links ok
Plane 4
```

```

Plane state: ACTIVE
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Unused
    FPC 2
      PFE 0 :Links ok
Plane 6
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Unused
    FPC 2
      PFE 0 :Links ok

```

#### show chassis fabric plane (MX480 with AS MLC Modular Carrier Card)

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```

user@host>show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 3
  Plane state: ACTIVE

```

```
FPC 2
  PFE 0 :Links ok
FPC 4
  PFE 0 :Links ok
  PFE 2 :Links ok
FPC 5
  PFE 0 :Links ok
Plane 4
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Unused
Plane 6
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Unused
```

#### show chassis fabric plane (MX480 Router with MPC4E)

```
user@host > show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
```

```
        PFE 0 :Links ok
        PFE 1 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 4
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
```

```

        PFE 1 :Links ok
Plane 5
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 6
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 7
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
```

#### show chassis fabric plane (MX960 with AS-MLC Modular Carrier Card)

In the following output, FPC 1 is a modular carrier card.

```
user@host>show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 4
```



```

    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 5
    PFE 0 :Links ok
  FPC 8
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 5
      PFE 0 :Links ok
    FPC 8
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 5
      PFE 0 :Links ok
    FPC 8
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
FPC 5
  PFE 0 :Links ok
FPC 8
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
Plane 4
Plane state: SPARE
FPC 0
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 1
  PFE 0 :Links ok
FPC 4
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 5
  PFE 0 :Links ok
FPC 8
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
Plane 5
Plane state: SPARE
FPC 0
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 1
  PFE 0 :Links ok
FPC 4
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 5
  PFE 0 :Links ok
FPC 8
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
```

#### show chassis fabric plane (MX2010 Router)

```
user@host>show chassis fabric plane
Fabric management PLANE state
Plane 0
Plane state: ACTIVE
FPC 0
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 1
  PFE 0 :Links ok
FPC 2
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 3
```

```

        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 7
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 8
        PFE 0 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 4
      PFE 0 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
    FPC 7
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 8
      PFE 0 :Links ok
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
```

```

        PFE 0 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 7
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 8
        PFE 0 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
Plane 3
    Plane state: OFFLINE
Plane 4
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 1
        PFE 0 :Links ok
    FPC 2
        PFE 0 :Links ok
PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 7
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 8
        PFE 0 :Links ok
    FPC 9
        PFE 0 :Links ok

```

```

    PFE 1 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 4
      PFE 0 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 7
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 8
      PFE 0 :Links ok
    FPC 9
      PFE 0 :Links ok
    PFE 1 :Links ok
Plane 6
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 4
      PFE 0 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 7
      PFE 0 :Links ok
```

```
        PFE 1 :Links ok
    FPC 8
        PFE 0 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
Plane 7
Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 1
        PFE 0 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 7
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 8
        PFE 0 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
```

#### show chassis fabric plane (MX2020 Router)

```
user@host>show chassis fabric plane
Fabric management PLANE state
Plane 0
Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
```

```
FPC 3
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 4
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 5
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 6
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 7
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 8
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 9
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 10
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 11
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 12
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 13
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 14
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 15
```

```

        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 16
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 17
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 18
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 1
Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 6
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok

```



```
FPC 7
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 8
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 9
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 10
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 11
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 12
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 13
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 14
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 15
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 16
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 17
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 18
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 19
```

```

        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 2
Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 3
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 4
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 5
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 6
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 7
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 8
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 9
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 10
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok

```

```

FPC 11
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 12
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 13
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 14
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 15
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 16
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 17
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 18
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 19
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
Plane 3
...
```

#### show chassis fabric plane (MX2020 Router with MPC4E)

```

user@host > show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 9
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 10
```

```

        PFE 0 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 10
        PFE 0 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 10
        PFE 0 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 10
        PFE 0 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok

```

```
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 4
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 10
      PFE 0 :Links ok
    FPC 14
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 10
      PFE 0 :Links ok
    FPC 14
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 6
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 10
      PFE 0 :Links ok
    FPC 14
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
```

```
FPC 9
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 10
  PFE 0 :Links ok
FPC 14
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 19
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
```

### show chassis fabric plane (MX2020 Routers with SFB2)

```
user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
    FPC 7
      PFE 0 :Links ok
    FPC 11
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 12
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 13
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 18
      PFE 0 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
    PFE 2 :Links ok
```

```
    PFE 3 :Links ok
FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 3
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 6
    PFE 0 :Links ok
FPC 7
    PFE 0 :Links ok
FPC 11
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 12
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 13
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 18
    PFE 0 :Links ok
FPC 19
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 2
Plane state: ACTIVE
FPC 0
    PFE 0 :Links ok
FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 3
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 6
    PFE 0 :Links ok
FPC 7
    PFE 0 :Links ok
FPC 11
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 12
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 13
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 18
    PFE 0 :Links ok
FPC 19
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
```

```

        PFE 3 :Links ok
...
Plane 18
    Plane state: OFFLINE
Plane 19
    Plane state: OFFLINE
Plane 20
    Plane state: OFFLINE
Plane 21
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
            PFE 3 :Links ok
        FPC 2
            PFE 0 :Links ok
            PFE 1 :Links ok
        FPC 3
            PFE 0 :Links ok
            PFE 1 :Links ok
        FPC 6
            PFE 0 :Links ok
        FPC 7
            PFE 0 :Links ok
        FPC 11
            PFE 0 :Links ok
            PFE 1 :Links ok
        FPC 12
            PFE 0 :Links ok
            PFE 1 :Links ok
        FPC 13
            PFE 0 :Links ok
            PFE 1 :Links ok
        FPC 18
            PFE 0 :Links ok
        FPC 19
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
            PFE 3 :Links ok
Plane 22
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
            PFE 3 :Links ok
        FPC 2
            PFE 0 :Links ok
            PFE 1 :Links ok
        FPC 3
            PFE 0 :Links ok
            PFE 1 :Links ok
        FPC 6
            PFE 0 :Links ok
        FPC 7

```



```

        PFE 0 :Links ok
    FPC 11
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 12
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 13
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 18
        PFE 0 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 23
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
    PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
    FPC 7
        PFE 0 :Links ok
    FPC 11
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 12
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 13
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 18
        PFE 0 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok

```

### show chassis fabric plane (MX2008)

```

user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
    Plane state: OFFLINE
Plane 1
    Plane state: ACTIVE

```

```

FPC 0
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 1
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 3
  PFE 0 :Links ok
FPC 5
  PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 4
  Plane state: OFFLINE
Plane 5
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3

```

```

        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
Plane 6
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 3
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
Plane 7
    Plane state: OFFLINE

```

#### show chassis fabric plane (TX Matrix Plus Router)

```
user@host> show chassis fabric plane
```

```
sfc0-re0:
```

Plane	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	10 hours, 16 seconds
2	Online	NONE	NONE	10 hours, 13 seconds
3	Online	NONE	NONE	10 hours, 9 seconds
4	Online	NONE	NONE	10 hours, 7 seconds

```
lcc0-re0:
```

SIB	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	10 hours, 16 seconds
2	Online	NONE	NONE	10 hours, 13 seconds
3	Online	NONE	NONE	10 hours, 9 seconds
4	Online	NONE	NONE	10 hours, 7 seconds

```
lcc2-re0:
```

SIB	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	10 hours, 16 seconds
2	Online	NONE	NONE	10 hours, 12 seconds
3	Online	NONE	NONE	10 hours, 9 seconds
4	Online	NONE	NONE	10 hours, 7 seconds

#### show chassis fabric plane (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric plane
```

```
sfc0-re0:
```

Plane	State	Cable errors	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	NONE	
1	Online	NONE	NONE	NONE	5 hours, 11 minutes, 3 seconds

```

2      Online      NONE      NONE      NONE      8 hours, 4
minutes, 24 seconds
3      Online      NONE      NONE      NONE      8 hours, 3
minutes, 16 seconds
4      Online      NONE      NONE      NONE      8 hours, 2
minutes, 12 seconds

```

```
lcc2-re0:
```

```

-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
0     Spare      NONE         NONE         NONE                5 hours, 11
1     Online      NONE         NONE         NONE                minutes, 3 seconds
2     Online      NONE         NONE         NONE                8 hours, 4
minutes, 57 seconds
3     Online      NONE         NONE         NONE                8 hours, 3
minutes, 53 seconds
4     Online      NONE         NONE         NONE                8 hours, 2
minutes, 45 seconds

```

```
lcc4-re0:
```

```

-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
0     Spare      NONE         NONE         NONE                5 hours, 11
1     Online      NONE         NONE         NONE                minutes, 12 seconds
2     Online      NONE         NONE         NONE                8 hours, 4
minutes, 24 seconds
3     Online      NONE         NONE         NONE                8 hours, 3
minutes, 16 seconds
4     Online      NONE         NONE         NONE                8 hours, 2
minutes, 12 seconds

```

```
lcc5-re0:
```

```

-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
0     Spare      NONE         NONE         NONE                5 hours, 11
1     Online      NONE         NONE         NONE                minutes, 12 seconds
2     Online      NONE         NONE         NONE                8 hours, 4
minutes, 24 seconds
3     Online      NONE         NONE         NONE                8 hours, 3
minutes, 15 seconds
4     Online      NONE         NONE         NONE                8 hours, 2
minutes, 11 seconds

```

### show chassis fabric plane detail (TX Matrix Plus Router)

```

user@host> show chassis fabric plane detail
sfc0-re0:

```

```
-----
Fabric Management PLANE State:
```

```

PLANE 0:  Spare
  SIB F13 0 :  Spare
  SIB F13 1 :  Empty
  SIB F2S 0/0 : Spare
  SIB F2S 0/2 : Spare
  SIB F2S 0/4 : Spare
  SIB F2S 0/6 : Spare
PLANE 1:  Online
  SIB F13 3 :  Online

```

```

SIB F13 4 : Empty
SIB F2S 1/0 : Online
SIB F2S 1/2 : Online
SIB F2S 1/4 : Online
SIB F2S 1/6 : Online
PLANE 2: Online
SIB F13 6 : Online
SIB F13 7 : Empty
SIB F2S 2/0 : Online
SIB F2S 2/2 : Online
SIB F2S 2/4 : Online
SIB F2S 2/6 : Online
PLANE 3: Online
SIB F13 8 : Online
SIB F13 9 : Online
SIB F2S 3/0 : Online
SIB F2S 3/2 : Online
SIB F2S 3/4 : Online
SIB F2S 3/6 : Online
PLANE 4: Online
SIB F13 11 : Online
SIB F13 12 : Online
SIB F2S 4/0 : Online
SIB F2S 4/2 : Online
SIB F2S 4/4 : Online
SIB F2S 4/6 : Online

```

```
lcc0-re0:
```

```
-----
Fabric Management SIB State:
```

```

SIB 0 : Spare
SIB 1 : Online
SIB 2 : Online
SIB 3 : Online
SIB 4 : Online

```

```
lcc1-re0:
```

```
-----
Fabric Management SIB State:
```

```

SIB 0 : Spare
SIB 1 : Online
SIB 2 : Online
SIB 3 : Online
SIB 4 : Online

```

```
...
```

### show chassis fabric plane extensive (TX Matrix Plus Router )

```
user@host> show chassis fabric plane extensive
sfc0-re0:
```

```
-----
Fabric Management PLANE State:
```

```

PLANE 0: Spare
SIB F13 0 : Spare
SIB F13 1 : Empty
SIB F2S 0/0 : Spare
SIB F2S 0/2 : Spare
SIB F2S 0/4 : Spare
SIB F2S 0/6 : Spare
SIB F13 0 Even:
LCC 0, SIB 0 : Links ok

```

```

SG 0
  Port 0 : Links ok
  Port 1 : Links ok
  Port 2 : Links ok
  Port 3 : Links ok
SG 1
  Port 0 : Links ok
  Port 1 : Links ok
  Port 2 : Links ok
  Port 3 : Links ok
SG 2
  Port 0 : Links ok
  Port 1 : Links ok
  Port 2 : Links ok
  Port 3 : Links ok
SG 3
  Port 0 : Links ok
  Port 1 : Links ok
  Port 2 : Links ok
  Port 3 : Links ok
SIB F13 0 Odd:
  LCC 1, SIB 0 : Links ok
    SG 0
      Port 0 : Links ok
      Port 1 : Links ok
      Port 2 : Links ok
      Port 3 : Links ok
    SG 1
      Port 0 : Links ok
      Port 1 : Links ok
      Port 2 : Links ok
      Port 3 : Links ok
    SG 2
      Port 0 : Links ok
      Port 1 : Links ok
      Port 2 : Links ok
      Port 3 : Links ok
    SG 3
      Port 0 : Links ok
      Port 1 : Links ok
      Port 2 : Links ok
      Port 3 : Links ok
  SIB F2S 0/0: Links ok
  SIB F2S 0/2: Links ok
  SIB F2S 0/4: Links ok
  SIB F2S 0/6: Links ok
SIB F13 1 Even:
  LCC 2, SIB 0 : Unused
    SG 0
      Port 0 : Unused
      Port 1 : Unused
      Port 2 : Unused
      Port 3 : Unused
    SG 1
      Port 0 : Unused
      Port 1 : Unused
      Port 2 : Unused
      Port 3 : Unused
    SG 2
      Port 0 : Unused
      Port 1 : Unused

```

```

        Port 2 : Unused
        Port 3 : Unused
    SG 3
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
SIB F13 1 Odd:
    LCC 3, SIB 0 : Unused
    SG 0
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 1
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 2
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 3
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SIB F2S 0/0: Unused
    SIB F2S 0/2: Unused
    SIB F2S 0/4: Unused
    SIB F2S 0/6: Unused
PLANE 1: Online
    SIB F13 3 : Online
    SIB F13 4 : Empty
    SIB F2S 1/0 : Online
    SIB F2S 1/2 : Online
    SIB F2S 1/4 : Online
    SIB F2S 1/6 : Online
    SIB F13 3 Even:
...

```

#### show chassis fabric plane extensive (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane extensive
sfc0-re0:

```

##### ----- Fabric Management PLANE State:

```

PLANE 0: Online
    SIB F13 0 : Empty
    SIB F13 1 : Online
    SIB F2S 0/0 : Online
    SIB F2S 0/2 : Online
    SIB F2S 0/4 : Online
    SIB F2S 0/6 : Online
    SIB F13 0
        LCC 0, SIB 0 : Unused
        PFE 0 : Unused
        PFE 1 : Unused
        PFE 2 : Unused

```

```

PFE 3 : Unused
PFE 4 : Unused
PFE 5 : Unused
PFE 6 : Unused
PFE 7 : Unused
PFE 8 : Unused
PFE 9 : Unused
PFE 10 : Unused
PFE 11 : Unused
PFE 12 : Unused
PFE 13 : Unused
PFE 14 : Unused
PFE 15 : Unused
LCC 1, SIB 0 : Unused
PFE 0 : Unused
PFE 1 : Unused
PFE 2 : Unused
PFE 3 : Unused
PFE 4 : Unused
PFE 5 : Unused
PFE 6 : Unused
PFE 7 : Unused
PFE 8 : Unused
PFE 9 : Unused
PFE 10 : Unused
PFE 11 : Unused
PFE 12 : Unused
PFE 13 : Unused
PFE 14 : Unused
PFE 15 : Unused
LCC 2, SIB 0 : Unused
PFE 0 : Unused
PFE 1 : Unused
PFE 2 : Unused
PFE 3 : Unused
PFE 4 : Unused
PFE 5 : Unused
PFE 6 : Unused
PFE 7 : Unused
PFE 8 : Unused
PFE 9 : Unused
PFE 10 : Unused
...
lcc5-re0:
-----
Fabric Management SIB State:
SIB 0 : Online
LCC SIB Link State : Links ok
PFE 0 : Links ok
PFE 1 : Links ok
PFE 2 : Links ok
PFE 3 : Links ok
PFE 4 : Links ok
PFE 5 : Links ok
PFE 6 : Links ok
PFE 7 : Links ok
PFE 8 : Links ok
PFE 9 : Links ok
PFE 10 : Links ok
PFE 11 : Links ok
PFE 12 : Links ok

```



```

PFE 13 : Links ok
PFE 14 : Links ok
PFE 15 : Links ok
FPC 1
  PFE 0 : Links ok
FPC 2
  PFE 0 : Links ok
FPC 3
  PFE 0 : Links ok
  PFE 1 : Links ok
FPC 4
  PFE 0 : Links ok
SIB 1 : Online
LCC SIB Link State : Links ok
PFE 0 : Links ok
PFE 1 : Links ok
PFE 2 : Links ok
PFE 3 : Links ok
PFE 4 : Links ok
PFE 5 : Links ok
PFE 6 : Links ok
PFE 7 : Links ok
PFE 8 : Links ok
PFE 9 : Links ok
PFE 10 : Links ok
PFE 11 : Links ok
PFE 12 : Links ok
PFE 13 : Links ok
PFE 14 : Links ok
PFE 15 : Links ok
FPC 1
  PFE 0 : Links ok
FPC 2
  PFE 0 : Links ok
FPC 3
  PFE 0 : Links ok
  PFE 1 : Links ok
FPC 4
  PFE 0 : Links ok

```

#### show chassis fabric plane terse (TX Matrix Plus Router)

```

user@host> show chassis fabric plane terse
sfc0-re0:

```

Plane	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	18 minutes, 37 seconds
2	Online	NONE	NONE	18 minutes, 36 seconds
3	Online	NONE	NONE	18 minutes, 33 seconds
4	Online	NONE	NONE	18 minutes, 31 seconds

```
lcc1-re0:
```

SIB	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	18 minutes, 37 seconds

2	Online	NONE	NONE
3	Online	NONE	NONE
4	Empty	NONE	NONE

lcc2-re0:

SIB	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	18 minutes, 37 seconds
2	Online	NONE	NONE	18 minutes, 36 seconds
3	Online	NONE	NONE	18 minutes, 32 seconds
4	Online	NONE	NONE	18 minutes, 31 seconds

### show chassis fabric plane terse (TX Matrix Plus Router with 3D SIBs)

user@host&gt; show chassis fabric plane terse

sfc0-re0:

Plane	State	Cable errors	Link errors	Destination errors	Uptime
0	Offline	NONE	NONE	NONE	
1	Online	NONE	NONE	NONE	1 day, 18 hours, 14 minutes, 26 seconds
2	Offline	NONE	NONE	NONE	
3	Offline	NONE	NONE	NONE	
4	Offline	NONE	NONE	NONE	

lcc2-re0:

SIB	State	Cable errors	Link errors	Destination errors	Uptime
0	Offline	NONE	NONE	NONE	
1	Online	NONE	NONE	NONE	1 day, 18 hours, 17 minutes
2	Offline	NONE	NONE	NONE	
3	Offline	NONE	NONE	NONE	
4	Offline	NONE	NONE	NONE	

lcc4-re0:

SIB	State	Cable errors	Link errors	Destination errors	Uptime
0	Offline	NONE	NONE	NONE	
1	Online	NONE	NONE	NONE	1 day, 18 hours, 14 minutes, 38 seconds
2	Offline	NONE	NONE	NONE	
3	Offline	NONE	NONE	NONE	
4	Offline	NONE	NONE	NONE	

lcc5-re0:

SIB	State	Cable errors	Link errors	Destination errors	Uptime
0	Offline	NONE	NONE	NONE	
1	Online	NONE	NONE	NONE	1 day, 18 hours, 14 minutes, 34 seconds
2	Offline	NONE	NONE	NONE	
3	Offline	NONE	NONE	NONE	
4	Offline	NONE	NONE	NONE	

**show chassis fabric plane lcc (TX Matrix Plus Router)**

```
user@host> show chassis fabric plane lcc 1
lcc1-re0:
```

SIB	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	25 minutes, 17 seconds
2	Disconnected	NONE	NONE	
3	Disconnected	NONE	NONE	
4	Empty	NONE	NONE	

**show chassis fabric plane lcc (TX Matrix Plus Router with 3D SIBs)**

```
user@host> show chassis fabric plane lcc 2
lcc2-re0:
```

SIB	State	Cable errors	Link errors	Destination errors	Uptime
0	Offline	NONE	NONE	NONE	
1	Online	NONE	NONE	NONE	1 day, 18 hours, 16 minutes, 44 seconds
2	Offline	NONE	NONE	NONE	
3	Offline	NONE	NONE	NONE	
4	Offline	NONE	NONE	NONE	

**show chassis fabric plane sfc (TX Matrix Plus Router)**

```
user@host> show chassis fabric plane sfc 0
sfc0-re0:
```

Plane	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	27 minutes, 7 seconds
2	Online	NONE	NONE	27 minutes, 6 seconds
3	Online	NONE	NONE	27 minutes, 3 seconds
4	Online	NONE	NONE	27 minutes, 1 second

**show chassis fabric plane sfc (TX Matrix Plus Router with 3D SIBs)**

```
user@host> show chassis fabric plane sfc 0
sfc0-re0:
```

Plane	State	Cable errors	Link errors	Destination errors	Uptime
0	Offline	NONE	NONE	NONE	
1	Online	NONE	NONE	NONE	1 day, 18 hours, 14 minutes, 20 seconds
2	Offline	NONE	NONE	NONE	
3	Offline	NONE	NONE	NONE	
4	Offline	NONE	NONE	NONE	

**show chassis fabric plane (TI600 Router)**

```
user@host> show chassis fabric plane
Plane State Uptime
0 Online 15 hours, 42 minutes, 9 seconds
```

1	Online	15 hours, 42 minutes, 9 seconds
2	Fault	
3	Online	15 hours, 42 minutes, 9 seconds
4	Online	15 hours, 42 minutes, 9 seconds

### show chassis fabric plane extensive (T1600 Router)

```
user@host> show chassis fabric plane extensive
```

```
Fabric Management PLANE State:
```

```
PLANE 0:    Online
```

```
ST-SIB-L 0: Links ok
```

```
SG 0
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```
Port 3    : Links ok
```

```
SG 1
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```
Port 3    : Links ok
```

```
SG 2
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```
Port 3    : Links ok
```

```
SG 3
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```
Port 3    : Links ok
```

```
ST-SIB-L 0
```

```
FPC 4
```

```
PFE 0: Links ok
```

```
PFE 1: Links ok
```

```
FPC 6
```

```
PFE 0: Links ok
```

```
PFE 1: Links ok
```

```
FPC 7
```

```
PFE 0: Links ok
```

```
PLANE 1:    Online
```

```
ST-SIB-L 1: Links ok
```

```
SG 0
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```
Port 3    : Links ok
```

```
SG 1
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```
Port 3    : Links ok
```

```
SG 2
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```
Port 3    : Links ok
```

```
SG 3
```

```
Port 0    : Links ok
```

```
Port 1    : Links ok
```

```
Port 2    : Links ok
```

```

        Port 3      : Links ok
ST-SIB-L 1
  FPC 4
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 6
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 7
    PFE 0: Links ok
PLANE 2:   Online
ST-SIB-L 2: Links ok
  SG 0
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 1
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 2
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 3
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
ST-SIB-L 2
  FPC 4
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 6
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 7
    PFE 0: Links ok
PLANE 3:   Spare
ST-SIB-L 3: Links ok
  SG 0
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 1
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 2
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 3
    Port 0      : Links ok
    Port 1      : Links ok

```

```

        Port 2      : Links ok
        Port 3      : Links ok
    ST-SIB-L 3
        FPC 4
            PFE 0: Links ok
            PFE 1: Links ok
        FPC 6
            PFE 0: Links ok
            PFE 1: Links ok
        FPC 7
            PFE 0: Links ok
    PLANE 4:   Online
    ST-SIB-L 4: Links ok
    SG 0
        Port 0      : Links ok
        Port 1      : Links ok
        Port 2      : Links ok
        Port 3      : Links ok
    SG 1
        Port 0      : Links ok
        Port 1      : Links ok
        Port 2      : Links ok
        Port 3      : Links ok
    SG 2
        Port 0      : Links ok
        Port 1      : Links ok
        Port 2      : Links ok
        Port 3      : Links ok
    SG 3
        Port 0      : Links ok
        Port 1      : Links ok
        Port 2      : Links ok
        Port 3      : Links ok
    ST-SIB-L 4
        FPC 4
            PFE 0: Links ok
            PFE 1: Links ok
        FPC 6
            PFE 0: Links ok
            PFE 1: Links ok
        FPC 7
            PFE 0: Links ok
```

#### show chassis fabric plane detail (T1600 Router)

```
user@host> show chassis fabric plane detail
Fabric Management PLANE State:
PLANE 0:   Online
PLANE 1:   Online
PLANE 2:   Online
PLANE 3:   Spare
PLANE 4:   Online
```

#### show chassis fabric plane (EX8200 Switch)

```
user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
    Plane state: ACTIVE
Plane 1
```

```

    Plane state: ACTIVE
Plane 2
    Plane state: ACTIVE
Plane 3
    Plane state: ACTIVE
Plane 4
    Plane state: SPARE
Plane 5
    Plane state: SPARE
Plane 6
    Plane state: SPARE
Plane 7
    Plane state: SPARE
Plane 8
    Plane state: ACTIVE
Plane 9
    Plane state: ACTIVE
Plane 10
    Plane state: ACTIVE
Plane 11
    Plane state: ACTIVE

```

#### show chassis fabric plane (EX9253 Switch)

```

user@switch> show chassis fabric plane
Fabric management PLANE state
Plane 0
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
Plane 1
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
Plane 2
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
Plane 3
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok

```

```

        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 4
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 5
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 6
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 7
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 8
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 9
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok

```



```
FPC 1
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
Plane 10
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 11
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 12
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 13
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 14
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 15
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
```

```

        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 16
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 17
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 18
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 19
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 20
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 21
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok

```

```
PFE 1 :Links ok  
PFE 2 :Links ok
```

## show chassis fabric plane-location

---

<b>List of Syntax</b>	<a href="#">Syntax on page 762</a> <a href="#">Syntax (MX Series Routers) on page 762</a> <a href="#">Syntax (MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) on page 762</a> <a href="#">Syntax (TX Matrix Plus Router) on page 762</a> <a href="#">Syntax (QFX Switches) on page 762</a> <a href="#">Syntax (EX9253 Switches) on page 762</a>
<b>Syntax</b>	show chassis fabric plane-location
<b>Syntax (MX Series Routers)</b>	show chassis fabric plane-location <all-members> <local> <member <i>member-id</i> >
<b>Syntax (MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers)</b>	show chassis fabric plane-location <extended>
<b>Syntax (TX Matrix Plus Router)</b>	show chassis fabric plane-location
<b>Syntax (QFX Switches)</b>	show chassis fabric plane-location
<b>Syntax (EX9253 Switches)</b>	show chassis fabric plane-location
<b>Release Information</b>	Command introduced in Junos OS Release 8.0. Command introduced in Junos OS Release 9.4 for EX Series switches. Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers. Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches. <b>extended</b> option introduced in Junos OS Release 16.1R1 for MX2020 and MX2010 3D Universal Edge Routers. Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers. Command introduced in Junos OS Release 17.2 for PTX10008 Routers. Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers. Command introduced in Junos OS Release 18.2 for MX10008 3D Universal Edge Routers. Command introduced in Junos OS Release 18.2 for EX9253 Switches.
<b>Description</b>	(M120, MX Series routers, and EX8200 switches only) Display the Control Board (CB) location of each plane. This command can be used on the master Routing Engine or the

backup Routing Engine. For information about the meaning of “CBs” and “fabric plane” on the switches, see the hardware documentation for your switch.

(TX Matrix Plus routers only) Display the SIB location of each fabric plane.

(PTX Series Packet Transport Routers and QFX Series switches only) Display the fabric plane location of each SIB.

(MX2010, MX2020, and MX2008 Routers only) Display the fabric plane location of each Switch Fabric Board (SFB).

**Options** **all-members**—(MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in all member routers in the Virtual Chassis configuration.

**local**—(MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the specified member in the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**extended**—(MX2020, MX2010, and MX2008 routers only) (Optional) Display the fabric plane location of all 3 planes of each Switch Fabric Board (SFB) or enhanced Switch Fabric Board (SFB2).

**Required Privilege Level** view

**List of Sample Output** [show chassis fabric plane-location \(M120 Router\) on page 764](#)  
[show chassis fabric plane-location \(MX240 and MX480 Routers\) on page 764](#)  
[show chassis fabric plane-location \(MX960 Router\) on page 765](#)  
[show chassis fabric plane-location \(MX10008 Router\) on page 765](#)  
[show chassis fabric plane-location \(MX2010 Router\) on page 765](#)  
[show chassis fabric plane-location \(MX2020 Router\) on page 766](#)  
[show chassis fabric plane-location \(MX2020 Router with SFB2\) on page 766](#)  
[show chassis fabric plane-location \(MX2008 Router\) on page 766](#)  
[show chassis fabric plane-location \(MX10003 Router\) on page 766](#)  
[show chassis fabric plane-location \(TX Matrix Plus Router\) on page 768](#)  
[show chassis fabric plane-location \(TX Matrix Plus Router with 3D SIBs\) on page 768](#)  
[show chassis fabric plane-location \(EX8200 Switch\) on page 768](#)  
[show chassis fabric plane-location \(EX9253 Switch\) on page 768](#)  
[show chassis fabric plane-location \(PTX Series Packet Transport Routers\) on page 769](#)  
[show chassis fabric plane-location \(PTX10008 Routers\) on page 770](#)  
[show chassis fabric plane-location \(QFX 10008 Switch\) on page 770](#)

**Output Fields** [Table 27 on page 764](#) lists the output fields for the **show chassis fabric plane-location** command. Output fields are listed in the approximate order in which they appear.

Table 27: show chassis fabric plane-location Output Fields

Field Name	Field Description
Plane <i>n</i>	Plane number.  (PTX Series Packet Transport Routers and QFX Series switches) Plane numbers associated with the SIB.  (MX2010, MX2020, and MX2008 Routers only) Plane numbers associated with the SFB.
Control Board <i>n</i>	Control board number.
SFC ABS-SIB-F13	(TX Matrix Plus routers only) Switch Interface Board (SIB) slot number on the F13 SIB.
SFC ABS-SIB-F2S	(TX Matrix Plus routers only) SIB slot number on the F2S SIB.
LCC ST-SIB-L	(TX Matrix Plus routers only) Line-card chassis (LCC) SIB slot number.
SFC SIB F13	(TX Matrix Plus routers with 3D SIBs only) Switch Interface Board (SIB) slot number on the F13 SIB.
SFC SIB F2S	(TX Matrix Plus routers with 3D SIBs only) SIB slot number on the F2S SIB.
LCC SIB	(TX Matrix Plus routers with 3D SIBs only) Line-card chassis (LCC) SIB slot number.
SIB	(PTX Series Packet Transport Routers and QFX Series switches) SIB number.
Switch Fabric Board <i>n</i>	(MX2010, MX2020, and MX2008 Routers only) SFB number.

## Sample Output

### show chassis fabric plane-location (M120 Router)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0                Control Board 0
Plane 1                Control Board 0
Plane 2                Control Board 1
Plane 3                Control Board 1

```

### show chassis fabric plane-location (MX240 and MX480 Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0                Control Board 0
Plane 1                Control Board 0
Plane 2                Control Board 0
Plane 3                Control Board 0

```

Plane 4	Control Board 1
Plane 5	Control Board 1
Plane 6	Control Board 1
Plane 7	Control Board 1

### show chassis fabric plane-location (MX960 Router)

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Control Board 0
Plane 1          Control Board 0
Plane 2          Control Board 1
Plane 3          Control Board 1
Plane 4          Control Board 2
Plane 5          Control Board 2
```

### show chassis fabric plane-location (MX10008 Router)

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 0
Plane 2          Switch Fabric Board 0
Plane 3          Switch Fabric Board 0
Plane 4          Switch Fabric Board 1
Plane 5          Switch Fabric Board 1
Plane 6          Switch Fabric Board 1
Plane 7          Switch Fabric Board 1
Plane 8          Switch Fabric Board 2
Plane 9          Switch Fabric Board 2
Plane 10         Switch Fabric Board 2
Plane 11         Switch Fabric Board 2
Plane 12         Switch Fabric Board 3
Plane 13         Switch Fabric Board 3
Plane 14         Switch Fabric Board 3
Plane 15         Switch Fabric Board 3
Plane 16         Switch Fabric Board 4
Plane 17         Switch Fabric Board 4
Plane 18         Switch Fabric Board 4
Plane 19         Switch Fabric Board 4
Plane 20         Switch Fabric Board 5
Plane 21         Switch Fabric Board 5
Plane 22         Switch Fabric Board 5
Plane 23         Switch Fabric Board 5
```

### show chassis fabric plane-location (MX2010 Router)

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 1
Plane 2          Switch Fabric Board 2
Plane 3          Switch Fabric Board 3
Plane 4          Switch Fabric Board 4
Plane 5          Switch Fabric Board 5
Plane 6          Switch Fabric Board 6
Plane 7          Switch Fabric Board 7
```

**show chassis fabric plane-location (MX2020 Router)**

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 1
Plane 2          Switch Fabric Board 2
Plane 3          Switch Fabric Board 3
Plane 4          Switch Fabric Board 4
Plane 5          Switch Fabric Board 5
Plane 6          Switch Fabric Board 6
Plane 7          Switch Fabric Board 7
```

**show chassis fabric plane-location (MX2020 Router with SFB2)**

```
user@host> show chassis fabric plane-location extended
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 0
Plane 2          Switch Fabric Board 0
Plane 3          Switch Fabric Board 1
Plane 4          Switch Fabric Board 1
Plane 5          Switch Fabric Board 1
Plane 6          Switch Fabric Board 2
Plane 7          Switch Fabric Board 2
Plane 8          Switch Fabric Board 2
Plane 9          Switch Fabric Board 3
Plane 10         Switch Fabric Board 3
Plane 11         Switch Fabric Board 3
Plane 12         Switch Fabric Board 4
Plane 13         Switch Fabric Board 4
Plane 14         Switch Fabric Board 4
Plane 15         Switch Fabric Board 5
Plane 16         Switch Fabric Board 5
Plane 17         Switch Fabric Board 5
Plane 18         Switch Fabric Board 6
Plane 19         Switch Fabric Board 6
Plane 20         Switch Fabric Board 6
Plane 21         Switch Fabric Board 7
Plane 22         Switch Fabric Board 7
Plane 23         Switch Fabric Board 7
```

**show chassis fabric plane-location (MX2008 Router)**

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 1
Plane 2          Switch Fabric Board 2
Plane 3          Switch Fabric Board 3
Plane 4          Switch Fabric Board 4
Plane 5          Switch Fabric Board 5
Plane 6          Switch Fabric Board 6
Plane 7          Switch Fabric Board 7
```

**show chassis fabric plane-location (MX10003 Router)**

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
```



```
Plane 0
    FPC 0
    FPC 1
Plane 1
    FPC 0
    FPC 1
Plane 2
    FPC 0
    FPC 1
Plane 3
    FPC 0
    FPC 1
Plane 4
    FPC 0
    FPC 1
Plane 5
    FPC 0
    FPC 1
Plane 6
    FPC 0
    FPC 1
Plane 7
    FPC 0
    FPC 1
Plane 8
    FPC 0
    FPC 1
Plane 9
    FPC 0
    FPC 1
Plane 10
    FPC 0
    FPC 1
Plane 11
    FPC 0
    FPC 1
Plane 12
    FPC 0
    FPC 1
Plane 13
    FPC 0
    FPC 1
Plane 14
    FPC 0
    FPC 1
Plane 15
    FPC 0
    FPC 1
Plane 16
    FPC 0
    FPC 1
Plane 17
    FPC 0
    FPC 1
Plane 18
    FPC 0
    FPC 1
Plane 19
    FPC 0
    FPC 1
Plane 20
```

```

FPC 0
FPC 1
Plane 21
FPC 0
FPC 1

```

### show chassis fabric plane-location (TX Matrix Plus Router)

```

user@host> show chassis fabric plane-location
Fabric Plane Locations :
Plane      SFC ABS-SIB-F13      SFC ABS-SIB-F2      LCC ST-SIB-L
0          0, 1              0/0, 0/2, 0/4, 0/6      0
1          3, 4              1/0, 1/2, 1/4, 1/6      1
2          6, 7              2/0, 2/2, 2/4, 2/6      2
3          8, 9              3/0, 3/2, 3/4, 3/6      3
4          11, 12             4/0, 4/2, 4/4, 4/6      4

```

### show chassis fabric plane-location (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane-location
sfc0-re0
-----
-----Fabric Plane Locations-----
Plane      SFC SIB F13      SFC SIB F2      LCC SIB
0          0, 1              0/0, 0/2, 0/4, 0/6      0
1          3, 4              1/0, 1/2, 1/4, 1/6      1
2          6, 7              2/0, 2/2, 2/4, 2/6      2
3          8, 9              3/0, 3/2, 3/4, 3/6      3
4          11, 12             4/0, 4/2, 4/4, 4/6      4

```

### show chassis fabric plane-location (EX8200 Switch)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0      Control Board 0
Plane 1      Control Board 0
Plane 2      Control Board 0
Plane 3      Control Board 0
Plane 4      Control Board 1
Plane 5      Control Board 1
Plane 6      Control Board 1
Plane 7      Control Board 1
Plane 8      Control Board 2
Plane 9      Control Board 2
Plane 10     Control Board 2
Plane 11     Control Board 2

```

### show chassis fabric plane-location (EX9253 Switch)

```

user@switch> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0
FPC 0
FPC 1
Plane 1
FPC 0
FPC 1
Plane 2
FPC 0
FPC 1

```

```
Plane 3
    FPC 0
    FPC 1
Plane 4
    FPC 0
    FPC 1
Plane 5
    FPC 0
    FPC 1
Plane 6
    FPC 0
    FPC 1
Plane 7
    FPC 0
    FPC 1
Plane 8
    FPC 0
    FPC 1
Plane 9
    FPC 0
    FPC 1
Plane 10
    FPC 0
    FPC 1
Plane 11
    FPC 0
    FPC 1
Plane 12
    FPC 0
    FPC 1
Plane 13
    FPC 0
    FPC 1
Plane 14
    FPC 0
    FPC 1
Plane 15
    FPC 0
    FPC 1
Plane 16
    FPC 0
    FPC 1
Plane 17
    FPC 0
    FPC 1
Plane 18
    FPC 0
    FPC 1
Plane 19
    FPC 0
    FPC 1
Plane 20
    FPC 0
    FPC 1
Plane 21
    FPC 0
    FPC 1
```

#### show chassis fabric plane-location (PTX Series Packet Transport Routers)

```
user@host> show chassis fabric plane-location
```

```

-----Fabric Plane Locations-----
SIB          Planes
0            0    1
1            2    3
2            4    5
3            6    7
4            8    9
5           10   11
6           12   13
7           14   15
8           16   17

```

#### show chassis fabric plane-location (PTX10008 Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
0            0    1
1            2    3
2            4    5
3            6    7
4            8    9
5           10   11

```

#### show chassis fabric plane-location (QFX 10008 Switch)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
0            0    1
1            2    3
2            4    5
3            6    7
4            8    9
5           10   11

```

## show chassis fabric topology

<b>List of Syntax</b>	<a href="#">Syntax on page 771</a> <a href="#">Syntax (TX Matrix Router) on page 771</a> <a href="#">Syntax (TX Matrix Plus Router) on page 771</a> <a href="#">Syntax (T4000 Core Router) on page 771</a> <a href="#">Syntax (PTX Series Packet Transport Routers) on page 771</a> <a href="#">Syntax (QTX Series Switches) on page 771</a>
<b>Syntax</b>	<pre>show chassis fabric topology &lt;fcc number   scc&gt; &lt;sib-slot&gt;</pre>
<b>Syntax (TX Matrix Router)</b>	<pre>show chassis fabric topology &lt;fcc number   scc&gt; &lt;sib-slot&gt;</pre>
<b>Syntax (TX Matrix Plus Router)</b>	<pre>show chassis fabric topology &lt;fcc number   sfc number&gt; &lt;sib-slot&gt;</pre>
<b>Syntax (T4000 Core Router)</b>	<pre>show chassis fabric topology &lt;sib-slot&gt;</pre>
<b>Syntax (PTX Series Packet Transport Routers)</b>	<pre>show chassis fabric topology</pre>
<b>Syntax (QTX Series Switches)</b>	<pre>show chassis fabric topology</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p>
<b>Description</b>	<p>(TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.</p> <p>(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the connected routers.</p> <p>(T320, T640, T1600, and T4000 routers only) Display the state of the switching fabric topology for the connection between the Switch Interface Board (SIB) and the FPCs.</p> <p>(PTX Series Packet Transport Routers and QFX Series switches) Display the input-output link topology.</p>

**Options** **none**—(TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.

(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the connected routers.

(T320, T640, T1600, and T4000 routers only) Display the state of the switching fabric topology for the connection between the Switch Interface Board (SIB) and the FPCs.

(QFX Series switches) Display the input-output link topology.

**lcc number**—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the fabric topology state for a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display the fabric topology state for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**scc**—(TX Matrix routers only) (Optional) Display the fabric topology state for the TX Matrix router (or switch-card chassis).

**sfc number**—(TX Matrix Plus routers only) (Optional) Display the fabric topology for the switch-fabric chassis. Replace *number* with 0.

**sib-slot**—(Optional) Display the fabric topology state for a specified SIB slot. Replace *sib-slot* with a value from 0 through 4. On a TX Matrix Plus router, replace *sib-slot* with a value from 0 through 15.

**Required Privilege Level** view

**Related Documentation**

- *Layer 2 Wholesale Network Topology Overview*

**List of Sample Output** [show chassis fabric topology scc \(TX Matrix Router\) on page 776](#)  
[show chassis fabric topology lcc on page 778](#)

[show chassis fabric topology \(TX Matrix Plus Router\) on page 780](#)  
[show chassis fabric topology sfc \(TX Matrix Plus Router\) on page 781](#)  
[show chassis fabric topology lcc \(TX Matrix Plus Router\) on page 782](#)  
[show chassis fabric topology \(T4000 Core Router\) on page 783](#)  
[show chassis fabric topology lcc \(TX Matrix Plus Router with 3D SIBs\) on page 784](#)  
[show chassis fabric topology sfc \(TX Matrix Plus Router with 3D SIBs\) on page 786](#)  
[show chassis fabric topology \(PTX5000 Router\) on page 791](#)  
[show chassis fabric topology \(PTX3000 Router\) on page 793](#)  
[show chassis fabric topology \(PTX10008 Router\) on page 800](#)  
[show chassis fabric topology \(QFX10008 Switch\) on page 804](#)

**Output Fields** Table 28 on page 773 lists the output fields for the **show chassis fabric topology** command. Output fields are listed in the approximate order in which they appear.

*Table 28: show chassis fabric topology Output Fields*

Field Name	Field Description
<b>in-links</b>	Fabric topology for receive side links.
<b>out-links</b>	Fabric topology for transmit side links.
<b>state</b>	<p>State of the fabric link:</p> <ul style="list-style-type: none"> <li>• <b>RESET</b>—Link between the SIB and the FPC/DPC is powered down on purpose. This is done in all non-dual Packet Forwarding Engine–based boards.</li> <li>• <b>UP</b>—Link between the SIB and the FPC/DCP is up and running.</li> <li>• <b>DOWN</b>—Link between the SIB and the FPC/DCP is powered down.</li> <li>• <b>FAULT</b>—The SIB is in the alarmed state, in which the SIB's plane is not operational for one or more of the following reasons: <ul style="list-style-type: none"> <li>• On-board F-chip is not operational.</li> <li>• Fiber-optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> </ul> </li> </ul> <p><b>NOTE:</b> The following state descriptions are applicable only to PTX Series Packet Transport Routers.</p> <ul style="list-style-type: none"> <li>• <b>OK</b>—The link between the SIB and the FPC is operational.</li> <li>• <b>Down</b>—The link between the SIB and the FPC is powered down.</li> <li>• <b>Error</b>—The CCL link between the SIB and FPC is not operational for one or more of the following reasons: <ul style="list-style-type: none"> <li>• FPC midplane connector failure.</li> <li>• SIB midplane connector failure.</li> <li>• CCL link CRC error.</li> </ul> </li> </ul>

**Table 28: show chassis fabric topology Output Fields (continued)**

<b>Out-Links:</b> <b>and</b> <b>In-Links</b> (TX Matrix Plus router only)	<p>State of the links from the F13 SIB to the LCC or vice-versa. Out-Links indicate Tx links. In-Links indicate an Rx link. The following additional fields are displayed for each SIB:</p> <ul style="list-style-type: none"> <li>• <b>VCSEL Status</b>—Optical (VCSEL channel) link status for the corresponding electrical (HSL2) link. The states include: <ul style="list-style-type: none"> <li>• <b>OK</b>—Optical signal power is good.</li> <li>• <b>Error</b>—Internal error.</li> <li>• <b>LOS</b>—Loss of Signal detected.</li> <li>• <b>High Cur</b>—The Tx Bias-current is higher than threshold on this channel. This is applicable only to Tx Channels.</li> <li>• <b>Low Cur</b>—The Tx Bias-current is lower than threshold on this channel. This is applicable only to Tx Channels.</li> </ul> </li> <li>• <b>HSL2 Channel</b>—HSL2 is the electrical link used to connect ASICs to the in-link and out-link. The channel number corresponds to the link and varies based on the ASIC or configuration.</li> </ul>
--	---

- **HSL2 Status** —The status of the HSL2 Channel. Includes the following states:
  - **Up**—Channel is up.
  - **Down**—Channel is down.
  - **Reset**—Channel has been reset.
  - **Fault**—Channel has faults.

The following is a representation of display output for links originating from the SIBs (LCC or SFC)

SF\_[1|3]\_port#\_FB\_[A-D] (VCSEL#, fiber)

- **SF\_[1|3]**—Name of the ASIC, with Fabric F1 or F3 mode.
- **port#**—HSL2 port number on the SF ASIC in the LCC.
- **FB\_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a representation of display output for links originating from the SIBs (LCC or SFC)

SF\_[1|3]\_port#\_FB\_[A-D] (VCSEL#, fiber)

- **SF\_[1|3]**—Name of the ASIC, with Fabric F1 or F3 mode.
- **port#**—HSL2 port number on the SF ASIC in the LCC.
- **FB\_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a sample output with description of the fields displayed in the output for Out-Links:

Out-Links:

=====

SF\_30\_13\_FB\_A(21,09) -> FPC7\_B\_SG(3,3,6)\_FB\_A(18,09)      OK      203      Up



*Table 28: show chassis fabric topology Output Fields (continued)*

- **SF\_30\_13**—Name of the ASIC, with Fabric F1 or F3 mode. In this case, 3 is the F3 direction and is used in the Tx path and 0 identifies the serial link on the SF chip (in this case, link goes to sf-3 chip number 0). You can also have F1 mode and Rx path instead.
- **FB\_A (21, 09)**—Fiber bundle A, with VCSEL unit number 21 within the SIB, and channel number 9 within the unit number.
- **FPC7\_B\_SG(3,3,6)**—FPC 7.with bottom Packet Forwarding Engine (T for top PFE and B for bottom PFE), SG ASIC, with number 3 and port number 3, with HSL2 link number with the SIB as 6.
- **FB\_A(18, 09)**—Fiber Bundle, with VCSEL unit number 18 within the SIB, and VCSEL channel number 9 within the unit number.

The following is a representation of display output for links originating from the FPCs (In-Links)

**FPC#\_[T|B]\_SG(ASIC#, port#, HSL2\_bit)\_FB\_[A-D] (VCSEL#, fiber)**

- **FPC#**—FPC number with PFE (0 or 1).
- **T**—Top Packet Forwarding Engine.
- **B**—Bottom Packet Forwarding Engine.
- **SG(ASIC#, port#, HSL2\_bit)**—SG ASIC information (ASIC 0-3, port 0-3, HSL2\_bit 0-7).
- **FB\_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a representation of display output for links originating from the FPCs (In-Links)

**FPC#\_[T|B]\_SG(ASIC#, port#, HSL2\_bit)\_FB\_[A-D] (VCSEL#, fiber)**

- **FPC#**—FPC number with PFE (0 or 1).
- **T**—Top Packet Forwarding Engine.
- **B**—Bottom Packet Forwarding Engine.
- **SG(ASIC#, port#, HSL2\_bit)**—SG ASIC information (ASIC 0-3, port 0-3, HSL2\_bit 0-7).
- **FB\_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a sample output with description of the fields displayed in the output for In-Links:

In-Links :

=====

**FPC0\_T\_SG(0,0,0)\_FB\_D(04,11) -> SF\_10\_00\_FB\_D(01,11) OK 0 Up**

- **FPC0**—FPC 0.
- **T**—Top Packet Forwarding Engine.
- **SG (0, 0, 0)**—SG ASIC with port number 0 and link 0.
- **FB\_D (04,11)**—Fiber Bundle D with VCSEL 4, channel 11.
- **SF\_10**—Indicates F1 mode chip number 0 and Rx path.
- **SF\_10\_00\_FB\_D(01,11)** —Indicates F1 mode chip number 0 and Rx path with port 0, fiber bundle D, with VCSEL 1, channel 11.

**Table 28: show chassis fabric topology Output Fields (continued)**

<b>Out-links and In-links</b> (TX Matrix Plus router with 3D SIBs only)	State of the links from the F13 SIB to the SFC/LCC or vice-versa. Out-Links indicate Tx links. In-Links indicate an Rx link. The following additional fields are displayed for each SIB:			
	<ul style="list-style-type: none"> <li>Description of the fields displayed in the output for <b>In-links</b> and <b>Out-links</b> for SFC:</li> </ul>			
	In-links	State	Out-links	State
	CXP0_Evn->F13_SIB0_XF2,04_0	Up	F13_SIB0_XF2,04_0->CXP0_Evn	Up

- CXP0\_Evn**—CXP optics with type of port bits such as even or odd. In this case, it indicates CXP optics with even port bit number 0.
- F13\_SIB0**—Name of the SFC data plane SIB with the SIB number. In this case, it indicates F13 SIB with number 0.
- XF2,04\_0**—Name of the ASIC with port and subchannel number. In this case, it Indicates XF2 chip with port number 4 and subchannel number 0.

- Description of the fields displayed in the output for **In-links** and **Out-links** for LCC:

	In-links	State	Out-links	
State				
	CXP0_Evn->LCC_SIB0_XF3,10_0	Up	LCC_SIB0_XF3,10_0->CXP0_Evn	Up

- CXP0\_Evn**—CXP optics with the type of port bits such as even or odd. In this case, it indicates CXP optics with even port bit number 0.
- LCC\_SIB0**—LCC SIB number. In this case, it indicates LCC SIB with number 0.
- XF3,10\_0**—Name of the ASIC with port and subchannel number. In this case, it Indicates XF3 with port number 10 and subchannel number 0.

## Sample Output

### show chassis fabric topology scc (TX Matrix Router)

```

user@host> show chassis fabric topology scc
scc-rel:

-----
fchip (mode)
in-links      state  out-links      state
-----

Sib #0 :
-----
SIB0_F0 (F2 ):
LCC0_SIB-L0_F0,03->SIB-S0_F0,00  UP          SIB-S0_F0,00->LCC0_SIB-L0_F1,00  UP
LCC1_SIB-L0_F0,03->SIB-S0_F0,01  UP          SIB-S0_F0,01->LCC1_SIB-L0_F1,08  UP
LCC2_SIB-L0_F0,03->SIB-S0_F0,02  RESET       SIB-S0_F0,02->LCC2_SIB-L0_F1,08  UP
LCC3_SIB-L0_F0,03->SIB-S0_F0,03  RESET       SIB-S0_F0,03->LCC3_SIB-L0_F1,00  UP
LCC0_SIB-L0_F0,02->SIB-S0_F0,04  UP          SIB-S0_F0,04->LCC0_SIB-L0_F1,01  UP

```

LCC1_SIB-L0_F0,02->SIB-S0_F0,05	UP	SIB-S0_F0,05->LCC1_SIB-L0_F1,09	UP
LCC2_SIB-L0_F0,02->SIB-S0_F0,06	RESET	SIB-S0_F0,06->LCC2_SIB-L0_F1,09	UP
LCC3_SIB-L0_F0,02->SIB-S0_F0,07	RESET	SIB-S0_F0,07->LCC3_SIB-L0_F1,01	UP
LCC0_SIB-L0_F0,07->SIB-S0_F0,08	UP	SIB-S0_F0,08->LCC0_SIB-L0_F1,04	UP
LCC1_SIB-L0_F0,07->SIB-S0_F0,09	UP	SIB-S0_F0,09->LCC1_SIB-L0_F1,12	UP
LCC2_SIB-L0_F0,07->SIB-S0_F0,10	RESET	SIB-S0_F0,10->LCC2_SIB-L0_F1,12	UP
LCC3_SIB-L0_F0,07->SIB-S0_F0,11	RESET	SIB-S0_F0,11->LCC3_SIB-L0_F1,04	UP
LCC0_SIB-L0_F0,06->SIB-S0_F0,12	UP	SIB-S0_F0,12->LCC0_SIB-L0_F1,05	UP
LCC1_SIB-L0_F0,06->SIB-S0_F0,13	UP	SIB-S0_F0,13->LCC1_SIB-L0_F1,13	UP
LCC2_SIB-L0_F0,06->SIB-S0_F0,14	RESET	SIB-S0_F0,14->LCC2_SIB-L0_F1,13	UP
LCC3_SIB-L0_F0,06->SIB-S0_F0,15	RESET	SIB-S0_F0,15->LCC3_SIB-L0_F1,05	UP
SIB0_F1 (F2 ):			
LCC0_SIB-L0_F0,11->SIB-S0_F1,00	UP	SIB-S0_F1,00->LCC0_SIB-L0_F1,08	UP
LCC1_SIB-L0_F0,11->SIB-S0_F1,01	UP	SIB-S0_F1,01->LCC1_SIB-L0_F1,00	UP
LCC2_SIB-L0_F0,11->SIB-S0_F1,02	RESET	SIB-S0_F1,02->LCC2_SIB-L0_F1,00	UP
LCC3_SIB-L0_F0,11->SIB-S0_F1,03	RESET	SIB-S0_F1,03->LCC3_SIB-L0_F1,08	UP
LCC0_SIB-L0_F0,10->SIB-S0_F1,04	UP	SIB-S0_F1,04->LCC0_SIB-L0_F1,09	UP
LCC1_SIB-L0_F0,10->SIB-S0_F1,05	UP	SIB-S0_F1,05->LCC1_SIB-L0_F1,01	UP
LCC2_SIB-L0_F0,10->SIB-S0_F1,06	RESET	SIB-S0_F1,06->LCC2_SIB-L0_F1,01	UP
LCC3_SIB-L0_F0,10->SIB-S0_F1,07	RESET	SIB-S0_F1,07->LCC3_SIB-L0_F1,09	UP
LCC0_SIB-L0_F0,15->SIB-S0_F1,08	UP	SIB-S0_F1,08->LCC0_SIB-L0_F1,12	UP
LCC1_SIB-L0_F0,15->SIB-S0_F1,09	UP	SIB-S0_F1,09->LCC1_SIB-L0_F1,04	UP
LCC2_SIB-L0_F0,15->SIB-S0_F1,10	RESET	SIB-S0_F1,10->LCC2_SIB-L0_F1,04	UP
LCC3_SIB-L0_F0,15->SIB-S0_F1,11	RESET	SIB-S0_F1,11->LCC3_SIB-L0_F1,12	UP
LCC0_SIB-L0_F0,14->SIB-S0_F1,12	UP	SIB-S0_F1,12->LCC0_SIB-L0_F1,13	UP
LCC1_SIB-L0_F0,14->SIB-S0_F1,13	UP	SIB-S0_F1,13->LCC1_SIB-L0_F1,05	UP
LCC2_SIB-L0_F0,14->SIB-S0_F1,14	RESET	SIB-S0_F1,14->LCC2_SIB-L0_F1,05	
UP			
LCC3_SIB-L0_F0,14->SIB-S0_F1,15	RESET	SIB-S0_F1,15->LCC3_SIB-L0_F1,13	
UP			
SIB0_F2 (F2 ):			
LCC3_SIB-L0_F0,13->SIB-S0_F2,00	RESET	SIB-S0_F2,00->LCC3_SIB-L0_F1,14	UP
LCC2_SIB-L0_F0,13->SIB-S0_F2,01	RESET	SIB-S0_F2,01->LCC2_SIB-L0_F1,06	
UP			
LCC1_SIB-L0_F0,13->SIB-S0_F2,02	UP	SIB-S0_F2,02->LCC1_SIB-L0_F1,06	UP
LCC0_SIB-L0_F0,13->SIB-S0_F2,03	UP	SIB-S0_F2,03->LCC0_SIB-L0_F1,14	UP
LCC3_SIB-L0_F0,12->SIB-S0_F2,04	RESET	SIB-S0_F2,04->LCC3_SIB-L0_F1,15	
UP			
LCC2_SIB-L0_F0,12->SIB-S0_F2,05	RESET	SIB-S0_F2,05->LCC2_SIB-L0_F1,07	UP
LCC1_SIB-L0_F0,12->SIB-S0_F2,06	UP	SIB-S0_F2,06->LCC1_SIB-L0_F1,07	UP
LCC0_SIB-L0_F0,12->SIB-S0_F2,07	UP	SIB-S0_F2,07->LCC0_SIB-L0_F1,15	UP
LCC3_SIB-L0_F0,09->SIB-S0_F2,08	RESET	SIB-S0_F2,08->LCC3_SIB-L0_F1,10	
UP			
LCC2_SIB-L0_F0,09->SIB-S0_F2,09	RESET	SIB-S0_F2,09->LCC2_SIB-L0_F1,02	
UP			
LCC1_SIB-L0_F0,09->SIB-S0_F2,10	UP	SIB-S0_F2,10->LCC1_SIB-L0_F1,02	UP
LCC0_SIB-L0_F0,09->SIB-S0_F2,11	UP	SIB-S0_F2,11->LCC0_SIB-L0_F1,10	UP
LCC3_SIB-L0_F0,08->SIB-S0_F2,12	RESET	SIB-S0_F2,12->LCC3_SIB-L0_F1,11	
UP			
LCC2_SIB-L0_F0,08->SIB-S0_F2,13	RESET	SIB-S0_F2,13->LCC2_SIB-L0_F1,03	
UP			
LCC1_SIB-L0_F0,08->SIB-S0_F2,14	UP	SIB-S0_F2,14->LCC1_SIB-L0_F1,03	UP
LCC0_SIB-L0_F0,08->SIB-S0_F2,15	UP	SIB-S0_F2,15->LCC0_SIB-L0_F1,11	UP
SIB0_F3 (F2 ):			
LCC3_SIB-L0_F0,05->SIB-S0_F3,00	RESET	SIB-S0_F3,00->LCC3_SIB-L0_F1,06	
UP			
LCC2_SIB-L0_F0,05->SIB-S0_F3,01	RESET	SIB-S0_F3,01->LCC2_SIB-L0_F1,14	
UP			
LCC1_SIB-L0_F0,05->SIB-S0_F3,02	UP	SIB-S0_F3,02->LCC1_SIB-L0_F1,14	UP
LCC0_SIB-L0_F0,05->SIB-S0_F3,03	UP	SIB-S0_F3,03->LCC0_SIB-L0_F1,06	UP
LCC3_SIB-L0_F0,04->SIB-S0_F3,04	RESET	SIB-S0_F3,04->LCC3_SIB-L0_F1,07	

```

UP
LCC2_SIB-L0_F0,04->SIB-S0_F3,05  RESET      SIB-S0_F3,05->LCC2_SIB-L0_F1,15
UP
LCC1_SIB-L0_F0,04->SIB-S0_F3,06  UP          SIB-S0_F3,06->LCC1_SIB-L0_F1,15  UP
LCC0_SIB-L0_F0,04->SIB-S0_F3,07  UP          SIB-S0_F3,07->LCC0_SIB-L0_F1,07  UP
LCC3_SIB-L0_F0,01->SIB-S0_F3,08  RESET      SIB-S0_F3,08->LCC3_SIB-L0_F1,02
UP
LCC2_SIB-L0_F0,01->SIB-S0_F3,09  RESET      SIB-S0_F3,09->LCC2_SIB-L0_F1,10
UP
LCC1_SIB-L0_F0,01->SIB-S0_F3,10  UP          SIB-S0_F3,10->LCC1_SIB-L0_F1,10  UP
LCC0_SIB-L0_F0,01->SIB-S0_F3,11  UP          SIB-S0_F3,11->LCC0_SIB-L0_F1,02  UP
LCC3_SIB-L0_F0,00->SIB-S0_F3,12  RESET      SIB-S0_F3,12->LCC3_SIB-L0_F1,03
UP
LCC2_SIB-L0_F0,00->SIB-S0_F3,13  RESET      SIB-S0_F3,13->LCC2_SIB-L0_F1,11
UP
LCC1_SIB-L0_F0,00->SIB-S0_F3,14  UP          SIB-S0_F3,14->LCC1_SIB-L0_F1,11  UP
LCC0_SIB-L0_F0,00->SIB-S0_F3,15  UP          SIB-S0_F3,15->LCC0_SIB-L0_F1,03  UP
Sib #1 :
-----
SIB1_F0 (F2 ):
LCC0_SIB-L1_F0,03->SIB-S1_F0,00  RESET      SIB-S1_F0,00->LCC0_SIB-L1_F1,00  UP
LCC1_SIB-L1_F0,03->SIB-S1_F0,01  RESET      SIB-S1_F0,01->LCC1_SIB-L1_F1,08  UP
LCC2_SIB-L1_F0,03->SIB-S1_F0,02  RESET      SIB-S1_F0,02->LCC2_SIB-L1_F1,08  UP
LCC3_SIB-L1_F0,03->SIB-S1_F0,03  RESET      SIB-S1_F0,03->LCC3_SIB-L1_F1,00  UP
LCC0_SIB-L1_F0,02->SIB-S1_F0,04  RESET      SIB-S1_F0,04->LCC0_SIB-L1_F1,01  UP
LCC1_SIB-L1_F0,02->SIB-S1_F0,05  RESET      SIB-S1_F0,05->LCC1_SIB-L1_F1,09  UP
LCC2_SIB-L1_F0,02->SIB-S1_F0,06  RESET      SIB-S1_F0,06->LCC2_SIB-L1_F1,09  UP
LCC3_SIB-L1_F0,02->SIB-S1_F0,07  RESET      SIB-S1_F0,07->LCC3_SIB-L1_F1,01  UP
LCC0_SIB-L1_F0,07->SIB-S1_F0,08  RESET      SIB-S1_F0,08->LCC0_SIB-L1_F1,04  UP
LCC1_SIB-L1_F0,07->SIB-S1_F0,09  RESET      SIB-S1_F0,09->LCC1_SIB-L1_F1,12  UP
LCC2_SIB-L1_F0,07->SIB-S1_F0,10  RESET      SIB-S1_F0,10->LCC2_SIB-L1_F1,12  UP
LCC3_SIB-L1_F0,07->SIB-S1_F0,11  RESET      SIB-S1_F0,11->LCC3_SIB-L1_F1,04  UP
LCC0_SIB-L1_F0,06->SIB-S1_F0,12  RESET      SIB-S1_F0,12->LCC0_SIB-L1_F1,05  UP
LCC1_SIB-L1_F0,06->SIB-S1_F0,13  RESET      SIB-S1_F0,13->LCC1_SIB-L1_F1,13  UP
LCC2_SIB-L1_F0,06->SIB-S1_F0,14  RESET      SIB-S1_F0,14->LCC2_SIB-L1_F1,13  UP
LCC3_SIB-L1_F0,06->SIB-S1_F0,15  RESET      SIB-S1_F0,15->LCC3_SIB-L1_F1,05  UP
SIB1_F1 (F2 ):
LCC0_SIB-L1_F0,11->SIB-S1_F1,00  RESET      SIB-S1_F1,00->LCC0_SIB-L1_F1,08  UP
LCC1_SIB-L1_F0,11->SIB-S1_F1,01  RESET      SIB-S1_F1,01->LCC1_SIB-L1_F1,00  UP
LCC2_SIB-L1_F0,11->SIB-S1_F1,02  RESET      SIB-S1_F1,02->LCC2_SIB-L1_F1,00  UP
LCC3_SIB-L1_F0,11->SIB-S1_F1,03  RESET      SIB-S1_F1,03->LCC3_SIB-L1_F1,08  UP
LCC0_SIB-L1_F0,10->SIB-S1_F1,04  RESET      SIB-S1_F1,04->LCC0_SIB-L1_F1,09  UP
LCC1_SIB-L1_F0,10->SIB-S1_F1,05  RESET      SIB-S1_F1,05->LCC1_SIB-L1_F1,01  UP
LCC2_SIB-L1_F0,10->SIB-S1_F1,06  RESET      SIB-S1_F1,06->LCC2_SIB-L1_F1,01  UP
LCC3_SIB-L1_F0,10->SIB-S1_F1,07  RESET      SIB-S1_F1,07->LCC3_SIB-L1_F1,09  UP
LCC0_SIB-L1_F0,15->SIB-S1_F1,08  RESET      SIB-S1_F1,08->LCC0_SIB-L1_F1,12  UP
LCC1_SIB-L1_F0,15->SIB-S1_F1,09  RESET      SIB-S1_F1,09->LCC1_SIB-L1_F1,04  UP
LCC2_SIB-L1_F0,15->SIB-S1_F1,10  RESET      SIB-S1_F1,10->LCC2_SIB-L1_F1,04  UP
LCC3_SIB-L1_F0,15->SIB-S1_F1,11  RESET      SIB-S1_F1,11->LCC3_SIB-L1_F1,12,05  UP
LCC0_SIB-L1_F0,14->SIB-S1_F1,12  RESET      SIB-S1_F1,12->LCC0_SIB-L1_F1,13  UP
LCC1_SIB-L1_F0,14->SIB-S1_F1,13  RESET      SIB-S1_F1,13->LCC1_SIB-L1_F1,05  UP
LCC2_SIB-L1_F0,14->SIB-S1_F1,14  RESET      SIB-S1_F1,14->LCC2_SIB-L1_F1,05  UP

```

### show chassis fabric topology lcc

```

user@host> show chassis fabric topology lcc 0
lcc0-re0:

```

```

-----
      fchip (mode)
in-links          state      out-links          state
-----

```

Sib #2 :

-----

SIB2\_F0 (F1 ):

FPC0_T->SIB-L2_F0,00	DOWN	SIB-L2_F0,00->SIB-S2_F3,15	DOWN
FPC0_B->SIB-L2_F0,01	UP	SIB-L2_F0,01->SIB-S2_F3,11	DOWN
FPC1_T->SIB-L2_F0,02	DOWN	SIB-L2_F0,02->SIB-S2_F0,04	DOWN
FPC1_B->SIB-L2_F0,03	DOWN	SIB-L2_F0,03->SIB-S2_F0,00	DOWN
FPC2_T->SIB-L2_F0,04	DOWN	SIB-L2_F0,04->SIB-S2_F3,07	DOWN
FPC2_B->SIB-L2_F0,05	DOWN	SIB-L2_F0,05->SIB-S2_F3,03	DOWN
FPC3_T->SIB-L2_F0,06	DOWN	SIB-L2_F0,06->SIB-S2_F0,12	DOWN
FPC3_B->SIB-L2_F0,07	DOWN	SIB-L2_F0,07->SIB-S2_F0,08	DOWN
FPC4_T->SIB-L2_F0,08	DOWN	SIB-L2_F0,08->SIB-S2_F2,15	DOWN
FPC4_B->SIB-L2_F0,09	DOWN	SIB-L2_F0,09->SIB-S2_F2,11	DOWN
FPC5_T->SIB-L2_F0,10	DOWN	SIB-L2_F0,10->SIB-S2_F1,04	DOWN
FPC5_B->SIB-L2_F0,11	DOWN	SIB-L2_F0,11->SIB-S2_F1,00	DOWN
FPC6_T->SIB-L2_F0,12	DOWN	SIB-L2_F0,12->SIB-S2_F2,07	DOWN
FPC6_B->SIB-L2_F0,13	UP	SIB-L2_F0,13->SIB-S2_F2,03	DOWN
FPC7_T->SIB-L2_F0,14	DOWN	SIB-L2_F0,14->SIB-S2_F1,12	DOWN
FPC7_B->SIB-L2_F0,15	DOWN	SIB-L2_F0,15->SIB-S2_F1,08	DOWN

SIB2\_F1 (F3 ):

SIB-S2_F0,00->SIB-L2_F1,00	UP	SIB-L2_F1,00->FPC7_B	DOWN
SIB-S2_F0,04->SIB-L2_F1,01	UP	SIB-L2_F1,01->FPC7_T	DOWN
SIB-S2_F3,11->SIB-L2_F1,02	UP	SIB-L2_F1,02->FPC6_B	DOWN
SIB-S2_F3,15->SIB-L2_F1,03	UP	SIB-L2_F1,03->FPC6_T	DOWN
SIB-S2_F0,08->SIB-L2_F1,04	UP	SIB-L2_F1,04->FPC5_B	DOWN
SIB-S2_F0,12->SIB-L2_F1,05	UP	SIB-L2_F1,05->FPC5_T	DOWN
SIB-S2_F3,03->SIB-L2_F1,06	UP	SIB-L2_F1,06->FPC4_B	DOWN
SIB-S2_F3,07->SIB-L2_F1,07	UP	SIB-L2_F1,07->FPC4_T	DOWN
SIB-S2_F1,00->SIB-L2_F1,08	UP	SIB-L2_F1,08->FPC3_B	DOWN
SIB-S2_F1,04->SIB-L2_F1,09	UP	SIB-L2_F1,09->FPC3_T	DOWN
SIB-S2_F2,11->SIB-L2_F1,10	UP	SIB-L2_F1,10->FPC2_B	DOWN
SIB-S2_F2,15->SIB-L2_F1,11	UP	SIB-L2_F1,11->FPC2_T	DOWN
SIB-S2_F1,08->SIB-L2_F1,12	UP	SIB-L2_F1,12->FPC1_B	DOWN
SIB-S2_F1,12->SIB-L2_F1,13	UP	SIB-L2_F1,13->FPC1_T	DOWN
SIB-S2_F2,03->SIB-L2_F1,14	UP	SIB-L2_F1,14->FPC0_B	DOWN
SIB-S2_F2,07->SIB-L2_F1,15	UP	SIB-L2_F1,15->FPC0_T	DOWN

Sib #4 :

-----

SIB4\_F0 (F1 ):

FPC0_T->SIB-L4_F0,00	RESET	SIB-L4_F0,00->SIB-S4_F3,15	UP
FPC0_B->SIB-L4_F0,01	UP	SIB-L4_F0,01->SIB-S4_F3,11	UP
FPC1_T->SIB-L4_F0,02	RESET	SIB-L4_F0,02->SIB-S4_F0,04	UP
FPC1_B->SIB-L4_F0,03	RESET	SIB-L4_F0,03->SIB-S4_F0,00	UP
FPC2_T->SIB-L4_F0,04	RESET	SIB-L4_F0,04->SIB-S4_F3,07	UP
FPC2_B->SIB-L4_F0,05	RESET	SIB-L4_F0,05->SIB-S4_F3,03	UP
FPC3_T->SIB-L4_F0,06	RESET	SIB-L4_F0,06->SIB-S4_F0,12	UP
FPC3_B->SIB-L4_F0,07	RESET	SIB-L4_F0,07->SIB-S4_F0,08	UP
FPC4_T->SIB-L4_F0,08	RESET	SIB-L4_F0,08->SIB-S4_F2,15	UP
FPC4_B->SIB-L4_F0,09	RESET	SIB-L4_F0,09->SIB-S4_F2,11	UP
FPC5_T->SIB-L4_F0,10	RESET	SIB-L4_F0,10->SIB-S4_F1,04	UP
FPC5_B->SIB-L4_F0,11	RESET	SIB-L4_F0,11->SIB-S4_F1,00	UP
FPC6_T->SIB-L4_F0,12	RESET	SIB-L4_F0,12->SIB-S4_F2,07	UP
FPC6_B->SIB-L4_F0,13	UP	SIB-L4_F0,13->SIB-S4_F2,03	UP
FPC7_T->SIB-L4_F0,14	RESET	SIB-L4_F0,14->SIB-S4_F1,12	UP
FPC7_B->SIB-L4_F0,15	RESET	SIB-L4_F0,15->SIB-S4_F1,08	UP

SIB4\_F1 (F3 ):

SIB-S4_F0,00->SIB-L4_F1,00	UP	SIB-L4_F1,00->FPC7_B	UP
SIB-S4_F0,04->SIB-L4_F1,01	UP	SIB-L4_F1,01->FPC7_T	UP
SIB-S4_F3,11->SIB-L4_F1,02	UP	SIB-L4_F1,02->FPC6_B	UP
SIB-S4_F3,15->SIB-L4_F1,03	UP	SIB-L4_F1,03->FPC6_T	UP
SIB-S4_F0,08->SIB-L4_F1,04	UP	SIB-L4_F1,04->FPC5_B	UP

```

SIB-S4_F0,12->SIB-L4_F1,05 UP      SIB-L4_F1,05->FPC5_T      UP
SIB-S4_F3,03->SIB-L4_F1,06 UP      SIB-L4_F1,06->FPC4_B      UP
SIB-S4_F3,07->SIB-L4_F1,07 UP      SIB-L4_F1,07->FPC4_T      UP
SIB-S4_F1,00->SIB-L4_F1,08 UP      SIB-L4_F1,08->FPC3_B      UP
SIB-S4_F1,04->SIB-L4_F1,09 UP      SIB-L4_F1,09->FPC3_T      UP
SIB-S4_F2,11->SIB-L4_F1,10 UP      SIB-L4_F1,10->FPC2_B      UP
SIB-S4_F2,15->SIB-L4_F1,11 UP      SIB-L4_F1,11->FPC2_T      UP
SIB-S4_F1,08->SIB-L4_F1,12 UP      SIB-L4_F1,12->FPC1_B      UP
SIB-S4_F1,12->SIB-L4_F1,13 UP      SIB-L4_F1,13->FPC1_T      UP
SIB-S4_F2,03->SIB-L4_F1,14 UP      SIB-L4_F1,14->FPC0_B      UP
SIB-S4_F2,07->SIB-L4_F1,15 UP      SIB-L4_F1,15->FPC0_T      UP

```

### show chassis fabric topology (TX Matrix Plus Router)

```

user@host> show chassis fabric topology
sfc0-re0:

```

```

F13_SIB0

```

```

Out-Links:

```

```

=====
SFC0_F13_SIB_00      -> LCC00_ST_SIB_L00      VCSEL      HSL2      HSL2
                        Status      Channel1      Status
=====
SF_30_00_FB_D(04,11) -> FPC0_T_SG(0,0,0)_FB_D(01,11)      OK          112      Up
SF_30_00_FB_D(04,10) -> FPC0_T_SG(0,0,1)_FB_D(01,10)      OK          112      Up
SF_30_00_FB_D(04,09) -> FPC0_T_SG(0,0,2)_FB_D(01,09)      OK          112      Up
SF_30_00_FB_D(04,08) -> FPC0_T_SG(0,0,3)_FB_D(01,08)      OK          112      Up
SF_30_00_FB_D(04,07) -> FPC0_T_SG(0,0,4)_FB_D(01,07)      OK          112      Up
SF_30_00_FB_D(04,06) -> FPC0_T_SG(0,0,5)_FB_D(01,06)      OK          112      Up
SF_30_00_FB_D(04,05) -> FPC0_T_SG(0,0,6)_FB_D(01,05)      OK          112      Up
SF_30_00_FB_D(04,04) -> FPC0_T_SG(0,0,7)_FB_D(01,04)      OK          112      Up
SF_30_01_FB_B(16,11) -> FPC4_T_SG(2,0,0)_FB_B(13,11)      OK          119      Up
SF_30_01_FB_B(16,10) -> FPC4_T_SG(2,0,1)_FB_B(13,10)      OK          119      Up
SF_30_01_FB_B(16,09) -> FPC4_T_SG(2,0,2)_FB_B(13,09)      OK          119      Up
SF_30_01_FB_B(16,08) -> FPC4_T_SG(2,0,3)_FB_B(13,08)      OK          119      Up
SF_30_01_FB_B(16,07) -> FPC4_T_SG(2,0,4)_FB_B(13,07)      OK          119      Up
SF_30_01_FB_B(16,06) -> FPC4_T_SG(2,0,5)_FB_B(13,06)      OK          119      Up
SF_30_01_FB_B(16,05) -> FPC4_T_SG(2,0,6)_FB_B(13,05)      OK          119      Up
SF_30_01_FB_B(16,04) -> FPC4_T_SG(2,0,7)_FB_B(13,04)      OK          119      Up
SF_30_02_FB_D(05,08) -> FPC1_T_SG(0,2,0)_FB_D(02,08)      OK          126      Up
SF_30_02_FB_D(05,07) -> FPC1_T_SG(0,2,1)_FB_D(02,07)      OK          126      Up
SF_30_02_FB_D(05,06) -> FPC1_T_SG(0,2,2)_FB_D(02,06)      OK          126      Up
SF_30_02_FB_D(05,05) -> FPC1_T_SG(0,2,3)_FB_D(02,05)      OK          126      Up
SF_30_02_FB_D(05,03) -> FPC1_T_SG(0,2,4)_FB_D(02,03)      OK          126      Up
SF_30_02_FB_D(05,02) -> FPC1_T_SG(0,2,5)_FB_D(02,02)      OK          126      Up
SF_30_02_FB_D(05,01) -> FPC1_T_SG(0,2,6)_FB_D(02,01)      OK          126      Up
SF_30_02_FB_D(05,00) -> FPC1_T_SG(0,2,7)_FB_D(02,00)      OK          126      Up
SF_30_03_FB_B(17,08) -> FPC5_T_SG(2,2,0)_FB_B(14,08)      OK          133      Up
SF_30_03_FB_B(17,07) -> FPC5_T_SG(2,2,1)_FB_B(14,07)      OK          133      Up
SF_30_03_FB_B(17,06) -> FPC5_T_SG(2,2,2)_FB_B(14,06)      OK          133      Up
SF_30_03_FB_B(17,05) -> FPC5_T_SG(2,2,3)_FB_B(14,05)      OK          133      Up
SF_30_03_FB_B(17,03) -> FPC5_T_SG(2,2,4)_FB_B(14,03)      OK          133      Up
SF_30_03_FB_B(17,02) -> FPC5_T_SG(2,2,5)_FB_B(14,02)      OK          133      Up
SF_30_03_FB_B(17,01) -> FPC5_T_SG(2,2,6)_FB_B(14,01)      OK          133      Up
SF_30_03_FB_B(17,00) -> FPC5_T_SG(2,2,7)_FB_B(14,00)      OK          133      Up
SF_30_04_FB_C(10,11) -> FPC2_T_SG(1,0,0)_FB_C(07,11)      OK          140      Up
SF_30_04_FB_C(10,10) -> FPC2_T_SG(1,0,1)_FB_C(07,10)      OK          140      Up
SF_30_04_FB_C(10,09) -> FPC2_T_SG(1,0,2)_FB_C(07,09)      OK          140      Up

```

```

SF_30_04_FB_C(10,08) -> FPC2_T_SG(1,0,3)_FB_C(07,08)    OK      140    Up
SF_30_04_FB_C(10,07) -> FPC2_T_SG(1,0,4)_FB_C(07,07)    OK      140    Up
SF_30_04_FB_C(10,06) -> FPC2_T_SG(1,0,5)_FB_C(07,06)    OK      140    Up
SF_30_04_FB_C(10,05) -> FPC2_T_SG(1,0,6)_FB_C(07,05)    OK      140    Up
SF_30_04_FB_C(10,04) -> FPC2_T_SG(1,0,7)_FB_C(07,04)    OK      140    Up
SF_30_05_FB_A(22,11) -> FPC6_T_SG(3,0,0)_FB_A(19,11)    OK      147    Up
SF_30_05_FB_A(22,10) -> FPC6_T_SG(3,0,1)_FB_A(19,10)    OK      147    Up
SF_30_05_FB_A(22,09) -> FPC6_T_SG(3,0,2)_FB_A(19,09)    OK      147    Up
SF_30_05_FB_A(22,08) -> FPC6_T_SG(3,0,3)_FB_A(19,08)    OK      147    Up
SF_30_05_FB_A(22,07) -> FPC6_T_SG(3,0,4)_FB_A(19,07)    OK      147    Up
SF_30_05_FB_A(22,06) -> FPC6_T_SG(3,0,5)_FB_A(19,06)    OK      147    Up
SF_30_05_FB_A(22,05) -> FPC6_T_SG(3,0,6)_FB_A(19,05)    OK      147    Up
SF_30_05_FB_A(22,04) -> FPC6_T_SG(3,0,7)_FB_A(19,04)    OK      147    Up
SF_30_06_FB_C(11,08) -> FPC3_T_SG(1,2,0)_FB_C(08,08)    OK      154    Up
SF_30_06_FB_C(11,07) -> FPC3_T_SG(1,2,1)_FB_C(08,07)    OK      154    Up
SF_30_06_FB_C(11,06) -> FPC3_T_SG(1,2,2)_FB_C(08,06)    OK      154    Up
SF_30_06_FB_C(11,05) -> FPC3_T_SG(1,2,3)_FB_C(08,05)    OK      154    Up
SF_30_06_FB_C(11,03) -> FPC3_T_SG(1,2,4)_FB_C(08,03)    OK      154    Up
SF_30_06_FB_C(11,02) -> FPC3_T_SG(1,2,5)_FB_C(08,02)    OK      154    Up
SF_30_06_FB_C(11,01) -> FPC3_T_SG(1,2,6)_FB_C(08,01)    OK      154    Up
SF_30_06_FB_C(11,00) -> FPC3_T_SG(1,2,7)_FB_C(08,00)    OK      154    Up
...

```

### show chassis fabric topology sfc (TX Matrix Plus Router)

```

user@host> show chassis fabric topology sfc 0
sfc0-re0:

```

```

F13_SIB0
=====

```

```

Out-Links:
=====

```

SFC0_F13_SIB_00	-> LCC00_ST_SIB_L00	VCSEL Status	HSL2 Channel	HSL2 Status
SF_30_00_FB_D(04,11)	-> FPC0_T_SG(0,0,0)_FB_D(01,11)	OK	112	Up
SF_30_00_FB_D(04,10)	-> FPC0_T_SG(0,0,1)_FB_D(01,10)	OK	112	Up
SF_30_00_FB_D(04,09)	-> FPC0_T_SG(0,0,2)_FB_D(01,09)	OK	112	Up
SF_30_00_FB_D(04,08)	-> FPC0_T_SG(0,0,3)_FB_D(01,08)	OK	112	Up
SF_30_00_FB_D(04,07)	-> FPC0_T_SG(0,0,4)_FB_D(01,07)	OK	112	Up
SF_30_00_FB_D(04,06)	-> FPC0_T_SG(0,0,5)_FB_D(01,06)	OK	112	Up
SF_30_00_FB_D(04,05)	-> FPC0_T_SG(0,0,6)_FB_D(01,05)	OK	112	Up
SF_30_00_FB_D(04,04)	-> FPC0_T_SG(0,0,7)_FB_D(01,04)	OK	112	Up
SF_30_01_FB_B(16,11)	-> FPC4_T_SG(2,0,0)_FB_B(13,11)	OK	119	Up
SF_30_01_FB_B(16,10)	-> FPC4_T_SG(2,0,1)_FB_B(13,10)	OK	119	Up
SF_30_01_FB_B(16,09)	-> FPC4_T_SG(2,0,2)_FB_B(13,09)	OK	119	Up
SF_30_01_FB_B(16,08)	-> FPC4_T_SG(2,0,3)_FB_B(13,08)	OK	119	Up
SF_30_01_FB_B(16,07)	-> FPC4_T_SG(2,0,4)_FB_B(13,07)	OK	119	Up
SF_30_01_FB_B(16,06)	-> FPC4_T_SG(2,0,5)_FB_B(13,06)	OK	119	Up
SF_30_01_FB_B(16,05)	-> FPC4_T_SG(2,0,6)_FB_B(13,05)	OK	119	Up
SF_30_01_FB_B(16,04)	-> FPC4_T_SG(2,0,7)_FB_B(13,04)	OK	119	Up
SF_30_02_FB_D(05,08)	-> FPC1_T_SG(0,2,0)_FB_D(02,08)	OK	126	Up
SF_30_02_FB_D(05,07)	-> FPC1_T_SG(0,2,1)_FB_D(02,07)	OK	126	Up
SF_30_02_FB_D(05,06)	-> FPC1_T_SG(0,2,2)_FB_D(02,06)	OK	126	Up
SF_30_02_FB_D(05,05)	-> FPC1_T_SG(0,2,3)_FB_D(02,05)	OK	126	Up
SF_30_02_FB_D(05,03)	-> FPC1_T_SG(0,2,4)_FB_D(02,03)	OK	126	Up
SF_30_02_FB_D(05,02)	-> FPC1_T_SG(0,2,5)_FB_D(02,02)	OK	126	Up
SF_30_02_FB_D(05,01)	-> FPC1_T_SG(0,2,6)_FB_D(02,01)	OK	126	Up
SF_30_02_FB_D(05,00)	-> FPC1_T_SG(0,2,7)_FB_D(02,00)	OK	126	Up

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SF_30_03_FB_B(17,08) -> FPC5_T_SG(2,2,0)_FB_B(14,08)    OK      133    Up
SF_30_03_FB_B(17,07) -> FPC5_T_SG(2,2,1)_FB_B(14,07)    OK      133    Up
SF_30_03_FB_B(17,06) -> FPC5_T_SG(2,2,2)_FB_B(14,06)    OK      133    Up
SF_30_03_FB_B(17,05) -> FPC5_T_SG(2,2,3)_FB_B(14,05)    OK      133    Up
SF_30_03_FB_B(17,03) -> FPC5_T_SG(2,2,4)_FB_B(14,03)    OK      133    Up
SF_30_03_FB_B(17,02) -> FPC5_T_SG(2,2,5)_FB_B(14,02)    OK      133    Up
SF_30_03_FB_B(17,01) -> FPC5_T_SG(2,2,6)_FB_B(14,01)    OK      133    Up
SF_30_03_FB_B(17,00) -> FPC5_T_SG(2,2,7)_FB_B(14,00)    OK      133    Up
SF_30_04_FB_C(10,11) -> FPC2_T_SG(1,0,0)_FB_C(07,11)    OK      140    Up
SF_30_04_FB_C(10,10) -> FPC2_T_SG(1,0,1)_FB_C(07,10)    OK      140    Up
SF_30_04_FB_C(10,09) -> FPC2_T_SG(1,0,2)_FB_C(07,09)    OK      140    Up
SF_30_04_FB_C(10,08) -> FPC2_T_SG(1,0,3)_FB_C(07,08)    OK      140    Up
SF_30_04_FB_C(10,07) -> FPC2_T_SG(1,0,4)_FB_C(07,07)    OK      140    Up
SF_30_04_FB_C(10,06) -> FPC2_T_SG(1,0,5)_FB_C(07,06)    OK      140    Up
SF_30_04_FB_C(10,05) -> FPC2_T_SG(1,0,6)_FB_C(07,05)    OK      140    Up
SF_30_04_FB_C(10,04) -> FPC2_T_SG(1,0,7)_FB_C(07,04)    OK      140    Up
SF_30_05_FB_A(22,11) -> FPC6_T_SG(3,0,0)_FB_A(19,11)    OK      147    Up
SF_30_05_FB_A(22,10) -> FPC6_T_SG(3,0,1)_FB_A(19,10)    OK      147    Up
SF_30_05_FB_A(22,09) -> FPC6_T_SG(3,0,2)_FB_A(19,09)    OK      147    Up
SF_30_05_FB_A(22,08) -> FPC6_T_SG(3,0,3)_FB_A(19,08)    OK      147    Up
SF_30_05_FB_A(22,07) -> FPC6_T_SG(3,0,4)_FB_A(19,07)    OK      147    Up
SF_30_05_FB_A(22,06) -> FPC6_T_SG(3,0,5)_FB_A(19,06)    OK      147    Up
SF_30_05_FB_A(22,05) -> FPC6_T_SG(3,0,6)_FB_A(19,05)    OK      147    Up
SF_30_05_FB_A(22,04) -> FPC6_T_SG(3,0,7)_FB_A(19,04)    OK      147    Up
SF_30_06_FB_C(11,08) -> FPC3_T_SG(1,2,0)_FB_C(08,08)    OK      154    Up
SF_30_06_FB_C(11,07) -> FPC3_T_SG(1,2,1)_FB_C(08,07)    OK      154    Up
SF_30_06_FB_C(11,06) -> FPC3_T_SG(1,2,2)_FB_C(08,06)    OK      154    Up
SF_30_06_FB_C(11,05) -> FPC3_T_SG(1,2,3)_FB_C(08,05)    OK      154    Up
SF_30_06_FB_C(11,03) -> FPC3_T_SG(1,2,4)_FB_C(08,03)    OK      154    Up
SF_30_06_FB_C(11,02) -> FPC3_T_SG(1,2,5)_FB_C(08,02)    OK      154    Up
SF_30_06_FB_C(11,01) -> FPC3_T_SG(1,2,6)_FB_C(08,01)    OK      154    Up
SF_30_06_FB_C(11,00) -> FPC3_T_SG(1,2,7)_FB_C(08,00)    OK      154    Up
...

```

### show chassis fabric topology lcc (TX Matrix Plus Router)

```

user@host> show chassis fabric topology lcc 0
lcc0-re0:
-----

SIB0
=====

Out-Links:
=====
LCC00_ST_SIB_L00          -> SFC0_F13_SIB_00          VCSEL   HSL2   HSL2
                        Status   Channel Status
=====
FPC0_T_SG(0,0,0)_FB_D(04,11) -> SF_10_00_FB_D(01,11)    OK      12     Up
FPC0_T_SG(0,0,1)_FB_D(04,10) -> SF_10_00_FB_D(01,10)    OK      12     Up
FPC0_T_SG(0,0,2)_FB_D(04,09) -> SF_10_00_FB_D(01,09)    OK      12     Up
FPC0_T_SG(0,0,3)_FB_D(04,08) -> SF_10_00_FB_D(01,08)    OK      12     Up
FPC0_T_SG(0,0,4)_FB_D(04,07) -> SF_10_00_FB_D(01,07)    OK      12     Up
FPC0_T_SG(0,0,5)_FB_D(04,06) -> SF_10_00_FB_D(01,06)    OK      12     Up
FPC0_T_SG(0,0,6)_FB_D(04,05) -> SF_10_00_FB_D(01,05)    OK      12     Up
FPC0_T_SG(0,0,7)_FB_D(04,04) -> SF_10_00_FB_D(01,04)    OK      12     Up
FPC0_B_SG(0,1,0)_FB_D(03,07) -> SF_10_10_FB_D(00,07)    OK      15     Up
FPC0_B_SG(0,1,1)_FB_D(03,06) -> SF_10_10_FB_D(00,06)    OK      15     Up
FPC0_B_SG(0,1,2)_FB_D(03,05) -> SF_10_10_FB_D(00,05)    OK      15     Up
FPC0_B_SG(0,1,3)_FB_D(03,04) -> SF_10_10_FB_D(00,04)    OK      15     Up
FPC0_B_SG(0,1,4)_FB_D(03,03) -> SF_10_10_FB_D(00,03)    OK      15     Up

```



```

FPC0_B_SG(0,1,5)_FB_D(03,02) -> SF_10_10_FB_D(00,02)    OK      15      Up
FPC0_B_SG(0,1,6)_FB_D(03,01) -> SF_10_10_FB_D(00,01)    OK      15      Up
FPC0_B_SG(0,1,7)_FB_D(03,00) -> SF_10_10_FB_D(00,00)    OK      15      Up
FPC1_T_SG(0,2,0)_FB_D(05,08) -> SF_10_02_FB_D(02,08)    OK      18      Up
FPC1_T_SG(0,2,1)_FB_D(05,07) -> SF_10_02_FB_D(02,07)    OK      18      Up
FPC1_T_SG(0,2,2)_FB_D(05,06) -> SF_10_02_FB_D(02,06)    OK      18      Up
FPC1_T_SG(0,2,3)_FB_D(05,05) -> SF_10_02_FB_D(02,05)    OK      18      Up
FPC1_T_SG(0,2,4)_FB_D(05,03) -> SF_10_02_FB_D(02,03)    OK      18      Up
FPC1_T_SG(0,2,5)_FB_D(05,02) -> SF_10_02_FB_D(02,02)    OK      18      Up
FPC1_T_SG(0,2,6)_FB_D(05,01) -> SF_10_02_FB_D(02,01)    OK      18      Up
FPC1_T_SG(0,2,7)_FB_D(05,00) -> SF_10_02_FB_D(02,00)    OK      18      Up
FPC1_B_SG(0,3,0)_FB_D(04,03) -> SF_10_11_FB_D(01,03)    OK      21      Up
FPC1_B_SG(0,3,1)_FB_D(04,02) -> SF_10_11_FB_D(01,02)    OK      21      Up
FPC1_B_SG(0,3,2)_FB_D(04,01) -> SF_10_11_FB_D(01,01)    OK      21      Up
FPC1_B_SG(0,3,3)_FB_D(04,00) -> SF_10_11_FB_D(01,00)    OK      21      Up
FPC1_B_SG(0,3,4)_FB_D(03,11) -> SF_10_11_FB_D(00,11)    OK      21      Up
FPC1_B_SG(0,3,5)_FB_D(03,10) -> SF_10_11_FB_D(00,10)    OK      21      Up
FPC1_B_SG(0,3,6)_FB_D(03,09) -> SF_10_11_FB_D(00,09)    OK      21      Up
FPC1_B_SG(0,3,7)_FB_D(03,08) -> SF_10_11_FB_D(00,08)    OK      21      Up
FPC2_T_SG(1,0,0)_FB_C(10,11) -> SF_10_04_FB_C(07,11)    OK      12      Up
FPC2_T_SG(1,0,1)_FB_C(10,10) -> SF_10_04_FB_C(07,10)    OK      12      Up
FPC2_T_SG(1,0,2)_FB_C(10,09) -> SF_10_04_FB_C(07,09)    OK      12      Up
FPC2_T_SG(1,0,3)_FB_C(10,08) -> SF_10_04_FB_C(07,08)    OK      12      Up
FPC2_T_SG(1,0,4)_FB_C(10,07) -> SF_10_04_FB_C(07,07)    OK      12      Up
FPC2_T_SG(1,0,5)_FB_C(10,06) -> SF_10_04_FB_C(07,06)    OK      12      Up
FPC2_T_SG(1,0,6)_FB_C(10,05) -> SF_10_04_FB_C(07,05)    OK      12      Up
FPC2_T_SG(1,0,7)_FB_C(10,04) -> SF_10_04_FB_C(07,04)    OK      12      Up
FPC2_B_SG(1,1,0)_FB_C(09,07) -> SF_10_14_FB_C(06,07)    OK      15      Up
FPC2_B_SG(1,1,1)_FB_C(09,06) -> SF_10_14_FB_C(06,06)    OK      15      Up
FPC2_B_SG(1,1,2)_FB_C(09,05) -> SF_10_14_FB_C(06,05)    OK      15      Up
FPC2_B_SG(1,1,3)_FB_C(09,04) -> SF_10_14_FB_C(06,04)    OK      15      Up
FPC2_B_SG(1,1,4)_FB_C(09,03) -> SF_10_14_FB_C(06,03)    OK      15      Up
FPC2_B_SG(1,1,5)_FB_C(09,02) -> SF_10_14_FB_C(06,02)    OK      15      Up
FPC2_B_SG(1,1,6)_FB_C(09,01) -> SF_10_14_FB_C(06,01)    OK      15      Up
FPC2_B_SG(1,1,7)_FB_C(09,00) -> SF_10_14_FB_C(06,00)    OK      15      Up
FPC3_T_SG(1,2,0)_FB_C(11,08) -> SF_10_06_FB_C(08,08)    OK      18      Up
FPC3_T_SG(1,2,1)_FB_C(11,07) -> SF_10_06_FB_C(08,07)    OK      18      Up
FPC3_T_SG(1,2,2)_FB_C(11,06) -> SF_10_06_FB_C(08,06)    OK      18      Up
FPC3_T_SG(1,2,3)_FB_C(11,05) -> SF_10_06_FB_C(08,05)    OK      18      Up
FPC3_T_SG(1,2,4)_FB_C(11,03) -> SF_10_06_FB_C(08,03)    OK      18      Up
FPC3_T_SG(1,2,5)_FB_C(11,02) -> SF_10_06_FB_C(08,02)    OK      18      Up
FPC3_T_SG(1,2,6)_FB_C(11,01) -> SF_10_06_FB_C(08,01)    OK      18      Up
...

```

### show chassis fabric topology (T4000 Core Router)

```
user@host> show chassis fabric topology 0
```

```

fchip (mode)
      In-links      State      Out-links      State
-----
SIB0 :
-----

Onboard Links
-----
SIB0_XF1,14_0->SIB0_XF,00_0    Up      SIB0_XF,00_0->SIB0_XF1,14_0    Up
SIB0_XF,00_0->SIB0_XF1,14_0    Up      SIB0_XF1,14_0->SIB0_XF,00_0    Up
SIB0_XF1,13_0->SIB0_XF,01_0    Up      SIB0_XF,01_0->SIB0_XF1,13_0    Up
SIB0_XF,01_0->SIB0_XF1,13_0    Up      SIB0_XF1,13_0->SIB0_XF,01_0    Up

```

SIB0_XF1,12_0->SIB0_XF,02_0	Up	SIB0_XF,02_0->SIB0_XF1,12_0	Up
SIB0_XF,02_0->SIB0_XF1,12_0	Up	SIB0_XF1,12_0->SIB0_XF,02_0	Up
SIB0_XF1,11_0->SIB0_XF,03_0	Up	SIB0_XF,03_0->SIB0_XF1,11_0	Up
SIB0_XF,03_0->SIB0_XF1,11_0	Up	SIB0_XF1,11_0->SIB0_XF,03_0	Up
SIB0_XF1,10_0->SIB0_XF,04_0	Up	SIB0_XF,04_0->SIB0_XF1,10_0	Up
SIB0_XF,04_0->SIB0_XF1,10_0	Up	SIB0_XF1,10_0->SIB0_XF,04_0	Up
SIB0_XF1,09_0->SIB0_XF,05_0	Up	SIB0_XF,05_0->SIB0_XF1,09_0	Up
SIB0_XF,05_0->SIB0_XF1,09_0	Up	SIB0_XF1,09_0->SIB0_XF,05_0	Up
SIB0_XF2,14_0->SIB0_XF,06_0	Up	SIB0_XF,06_0->SIB0_XF2,14_0	Up
SIB0_XF,06_0->SIB0_XF2,14_0	Up	SIB0_XF2,14_0->SIB0_XF,06_0	Up
SIB0_XF2,13_0->SIB0_XF,07_0	Up	SIB0_XF,07_0->SIB0_XF2,13_0	Up
SIB0_XF,07_0->SIB0_XF2,13_0	Up	SIB0_XF2,13_0->SIB0_XF,07_0	Up
SIB0_XF2,12_0->SIB0_XF,08_0	Up	SIB0_XF,08_0->SIB0_XF2,12_0	Up
SIB0_XF,08_0->SIB0_XF2,12_0	Up	SIB0_XF2,12_0->SIB0_XF,08_0	Up
SIB0_XF2,11_0->SIB0_XF,09_0	Up	SIB0_XF,09_0->SIB0_XF2,11_0	Up
SIB0_XF,09_0->SIB0_XF2,11_0	Up	SIB0_XF2,11_0->SIB0_XF,09_0	Up
SIB0_XF2,10_0->SIB0_XF,10_0	Up	SIB0_XF,10_0->SIB0_XF2,10_0	Up
SIB0_XF,10_0->SIB0_XF2,10_0	Up	SIB0_XF2,10_0->SIB0_XF,10_0	Up
SIB0_XF2,09_0->SIB0_XF,11_0	Up	SIB0_XF,11_0->SIB0_XF2,09_0	Up
SIB0_XF,11_0->SIB0_XF2,09_0	Up	SIB0_XF2,09_0->SIB0_XF,11_0	Up
SIB0_XF3,13_0->SIB0_XF,12_0	Up	SIB0_XF,12_0->SIB0_XF3,13_0	Up
SIB0_XF,12_0->SIB0_XF3,13_0	Up	SIB0_XF3,13_0->SIB0_XF,12_0	Up
SIB0_XF3,12_0->SIB0_XF,13_0	Up	SIB0_XF,13_0->SIB0_XF3,12_0	Up
SIB0_XF,13_0->SIB0_XF3,12_0	Up	SIB0_XF3,12_0->SIB0_XF,13_0	Up
SIB0_XF3,11_0->SIB0_XF,14_0	Up	SIB0_XF,14_0->SIB0_XF3,11_0	Up
SIB0_XF,14_0->SIB0_XF3,11_0	Up	SIB0_XF3,11_0->SIB0_XF,14_0	Up
SIB0_XF3,10_0->SIB0_XF,15_0	Up	SIB0_XF,15_0->SIB0_XF3,10_0	Up
SIB0_XF,15_0->SIB0_XF3,10_0	Up	SIB0_XF3,10_0->SIB0_XF,15_0	Up

## PFE Links

FPC2PFE0->SIB0_XF1,05_0	Up	SIB0_XF1,05_0->FPC2PFE0	Up
FPC3PFE0->SIB0_XF2,15_0	Up	SIB0_XF2,15_0->FPC3PFE0	Up
FPC5PFE0->SIB0_XF2,05_0	Up	SIB0_XF2,05_0->FPC5PFE0	Up
FPC5PFE1->SIB0_XF2,07_0	Up	SIB0_XF2,07_0->FPC5PFE1	Up
FPC6PFE0->SIB0_XF3,01_0	Up	SIB0_XF3,01_0->FPC6PFE0	Up
FPC6PFE0->SIB0_XF3,01_1	Up	SIB0_XF3,01_1->FPC6PFE0	Up
FPC6PFE0->SIB0_XF3,02_0	Up	SIB0_XF3,02_0->FPC6PFE0	Up
FPC6PFE1->SIB0_XF3,03_0	Up	SIB0_XF3,03_0->FPC6PFE1	Up
FPC6PFE1->SIB0_XF3,03_1	Up	SIB0_XF3,03_1->FPC6PFE1	Up
FPC6PFE1->SIB0_XF3,02_1	Up	SIB0_XF3,02_1->FPC6PFE1	Up

## show chassis fabric topology lcc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric topology lcc 6
lcc6-re0:
```

fchip (mode)			
In-links	State	Out-links	State
SIB0 :			
-----			
CXP0_Evn->LCC_SIB0_XF3,10_0	Up	LCC_SIB0_XF3,10_0->CXP0_Evn	Up
CXP0_Odd->LCC_SIB0_XF3,11_0	Up	LCC_SIB0_XF3,11_0->CXP0_Odd	Up
CXP1_Evn->LCC_SIB0_XF3,12_0	Up	LCC_SIB0_XF3,12_0->CXP1_Evn	Up
CXP1_Odd->LCC_SIB0_XF3,13_0	Up	LCC_SIB0_XF3,13_0->CXP1_Odd	Up
CXP2_Evn->LCC_SIB0_XF2,09_0	Up	LCC_SIB0_XF2,09_0->CXP2_Evn	Up
CXP2_Odd->LCC_SIB0_XF2,10_0	Up	LCC_SIB0_XF2,10_0->CXP2_Odd	Up
CXP3_Evn->LCC_SIB0_XF2,11_0	Up	LCC_SIB0_XF2,11_0->CXP3_Evn	Up
CXP3_Odd->LCC_SIB0_XF2,12_0	Up	LCC_SIB0_XF2,12_0->CXP3_Odd	Up
CXP4_Evn->LCC_SIB0_XF2,13_0	Up	LCC_SIB0_XF2,13_0->CXP4_Evn	Up

```

CXP4_Odd->LCC_SIB0_XF1,09_0      Up      LCC_SIB0_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB0_XF2,14_0      Up      LCC_SIB0_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB0_XF1,10_0      Up      LCC_SIB0_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB0_XF1,11_0      Up      LCC_SIB0_XF1,11_0->CXP6_Evn      Up
CXP6_Odd->LCC_SIB0_XF1,12_0      Up      LCC_SIB0_XF1,12_0->CXP6_Odd      Up
CXP7_Evn->LCC_SIB0_XF1,13_0      Up      LCC_SIB0_XF1,13_0->CXP7_Evn      Up
CXP7_Odd->LCC_SIB0_XF1,14_0      Up      LCC_SIB0_XF1,14_0->CXP7_Odd      Up
SIB1 :
-----
SIB2 :
-----
CXP0_Evn->LCC_SIB2_XF3,10_0      Up      LCC_SIB2_XF3,10_0->CXP0_Evn      Up
CXP0_Odd->LCC_SIB2_XF3,11_0      Up      LCC_SIB2_XF3,11_0->CXP0_Odd      Up
CXP1_Evn->LCC_SIB2_XF3,12_0      Up      LCC_SIB2_XF3,12_0->CXP1_Evn      Up
CXP1_Odd->LCC_SIB2_XF3,13_0      Up      LCC_SIB2_XF3,13_0->CXP1_Odd      Up
CXP2_Evn->LCC_SIB2_XF2,09_0      Up      LCC_SIB2_XF2,09_0->CXP2_Evn      Up
CXP2_Odd->LCC_SIB2_XF2,10_0      Up      LCC_SIB2_XF2,10_0->CXP2_Odd      Up
CXP3_Evn->LCC_SIB2_XF2,11_0      Up      LCC_SIB2_XF2,11_0->CXP3_Evn      Up
CXP3_Odd->LCC_SIB2_XF2,12_0      Up      LCC_SIB2_XF2,12_0->CXP3_Odd      Up
CXP4_Evn->LCC_SIB2_XF2,13_0      Up      LCC_SIB2_XF2,13_0->CXP4_Evn      Up
CXP4_Odd->LCC_SIB2_XF1,09_0      Up      LCC_SIB2_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB2_XF2,14_0      Up      LCC_SIB2_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB2_XF1,10_0      Up      LCC_SIB2_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB2_XF1,11_0      Up      LCC_SIB2_XF1,11_0->CXP6_Evn      Up
CXP6_Odd->LCC_SIB2_XF1,12_0      Up      LCC_SIB2_XF1,12_0->CXP6_Odd      Up
CXP7_Evn->LCC_SIB2_XF1,13_0      Up      LCC_SIB2_XF1,13_0->CXP7_Evn      Up
CXP7_Odd->LCC_SIB2_XF1,14_0      Up      LCC_SIB2_XF1,14_0->CXP7_Odd      Up
SIB3 :
-----
CXP0_Evn->LCC_SIB3_XF3,10_0      Up      LCC_SIB3_XF3,10_0->CXP0_Evn      Up
CXP0_Odd->LCC_SIB3_XF3,11_0      Up      LCC_SIB3_XF3,11_0->CXP0_Odd      Up
CXP1_Evn->LCC_SIB3_XF3,12_0      Up      LCC_SIB3_XF3,12_0->CXP1_Evn      Up
CXP1_Odd->LCC_SIB3_XF3,13_0      Up      LCC_SIB3_XF3,13_0->CXP1_Odd      Up
CXP2_Evn->LCC_SIB3_XF2,09_0      Up      LCC_SIB3_XF2,09_0->CXP2_Evn      Up
CXP2_Odd->LCC_SIB3_XF2,10_0      Up      LCC_SIB3_XF2,10_0->CXP2_Odd      Up
CXP3_Evn->LCC_SIB3_XF2,11_0      Up      LCC_SIB3_XF2,11_0->CXP3_Evn      Up
CXP3_Odd->LCC_SIB3_XF2,12_0      Up      LCC_SIB3_XF2,12_0->CXP3_Odd      Up
CXP4_Evn->LCC_SIB3_XF2,13_0      Up      LCC_SIB3_XF2,13_0->CXP4_Evn      Up
CXP4_Odd->LCC_SIB3_XF1,09_0      Up      LCC_SIB3_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB3_XF2,14_0      Up      LCC_SIB3_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB3_XF1,10_0      Up      LCC_SIB3_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB3_XF1,11_0      Up      LCC_SIB3_XF1,11_0->CXP6_Evn      Up
CXP6_Odd->LCC_SIB3_XF1,12_0      Up      LCC_SIB3_XF1,12_0->CXP6_Odd      Up
CXP7_Evn->LCC_SIB3_XF1,13_0      Up      LCC_SIB3_XF1,13_0->CXP7_Evn      Up
CXP7_Odd->LCC_SIB3_XF1,14_0      Up      LCC_SIB3_XF1,14_0->CXP7_Odd      Up
SIB4 :
-----
CXP0_Evn->LCC_SIB4_XF3,10_0      Up      LCC_SIB4_XF3,10_0->CXP0_Evn      Up
CXP0_Odd->LCC_SIB4_XF3,11_0      Up      LCC_SIB4_XF3,11_0->CXP0_Odd      Up
CXP1_Evn->LCC_SIB4_XF3,12_0      Up      LCC_SIB4_XF3,12_0->CXP1_Evn      Up
CXP1_Odd->LCC_SIB4_XF3,13_0      Up      LCC_SIB4_XF3,13_0->CXP1_Odd      Up
CXP2_Evn->LCC_SIB4_XF2,09_0      Up      LCC_SIB4_XF2,09_0->CXP2_Evn      Up
CXP2_Odd->LCC_SIB4_XF2,10_0      Up      LCC_SIB4_XF2,10_0->CXP2_Odd      Up
CXP3_Evn->LCC_SIB4_XF2,11_0      Up      LCC_SIB4_XF2,11_0->CXP3_Evn      Up
CXP3_Odd->LCC_SIB4_XF2,12_0      Up      LCC_SIB4_XF2,12_0->CXP3_Odd      Up
CXP4_Evn->LCC_SIB4_XF2,13_0      Up      LCC_SIB4_XF2,13_0->CXP4_Evn      Up
CXP4_Odd->LCC_SIB4_XF1,09_0      Up      LCC_SIB4_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB4_XF2,14_0      Up      LCC_SIB4_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB4_XF1,10_0      Up      LCC_SIB4_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB4_XF1,11_0      Up      LCC_SIB4_XF1,11_0->CXP6_Evn      Up
CXP6_Odd->LCC_SIB4_XF1,12_0      Up      LCC_SIB4_XF1,12_0->CXP6_Odd      Up

```

```

CXP7_Evn->LCC_SIB4_XF1,13_0    Up    LCC_SIB4_XF1,13_0->CXP7_Evn    Up
CXP7_Odd->LCC_SIB4_XF1,14_0    Up    LCC_SIB4_XF1,14_0->CXP7_Odd    Up

```

### show chassis fabric topology sfc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric topology sfc 0
sfc0-re0:

```

```

-----
      fchip (mode)
      In-links          State          Out-links          State
-----
F13_SIB0 :
-----
CXP0_Evn->F13_SIB0_XF2,04_0    Up    F13_SIB0_XF2,04_0->CXP0_Evn    Up
CXP0_Odd->F13_SIB0_XF2,03_0    Up    F13_SIB0_XF2,03_0->CXP0_Odd    Up
CXP1_Evn->F13_SIB0_XF2,06_0    Up    F13_SIB0_XF2,06_0->CXP1_Evn    Up
CXP1_Odd->F13_SIB0_XF2,05_0    Up    F13_SIB0_XF2,05_0->CXP1_Odd    Up
CXP2_Evn->F13_SIB0_XF2,08_0    Up    F13_SIB0_XF2,08_0->CXP2_Evn    Up
CXP2_Odd->F13_SIB0_XF2,07_0    Up    F13_SIB0_XF2,07_0->CXP2_Odd    Up
CXP3_Evn->F13_SIB0_XF2,10_0    Up    F13_SIB0_XF2,10_0->CXP3_Evn    Up
CXP3_Odd->F13_SIB0_XF2,09_0    Up    F13_SIB0_XF2,09_0->CXP3_Odd    Up
CXP4_Evn->F13_SIB0_XF0,04_0    Up    F13_SIB0_XF0,04_0->CXP4_Evn    Up
CXP4_Odd->F13_SIB0_XF0,03_0    Up    F13_SIB0_XF0,03_0->CXP4_Odd    Up
CXP5_Evn->F13_SIB0_XF0,06_0    Up    F13_SIB0_XF0,06_0->CXP5_Evn    Up
CXP5_Odd->F13_SIB0_XF0,05_0    Up    F13_SIB0_XF0,05_0->CXP5_Odd    Up
CXP6_Evn->F13_SIB0_XF0,08_0    Up    F13_SIB0_XF0,08_0->CXP6_Evn    Up
CXP6_Odd->F13_SIB0_XF0,07_0    Up    F13_SIB0_XF0,07_0->CXP6_Odd    Up
CXP7_Evn->F13_SIB0_XF0,10_0    Up    F13_SIB0_XF0,10_0->CXP7_Evn    Up
CXP7_Odd->F13_SIB0_XF0,09_0    Up    F13_SIB0_XF0,09_0->CXP7_Odd    Up
CXP8_Evn->F13_SIB0_XF3,04_0    Up    F13_SIB0_XF3,04_0->CXP8_Evn    Up
CXP8_Odd->F13_SIB0_XF3,03_0    Up    F13_SIB0_XF3,03_0->CXP8_Odd    Up
CXP9_Evn->F13_SIB0_XF3,06_0    Up    F13_SIB0_XF3,06_0->CXP9_Evn    Up
CXP9_Odd->F13_SIB0_XF3,05_0    Up    F13_SIB0_XF3,05_0->CXP9_Odd    Up
CXP10_Evn->F13_SIB0_XF3,08_0    Up    F13_SIB0_XF3,08_0->CXP10_Evn    Up
CXP10_Odd->F13_SIB0_XF3,07_0    Up    F13_SIB0_XF3,07_0->CXP10_Odd    Up
CXP11_Evn->F13_SIB0_XF3,10_0    Up    F13_SIB0_XF3,10_0->CXP11_Evn    Up
CXP11_Odd->F13_SIB0_XF3,09_0    Up    F13_SIB0_XF3,09_0->CXP11_Odd    Up
CXP12_Evn->F13_SIB0_XF1,04_0    Up    F13_SIB0_XF1,04_0->CXP12_Evn    Up
CXP12_Odd->F13_SIB0_XF1,03_0    Up    F13_SIB0_XF1,03_0->CXP12_Odd    Up
CXP13_Evn->F13_SIB0_XF1,06_0    Up    F13_SIB0_XF1,06_0->CXP13_Evn    Up
CXP13_Odd->F13_SIB0_XF1,05_0    Up    F13_SIB0_XF1,05_0->CXP13_Odd    Up
CXP14_Evn->F13_SIB0_XF1,08_0    Up    F13_SIB0_XF1,08_0->CXP14_Evn    Up
CXP14_Odd->F13_SIB0_XF1,07_0    Up    F13_SIB0_XF1,07_0->CXP14_Odd    Up
CXP15_Evn->F13_SIB0_XF1,10_0    Up    F13_SIB0_XF1,10_0->CXP15_Evn    Up
CXP15_Odd->F13_SIB0_XF1,09_0    Up    F13_SIB0_XF1,09_0->CXP15_Odd    Up
F13_SIB0_XF4,00_0->F13_SIB0_XF2,02_0 Up    F13_SIB0_XF2,02_0->F13_SIB0_XF4,00_0 Up
F13_SIB0_XF4,01_0->F13_SIB0_XF2,01_0 Up    F13_SIB0_XF2,01_0->F13_SIB0_XF4,01_0 Up
F13_SIB0_XF4,02_0->F13_SIB0_XF2,00_0 Up    F13_SIB0_XF2,00_0->F13_SIB0_XF4,02_0 Up
F13_SIB0_XF4,03_0->F13_SIB0_XF2,15_0 Up    F13_SIB0_XF2,15_0->F13_SIB0_XF4,03_0 Up
F13_SIB0_XF4,04_0->F13_SIB0_XF2,14_0 Up    F13_SIB0_XF2,14_0->F13_SIB0_XF4,04_0 Up
F13_SIB0_XF4,05_0->F13_SIB0_XF2,13_0 Up    F13_SIB0_XF2,13_0->F13_SIB0_XF4,05_0 Up
F13_SIB0_XF4,06_0->F13_SIB0_XF2,12_0 Up    F13_SIB0_XF2,12_0->F13_SIB0_XF4,06_0 Up
F13_SIB0_XF4,07_0->F13_SIB0_XF2,11_0 Up    F13_SIB0_XF2,11_0->F13_SIB0_XF4,07_0 Up

```

```

F13_SIB0_XF4,08_0->F13_SIB0_XF0,02_0 Up  F13_SIB0_XF0,02_0->F13_SIB0_XF4,08_0 Up
F13_SIB0_XF4,09_0->F13_SIB0_XF0,01_0 Up  F13_SIB0_XF0,01_0->F13_SIB0_XF4,09_0 Up
F13_SIB0_XF4,10_0->F13_SIB0_XF0,00_0 Up  F13_SIB0_XF0,00_0->F13_SIB0_XF4,10_0 Up
F13_SIB0_XF4,11_0->F13_SIB0_XF0,15_0 Up  F13_SIB0_XF0,15_0->F13_SIB0_XF4,11_0 Up
F13_SIB0_XF4,12_0->F13_SIB0_XF0,14_0 Up  F13_SIB0_XF0,14_0->F13_SIB0_XF4,12_0 Up
F13_SIB0_XF4,13_0->F13_SIB0_XF0,13_0 Up  F13_SIB0_XF0,13_0->F13_SIB0_XF4,13_0 Up
F13_SIB0_XF4,14_0->F13_SIB0_XF0,12_0 Up  F13_SIB0_XF0,12_0->F13_SIB0_XF4,14_0 Up
F13_SIB0_XF4,15_0->F13_SIB0_XF0,11_0 Up  F13_SIB0_XF0,11_0->F13_SIB0_XF4,15_0 Up
F13_SIB0_XF6,08_0->F13_SIB0_XF3,02_0 Up  F13_SIB0_XF3,02_0->F13_SIB0_XF6,08_0 Up
F13_SIB0_XF6,09_0->F13_SIB0_XF3,01_0 Up  F13_SIB0_XF3,01_0->F13_SIB0_XF6,09_0 Up
F13_SIB0_XF6,10_0->F13_SIB0_XF3,00_0 Up  F13_SIB0_XF3,00_0->F13_SIB0_XF6,10_0 Up
F13_SIB0_XF6,11_0->F13_SIB0_XF3,15_0 Up  F13_SIB0_XF3,15_0->F13_SIB0_XF6,11_0 Up
F13_SIB0_XF6,12_0->F13_SIB0_XF3,14_0 Up  F13_SIB0_XF3,14_0->F13_SIB0_XF6,12_0 Up
F13_SIB0_XF6,13_0->F13_SIB0_XF3,13_0 Up  F13_SIB0_XF3,13_0->F13_SIB0_XF6,13_0 Up
F13_SIB0_XF6,14_0->F13_SIB0_XF3,12_0 Up  F13_SIB0_XF3,12_0->F13_SIB0_XF6,14_0 Up
F13_SIB0_XF6,15_0->F13_SIB0_XF3,11_0 Up  F13_SIB0_XF3,11_0->F13_SIB0_XF6,15_0 Up
F13_SIB0_XF6,00_0->F13_SIB0_XF1,02_0 Up  F13_SIB0_XF1,02_0->F13_SIB0_XF6,00_0 Up
F13_SIB0_XF6,01_0->F13_SIB0_XF1,01_0 Up  F13_SIB0_XF1,01_0->F13_SIB0_XF6,01_0 Up
F13_SIB0_XF6,02_0->F13_SIB0_XF1,00_0 Up  F13_SIB0_XF1,00_0->F13_SIB0_XF6,02_0 Up
F13_SIB0_XF6,03_0->F13_SIB0_XF1,15_0 Up  F13_SIB0_XF1,15_0->F13_SIB0_XF6,03_0 Up
F13_SIB0_XF6,04_0->F13_SIB0_XF1,14_0 Up  F13_SIB0_XF1,14_0->F13_SIB0_XF6,04_0 Up
F13_SIB0_XF6,05_0->F13_SIB0_XF1,13_0 Up  F13_SIB0_XF1,13_0->F13_SIB0_XF6,05_0 Up
F13_SIB0_XF6,06_0->F13_SIB0_XF1,12_0 Up  F13_SIB0_XF1,12_0->F13_SIB0_XF6,06_0 Up
F13_SIB0_XF6,07_0->F13_SIB0_XF1,11_0 Up  F13_SIB0_XF1,11_0->F13_SIB0_XF6,07_0 Up
F13_SIB0_XF2,02_0->F13_SIB0_XF5,00_0 Up  F13_SIB0_XF5,00_0->F13_SIB0_XF2,02_0 Up
F13_SIB0_XF2,01_0->F13_SIB0_XF5,01_0 Up  F13_SIB0_XF5,01_0->F13_SIB0_XF2,01_0 Up
F13_SIB0_XF2,00_0->F13_SIB0_XF5,02_0 Up  F13_SIB0_XF5,02_0->F13_SIB0_XF2,00_0 Up
F13_SIB0_XF2,15_0->F13_SIB0_XF5,03_0 Up  F13_SIB0_XF5,03_0->F13_SIB0_XF2,15_0 Up
F13_SIB0_XF2,14_0->F13_SIB0_XF5,04_0 Up  F13_SIB0_XF5,04_0->F13_SIB0_XF2,14_0 Up
F13_SIB0_XF2,13_0->F13_SIB0_XF5,05_0 Up  F13_SIB0_XF5,05_0->F13_SIB0_XF2,13_0 Up
F13_SIB0_XF2,12_0->F13_SIB0_XF5,06_0 Up  F13_SIB0_XF5,06_0->F13_SIB0_XF2,12_0 Up

```

F13_SIB0_XF2,11_0->F13_SIB0_XF5,07_0 Up	F13_SIB0_XF5,07_0->F13_SIB0_XF2,11_0 Up
F13_SIB0_XF0,02_0->F13_SIB0_XF5,08_0 Up	F13_SIB0_XF5,08_0->F13_SIB0_XF0,02_0 Up
F13_SIB0_XF0,01_0->F13_SIB0_XF5,09_0 Up	F13_SIB0_XF5,09_0->F13_SIB0_XF0,01_0 Up
F13_SIB0_XF0,00_0->F13_SIB0_XF5,10_0 Up	F13_SIB0_XF5,10_0->F13_SIB0_XF0,00_0 Up
F13_SIB0_XF0,15_0->F13_SIB0_XF5,11_0 Up	F13_SIB0_XF5,11_0->F13_SIB0_XF0,15_0 Up
F13_SIB0_XF0,14_0->F13_SIB0_XF5,12_0 Up	F13_SIB0_XF5,12_0->F13_SIB0_XF0,14_0 Up
F13_SIB0_XF0,13_0->F13_SIB0_XF5,13_0 Up	F13_SIB0_XF5,13_0->F13_SIB0_XF0,13_0 Up
F13_SIB0_XF0,12_0->F13_SIB0_XF5,14_0 Up	F13_SIB0_XF5,14_0->F13_SIB0_XF0,12_0 Up
F13_SIB0_XF0,11_0->F13_SIB0_XF5,15_0 Up	F13_SIB0_XF5,15_0->F13_SIB0_XF0,11_0 Up
F13_SIB0_XF3,02_0->F13_SIB0_XF7,08_0 Up	F13_SIB0_XF7,08_0->F13_SIB0_XF3,02_0 Up
F13_SIB0_XF3,01_0->F13_SIB0_XF7,09_0 Up	F13_SIB0_XF7,09_0->F13_SIB0_XF3,01_0 Up
F13_SIB0_XF3,00_0->F13_SIB0_XF7,10_0 Up	F13_SIB0_XF7,10_0->F13_SIB0_XF3,00_0 Up
F13_SIB0_XF3,15_0->F13_SIB0_XF7,11_0 Up	F13_SIB0_XF7,11_0->F13_SIB0_XF3,15_0 Up
F13_SIB0_XF3,14_0->F13_SIB0_XF7,12_0 Up	F13_SIB0_XF7,12_0->F13_SIB0_XF3,14_0 Up
F13_SIB0_XF3,13_0->F13_SIB0_XF7,13_0 Up	F13_SIB0_XF7,13_0->F13_SIB0_XF3,13_0 Up
F13_SIB0_XF3,12_0->F13_SIB0_XF7,14_0 Up	F13_SIB0_XF7,14_0->F13_SIB0_XF3,12_0 Up
F13_SIB0_XF3,11_0->F13_SIB0_XF7,15_0 Up	F13_SIB0_XF7,15_0->F13_SIB0_XF3,11_0 Up
F13_SIB0_XF1,02_0->F13_SIB0_XF7,00_0 Up	F13_SIB0_XF7,00_0->F13_SIB0_XF1,02_0 Up
F13_SIB0_XF1,01_0->F13_SIB0_XF7,01_0 Up	F13_SIB0_XF7,01_0->F13_SIB0_XF1,01_0 Up
F13_SIB0_XF1,00_0->F13_SIB0_XF7,02_0 Up	F13_SIB0_XF7,02_0->F13_SIB0_XF1,00_0 Up
F13_SIB0_XF1,15_0->F13_SIB0_XF7,03_0 Up	F13_SIB0_XF7,03_0->F13_SIB0_XF1,15_0 Up
F13_SIB0_XF1,14_0->F13_SIB0_XF7,04_0 Up	F13_SIB0_XF7,04_0->F13_SIB0_XF1,14_0 Up
F13_SIB0_XF1,13_0->F13_SIB0_XF7,05_0 Up	F13_SIB0_XF7,05_0->F13_SIB0_XF1,13_0 Up
F13_SIB0_XF1,12_0->F13_SIB0_XF7,06_0 Up	F13_SIB0_XF7,06_0->F13_SIB0_XF1,12_0 Up
F13_SIB0_XF1,11_0->F13_SIB0_XF7,07_0 Up	F13_SIB0_XF7,07_0->F13_SIB0_XF1,11_0 Up
F2S_SIB2_XF,12_0->F13_SIB0_XF4,00_0 Up	F13_SIB0_XF4,00_0->F2S_SIB2_XF,12_0 Up
F2S_SIB2_XF,08_0->F13_SIB0_XF4,01_0 Up	F13_SIB0_XF4,01_0->F2S_SIB2_XF,08_0 Up
F2S_SIB2_XF,14_0->F13_SIB0_XF4,02_0 Up	F13_SIB0_XF4,02_0->F2S_SIB2_XF,14_0 Up
F2S_SIB2_XF,10_0->F13_SIB0_XF4,03_0 Up	F13_SIB0_XF4,03_0->F2S_SIB2_XF,10_0 Up
F2S_SIB3_XF,12_0->F13_SIB0_XF4,04_0 Up	F13_SIB0_XF4,04_0->F2S_SIB3_XF,12_0 Up

```

F2S_SIB3_XF,08_0->F13_SIB0_XF4,05_0 Up   F13_SIB0_XF4,05_0->F2S_SIB3_XF,08_0 Up
F2S_SIB3_XF,14_0->F13_SIB0_XF4,06_0 Up   F13_SIB0_XF4,06_0->F2S_SIB3_XF,14_0 Up
F2S_SIB3_XF,10_0->F13_SIB0_XF4,07_0 Up   F13_SIB0_XF4,07_0->F2S_SIB3_XF,10_0 Up
F2S_SIB0_XF,12_0->F13_SIB0_XF4,08_0 Up   F13_SIB0_XF4,08_0->F2S_SIB0_XF,12_0 Up
F2S_SIB0_XF,08_0->F13_SIB0_XF4,09_0 Up   F13_SIB0_XF4,09_0->F2S_SIB0_XF,08_0 Up
F2S_SIB0_XF,14_0->F13_SIB0_XF4,10_0 Up   F13_SIB0_XF4,10_0->F2S_SIB0_XF,14_0 Up
F2S_SIB0_XF,10_0->F13_SIB0_XF4,11_0 Up   F13_SIB0_XF4,11_0->F2S_SIB0_XF,10_0 Up
F2S_SIB1_XF,12_0->F13_SIB0_XF4,12_0 Up   F13_SIB0_XF4,12_0->F2S_SIB1_XF,12_0 Up
F2S_SIB1_XF,08_0->F13_SIB0_XF4,13_0 Up   F13_SIB0_XF4,13_0->F2S_SIB1_XF,08_0 Up
F2S_SIB1_XF,14_0->F13_SIB0_XF4,14_0 Up   F13_SIB0_XF4,14_0->F2S_SIB1_XF,14_0 Up
F2S_SIB1_XF,10_0->F13_SIB0_XF4,15_0 Up   F13_SIB0_XF4,15_0->F2S_SIB1_XF,10_0 Up
F2S_SIB2_XF,13_0->F13_SIB0_XF6,00_0 Up   F13_SIB0_XF6,00_0->F2S_SIB2_XF,13_0 Up
F2S_SIB2_XF,09_0->F13_SIB0_XF6,01_0 Up   F13_SIB0_XF6,01_0->F2S_SIB2_XF,09_0 Up
F2S_SIB2_XF,15_0->F13_SIB0_XF6,02_0 Up   F13_SIB0_XF6,02_0->F2S_SIB2_XF,15_0 Up
F2S_SIB2_XF,11_0->F13_SIB0_XF6,03_0 Up   F13_SIB0_XF6,03_0->F2S_SIB2_XF,11_0 Up
F2S_SIB3_XF,13_0->F13_SIB0_XF6,04_0 Up   F13_SIB0_XF6,04_0->F2S_SIB3_XF,13_0 Up
F2S_SIB3_XF,09_0->F13_SIB0_XF6,05_0 Up   F13_SIB0_XF6,05_0->F2S_SIB3_XF,09_0 Up
F2S_SIB3_XF,15_0->F13_SIB0_XF6,06_0 Up   F13_SIB0_XF6,06_0->F2S_SIB3_XF,15_0 Up
F2S_SIB3_XF,11_0->F13_SIB0_XF6,07_0 Up   F13_SIB0_XF6,07_0->F2S_SIB3_XF,11_0 Up
F2S_SIB0_XF,13_0->F13_SIB0_XF6,08_0 Up   F13_SIB0_XF6,08_0->F2S_SIB0_XF,13_0 Up
F2S_SIB0_XF,09_0->F13_SIB0_XF6,09_0 Up   F13_SIB0_XF6,09_0->F2S_SIB0_XF,09_0 Up
F2S_SIB0_XF,15_0->F13_SIB0_XF6,10_0 Up   F13_SIB0_XF6,10_0->F2S_SIB0_XF,15_0 Up
F2S_SIB0_XF,11_0->F13_SIB0_XF6,11_0 Up   F13_SIB0_XF6,11_0->F2S_SIB0_XF,11_0 Up
F2S_SIB1_XF,13_0->F13_SIB0_XF6,12_0 Up   F13_SIB0_XF6,12_0->F2S_SIB1_XF,13_0 Up
F2S_SIB1_XF,09_0->F13_SIB0_XF6,13_0 Up   F13_SIB0_XF6,13_0->F2S_SIB1_XF,09_0 Up
F2S_SIB1_XF,15_0->F13_SIB0_XF6,14_0 Up   F13_SIB0_XF6,14_0->F2S_SIB1_XF,15_0 Up
F2S_SIB1_XF,11_0->F13_SIB0_XF6,15_0 Up   F13_SIB0_XF6,15_0->F2S_SIB1_XF,11_0 Up
F13_SIB0_XF5,00_0->F2S_SIB2_XF,12_0 Up   F2S_SIB2_XF,12_0->F13_SIB0_XF5,00_0 Up
F13_SIB0_XF5,01_0->F2S_SIB2_XF,08_0 Up   F2S_SIB2_XF,08_0->F13_SIB0_XF5,01_0 Up
F13_SIB0_XF5,02_0->F2S_SIB2_XF,14_0 Up   F2S_SIB2_XF,14_0->F13_SIB0_XF5,02_0 Up
F13_SIB0_XF5,03_0->F2S_SIB2_XF,10_0 Up   F2S_SIB2_XF,10_0->F13_SIB0_XF5,03_0 Up

```

F13_SIB0_XF5,04_0->F2S_SIB3_XF,12_0 Up	F2S_SIB3_XF,12_0->F13_SIB0_XF5,04_0 Up
F13_SIB0_XF5,05_0->F2S_SIB3_XF,08_0 Up	F2S_SIB3_XF,08_0->F13_SIB0_XF5,05_0 Up
F13_SIB0_XF5,06_0->F2S_SIB3_XF,14_0 Up	F2S_SIB3_XF,14_0->F13_SIB0_XF5,06_0 Up
F13_SIB0_XF5,07_0->F2S_SIB3_XF,10_0 Up	F2S_SIB3_XF,10_0->F13_SIB0_XF5,07_0 Up
F13_SIB0_XF5,08_0->F2S_SIB0_XF,12_0 Up	F2S_SIB0_XF,12_0->F13_SIB0_XF5,08_0 Up
F13_SIB0_XF5,09_0->F2S_SIB0_XF,08_0 Up	F2S_SIB0_XF,08_0->F13_SIB0_XF5,09_0 Up
F13_SIB0_XF5,10_0->F2S_SIB0_XF,14_0 Up	F2S_SIB0_XF,14_0->F13_SIB0_XF5,10_0 Up
F13_SIB0_XF5,11_0->F2S_SIB0_XF,10_0 Up	F2S_SIB0_XF,10_0->F13_SIB0_XF5,11_0 Up
F13_SIB0_XF5,12_0->F2S_SIB1_XF,12_0 Up	F2S_SIB1_XF,12_0->F13_SIB0_XF5,12_0 Up
F13_SIB0_XF5,13_0->F2S_SIB1_XF,08_0 Up	F2S_SIB1_XF,08_0->F13_SIB0_XF5,13_0 Up
F13_SIB0_XF5,14_0->F2S_SIB1_XF,14_0 Up	F2S_SIB1_XF,14_0->F13_SIB0_XF5,14_0 Up
F13_SIB0_XF5,15_0->F2S_SIB1_XF,10_0 Up	F2S_SIB1_XF,10_0->F13_SIB0_XF5,15_0 Up
F13_SIB0_XF7,00_0->F2S_SIB2_XF,13_0 Up	F2S_SIB2_XF,13_0->F13_SIB0_XF7,00_0 Up
F13_SIB0_XF7,01_0->F2S_SIB2_XF,09_0 Up	F2S_SIB2_XF,09_0->F13_SIB0_XF7,01_0 Up
F13_SIB0_XF7,02_0->F2S_SIB2_XF,15_0 Up	F2S_SIB2_XF,15_0->F13_SIB0_XF7,02_0 Up
F13_SIB0_XF7,03_0->F2S_SIB2_XF,11_0 Up	F2S_SIB2_XF,11_0->F13_SIB0_XF7,03_0 Up
F13_SIB0_XF7,04_0->F2S_SIB3_XF,13_0 Up	F2S_SIB3_XF,13_0->F13_SIB0_XF7,04_0 Up
F13_SIB0_XF7,05_0->F2S_SIB3_XF,09_0 Up	F2S_SIB3_XF,09_0->F13_SIB0_XF7,05_0 Up
F13_SIB0_XF7,06_0->F2S_SIB3_XF,15_0 Up	F2S_SIB3_XF,15_0->F13_SIB0_XF7,06_0 Up
F13_SIB0_XF7,07_0->F2S_SIB3_XF,11_0 Up	F2S_SIB3_XF,11_0->F13_SIB0_XF7,07_0 Up
F13_SIB0_XF7,08_0->F2S_SIB0_XF,13_0 Up	F2S_SIB0_XF,13_0->F13_SIB0_XF7,08_0 Up
F13_SIB0_XF7,09_0->F2S_SIB0_XF,09_0 Up	F2S_SIB0_XF,09_0->F13_SIB0_XF7,09_0 Up
F13_SIB0_XF7,10_0->F2S_SIB0_XF,15_0 Up	F2S_SIB0_XF,15_0->F13_SIB0_XF7,10_0 Up
F13_SIB0_XF7,11_0->F2S_SIB0_XF,11_0 Up	F2S_SIB0_XF,11_0->F13_SIB0_XF7,11_0 Up
F13_SIB0_XF7,12_0->F2S_SIB1_XF,13_0 Up	F2S_SIB1_XF,13_0->F13_SIB0_XF7,12_0 Up
F13_SIB0_XF7,13_0->F2S_SIB1_XF,09_0 Up	F2S_SIB1_XF,09_0->F13_SIB0_XF7,13_0 Up
F13_SIB0_XF7,14_0->F2S_SIB1_XF,15_0 Up	F2S_SIB1_XF,15_0->F13_SIB0_XF7,14_0 Up
F13_SIB0_XF7,15_0->F2S_SIB1_XF,11_0 Up	F2S_SIB1_XF,11_0->F13_SIB0_XF7,15_0 Up
...	



## show chassis fabric topology (PTX5000 Router)

```
user@host> show chassis fabric topology
```

```
In-link : FPC# FE# TQ# (TQ-TX sub-chnl #) ->
```

```
SIB# TF#_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)
```

```
Out-link : SIB# TF#_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->
```

```
FPC# FE# TQ# (TQ-RX sub-chnl #)
```

```
(6, 4, 06) in FPC02FE0TQ0(02)->S01F0_0(6,4,06) will be TF Rx Port 6, TF CCL Rx Sub-Channel 4, TF CCL Rx Instance 6.
```

```
(2, 7, 10) in S01F0_0(2,7,10)->FPC02FE0TQ0(02) will be TF-Tx Port 2, TF CCL Tx Sub-channel 7, TF CCL Tx Instance 10.
```

```
SIB 0 FCHIP 0 FCORE 0 :
```

In-links	State	Out-links	State
FPC00FE0TQ0(00)->S00F0_0(7,4,07)	OK	S00F0_0(3,7,11)->FPC00FE0TQ0(00)	OK
FPC00FE1TQ1(00)->S00F0_0(7,6,07)	OK	S00F0_0(3,5,11)->FPC00FE1TQ1(00)	OK
FPC00FE2TQ2(00)->S00F0_0(7,5,07)	OK	S00F0_0(3,6,11)->FPC00FE2TQ2(00)	OK
FPC00FE3TQ3(00)->S00F0_0(7,7,07)	OK	S00F0_0(3,4,11)->FPC00FE3TQ3(00)	OK
FPC01FE0TQ0(00)->S00F0_0(7,0,07)	OK	S00F0_0(3,3,11)->FPC01FE0TQ0(00)	OK
FPC01FE1TQ1(00)->S00F0_0(7,1,07)	OK	S00F0_0(3,1,11)->FPC01FE1TQ1(00)	OK
FPC01FE2TQ2(00)->S00F0_0(7,2,07)	OK	S00F0_0(3,2,11)->FPC01FE2TQ2(00)	Error
FPC01FE3TQ3(00)->S00F0_0(7,3,07)	OK	S00F0_0(3,0,11)->FPC01FE3TQ3(00)	OK
FPC02FE0TQ0(00)->S00F0_0(6,4,06)	OK	S00F0_0(2,7,10)->FPC02FE0TQ0(00)	OK
FPC02FE1TQ1(00)->S00F0_0(6,5,06)	OK	S00F0_0(2,5,10)->FPC02FE1TQ1(00)	OK
FPC02FE2TQ2(00)->S00F0_0(6,6,06)	OK	S00F0_0(2,6,10)->FPC02FE2TQ2(00)	OK
FPC02FE3TQ3(00)->S00F0_0(6,7,06)	OK	S00F0_0(2,4,10)->FPC02FE3TQ3(00)	OK
FPC03FE0TQ0(00)->S00F0_0(6,0,06)	Down	S00F0_0(2,3,10)->FPC03FE0TQ0(00)	Down
FPC03FE1TQ1(00)->S00F0_0(6,1,06)	Down	S00F0_0(2,0,10)->FPC03FE1TQ1(00)	Down
FPC03FE2TQ2(00)->S00F0_0(6,2,06)	Down	S00F0_0(2,2,10)->FPC03FE2TQ2(00)	Down
FPC03FE3TQ3(00)->S00F0_0(6,3,06)	Down	S00F0_0(2,1,10)->FPC03FE3TQ3(00)	Down
FPC04FE0TQ0(00)->S00F0_0(5,4,05)	OK	S00F0_0(1,7,09)->FPC04FE0TQ0(00)	OK
FPC04FE1TQ1(00)->S00F0_0(5,5,05)	OK	S00F0_0(1,6,09)->FPC04FE1TQ1(00)	OK
FPC04FE2TQ2(00)->S00F0_0(5,6,05)	OK	S00F0_0(1,4,09)->FPC04FE2TQ2(00)	OK
FPC04FE3TQ3(00)->S00F0_0(5,7,05)	OK	S00F0_0(1,5,09)->FPC04FE3TQ3(00)	OK
FPC05FE0TQ0(00)->S00F0_0(5,0,05)	OK	S00F0_0(1,3,09)->FPC05FE0TQ0(00)	OK
FPC05FE1TQ1(00)->S00F0_0(5,1,05)	OK	S00F0_0(1,0,09)->FPC05FE1TQ1(00)	OK
FPC05FE2TQ2(00)->S00F0_0(5,2,05)	OK	S00F0_0(1,2,09)->FPC05FE2TQ2(00)	OK
FPC05FE3TQ3(00)->S00F0_0(5,3,05)	OK	S00F0_0(1,1,09)->FPC05FE3TQ3(00)	OK
FPC06FE0TQ0(00)->S00F0_0(4,4,04)	Down	S00F0_0(0,7,08)->FPC06FE0TQ0(00)	Down
FPC06FE1TQ1(00)->S00F0_0(4,5,04)	Down	S00F0_0(0,5,08)->FPC06FE1TQ1(00)	Down
FPC06FE2TQ2(00)->S00F0_0(4,6,04)	Down	S00F0_0(0,6,08)->FPC06FE2TQ2(00)	Down
FPC06FE3TQ3(00)->S00F0_0(4,7,04)	Down	S00F0_0(0,4,08)->FPC06FE3TQ3(00)	Down
FPC07FE0TQ0(00)->S00F0_0(4,2,04)	Down	S00F0_0(0,3,08)->FPC07FE0TQ0(00)	Down
FPC07FE1TQ1(00)->S00F0_0(4,0,04)	Down	S00F0_0(0,0,08)->FPC07FE1TQ1(00)	Down
FPC07FE2TQ2(00)->S00F0_0(4,1,04)	Down	S00F0_0(0,1,08)->FPC07FE2TQ2(00)	Down
FPC07FE3TQ3(00)->S00F0_0(4,3,04)	Down	S00F0_0(0,2,08)->FPC07FE3TQ3(00)	Down

```
SIB 0 FCHIP 0 FCORE 1 :
```

In-links	State	Out-links	State
FPC00FE0TQ0(01)->S00F0_1(3,4,11)	OK	S00F0_1(7,6,07)->FPC00FE0TQ0(01)	OK
FPC00FE1TQ1(01)->S00F0_1(3,5,11)	OK	S00F0_1(7,4,07)->FPC00FE1TQ1(01)	OK
FPC00FE2TQ2(01)->S00F0_1(3,6,11)	OK	S00F0_1(7,7,07)->FPC00FE2TQ2(01)	OK
FPC00FE3TQ3(01)->S00F0_1(3,7,11)	OK	S00F0_1(7,5,07)->FPC00FE3TQ3(01)	OK
FPC01FE0TQ0(01)->S00F0_1(3,0,11)	OK	S00F0_1(7,2,07)->FPC01FE0TQ0(01)	OK
FPC01FE1TQ1(01)->S00F0_1(3,1,11)	OK	S00F0_1(7,0,07)->FPC01FE1TQ1(01)	OK
FPC01FE2TQ2(01)->S00F0_1(3,2,11)	OK	S00F0_1(7,3,07)->FPC01FE2TQ2(01)	OK
FPC01FE3TQ3(01)->S00F0_1(3,3,11)	OK	S00F0_1(7,1,07)->FPC01FE3TQ3(01)	OK

FPC02FE0TQ0(01)->S00F0_1(2,4,10)	OK	S00F0_1(6,5,06)->FPC02FE0TQ0(01)	OK
FPC02FE1TQ1(01)->S00F0_1(2,5,10)	OK	S00F0_1(6,4,06)->FPC02FE1TQ1(01)	OK
FPC02FE2TQ2(01)->S00F0_1(2,6,10)	OK	S00F0_1(6,7,06)->FPC02FE2TQ2(01)	OK
FPC02FE3TQ3(01)->S00F0_1(2,7,10)	OK	S00F0_1(6,6,06)->FPC02FE3TQ3(01)	OK
FPC03FE0TQ0(01)->S00F0_1(2,0,10)	Down	S00F0_1(6,1,06)->FPC03FE0TQ0(01)	Down
FPC03FE1TQ1(01)->S00F0_1(2,1,10)	Down	S00F0_1(6,0,06)->FPC03FE1TQ1(01)	Down
FPC03FE2TQ2(01)->S00F0_1(2,2,10)	Down	S00F0_1(6,3,06)->FPC03FE2TQ2(01)	Down
FPC03FE3TQ3(01)->S00F0_1(2,3,10)	Down	S00F0_1(6,2,06)->FPC03FE3TQ3(01)	Down
FPC04FE0TQ0(01)->S00F0_1(1,4,09)	OK	S00F0_1(5,5,05)->FPC04FE0TQ0(01)	OK
FPC04FE1TQ1(01)->S00F0_1(1,5,09)	OK	S00F0_1(5,4,05)->FPC04FE1TQ1(01)	OK
FPC04FE2TQ2(01)->S00F0_1(1,6,09)	OK	S00F0_1(5,7,05)->FPC04FE2TQ2(01)	OK
FPC04FE3TQ3(01)->S00F0_1(1,7,09)	OK	S00F0_1(5,6,05)->FPC04FE3TQ3(01)	OK
FPC05FE0TQ0(01)->S00F0_1(1,0,09)	OK	S00F0_1(5,1,05)->FPC05FE0TQ0(01)	OK
FPC05FE1TQ1(01)->S00F0_1(1,1,09)	OK	S00F0_1(5,0,05)->FPC05FE1TQ1(01)	OK
FPC05FE2TQ2(01)->S00F0_1(1,2,09)	OK	S00F0_1(5,3,05)->FPC05FE2TQ2(01)	OK
FPC05FE3TQ3(01)->S00F0_1(1,3,09)	OK	S00F0_1(5,2,05)->FPC05FE3TQ3(01)	OK
FPC06FE0TQ0(01)->S00F0_1(0,4,08)	Down	S00F0_1(4,7,04)->FPC06FE0TQ0(01)	Down
FPC06FE1TQ1(01)->S00F0_1(0,5,08)	Down	S00F0_1(4,0,04)->FPC06FE1TQ1(01)	Down
FPC06FE2TQ2(01)->S00F0_1(0,6,08)	Down	S00F0_1(4,6,04)->FPC06FE2TQ2(01)	Down
FPC06FE3TQ3(01)->S00F0_1(0,7,08)	Down	S00F0_1(4,1,04)->FPC06FE3TQ3(01)	Down
FPC07FE0TQ0(01)->S00F0_1(0,0,08)	Down	S00F0_1(4,3,04)->FPC07FE0TQ0(01)	Down
FPC07FE1TQ1(01)->S00F0_1(0,1,08)	Down	S00F0_1(4,4,04)->FPC07FE1TQ1(01)	Down
FPC07FE2TQ2(01)->S00F0_1(0,2,08)	Down	S00F0_1(4,2,04)->FPC07FE2TQ2(01)	Down
FPC07FE3TQ3(01)->S00F0_1(0,3,08)	Down	S00F0_1(4,5,04)->FPC07FE3TQ3(01)	Down

SIB 1 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(02)->S01F0_0(7,4,07)	Error	S01F0_0(3,7,11)->FPC00FE0TQ0(02)	Down
FPC00FE1TQ1(02)->S01F0_0(7,6,07)	OK	S01F0_0(3,5,11)->FPC00FE1TQ1(02)	OK
FPC00FE2TQ2(02)->S01F0_0(7,5,07)	OK	S01F0_0(3,6,11)->FPC00FE2TQ2(02)	OK
FPC00FE3TQ3(02)->S01F0_0(7,7,07)	OK	S01F0_0(3,4,11)->FPC00FE3TQ3(02)	OK
FPC01FE0TQ0(02)->S01F0_0(7,0,07)	OK	S01F0_0(3,3,11)->FPC01FE0TQ0(02)	OK
FPC01FE1TQ1(02)->S01F0_0(7,1,07)	OK	S01F0_0(3,1,11)->FPC01FE1TQ1(02)	OK
FPC01FE2TQ2(02)->S01F0_0(7,2,07)	OK	S01F0_0(3,2,11)->FPC01FE2TQ2(02)	OK
FPC01FE3TQ3(02)->S01F0_0(7,3,07)	OK	S01F0_0(3,0,11)->FPC01FE3TQ3(02)	OK
FPC02FE0TQ0(02)->S01F0_0(6,4,06)	OK	S01F0_0(2,7,10)->FPC02FE0TQ0(02)	OK
FPC02FE1TQ1(02)->S01F0_0(6,5,06)	OK	S01F0_0(2,5,10)->FPC02FE1TQ1(02)	OK
FPC02FE2TQ2(02)->S01F0_0(6,6,06)	OK	S01F0_0(2,6,10)->FPC02FE2TQ2(02)	OK
FPC02FE3TQ3(02)->S01F0_0(6,7,06)	OK	S01F0_0(2,4,10)->FPC02FE3TQ3(02)	OK
FPC03FE0TQ0(02)->S01F0_0(6,0,06)	Down	S01F0_0(2,3,10)->FPC03FE0TQ0(02)	Down
FPC03FE1TQ1(02)->S01F0_0(6,1,06)	Down	S01F0_0(2,0,10)->FPC03FE1TQ1(02)	Down
FPC03FE2TQ2(02)->S01F0_0(6,2,06)	Down	S01F0_0(2,2,10)->FPC03FE2TQ2(02)	Down
FPC03FE3TQ3(02)->S01F0_0(6,3,06)	Down	S01F0_0(2,1,10)->FPC03FE3TQ3(02)	Down
FPC04FE0TQ0(02)->S01F0_0(5,4,05)	OK	S01F0_0(1,7,09)->FPC04FE0TQ0(02)	OK
FPC04FE1TQ1(02)->S01F0_0(5,5,05)	OK	S01F0_0(1,6,09)->FPC04FE1TQ1(02)	OK
FPC04FE2TQ2(02)->S01F0_0(5,6,05)	OK	S01F0_0(1,4,09)->FPC04FE2TQ2(02)	OK
FPC04FE3TQ3(02)->S01F0_0(5,7,05)	OK	S01F0_0(1,5,09)->FPC04FE3TQ3(02)	OK
FPC05FE0TQ0(02)->S01F0_0(5,0,05)	OK	S01F0_0(1,3,09)->FPC05FE0TQ0(02)	OK
FPC05FE1TQ1(02)->S01F0_0(5,1,05)	OK	S01F0_0(1,0,09)->FPC05FE1TQ1(02)	OK
FPC05FE2TQ2(02)->S01F0_0(5,2,05)	OK	S01F0_0(1,2,09)->FPC05FE2TQ2(02)	OK
FPC05FE3TQ3(02)->S01F0_0(5,3,05)	OK	S01F0_0(1,1,09)->FPC05FE3TQ3(02)	OK
FPC06FE0TQ0(02)->S01F0_0(4,4,04)	Down	S01F0_0(0,7,08)->FPC06FE0TQ0(02)	Down
FPC06FE1TQ1(02)->S01F0_0(4,5,04)	Down	S01F0_0(0,5,08)->FPC06FE1TQ1(02)	Down
FPC06FE2TQ2(02)->S01F0_0(4,6,04)	Down	S01F0_0(0,6,08)->FPC06FE2TQ2(02)	Down
FPC06FE3TQ3(02)->S01F0_0(4,7,04)	Down	S01F0_0(0,4,08)->FPC06FE3TQ3(02)	Down
FPC07FE0TQ0(02)->S01F0_0(4,2,04)	Down	S01F0_0(0,3,08)->FPC07FE0TQ0(02)	Down
FPC07FE1TQ1(02)->S01F0_0(4,0,04)	Down	S01F0_0(0,0,08)->FPC07FE1TQ1(02)	Down
FPC07FE2TQ2(02)->S01F0_0(4,1,04)	Down	S01F0_0(0,1,08)->FPC07FE2TQ2(02)	Down
FPC07FE3TQ3(02)->S01F0_0(4,3,04)	Down	S01F0_0(0,2,08)->FPC07FE3TQ3(02)	Down

SIB 1 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(03)->S01F0_1(3,4,11)	OK	S01F0_1(7,6,07)->FPC00FE0TQ0(03)	OK
FPC00FE1TQ1(03)->S01F0_1(3,5,11)	OK	S01F0_1(7,4,07)->FPC00FE1TQ1(03)	OK
FPC00FE2TQ2(03)->S01F0_1(3,6,11)	OK	S01F0_1(7,7,07)->FPC00FE2TQ2(03)	OK
FPC00FE3TQ3(03)->S01F0_1(3,7,11)	OK	S01F0_1(7,5,07)->FPC00FE3TQ3(03)	OK
FPC01FE0TQ0(03)->S01F0_1(3,0,11)	OK	S01F0_1(7,2,07)->FPC01FE0TQ0(03)	OK
FPC01FE1TQ1(03)->S01F0_1(3,1,11)	OK	S01F0_1(7,0,07)->FPC01FE1TQ1(03)	OK
FPC01FE2TQ2(03)->S01F0_1(3,2,11)	OK	S01F0_1(7,3,07)->FPC01FE2TQ2(03)	OK
FPC01FE3TQ3(03)->S01F0_1(3,3,11)	OK	S01F0_1(7,1,07)->FPC01FE3TQ3(03)	OK
FPC02FE0TQ0(03)->S01F0_1(2,4,10)	OK	S01F0_1(6,5,06)->FPC02FE0TQ0(03)	OK
FPC02FE1TQ1(03)->S01F0_1(2,5,10)	OK	S01F0_1(6,4,06)->FPC02FE1TQ1(03)	OK
FPC02FE2TQ2(03)->S01F0_1(2,6,10)	OK	S01F0_1(6,7,06)->FPC02FE2TQ2(03)	OK
FPC02FE3TQ3(03)->S01F0_1(2,7,10)	OK	S01F0_1(6,6,06)->FPC02FE3TQ3(03)	OK
FPC03FE0TQ0(03)->S01F0_1(2,0,10)	Down	S01F0_1(6,1,06)->FPC03FE0TQ0(03)	Down
FPC03FE1TQ1(03)->S01F0_1(2,1,10)	Down	S01F0_1(6,0,06)->FPC03FE1TQ1(03)	Down
FPC03FE2TQ2(03)->S01F0_1(2,2,10)	Down	S01F0_1(6,3,06)->FPC03FE2TQ2(03)	Down
FPC03FE3TQ3(03)->S01F0_1(2,3,10)	Down	S01F0_1(6,2,06)->FPC03FE3TQ3(03)	Down
FPC04FE0TQ0(03)->S01F0_1(1,4,09)	OK	S01F0_1(5,5,05)->FPC04FE0TQ0(03)	OK
FPC04FE1TQ1(03)->S01F0_1(1,5,09)	OK	S01F0_1(5,4,05)->FPC04FE1TQ1(03)	OK
FPC04FE2TQ2(03)->S01F0_1(1,6,09)	OK	S01F0_1(5,7,05)->FPC04FE2TQ2(03)	OK
FPC04FE3TQ3(03)->S01F0_1(1,7,09)	OK	S01F0_1(5,6,05)->FPC04FE3TQ3(03)	OK
FPC05FE0TQ0(03)->S01F0_1(1,0,09)	OK	S01F0_1(5,1,05)->FPC05FE0TQ0(03)	OK
FPC05FE1TQ1(03)->S01F0_1(1,1,09)	OK	S01F0_1(5,0,05)->FPC05FE1TQ1(03)	OK
FPC05FE2TQ2(03)->S01F0_1(1,2,09)	OK	S01F0_1(5,3,05)->FPC05FE2TQ2(03)	OK
FPC05FE3TQ3(03)->S01F0_1(1,3,09)	OK	S01F0_1(5,2,05)->FPC05FE3TQ3(03)	OK
FPC06FE0TQ0(03)->S01F0_1(0,4,08)	Down	S01F0_1(4,7,04)->FPC06FE0TQ0(03)	Down
FPC06FE1TQ1(03)->S01F0_1(0,5,08)	Down	S01F0_1(4,0,04)->FPC06FE1TQ1(03)	Down
FPC06FE2TQ2(03)->S01F0_1(0,6,08)	Down	S01F0_1(4,6,04)->FPC06FE2TQ2(03)	Down
FPC06FE3TQ3(03)->S01F0_1(0,7,08)	Down	S01F0_1(4,1,04)->FPC06FE3TQ3(03)	Down
FPC07FE0TQ0(03)->S01F0_1(0,0,08)	Down	S01F0_1(4,3,04)->FPC07FE0TQ0(03)	Down
FPC07FE1TQ1(03)->S01F0_1(0,1,08)	Down	S01F0_1(4,4,04)->FPC07FE1TQ1(03)	Down
FPC07FE2TQ2(03)->S01F0_1(0,2,08)	Down	S01F0_1(4,2,04)->FPC07FE2TQ2(03)	Down
FPC07FE3TQ3(03)->S01F0_1(0,3,08)	Down	S01F0_1(4,5,04)->FPC07FE3TQ3(03)	Down

### show chassis fabric topology (PTX3000 Router)

user@host> show chassis fabric topology

In-link : FPC# FE# TQ# (TQ-TX sub-chnl #) ->

SIB# TF#\_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)

Out-link : SIB# TF#\_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->

FPC# FE# TQ# (TQ-RX sub-chnl #)

SIB 0 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(00)->S00F0_0(7,0,07)	Down	S00F0_0(3,0,11)->FPC00FE0TQ0(00)	Down
FPC00FE1TQ1(00)->S00F0_0(7,1,07)	Down	S00F0_0(3,1,11)->FPC00FE1TQ1(00)	Down
FPC02FE0TQ0(00)->S00F0_0(6,0,06)	Down	S00F0_0(2,0,10)->FPC02FE0TQ0(00)	Down
FPC02FE1TQ1(00)->S00F0_0(6,1,06)	Down	S00F0_0(2,1,10)->FPC02FE1TQ1(00)	Down
FPC04FE0TQ0(00)->S00F0_0(5,0,05)	Down	S00F0_0(1,0,09)->FPC04FE0TQ0(00)	Down
FPC04FE1TQ1(00)->S00F0_0(5,1,05)	Down	S00F0_0(1,1,09)->FPC04FE1TQ1(00)	Down
FPC06FE0TQ0(00)->S00F0_0(4,0,04)	Down	S00F0_0(0,0,08)->FPC06FE0TQ0(00)	Down
FPC06FE1TQ1(00)->S00F0_0(4,1,04)	Down	S00F0_0(0,1,08)->FPC06FE1TQ1(00)	Down
FPC08FE0TQ0(00)->S00F0_0(4,2,04)	OK	S00F0_0(0,2,08)->FPC08FE0TQ0(00)	OK
FPC08FE1TQ1(00)->S00F0_0(4,3,04)	OK	S00F0_0(0,3,08)->FPC08FE1TQ1(00)	OK
FPC10FE0TQ0(00)->S00F0_0(5,2,05)	Down	S00F0_0(1,2,09)->FPC10FE0TQ0(00)	Down

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FPC10FE1TQ1(00)->S00F0_0(5,3,05) Down    S00F0_0(1,3,09)->FPC10FE1TQ1(00) Down
FPC12FE0TQ0(00)->S00F0_0(7,2,07) OK       S00F0_0(3,2,11)->FPC12FE0TQ0(00) OK
FPC12FE1TQ1(00)->S00F0_0(7,3,07) OK       S00F0_0(3,3,11)->FPC12FE1TQ1(00) OK
FPC14FE0TQ0(00)->S00F0_0(7,4,07) Down     S00F0_0(3,4,11)->FPC14FE0TQ0(00) Down
FPC14FE1TQ1(00)->S00F0_0(7,5,07) Down     S00F0_0(3,5,11)->FPC14FE1TQ1(00) Down

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SIB 0 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(01)->S00F0_1(3,0,11)	Down	S00F0_1(7,0,07)->FPC00FE0TQ0(01)	Down
FPC00FE1TQ1(01)->S00F0_1(3,1,11)	Down	S00F0_1(7,1,07)->FPC00FE1TQ1(01)	Down
FPC02FE0TQ0(01)->S00F0_1(2,0,10)	Down	S00F0_1(6,0,06)->FPC02FE0TQ0(01)	Down
FPC02FE1TQ1(01)->S00F0_1(2,1,10)	Down	S00F0_1(6,1,06)->FPC02FE1TQ1(01)	Down
FPC04FE0TQ0(01)->S00F0_1(1,0,09)	Down	S00F0_1(4,0,04)->FPC04FE0TQ0(01)	Down
FPC04FE1TQ1(01)->S00F0_1(1,1,09)	Down	S00F0_1(4,1,04)->FPC04FE1TQ1(01)	Down
FPC06FE0TQ0(01)->S00F0_1(0,0,08)	Down	S00F0_1(4,2,04)->FPC06FE0TQ0(01)	Down
FPC06FE1TQ1(01)->S00F0_1(0,1,08)	Down	S00F0_1(4,3,04)->FPC06FE1TQ1(01)	Down
FPC08FE0TQ0(01)->S00F0_1(0,2,08)	OK	S00F0_1(4,4,04)->FPC08FE0TQ0(01)	OK
FPC08FE1TQ1(01)->S00F0_1(0,3,08)	OK	S00F0_1(4,5,04)->FPC08FE1TQ1(01)	OK
FPC10FE0TQ0(01)->S00F0_1(1,2,09)	Down	S00F0_1(5,0,05)->FPC10FE0TQ0(01)	Down
FPC10FE1TQ1(01)->S00F0_1(1,3,09)	Down	S00F0_1(5,1,05)->FPC10FE1TQ1(01)	Down
FPC12FE0TQ0(01)->S00F0_1(2,2,10)	OK	S00F0_1(6,2,06)->FPC12FE0TQ0(01)	OK
FPC12FE1TQ1(01)->S00F0_1(2,3,10)	OK	S00F0_1(6,3,06)->FPC12FE1TQ1(01)	OK
FPC14FE0TQ0(01)->S00F0_1(3,2,11)	Down	S00F0_1(7,2,07)->FPC14FE0TQ0(01)	Down
FPC14FE1TQ1(01)->S00F0_1(3,3,11)	Down	S00F0_1(7,3,07)->FPC14FE1TQ1(01)	Down

SIB 1 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(02)->S01F0_0(7,0,07)	Down	S01F0_0(3,0,11)->FPC00FE0TQ0(02)	Down
FPC00FE1TQ1(02)->S01F0_0(7,1,07)	Down	S01F0_0(3,1,11)->FPC00FE1TQ1(02)	Down
FPC02FE0TQ0(02)->S01F0_0(6,0,06)	Down	S01F0_0(2,0,10)->FPC02FE0TQ0(02)	Down
FPC02FE1TQ1(02)->S01F0_0(6,1,06)	Down	S01F0_0(2,1,10)->FPC02FE1TQ1(02)	Down

---(more)---[abort]

user@host> show chassis fabric topology | no-more

In-link : FPC# FE# TQ# (TQ-TX sub-chnl #) ->  
SIB# TF#\_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)

Out-link : SIB# TF#\_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->  
FPC# FE# TQ# (TQ-RX sub-chnl #)

SIB 0 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(00)->S00F0_0(7,0,07)	Down	S00F0_0(3,0,11)->FPC00FE0TQ0(00)	Down
FPC00FE1TQ1(00)->S00F0_0(7,1,07)	Down	S00F0_0(3,1,11)->FPC00FE1TQ1(00)	Down
FPC02FE0TQ0(00)->S00F0_0(6,0,06)	Down	S00F0_0(2,0,10)->FPC02FE0TQ0(00)	Down
FPC02FE1TQ1(00)->S00F0_0(6,1,06)	Down	S00F0_0(2,1,10)->FPC02FE1TQ1(00)	Down
FPC04FE0TQ0(00)->S00F0_0(5,0,05)	Down	S00F0_0(1,0,09)->FPC04FE0TQ0(00)	Down
FPC04FE1TQ1(00)->S00F0_0(5,1,05)	Down	S00F0_0(1,1,09)->FPC04FE1TQ1(00)	Down
FPC06FE0TQ0(00)->S00F0_0(4,0,04)	Down	S00F0_0(0,0,08)->FPC06FE0TQ0(00)	Down
FPC06FE1TQ1(00)->S00F0_0(4,1,04)	Down	S00F0_0(0,1,08)->FPC06FE1TQ1(00)	Down
FPC08FE0TQ0(00)->S00F0_0(4,2,04)	OK	S00F0_0(0,2,08)->FPC08FE0TQ0(00)	OK
FPC08FE1TQ1(00)->S00F0_0(4,3,04)	OK	S00F0_0(0,3,08)->FPC08FE1TQ1(00)	OK
FPC10FE0TQ0(00)->S00F0_0(5,2,05)	Down	S00F0_0(1,2,09)->FPC10FE0TQ0(00)	Down
FPC10FE1TQ1(00)->S00F0_0(5,3,05)	Down	S00F0_0(1,3,09)->FPC10FE1TQ1(00)	Down
FPC12FE0TQ0(00)->S00F0_0(7,2,07)	OK	S00F0_0(3,2,11)->FPC12FE0TQ0(00)	OK

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FPC12FE1TQ1(00)->S00F0_0(7,3,07) OK      S00F0_0(3,3,11)->FPC12FE1TQ1(00) OK
FPC14FE0TQ0(00)->S00F0_0(7,4,07) Down    S00F0_0(3,4,11)->FPC14FE0TQ0(00) Down
FPC14FE1TQ1(00)->S00F0_0(7,5,07) Down    S00F0_0(3,5,11)->FPC14FE1TQ1(00) Down

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SIB 0 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(01)->S00F0_1(3,0,11)	Down	S00F0_1(7,0,07)->FPC00FE0TQ0(01)	Down
FPC00FE1TQ1(01)->S00F0_1(3,1,11)	Down	S00F0_1(7,1,07)->FPC00FE1TQ1(01)	Down
FPC02FE0TQ0(01)->S00F0_1(2,0,10)	Down	S00F0_1(6,0,06)->FPC02FE0TQ0(01)	Down
FPC02FE1TQ1(01)->S00F0_1(2,1,10)	Down	S00F0_1(6,1,06)->FPC02FE1TQ1(01)	Down
FPC04FE0TQ0(01)->S00F0_1(1,0,09)	Down	S00F0_1(4,0,04)->FPC04FE0TQ0(01)	Down
FPC04FE1TQ1(01)->S00F0_1(1,1,09)	Down	S00F0_1(4,1,04)->FPC04FE1TQ1(01)	Down
FPC06FE0TQ0(01)->S00F0_1(0,0,08)	Down	S00F0_1(4,2,04)->FPC06FE0TQ0(01)	Down
FPC06FE1TQ1(01)->S00F0_1(0,1,08)	Down	S00F0_1(4,3,04)->FPC06FE1TQ1(01)	Down
FPC08FE0TQ0(01)->S00F0_1(0,2,08)	OK	S00F0_1(4,4,04)->FPC08FE0TQ0(01)	OK
FPC08FE1TQ1(01)->S00F0_1(0,3,08)	OK	S00F0_1(4,5,04)->FPC08FE1TQ1(01)	OK
FPC10FE0TQ0(01)->S00F0_1(1,2,09)	Down	S00F0_1(5,0,05)->FPC10FE0TQ0(01)	Down
FPC10FE1TQ1(01)->S00F0_1(1,3,09)	Down	S00F0_1(5,1,05)->FPC10FE1TQ1(01)	Down
FPC12FE0TQ0(01)->S00F0_1(2,2,10)	OK	S00F0_1(6,2,06)->FPC12FE0TQ0(01)	OK
FPC12FE1TQ1(01)->S00F0_1(2,3,10)	OK	S00F0_1(6,3,06)->FPC12FE1TQ1(01)	OK
FPC14FE0TQ0(01)->S00F0_1(3,2,11)	Down	S00F0_1(7,2,07)->FPC14FE0TQ0(01)	Down
FPC14FE1TQ1(01)->S00F0_1(3,3,11)	Down	S00F0_1(7,3,07)->FPC14FE1TQ1(01)	Down

SIB 1 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(02)->S01F0_0(7,0,07)	Down	S01F0_0(3,0,11)->FPC00FE0TQ0(02)	Down
FPC00FE1TQ1(02)->S01F0_0(7,1,07)	Down	S01F0_0(3,1,11)->FPC00FE1TQ1(02)	Down
FPC02FE0TQ0(02)->S01F0_0(6,0,06)	Down	S01F0_0(2,0,10)->FPC02FE0TQ0(02)	Down
FPC02FE1TQ1(02)->S01F0_0(6,1,06)	Down	S01F0_0(2,1,10)->FPC02FE1TQ1(02)	Down
FPC04FE0TQ0(02)->S01F0_0(5,0,05)	Down	S01F0_0(1,0,09)->FPC04FE0TQ0(02)	Down
FPC04FE1TQ1(02)->S01F0_0(5,1,05)	Down	S01F0_0(1,1,09)->FPC04FE1TQ1(02)	Down
FPC06FE0TQ0(02)->S01F0_0(4,0,04)	Down	S01F0_0(0,0,08)->FPC06FE0TQ0(02)	Down
FPC06FE1TQ1(02)->S01F0_0(4,1,04)	Down	S01F0_0(0,1,08)->FPC06FE1TQ1(02)	Down
FPC08FE0TQ0(02)->S01F0_0(4,2,04)	OK	S01F0_0(0,2,08)->FPC08FE0TQ0(02)	OK
FPC08FE1TQ1(02)->S01F0_0(4,3,04)	OK	S01F0_0(0,3,08)->FPC08FE1TQ1(02)	OK
FPC10FE0TQ0(02)->S01F0_0(5,2,05)	Down	S01F0_0(1,2,09)->FPC10FE0TQ0(02)	Down
FPC10FE1TQ1(02)->S01F0_0(5,3,05)	Down	S01F0_0(1,3,09)->FPC10FE1TQ1(02)	Down
FPC12FE0TQ0(02)->S01F0_0(7,2,07)	OK	S01F0_0(3,2,11)->FPC12FE0TQ0(02)	OK
FPC12FE1TQ1(02)->S01F0_0(7,3,07)	OK	S01F0_0(3,3,11)->FPC12FE1TQ1(02)	OK
FPC14FE0TQ0(02)->S01F0_0(7,4,07)	Down	S01F0_0(3,4,11)->FPC14FE0TQ0(02)	Down
FPC14FE1TQ1(02)->S01F0_0(7,5,07)	Down	S01F0_0(3,5,11)->FPC14FE1TQ1(02)	Down

SIB 1 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(03)->S01F0_1(3,0,11)	Down	S01F0_1(7,0,07)->FPC00FE0TQ0(03)	Down
FPC00FE1TQ1(03)->S01F0_1(3,1,11)	Down	S01F0_1(7,1,07)->FPC00FE1TQ1(03)	Down
FPC02FE0TQ0(03)->S01F0_1(2,0,10)	Down	S01F0_1(6,0,06)->FPC02FE0TQ0(03)	Down
FPC02FE1TQ1(03)->S01F0_1(2,1,10)	Down	S01F0_1(6,1,06)->FPC02FE1TQ1(03)	Down
FPC04FE0TQ0(03)->S01F0_1(1,0,09)	Down	S01F0_1(4,0,04)->FPC04FE0TQ0(03)	Down
FPC04FE1TQ1(03)->S01F0_1(1,1,09)	Down	S01F0_1(4,1,04)->FPC04FE1TQ1(03)	Down
FPC06FE0TQ0(03)->S01F0_1(0,0,08)	Down	S01F0_1(4,2,04)->FPC06FE0TQ0(03)	Down
FPC06FE1TQ1(03)->S01F0_1(0,1,08)	Down	S01F0_1(4,3,04)->FPC06FE1TQ1(03)	Down
FPC08FE0TQ0(03)->S01F0_1(0,2,08)	OK	S01F0_1(4,4,04)->FPC08FE0TQ0(03)	OK
FPC08FE1TQ1(03)->S01F0_1(0,3,08)	OK	S01F0_1(4,5,04)->FPC08FE1TQ1(03)	OK
FPC10FE0TQ0(03)->S01F0_1(1,2,09)	Down	S01F0_1(5,0,05)->FPC10FE0TQ0(03)	Down

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FPC10FE1TQ1(03)->S01F0_1(1,3,09) Down    S01F0_1(5,1,05)->FPC10FE1TQ1(03) Down
FPC12FE0TQ0(03)->S01F0_1(2,2,10) OK       S01F0_1(6,2,06)->FPC12FE0TQ0(03) OK
FPC12FE1TQ1(03)->S01F0_1(2,3,10) OK       S01F0_1(6,3,06)->FPC12FE1TQ1(03) OK
FPC14FE0TQ0(03)->S01F0_1(3,2,11) Down     S01F0_1(7,2,07)->FPC14FE0TQ0(03) Down
FPC14FE1TQ1(03)->S01F0_1(3,3,11) Down     S01F0_1(7,3,07)->FPC14FE1TQ1(03) Down

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SIB 2 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(04)->S02F0_0(7,0,07)	Down	S02F0_0(3,0,11)->FPC00FE0TQ0(04)	Down
FPC00FE1TQ1(04)->S02F0_0(7,1,07)	Down	S02F0_0(3,1,11)->FPC00FE1TQ1(04)	Down
FPC02FE0TQ0(04)->S02F0_0(6,0,06)	Down	S02F0_0(2,0,10)->FPC02FE0TQ0(04)	Down
FPC02FE1TQ1(04)->S02F0_0(6,1,06)	Down	S02F0_0(2,1,10)->FPC02FE1TQ1(04)	Down
FPC04FE0TQ0(04)->S02F0_0(5,0,05)	Down	S02F0_0(1,0,09)->FPC04FE0TQ0(04)	Down
FPC04FE1TQ1(04)->S02F0_0(5,1,05)	Down	S02F0_0(1,1,09)->FPC04FE1TQ1(04)	Down
FPC06FE0TQ0(04)->S02F0_0(4,0,04)	Down	S02F0_0(0,0,08)->FPC06FE0TQ0(04)	Down
FPC06FE1TQ1(04)->S02F0_0(4,1,04)	Down	S02F0_0(0,1,08)->FPC06FE1TQ1(04)	Down
FPC08FE0TQ0(04)->S02F0_0(4,2,04)	OK	S02F0_0(0,2,08)->FPC08FE0TQ0(04)	OK
FPC08FE1TQ1(04)->S02F0_0(4,3,04)	OK	S02F0_0(0,3,08)->FPC08FE1TQ1(04)	OK
FPC10FE0TQ0(04)->S02F0_0(5,2,05)	Down	S02F0_0(1,2,09)->FPC10FE0TQ0(04)	Down
FPC10FE1TQ1(04)->S02F0_0(5,3,05)	Down	S02F0_0(1,3,09)->FPC10FE1TQ1(04)	Down
FPC12FE0TQ0(04)->S02F0_0(7,2,07)	OK	S02F0_0(3,2,11)->FPC12FE0TQ0(04)	OK
FPC12FE1TQ1(04)->S02F0_0(7,3,07)	OK	S02F0_0(3,3,11)->FPC12FE1TQ1(04)	OK
FPC14FE0TQ0(04)->S02F0_0(7,4,07)	Down	S02F0_0(3,4,11)->FPC14FE0TQ0(04)	Down
FPC14FE1TQ1(04)->S02F0_0(7,5,07)	Down	S02F0_0(3,5,11)->FPC14FE1TQ1(04)	Down

SIB 2 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(05)->S02F0_1(3,0,11)	Down	S02F0_1(7,0,07)->FPC00FE0TQ0(05)	Down
FPC00FE1TQ1(05)->S02F0_1(3,1,11)	Down	S02F0_1(7,1,07)->FPC00FE1TQ1(05)	Down
FPC02FE0TQ0(05)->S02F0_1(2,0,10)	Down	S02F0_1(6,0,06)->FPC02FE0TQ0(05)	Down
FPC02FE1TQ1(05)->S02F0_1(2,1,10)	Down	S02F0_1(6,1,06)->FPC02FE1TQ1(05)	Down
FPC04FE0TQ0(05)->S02F0_1(1,0,09)	Down	S02F0_1(4,0,04)->FPC04FE0TQ0(05)	Down
FPC04FE1TQ1(05)->S02F0_1(1,1,09)	Down	S02F0_1(4,1,04)->FPC04FE1TQ1(05)	Down
FPC06FE0TQ0(05)->S02F0_1(0,0,08)	Down	S02F0_1(4,2,04)->FPC06FE0TQ0(05)	Down
FPC06FE1TQ1(05)->S02F0_1(0,1,08)	Down	S02F0_1(4,3,04)->FPC06FE1TQ1(05)	Down
FPC08FE0TQ0(05)->S02F0_1(0,2,08)	OK	S02F0_1(4,4,04)->FPC08FE0TQ0(05)	OK
FPC08FE1TQ1(05)->S02F0_1(0,3,08)	OK	S02F0_1(4,5,04)->FPC08FE1TQ1(05)	OK
FPC10FE0TQ0(05)->S02F0_1(1,2,09)	Down	S02F0_1(5,0,05)->FPC10FE0TQ0(05)	Down
FPC10FE1TQ1(05)->S02F0_1(1,3,09)	Down	S02F0_1(5,1,05)->FPC10FE1TQ1(05)	Down
FPC12FE0TQ0(05)->S02F0_1(2,2,10)	OK	S02F0_1(6,2,06)->FPC12FE0TQ0(05)	OK
FPC12FE1TQ1(05)->S02F0_1(2,3,10)	OK	S02F0_1(6,3,06)->FPC12FE1TQ1(05)	OK
FPC14FE0TQ0(05)->S02F0_1(3,2,11)	Down	S02F0_1(7,2,07)->FPC14FE0TQ0(05)	Down
FPC14FE1TQ1(05)->S02F0_1(3,3,11)	Down	S02F0_1(7,3,07)->FPC14FE1TQ1(05)	Down

SIB 3 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(06)->S03F0_0(7,0,07)	Down	S03F0_0(3,0,11)->FPC00FE0TQ0(06)	Down
FPC00FE1TQ1(06)->S03F0_0(7,1,07)	Down	S03F0_0(3,1,11)->FPC00FE1TQ1(06)	Down
FPC02FE0TQ0(06)->S03F0_0(6,0,06)	Down	S03F0_0(2,0,10)->FPC02FE0TQ0(06)	Down
FPC02FE1TQ1(06)->S03F0_0(6,1,06)	Down	S03F0_0(2,1,10)->FPC02FE1TQ1(06)	Down
FPC04FE0TQ0(06)->S03F0_0(5,0,05)	Down	S03F0_0(1,0,09)->FPC04FE0TQ0(06)	Down
FPC04FE1TQ1(06)->S03F0_0(5,1,05)	Down	S03F0_0(1,1,09)->FPC04FE1TQ1(06)	Down
FPC06FE0TQ0(06)->S03F0_0(4,0,04)	Down	S03F0_0(0,0,08)->FPC06FE0TQ0(06)	Down
FPC06FE1TQ1(06)->S03F0_0(4,1,04)	Down	S03F0_0(0,1,08)->FPC06FE1TQ1(06)	Down
FPC08FE0TQ0(06)->S03F0_0(4,2,04)	OK	S03F0_0(0,2,08)->FPC08FE0TQ0(06)	OK

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FPC08FE1TQ1(06)->S03F0_0(4,3,04) OK      S03F0_0(0,3,08)->FPC08FE1TQ1(06) OK
FPC10FE0TQ0(06)->S03F0_0(5,2,05) Down    S03F0_0(1,2,09)->FPC10FE0TQ0(06) Down
FPC10FE1TQ1(06)->S03F0_0(5,3,05) Down    S03F0_0(1,3,09)->FPC10FE1TQ1(06) Down
FPC12FE0TQ0(06)->S03F0_0(7,2,07) OK      S03F0_0(3,2,11)->FPC12FE0TQ0(06) OK
FPC12FE1TQ1(06)->S03F0_0(7,3,07) OK      S03F0_0(3,3,11)->FPC12FE1TQ1(06) OK
FPC14FE0TQ0(06)->S03F0_0(7,4,07) Down    S03F0_0(3,4,11)->FPC14FE0TQ0(06) Down
FPC14FE1TQ1(06)->S03F0_0(7,5,07) Down    S03F0_0(3,5,11)->FPC14FE1TQ1(06) Down

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## SIB 3 FCHIP 0 FCORE 1 :

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-----
In-links      State      Out-links      State
-----
FPC00FE0TQ0(07)->S03F0_1(3,0,11) Down    S03F0_1(7,0,07)->FPC00FE0TQ0(07) Down
FPC00FE1TQ1(07)->S03F0_1(3,1,11) Down    S03F0_1(7,1,07)->FPC00FE1TQ1(07) Down
FPC02FE0TQ0(07)->S03F0_1(2,0,10) Down    S03F0_1(6,0,06)->FPC02FE0TQ0(07) Down
FPC02FE1TQ1(07)->S03F0_1(2,1,10) Down    S03F0_1(6,1,06)->FPC02FE1TQ1(07) Down
FPC04FE0TQ0(07)->S03F0_1(1,0,09) Down    S03F0_1(4,0,04)->FPC04FE0TQ0(07) Down
FPC04FE1TQ1(07)->S03F0_1(1,1,09) Down    S03F0_1(4,1,04)->FPC04FE1TQ1(07) Down
FPC06FE0TQ0(07)->S03F0_1(0,0,08) Down    S03F0_1(4,2,04)->FPC06FE0TQ0(07) Down
FPC06FE1TQ1(07)->S03F0_1(0,1,08) Down    S03F0_1(4,3,04)->FPC06FE1TQ1(07) Down
FPC08FE0TQ0(07)->S03F0_1(0,2,08) OK      S03F0_1(4,4,04)->FPC08FE0TQ0(07) OK
FPC08FE1TQ1(07)->S03F0_1(0,3,08) OK      S03F0_1(4,5,04)->FPC08FE1TQ1(07) OK
FPC10FE0TQ0(07)->S03F0_1(1,2,09) Down    S03F0_1(5,0,05)->FPC10FE0TQ0(07) Down
FPC10FE1TQ1(07)->S03F0_1(1,3,09) Down    S03F0_1(5,1,05)->FPC10FE1TQ1(07) Down
FPC12FE0TQ0(07)->S03F0_1(2,2,10) OK      S03F0_1(6,2,06)->FPC12FE0TQ0(07) OK
FPC12FE1TQ1(07)->S03F0_1(2,3,10) OK      S03F0_1(6,3,06)->FPC12FE1TQ1(07) OK
FPC14FE0TQ0(07)->S03F0_1(3,2,11) Down    S03F0_1(7,2,07)->FPC14FE0TQ0(07) Down
FPC14FE1TQ1(07)->S03F0_1(3,3,11) Down    S03F0_1(7,3,07)->FPC14FE1TQ1(07) Down

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## SIB 4 FCHIP 0 FCORE 0 :

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-----
In-links      State      Out-links      State
-----
FPC00FE0TQ0(08)->S04F0_0(7,0,07) Down    S04F0_0(3,0,11)->FPC00FE0TQ0(08) Down
FPC00FE1TQ1(08)->S04F0_0(7,1,07) Down    S04F0_0(3,1,11)->FPC00FE1TQ1(08) Down
FPC02FE0TQ0(08)->S04F0_0(6,0,06) Down    S04F0_0(2,0,10)->FPC02FE0TQ0(08) Down
FPC02FE1TQ1(08)->S04F0_0(6,1,06) Down    S04F0_0(2,1,10)->FPC02FE1TQ1(08) Down
FPC04FE0TQ0(08)->S04F0_0(5,0,05) Down    S04F0_0(1,0,09)->FPC04FE0TQ0(08) Down
FPC04FE1TQ1(08)->S04F0_0(5,1,05) Down    S04F0_0(1,1,09)->FPC04FE1TQ1(08) Down
FPC06FE0TQ0(08)->S04F0_0(4,0,04) Down    S04F0_0(0,0,08)->FPC06FE0TQ0(08) Down
FPC06FE1TQ1(08)->S04F0_0(4,1,04) Down    S04F0_0(0,1,08)->FPC06FE1TQ1(08) Down
FPC08FE0TQ0(08)->S04F0_0(4,2,04) OK      S04F0_0(0,2,08)->FPC08FE0TQ0(08) OK
FPC08FE1TQ1(08)->S04F0_0(4,3,04) OK      S04F0_0(0,3,08)->FPC08FE1TQ1(08) OK
FPC10FE0TQ0(08)->S04F0_0(5,2,05) Down    S04F0_0(1,2,09)->FPC10FE0TQ0(08) Down
FPC10FE1TQ1(08)->S04F0_0(5,3,05) Down    S04F0_0(1,3,09)->FPC10FE1TQ1(08) Down
FPC12FE0TQ0(08)->S04F0_0(7,2,07) OK      S04F0_0(3,2,11)->FPC12FE0TQ0(08) OK
FPC12FE1TQ1(08)->S04F0_0(7,3,07) OK      S04F0_0(3,3,11)->FPC12FE1TQ1(08) OK
FPC14FE0TQ0(08)->S04F0_0(7,4,07) Down    S04F0_0(3,4,11)->FPC14FE0TQ0(08) Down
FPC14FE1TQ1(08)->S04F0_0(7,5,07) Down    S04F0_0(3,5,11)->FPC14FE1TQ1(08) Down

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## SIB 4 FCHIP 0 FCORE 1 :

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-----
In-links      State      Out-links      State
-----
FPC00FE0TQ0(09)->S04F0_1(3,0,11) Down    S04F0_1(7,0,07)->FPC00FE0TQ0(09) Down
FPC00FE1TQ1(09)->S04F0_1(3,1,11) Down    S04F0_1(7,1,07)->FPC00FE1TQ1(09) Down
FPC02FE0TQ0(09)->S04F0_1(2,0,10) Down    S04F0_1(6,0,06)->FPC02FE0TQ0(09) Down
FPC02FE1TQ1(09)->S04F0_1(2,1,10) Down    S04F0_1(6,1,06)->FPC02FE1TQ1(09) Down
FPC04FE0TQ0(09)->S04F0_1(1,0,09) Down    S04F0_1(4,0,04)->FPC04FE0TQ0(09) Down
FPC04FE1TQ1(09)->S04F0_1(1,1,09) Down    S04F0_1(4,1,04)->FPC04FE1TQ1(09) Down
FPC06FE0TQ0(09)->S04F0_1(0,0,08) Down    S04F0_1(4,2,04)->FPC06FE0TQ0(09) Down

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FPC06FE1TQ1(09)->S04F0_1(0,1,08) Down    S04F0_1(4,3,04)->FPC06FE1TQ1(09) Down
FPC08FE0TQ0(09)->S04F0_1(0,2,08) OK       S04F0_1(4,4,04)->FPC08FE0TQ0(09) OK
FPC08FE1TQ1(09)->S04F0_1(0,3,08) OK       S04F0_1(4,5,04)->FPC08FE1TQ1(09) OK
FPC10FE0TQ0(09)->S04F0_1(1,2,09) Down     S04F0_1(5,0,05)->FPC10FE0TQ0(09) Down
FPC10FE1TQ1(09)->S04F0_1(1,3,09) Down     S04F0_1(5,1,05)->FPC10FE1TQ1(09) Down
FPC12FE0TQ0(09)->S04F0_1(2,2,10) OK       S04F0_1(6,2,06)->FPC12FE0TQ0(09) OK
FPC12FE1TQ1(09)->S04F0_1(2,3,10) OK       S04F0_1(6,3,06)->FPC12FE1TQ1(09) OK
FPC14FE0TQ0(09)->S04F0_1(3,2,11) Down     S04F0_1(7,2,07)->FPC14FE0TQ0(09) Down
FPC14FE1TQ1(09)->S04F0_1(3,3,11) Down     S04F0_1(7,3,07)->FPC14FE1TQ1(09) Down

```

SIB 5 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(10)->S05F0_0(7,0,07)	Down	S05F0_0(3,0,11)->FPC00FE0TQ0(10)	Down
FPC00FE1TQ1(10)->S05F0_0(7,1,07)	Down	S05F0_0(3,1,11)->FPC00FE1TQ1(10)	Down
FPC02FE0TQ0(10)->S05F0_0(6,0,06)	Down	S05F0_0(2,0,10)->FPC02FE0TQ0(10)	Down
FPC02FE1TQ1(10)->S05F0_0(6,1,06)	Down	S05F0_0(2,1,10)->FPC02FE1TQ1(10)	Down
FPC04FE0TQ0(10)->S05F0_0(5,0,05)	Down	S05F0_0(1,0,09)->FPC04FE0TQ0(10)	Down
FPC04FE1TQ1(10)->S05F0_0(5,1,05)	Down	S05F0_0(1,1,09)->FPC04FE1TQ1(10)	Down
FPC06FE0TQ0(10)->S05F0_0(4,0,04)	Down	S05F0_0(0,0,08)->FPC06FE0TQ0(10)	Down
FPC06FE1TQ1(10)->S05F0_0(4,1,04)	Down	S05F0_0(0,1,08)->FPC06FE1TQ1(10)	Down
FPC08FE0TQ0(10)->S05F0_0(4,2,04)	OK	S05F0_0(0,2,08)->FPC08FE0TQ0(10)	OK
FPC08FE1TQ1(10)->S05F0_0(4,3,04)	OK	S05F0_0(0,3,08)->FPC08FE1TQ1(10)	OK
FPC10FE0TQ0(10)->S05F0_0(5,2,05)	Down	S05F0_0(1,2,09)->FPC10FE0TQ0(10)	Down
FPC10FE1TQ1(10)->S05F0_0(5,3,05)	Down	S05F0_0(1,3,09)->FPC10FE1TQ1(10)	Down
FPC12FE0TQ0(10)->S05F0_0(7,2,07)	OK	S05F0_0(3,2,11)->FPC12FE0TQ0(10)	OK
FPC12FE1TQ1(10)->S05F0_0(7,3,07)	OK	S05F0_0(3,3,11)->FPC12FE1TQ1(10)	OK
FPC14FE0TQ0(10)->S05F0_0(7,4,07)	Down	S05F0_0(3,4,11)->FPC14FE0TQ0(10)	Down
FPC14FE1TQ1(10)->S05F0_0(7,5,07)	Down	S05F0_0(3,5,11)->FPC14FE1TQ1(10)	Down

SIB 5 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(11)->S05F0_1(3,0,11)	Down	S05F0_1(7,0,07)->FPC00FE0TQ0(11)	Down
FPC00FE1TQ1(11)->S05F0_1(3,1,11)	Down	S05F0_1(7,1,07)->FPC00FE1TQ1(11)	Down
FPC02FE0TQ0(11)->S05F0_1(2,0,10)	Down	S05F0_1(6,0,06)->FPC02FE0TQ0(11)	Down
FPC02FE1TQ1(11)->S05F0_1(2,1,10)	Down	S05F0_1(6,1,06)->FPC02FE1TQ1(11)	Down
FPC04FE0TQ0(11)->S05F0_1(1,0,09)	Down	S05F0_1(4,0,04)->FPC04FE0TQ0(11)	Down
FPC04FE1TQ1(11)->S05F0_1(1,1,09)	Down	S05F0_1(4,1,04)->FPC04FE1TQ1(11)	Down
FPC06FE0TQ0(11)->S05F0_1(0,0,08)	Down	S05F0_1(4,2,04)->FPC06FE0TQ0(11)	Down
FPC06FE1TQ1(11)->S05F0_1(0,1,08)	Down	S05F0_1(4,3,04)->FPC06FE1TQ1(11)	Down
FPC08FE0TQ0(11)->S05F0_1(0,2,08)	OK	S05F0_1(4,4,04)->FPC08FE0TQ0(11)	OK
FPC08FE1TQ1(11)->S05F0_1(0,3,08)	OK	S05F0_1(4,5,04)->FPC08FE1TQ1(11)	OK
FPC10FE0TQ0(11)->S05F0_1(1,2,09)	Down	S05F0_1(5,0,05)->FPC10FE0TQ0(11)	Down
FPC10FE1TQ1(11)->S05F0_1(1,3,09)	Down	S05F0_1(5,1,05)->FPC10FE1TQ1(11)	Down
FPC12FE0TQ0(11)->S05F0_1(2,2,10)	OK	S05F0_1(6,2,06)->FPC12FE0TQ0(11)	OK
FPC12FE1TQ1(11)->S05F0_1(2,3,10)	OK	S05F0_1(6,3,06)->FPC12FE1TQ1(11)	OK
FPC14FE0TQ0(11)->S05F0_1(3,2,11)	Down	S05F0_1(7,2,07)->FPC14FE0TQ0(11)	Down
FPC14FE1TQ1(11)->S05F0_1(3,3,11)	Down	S05F0_1(7,3,07)->FPC14FE1TQ1(11)	Down

SIB 6 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(12)->S06F0_0(7,0,07)	Down	S06F0_0(3,0,11)->FPC00FE0TQ0(12)	Down
FPC00FE1TQ1(12)->S06F0_0(7,1,07)	Down	S06F0_0(3,1,11)->FPC00FE1TQ1(12)	Down
FPC02FE0TQ0(12)->S06F0_0(6,0,06)	Down	S06F0_0(2,0,10)->FPC02FE0TQ0(12)	Down
FPC02FE1TQ1(12)->S06F0_0(6,1,06)	Down	S06F0_0(2,1,10)->FPC02FE1TQ1(12)	Down
FPC04FE0TQ0(12)->S06F0_0(5,0,05)	Down	S06F0_0(1,0,09)->FPC04FE0TQ0(12)	Down



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FPC04FE1TQ1(12)->S06F0_0(5,1,05) Down    S06F0_0(1,1,09)->FPC04FE1TQ1(12) Down
FPC06FE0TQ0(12)->S06F0_0(4,0,04) Down    S06F0_0(0,0,08)->FPC06FE0TQ0(12) Down
FPC06FE1TQ1(12)->S06F0_0(4,1,04) Down    S06F0_0(0,1,08)->FPC06FE1TQ1(12) Down
FPC08FE0TQ0(12)->S06F0_0(4,2,04) OK      S06F0_0(0,2,08)->FPC08FE0TQ0(12) OK
FPC08FE1TQ1(12)->S06F0_0(4,3,04) OK      S06F0_0(0,3,08)->FPC08FE1TQ1(12) OK
FPC10FE0TQ0(12)->S06F0_0(5,2,05) Down    S06F0_0(1,2,09)->FPC10FE0TQ0(12) Down
FPC10FE1TQ1(12)->S06F0_0(5,3,05) Down    S06F0_0(1,3,09)->FPC10FE1TQ1(12) Down
FPC12FE0TQ0(12)->S06F0_0(7,2,07) OK      S06F0_0(3,2,11)->FPC12FE0TQ0(12) OK
FPC12FE1TQ1(12)->S06F0_0(7,3,07) OK      S06F0_0(3,3,11)->FPC12FE1TQ1(12) OK
FPC14FE0TQ0(12)->S06F0_0(7,4,07) Down    S06F0_0(3,4,11)->FPC14FE0TQ0(12) Down
FPC14FE1TQ1(12)->S06F0_0(7,5,07) Down    S06F0_0(3,5,11)->FPC14FE1TQ1(12) Down

```

SIB 6 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(13)->S06F0_1(3,0,11)	Down	S06F0_1(7,0,07)->FPC00FE0TQ0(13)	Down
FPC00FE1TQ1(13)->S06F0_1(3,1,11)	Down	S06F0_1(7,1,07)->FPC00FE1TQ1(13)	Down
FPC02FE0TQ0(13)->S06F0_1(2,0,10)	Down	S06F0_1(6,0,06)->FPC02FE0TQ0(13)	Down
FPC02FE1TQ1(13)->S06F0_1(2,1,10)	Down	S06F0_1(6,1,06)->FPC02FE1TQ1(13)	Down
FPC04FE0TQ0(13)->S06F0_1(1,0,09)	Down	S06F0_1(4,0,04)->FPC04FE0TQ0(13)	Down
FPC04FE1TQ1(13)->S06F0_1(1,1,09)	Down	S06F0_1(4,1,04)->FPC04FE1TQ1(13)	Down
FPC06FE0TQ0(13)->S06F0_1(0,0,08)	Down	S06F0_1(4,2,04)->FPC06FE0TQ0(13)	Down
FPC06FE1TQ1(13)->S06F0_1(0,1,08)	Down	S06F0_1(4,3,04)->FPC06FE1TQ1(13)	Down
FPC08FE0TQ0(13)->S06F0_1(0,2,08)	OK	S06F0_1(4,4,04)->FPC08FE0TQ0(13)	OK
FPC08FE1TQ1(13)->S06F0_1(0,3,08)	OK	S06F0_1(4,5,04)->FPC08FE1TQ1(13)	OK
FPC10FE0TQ0(13)->S06F0_1(1,2,09)	Down	S06F0_1(5,0,05)->FPC10FE0TQ0(13)	Down
FPC10FE1TQ1(13)->S06F0_1(1,3,09)	Down	S06F0_1(5,1,05)->FPC10FE1TQ1(13)	Down
FPC12FE0TQ0(13)->S06F0_1(2,2,10)	OK	S06F0_1(6,2,06)->FPC12FE0TQ0(13)	OK
FPC12FE1TQ1(13)->S06F0_1(2,3,10)	OK	S06F0_1(6,3,06)->FPC12FE1TQ1(13)	OK
FPC14FE0TQ0(13)->S06F0_1(3,2,11)	Down	S06F0_1(7,2,07)->FPC14FE0TQ0(13)	Down
FPC14FE1TQ1(13)->S06F0_1(3,3,11)	Down	S06F0_1(7,3,07)->FPC14FE1TQ1(13)	Down

SIB 7 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(14)->S07F0_0(7,0,07)	Down	S07F0_0(3,0,11)->FPC00FE0TQ0(14)	Down
FPC00FE1TQ1(14)->S07F0_0(7,1,07)	Down	S07F0_0(3,1,11)->FPC00FE1TQ1(14)	Down
FPC02FE0TQ0(14)->S07F0_0(6,0,06)	Down	S07F0_0(2,0,10)->FPC02FE0TQ0(14)	Down
FPC02FE1TQ1(14)->S07F0_0(6,1,06)	Down	S07F0_0(2,1,10)->FPC02FE1TQ1(14)	Down
FPC04FE0TQ0(14)->S07F0_0(5,0,05)	Down	S07F0_0(1,0,09)->FPC04FE0TQ0(14)	Down
FPC04FE1TQ1(14)->S07F0_0(5,1,05)	Down	S07F0_0(1,1,09)->FPC04FE1TQ1(14)	Down
FPC06FE0TQ0(14)->S07F0_0(4,0,04)	Down	S07F0_0(0,0,08)->FPC06FE0TQ0(14)	Down
FPC06FE1TQ1(14)->S07F0_0(4,1,04)	Down	S07F0_0(0,1,08)->FPC06FE1TQ1(14)	Down
FPC08FE0TQ0(14)->S07F0_0(4,2,04)	OK	S07F0_0(0,2,08)->FPC08FE0TQ0(14)	OK
FPC08FE1TQ1(14)->S07F0_0(4,3,04)	OK	S07F0_0(0,3,08)->FPC08FE1TQ1(14)	OK
FPC10FE0TQ0(14)->S07F0_0(5,2,05)	Down	S07F0_0(1,2,09)->FPC10FE0TQ0(14)	Down
FPC10FE1TQ1(14)->S07F0_0(5,3,05)	Down	S07F0_0(1,3,09)->FPC10FE1TQ1(14)	Down
FPC12FE0TQ0(14)->S07F0_0(7,2,07)	OK	S07F0_0(3,2,11)->FPC12FE0TQ0(14)	OK
FPC12FE1TQ1(14)->S07F0_0(7,3,07)	OK	S07F0_0(3,3,11)->FPC12FE1TQ1(14)	OK
FPC14FE0TQ0(14)->S07F0_0(7,4,07)	Down	S07F0_0(3,4,11)->FPC14FE0TQ0(14)	Down
FPC14FE1TQ1(14)->S07F0_0(7,5,07)	Down	S07F0_0(3,5,11)->FPC14FE1TQ1(14)	Down

SIB 7 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(15)->S07F0_1(3,0,11)	Down	S07F0_1(7,0,07)->FPC00FE0TQ0(15)	Down
FPC00FE1TQ1(15)->S07F0_1(3,1,11)	Down	S07F0_1(7,1,07)->FPC00FE1TQ1(15)	Down
FPC02FE0TQ0(15)->S07F0_1(2,0,10)	Down	S07F0_1(6,0,06)->FPC02FE0TQ0(15)	Down

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FPC02FE1TQ1(15)->S07F0_1(2,1,10) Down    S07F0_1(6,1,06)->FPC02FE1TQ1(15) Down
FPC04FE0TQ0(15)->S07F0_1(1,0,09) Down    S07F0_1(4,0,04)->FPC04FE0TQ0(15) Down
FPC04FE1TQ1(15)->S07F0_1(1,1,09) Down    S07F0_1(4,1,04)->FPC04FE1TQ1(15) Down
FPC06FE0TQ0(15)->S07F0_1(0,0,08) Down    S07F0_1(4,2,04)->FPC06FE0TQ0(15) Down
FPC06FE1TQ1(15)->S07F0_1(0,1,08) Down    S07F0_1(4,3,04)->FPC06FE1TQ1(15) Down
FPC08FE0TQ0(15)->S07F0_1(0,2,08) OK      S07F0_1(4,4,04)->FPC08FE0TQ0(15) OK
FPC08FE1TQ1(15)->S07F0_1(0,3,08) OK      S07F0_1(4,5,04)->FPC08FE1TQ1(15) OK
FPC10FE0TQ0(15)->S07F0_1(1,2,09) Down    S07F0_1(5,0,05)->FPC10FE0TQ0(15) Down
FPC10FE1TQ1(15)->S07F0_1(1,3,09) Down    S07F0_1(5,1,05)->FPC10FE1TQ1(15) Down
FPC12FE0TQ0(15)->S07F0_1(2,2,10) OK      S07F0_1(6,2,06)->FPC12FE0TQ0(15) OK
FPC12FE1TQ1(15)->S07F0_1(2,3,10) OK      S07F0_1(6,3,06)->FPC12FE1TQ1(15) OK
FPC14FE0TQ0(15)->S07F0_1(3,2,11) Down    S07F0_1(7,2,07)->FPC14FE0TQ0(15) Down
FPC14FE1TQ1(15)->S07F0_1(3,3,11) Down    S07F0_1(7,3,07)->FPC14FE1TQ1(15) Down

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SIB 8 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0(16)->S08F0_0(7,0,07)	Down	S08F0_0(3,0,11)->FPC00FE0TQ0(16)	Down
FPC00FE1TQ1(16)->S08F0_0(7,1,07)	Down	S08F0_0(3,1,11)->FPC00FE1TQ1(16)	Down
FPC02FE0TQ0(16)->S08F0_0(6,0,06)	Down	S08F0_0(2,0,10)->FPC02FE0TQ0(16)	Down
FPC02FE1TQ1(16)->S08F0_0(6,1,06)	Down	S08F0_0(2,1,10)->FPC02FE1TQ1(16)	Down
FPC04FE0TQ0(16)->S08F0_0(5,0,05)	Down	S08F0_0(1,0,09)->FPC04FE0TQ0(16)	Down
FPC04FE1TQ1(16)->S08F0_0(5,1,05)	Down	S08F0_0(1,1,09)->FPC04FE1TQ1(16)	Down
FPC06FE0TQ0(16)->S08F0_0(4,0,04)	Down	S08F0_0(0,0,08)->FPC06FE0TQ0(16)	Down
FPC06FE1TQ1(16)->S08F0_0(4,1,04)	Down	S08F0_0(0,1,08)->FPC06FE1TQ1(16)	Down
FPC08FE0TQ0(16)->S08F0_0(4,2,04)	OK	S08F0_0(0,2,08)->FPC08FE0TQ0(16)	OK
FPC08FE1TQ1(16)->S08F0_0(4,3,04)	OK	S08F0_0(0,3,08)->FPC08FE1TQ1(16)	OK
FPC10FE0TQ0(16)->S08F0_0(5,2,05)	Down	S08F0_0(1,2,09)->FPC10FE0TQ0(16)	Down
FPC10FE1TQ1(16)->S08F0_0(5,3,05)	Down	S08F0_0(1,3,09)->FPC10FE1TQ1(16)	Down
FPC12FE0TQ0(16)->S08F0_0(7,2,07)	OK	S08F0_0(3,2,11)->FPC12FE0TQ0(16)	OK
FPC12FE1TQ1(16)->S08F0_0(7,3,07)	OK	S08F0_0(3,3,11)->FPC12FE1TQ1(16)	OK
FPC14FE0TQ0(16)->S08F0_0(7,4,07)	Down	S08F0_0(3,4,11)->FPC14FE0TQ0(16)	Down
FPC14FE1TQ1(16)->S08F0_0(7,5,07)	Down	S08F0_0(3,5,11)->FPC14FE1TQ1(16)	Down

SIB 8 FCHIP 0 FCORE 1 :

In-links	State	Out-links	State
FPC00FE0TQ0(17)->S08F0_1(3,0,11)	Down	S08F0_1(7,0,07)->FPC00FE0TQ0(17)	Down
FPC00FE1TQ1(17)->S08F0_1(3,1,11)	Down	S08F0_1(7,1,07)->FPC00FE1TQ1(17)	Down
FPC02FE0TQ0(17)->S08F0_1(2,0,10)	Down	S08F0_1(6,0,06)->FPC02FE0TQ0(17)	Down
FPC02FE1TQ1(17)->S08F0_1(2,1,10)	Down	S08F0_1(6,1,06)->FPC02FE1TQ1(17)	Down
FPC04FE0TQ0(17)->S08F0_1(1,0,09)	Down	S08F0_1(4,0,04)->FPC04FE0TQ0(17)	Down
FPC04FE1TQ1(17)->S08F0_1(1,1,09)	Down	S08F0_1(4,1,04)->FPC04FE1TQ1(17)	Down
FPC06FE0TQ0(17)->S08F0_1(0,0,08)	Down	S08F0_1(4,2,04)->FPC06FE0TQ0(17)	Down
FPC06FE1TQ1(17)->S08F0_1(0,1,08)	Down	S08F0_1(4,3,04)->FPC06FE1TQ1(17)	Down
FPC08FE0TQ0(17)->S08F0_1(0,2,08)	OK	S08F0_1(4,4,04)->FPC08FE0TQ0(17)	OK
FPC08FE1TQ1(17)->S08F0_1(0,3,08)	OK	S08F0_1(4,5,04)->FPC08FE1TQ1(17)	OK
FPC10FE0TQ0(17)->S08F0_1(1,2,09)	Down	S08F0_1(5,0,05)->FPC10FE0TQ0(17)	Down
FPC10FE1TQ1(17)->S08F0_1(1,3,09)	Down	S08F0_1(5,1,05)->FPC10FE1TQ1(17)	Down
FPC12FE0TQ0(17)->S08F0_1(2,2,10)	OK	S08F0_1(6,2,06)->FPC12FE0TQ0(17)	OK
FPC12FE1TQ1(17)->S08F0_1(2,3,10)	OK	S08F0_1(6,3,06)->FPC12FE1TQ1(17)	OK
FPC14FE0TQ0(17)->S08F0_1(3,2,11)	Down	S08F0_1(7,2,07)->FPC14FE0TQ0(17)	Down
FPC14FE1TQ1(17)->S08F0_1(3,3,11)	Down	S08F0_1(7,3,07)->FPC14FE1TQ1(17)	Down

### show chassis fabric topology (PTX10008 Router)

user@host> show chassis fabric topology

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In-link  : FPC# FE# ASIC# (TX inst#, TX sub-chnl #) ->
           SIB# ASIC#_FCORE# (RX port#, RX sub-chnl#, RX inst#)

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Out-link : SIB# ASIC#\_FCORE# (TX port#, TX sub-chn#, TX inst#) ->  
 FPC# FE# ASIC# (RX inst#, RX sub-chnl #)

SIB 0 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0(1,17)->S00F0_0(01,0,01)	OK	S00F0_0(00,0,00)->FPC00FE0(1,09)	OK
FPC00FE0(1,09)->S00F0_0(02,0,02)	OK	S00F0_0(00,1,00)->FPC00FE0(1,17)	OK
FPC00FE0(1,07)->S00F0_0(02,2,02)	OK	S00F0_0(00,2,00)->FPC00FE0(1,07)	OK
FPC00FE1(1,12)->S00F0_0(01,1,01)	OK	S00F0_0(00,3,00)->FPC00FE1(1,06)	OK
FPC00FE1(1,06)->S00F0_0(01,2,01)	OK	S00F0_0(01,1,01)->FPC00FE1(1,12)	OK
FPC00FE1(1,10)->S00F0_0(01,3,01)	OK	S00F0_0(01,3,01)->FPC00FE1(1,10)	OK
FPC00FE2(1,16)->S00F0_0(00,4,00)	OK	S00F0_0(00,4,00)->FPC00FE2(1,08)	OK
FPC00FE2(1,08)->S00F0_0(01,6,01)	OK	S00F0_0(00,5,00)->FPC00FE2(1,16)	OK
FPC00FE2(1,06)->S00F0_0(01,7,01)	OK	S00F0_0(00,6,00)->FPC00FE2(1,06)	OK
FPC05FE0(1,07)->S00F0_0(05,5,05)	OK	S00F0_0(05,2,05)->FPC05FE0(1,17)	OK
FPC05FE0(1,09)->S00F0_0(05,7,05)	OK	S00F0_0(06,4,06)->FPC05FE0(1,07)	OK
FPC05FE0(1,17)->S00F0_0(09,3,09)	OK	S00F0_0(06,7,06)->FPC05FE0(1,09)	OK
FPC05FE1(1,06)->S00F0_0(06,1,06)	OK	S00F0_0(06,0,06)->FPC05FE1(1,06)	OK
FPC05FE1(1,08)->S00F0_0(06,3,06)	OK	S00F0_0(06,2,06)->FPC05FE1(1,08)	OK
FPC05FE1(1,16)->S00F0_0(09,7,09)	OK	S00F0_0(09,6,09)->FPC05FE1(1,16)	OK
FPC05FE2(1,10)->S00F0_0(09,0,09)	OK	S00F0_0(05,0,05)->FPC05FE2(1,06)	OK
FPC05FE2(1,06)->S00F0_0(09,1,09)	OK	S00F0_0(05,1,05)->FPC05FE2(1,10)	OK
FPC05FE2(1,12)->S00F0_0(09,2,09)	OK	S00F0_0(05,3,05)->FPC05FE2(1,12)	OK
FPC05FE3(1,11)->S00F0_0(09,4,09)	OK	S00F0_0(09,4,09)->FPC05FE3(1,07)	OK
FPC05FE3(1,07)->S00F0_0(09,5,09)	OK	S00F0_0(09,5,09)->FPC05FE3(1,11)	OK
FPC05FE3(1,13)->S00F0_0(09,6,09)	OK	S00F0_0(09,7,09)->FPC05FE3(1,13)	OK
FPC05FE4(1,16)->S00F0_0(05,3,05)	OK	S00F0_0(05,4,05)->FPC05FE4(1,06)	OK
FPC05FE4(1,06)->S00F0_0(06,5,06)	OK	S00F0_0(05,6,05)->FPC05FE4(1,08)	OK
FPC05FE4(1,08)->S00F0_0(06,7,06)	OK	S00F0_0(09,2,09)->FPC05FE4(1,16)	OK
FPC05FE5(1,10)->S00F0_0(05,0,05)	OK	S00F0_0(09,0,09)->FPC05FE5(1,06)	OK
FPC05FE5(1,06)->S00F0_0(05,1,05)	OK	S00F0_0(09,1,09)->FPC05FE5(1,10)	OK
FPC05FE5(1,12)->S00F0_0(05,2,05)	OK	S00F0_0(09,3,09)->FPC05FE5(1,12)	OK
FPC06FE0(1,17)->S00F0_0(05,6,05)	OK	S00F0_0(06,6,06)->FPC06FE0(1,17)	OK
FPC06FE0(1,07)->S00F0_0(07,0,07)	OK	S00F0_0(08,0,08)->FPC06FE0(1,07)	OK
FPC06FE0(1,09)->S00F0_0(07,2,07)	OK	S00F0_0(08,2,08)->FPC06FE0(1,09)	OK
FPC06FE1(1,16)->S00F0_0(06,2,06)	OK	S00F0_0(06,3,06)->FPC06FE1(1,16)	OK
FPC06FE1(1,06)->S00F0_0(07,4,07)	OK	S00F0_0(07,4,07)->FPC06FE1(1,06)	OK
FPC06FE1(1,08)->S00F0_0(07,6,07)	OK	S00F0_0(07,6,07)->FPC06FE1(1,08)	OK
FPC06FE2(1,06)->S00F0_0(05,4,05)	OK	S00F0_0(06,5,06)->FPC06FE2(1,06)	OK
FPC06FE2(1,10)->S00F0_0(07,1,07)	OK	S00F0_0(08,1,08)->FPC06FE2(1,10)	OK
FPC06FE2(1,12)->S00F0_0(07,3,07)	OK	S00F0_0(08,3,08)->FPC06FE2(1,12)	OK
FPC06FE3(1,07)->S00F0_0(06,0,06)	OK	S00F0_0(06,1,06)->FPC06FE3(1,07)	OK
FPC06FE3(1,11)->S00F0_0(07,5,07)	OK	S00F0_0(07,5,07)->FPC06FE3(1,11)	OK
FPC06FE3(1,13)->S00F0_0(07,7,07)	OK	S00F0_0(07,7,07)->FPC06FE3(1,13)	OK
FPC06FE4(1,16)->S00F0_0(06,6,06)	OK	S00F0_0(05,7,05)->FPC06FE4(1,16)	OK
FPC06FE4(1,06)->S00F0_0(08,0,08)	OK	S00F0_0(07,0,07)->FPC06FE4(1,06)	OK
FPC06FE4(1,08)->S00F0_0(08,2,08)	OK	S00F0_0(07,2,07)->FPC06FE4(1,08)	OK
FPC06FE5(1,06)->S00F0_0(06,4,06)	OK	S00F0_0(05,5,05)->FPC06FE5(1,06)	OK
FPC06FE5(1,10)->S00F0_0(08,1,08)	OK	S00F0_0(07,1,07)->FPC06FE5(1,10)	OK
FPC06FE5(1,12)->S00F0_0(08,3,08)	OK	S00F0_0(07,3,07)->FPC06FE5(1,12)	OK

SIB 0 FCHIP 1 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0(1,15)->S00F1_0(15,4,15)	OK	S00F1_0(16,4,16)->FPC00FE0(1,15)	OK
FPC00FE0(1,11)->S00F1_0(17,4,17)	OK	S00F1_0(18,4,18)->FPC00FE0(1,11)	OK
FPC00FE0(1,13)->S00F1_0(17,6,17)	OK	S00F1_0(18,6,18)->FPC00FE0(1,13)	OK
FPC00FE1(1,08)->S00F1_0(15,6,15)	OK	S00F1_0(16,6,16)->FPC00FE1(1,08)	OK

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FPC00FE1(1,14)->S00F1_0(17,5,17) OK      S00F1_0(18,5,18)->FPC00FE1(1,14) OK
FPC00FE1(1,16)->S00F1_0(17,7,17) OK      S00F1_0(18,7,18)->FPC00FE1(1,16) OK
FPC00FE2(1,14)->S00F1_0(16,0,16) OK      S00F1_0(16,0,16)->FPC00FE2(1,14) OK
FPC00FE2(1,10)->S00F1_0(18,0,18) OK      S00F1_0(18,0,18)->FPC00FE2(1,10) OK
FPC00FE2(1,12)->S00F1_0(18,2,18) OK      S00F1_0(18,2,18)->FPC00FE2(1,12) OK
FPC05FE0(1,11)->S00F1_0(02,0,02) OK      S00F1_0(02,1,02)->FPC05FE0(1,11) OK
FPC05FE0(1,13)->S00F1_0(02,2,02) OK      S00F1_0(02,3,02)->FPC05FE0(1,13) OK
FPC05FE0(1,15)->S00F1_0(04,7,04) OK      S00F1_0(03,6,03)->FPC05FE0(1,15) OK
FPC05FE1(1,10)->S00F1_0(02,4,02) OK      S00F1_0(02,5,02)->FPC05FE1(1,10) OK
FPC05FE1(1,12)->S00F1_0(02,6,02) OK      S00F1_0(02,7,02)->FPC05FE1(1,12) OK
FPC05FE1(1,14)->S00F1_0(04,3,04) OK      S00F1_0(04,2,04)->FPC05FE1(1,14) OK
FPC05FE2(1,16)->S00F1_0(04,4,04) OK      S00F1_0(03,4,03)->FPC05FE2(1,16) OK
FPC05FE2(1,08)->S00F1_0(04,5,04) OK      S00F1_0(03,5,03)->FPC05FE2(1,08) OK
FPC05FE2(1,14)->S00F1_0(04,6,04) OK      S00F1_0(03,7,03)->FPC05FE2(1,14) OK
FPC05FE3(1,17)->S00F1_0(04,0,04) OK      S00F1_0(04,0,04)->FPC05FE3(1,17) OK
FPC05FE3(1,09)->S00F1_0(04,1,04) OK      S00F1_0(04,1,04)->FPC05FE3(1,09) OK
FPC05FE3(1,15)->S00F1_0(04,2,04) OK      S00F1_0(04,3,04)->FPC05FE3(1,15) OK
FPC05FE4(1,10)->S00F1_0(03,0,03) OK      S00F1_0(03,1,03)->FPC05FE4(1,10) OK
FPC05FE4(1,12)->S00F1_0(03,2,03) OK      S00F1_0(03,3,03)->FPC05FE4(1,12) OK
FPC05FE4(1,14)->S00F1_0(03,7,03) OK      S00F1_0(04,6,04)->FPC05FE4(1,14) OK
FPC05FE5(1,16)->S00F1_0(03,4,03) OK      S00F1_0(04,4,04)->FPC05FE5(1,16) OK
FPC05FE5(1,08)->S00F1_0(03,5,03) OK      S00F1_0(04,5,04)->FPC05FE5(1,08) OK
FPC05FE5(1,14)->S00F1_0(03,6,03) OK      S00F1_0(04,7,04)->FPC05FE5(1,14) OK
FPC06FE0(1,11)->S00F1_0(01,0,01) OK      S00F1_0(00,3,00)->FPC06FE0(1,11) OK
FPC06FE0(1,13)->S00F1_0(02,3,02) OK      S00F1_0(01,0,01)->FPC06FE0(1,13) OK
FPC06FE1(1,14)->S00F1_0(01,4,01) OK      S00F1_0(01,2,01)->FPC06FE1(1,14) OK
FPC06FE1(1,10)->S00F1_0(02,5,02) OK      S00F1_0(00,7,00)->FPC06FE1(1,10) OK
FPC06FE1(1,12)->S00F1_0(02,7,02) OK      S00F1_0(01,4,01)->FPC06FE1(1,12) OK
FPC06FE2(1,08)->S00F1_0(01,2,01) OK      S00F1_0(01,6,01)->FPC06FE2(1,08) OK
FPC06FE2(1,16)->S00F1_0(15,0,15) OK      S00F1_0(00,1,00)->FPC06FE2(1,16) OK
FPC06FE2(1,14)->S00F1_0(15,2,15) OK      S00F1_0(01,5,01)->FPC06FE2(1,14) OK
FPC06FE3(1,09)->S00F1_0(01,6,01) OK      S00F1_0(01,7,01)->FPC06FE3(1,09) OK
FPC06FE3(1,17)->S00F1_0(19,4,19) OK      S00F1_0(00,5,00)->FPC06FE3(1,17) OK
FPC06FE3(1,15)->S00F1_0(19,6,19) OK      S00F1_0(02,4,02)->FPC06FE3(1,15) OK
FPC06FE4(1,10)->S00F1_0(01,7,01) OK      S00F1_0(02,6,02)->FPC06FE4(1,10) OK
FPC06FE4(1,12)->S00F1_0(03,1,03) OK      S00F1_0(01,3,01)->FPC06FE4(1,12) OK
FPC06FE4(1,14)->S00F1_0(03,3,03) OK      S00F1_0(02,0,02)->FPC06FE4(1,14) OK
FPC06FE5(1,08)->S00F1_0(01,5,01) OK      S00F1_0(02,2,02)->FPC06FE5(1,08) OK
FPC06FE5(1,16)->S00F1_0(19,0,19) OK      S00F1_0(01,1,01)->FPC06FE5(1,16) OK
FPC06FE5(1,14)->S00F1_0(19,2,19) OK      S00F1_0(03,0,03)->FPC06FE5(1,14) OK

```

SIB 1 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0(1,05)->S01F0_0(01,0,01)	OK	S01F0_0(00,0,00)->FPC00FE0(0,01)	OK
FPC00FE0(0,07)->S01F0_0(02,2,02)	OK	S01F0_0(00,1,00)->FPC00FE0(1,05)	OK
FPC00FE1(1,04)->S01F0_0(00,4,00)	OK	S01F0_0(00,2,00)->FPC00FE1(0,07)	OK
FPC00FE1(0,00)->S01F0_0(01,6,01)	OK	S01F0_0(00,4,00)->FPC00FE1(1,04)	OK
FPC00FE1(0,06)->S01F0_0(01,7,01)	OK	S01F0_0(00,5,00)->FPC00FE1(0,00)	OK
FPC00FE2(1,01)->S01F0_0(01,1,01)	OK	S01F0_0(00,6,00)->FPC00FE2(0,06)	OK
FPC00FE2(0,06)->S01F0_0(01,2,01)	OK	S01F0_0(00,3,00)->FPC00FE2(1,01)	OK
FPC00FE2(1,00)->S01F0_0(01,3,01)	OK	S01F0_0(01,1,01)->FPC00FE2(0,06)	OK
FPC05FE0(0,07)->S01F0_0(05,5,05)	OK	S01F0_0(01,3,01)->FPC00FE2(1,00)	OK
FPC05FE0(0,01)->S01F0_0(05,7,05)	OK	S01F0_0(05,2,05)->FPC05FE0(1,05)	OK
FPC05FE0(1,05)->S01F0_0(09,3,09)	OK	S01F0_0(06,4,06)->FPC05FE0(0,07)	OK
FPC05FE1(1,00)->S01F0_0(09,0,09)	OK	S01F0_0(06,7,06)->FPC05FE0(1,05)	OK
FPC05FE1(0,06)->S01F0_0(09,1,09)	OK	S01F0_0(05,0,05)->FPC05FE1(0,06)	OK
FPC05FE1(1,01)->S01F0_0(09,2,09)	OK	S01F0_0(05,1,05)->FPC05FE1(1,00)	OK
		S01F0_0(05,3,05)->FPC05FE1(1,01)	OK

```

FPC05FE2(0,06)->S01F0_0(06,1,06) OK      S01F0_0(06,0,06)->FPC05FE2(0,06) OK
FPC05FE2(0,00)->S01F0_0(06,3,06) OK      S01F0_0(06,2,06)->FPC05FE2(0,00) OK
FPC05FE2(1,04)->S01F0_0(09,7,09) OK      S01F0_0(09,6,09)->FPC05FE2(1,04) OK
FPC05FE3(1,00)->S01F0_0(09,4,09) OK      S01F0_0(09,4,09)->FPC05FE3(0,06) OK
FPC05FE3(0,06)->S01F0_0(09,5,09) OK      S01F0_0(09,5,09)->FPC05FE3(1,00) OK
FPC05FE3(1,01)->S01F0_0(09,6,09) OK      S01F0_0(09,7,09)->FPC05FE3(1,01) OK
FPC05FE4(0,04)->S01F0_0(05,3,05) OK      S01F0_0(05,4,05)->FPC05FE4(0,14) OK
FPC05FE4(0,14)->S01F0_0(06,5,06) OK      S01F0_0(05,6,05)->FPC05FE4(0,16) OK
FPC05FE4(0,16)->S01F0_0(06,7,06) OK      S01F0_0(09,2,09)->FPC05FE4(0,04) OK
FPC05FE5(1,00)->S01F0_0(05,0,05) OK      S01F0_0(09,0,09)->FPC05FE5(0,06) OK
FPC05FE5(0,06)->S01F0_0(05,1,05) OK      S01F0_0(09,1,09)->FPC05FE5(1,00) OK
FPC05FE5(1,01)->S01F0_0(05,2,05) OK      S01F0_0(09,3,09)->FPC05FE5(1,01) OK
FPC06FE0(1,05)->S01F0_0(05,6,05) OK      S01F0_0(06,6,06)->FPC06FE0(1,05) OK
FPC06FE0(0,07)->S01F0_0(07,0,07) OK      S01F0_0(08,0,08)->FPC06FE0(0,07) OK
FPC06FE0(0,01)->S01F0_0(07,2,07) OK      S01F0_0(08,2,08)->FPC06FE0(0,01) OK
FPC06FE1(0,06)->S01F0_0(05,4,05) OK      S01F0_0(06,5,06)->FPC06FE1(0,06) OK
FPC06FE1(1,00)->S01F0_0(07,1,07) OK      S01F0_0(08,1,08)->FPC06FE1(1,00) OK
FPC06FE1(1,01)->S01F0_0(07,3,07) OK      S01F0_0(08,3,08)->FPC06FE1(1,01) OK
FPC06FE2(1,04)->S01F0_0(06,2,06) OK      S01F0_0(06,3,06)->FPC06FE2(1,04) OK
FPC06FE2(0,06)->S01F0_0(07,4,07) OK      S01F0_0(07,4,07)->FPC06FE2(0,06) OK
FPC06FE2(0,00)->S01F0_0(07,6,07) OK      S01F0_0(07,6,07)->FPC06FE2(0,00) OK
FPC06FE3(0,06)->S01F0_0(06,0,06) OK      S01F0_0(06,1,06)->FPC06FE3(0,06) OK
FPC06FE3(1,00)->S01F0_0(07,5,07) OK      S01F0_0(07,5,07)->FPC06FE3(1,00) OK
FPC06FE3(1,01)->S01F0_0(07,7,07) OK      S01F0_0(07,7,07)->FPC06FE3(1,01) OK
FPC06FE4(0,04)->S01F0_0(06,6,06) OK      S01F0_0(05,7,05)->FPC06FE4(0,04) OK
FPC06FE4(0,14)->S01F0_0(08,0,08) OK      S01F0_0(07,0,07)->FPC06FE4(0,14) OK
FPC06FE4(0,16)->S01F0_0(08,2,08) OK      S01F0_0(07,2,07)->FPC06FE4(0,16) OK
FPC06FE5(0,06)->S01F0_0(06,4,06) OK      S01F0_0(05,5,05)->FPC06FE5(0,06) OK
FPC06FE5(1,00)->S01F0_0(08,1,08) OK      S01F0_0(07,1,07)->FPC06FE5(1,00) OK
FPC06FE5(1,01)->S01F0_0(08,3,08) OK      S01F0_0(07,3,07)->FPC06FE5(1,01) OK

```

SIB 1 FCHIP 1 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0(1,03)->S01F1_0(15,4,15)	OK	S01F1_0(16,4,16)->FPC00FE0(1,03)	OK
FPC00FE0(0,02)->S01F1_0(17,4,17)	OK	S01F1_0(18,4,18)->FPC00FE0(0,02)	OK
FPC00FE0(0,03)->S01F1_0(17,6,17)	OK	S01F1_0(18,6,18)->FPC00FE0(0,03)	OK
FPC00FE1(1,02)->S01F1_0(16,0,16)	OK	S01F1_0(16,0,16)->FPC00FE1(1,02)	OK
FPC00FE1(1,00)->S01F1_0(18,0,18)	OK	S01F1_0(18,0,18)->FPC00FE1(1,00)	OK
FPC00FE1(1,01)->S01F1_0(18,2,18)	OK	S01F1_0(18,2,18)->FPC00FE1(1,01)	OK
FPC00FE2(0,00)->S01F1_0(15,6,15)	OK	S01F1_0(16,6,16)->FPC00FE2(0,00)	OK
FPC00FE2(1,02)->S01F1_0(17,5,17)	OK	S01F1_0(18,5,18)->FPC00FE2(1,02)	OK
FPC00FE2(1,04)->S01F1_0(17,7,17)	OK	S01F1_0(18,7,18)->FPC00FE2(1,04)	OK
FPC05FE0(0,02)->S01F1_0(02,0,02)	OK	S01F1_0(02,1,02)->FPC05FE0(0,03)	OK
FPC05FE0(0,03)->S01F1_0(02,2,02)	OK	S01F1_0(02,3,02)->FPC05FE0(0,02)	OK
FPC05FE0(1,03)->S01F1_0(04,7,04)	OK	S01F1_0(03,6,03)->FPC05FE0(1,03)	OK
FPC05FE1(1,04)->S01F1_0(04,4,04)	OK	S01F1_0(03,4,03)->FPC05FE1(0,00)	OK
FPC05FE1(0,00)->S01F1_0(04,5,04)	OK	S01F1_0(03,5,03)->FPC05FE1(1,04)	OK
FPC05FE1(1,02)->S01F1_0(04,6,04)	OK	S01F1_0(03,7,03)->FPC05FE1(1,02)	OK
FPC05FE2(1,00)->S01F1_0(02,4,02)	OK	S01F1_0(02,5,02)->FPC05FE2(1,01)	OK
FPC05FE2(1,01)->S01F1_0(02,6,02)	OK	S01F1_0(02,7,02)->FPC05FE2(1,00)	OK
FPC05FE2(1,02)->S01F1_0(04,3,04)	OK	S01F1_0(04,2,04)->FPC05FE2(1,02)	OK
FPC05FE3(1,04)->S01F1_0(04,0,04)	OK	S01F1_0(04,0,04)->FPC05FE3(0,00)	OK
FPC05FE3(0,00)->S01F1_0(04,1,04)	OK	S01F1_0(04,1,04)->FPC05FE3(1,04)	OK
FPC05FE3(1,02)->S01F1_0(04,2,04)	OK	S01F1_0(04,3,04)->FPC05FE3(1,02)	OK
FPC05FE4(0,10)->S01F1_0(03,0,03)	OK	S01F1_0(03,1,03)->FPC05FE4(0,12)	OK
FPC05FE4(0,12)->S01F1_0(03,2,03)	OK	S01F1_0(03,3,03)->FPC05FE4(0,10)	OK
FPC05FE4(0,08)->S01F1_0(03,7,03)	OK	S01F1_0(04,6,04)->FPC05FE4(0,08)	OK
FPC05FE5(1,04)->S01F1_0(03,4,03)	OK	S01F1_0(04,4,04)->FPC05FE5(0,00)	OK
FPC05FE5(0,00)->S01F1_0(03,5,03)	OK	S01F1_0(04,5,04)->FPC05FE5(1,04)	OK

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FPC05FE5(1,02)->S01F1_0(03,6,03) OK      S01F1_0(04,7,04)->FPC05FE5(1,02) OK
FPC06FE0(1,03)->S01F1_0(01,0,01) OK      S01F1_0(00,3,00)->FPC06FE0(1,03) OK
FPC06FE0(0,02)->S01F1_0(02,1,02) OK      S01F1_0(01,0,01)->FPC06FE0(0,03) OK
FPC06FE0(0,03)->S01F1_0(02,3,02) OK      S01F1_0(01,2,01)->FPC06FE0(0,02) OK
FPC06FE1(0,00)->S01F1_0(01,2,01) OK      S01F1_0(00,1,00)->FPC06FE1(0,00) OK
FPC06FE1(1,04)->S01F1_0(15,0,15) OK      S01F1_0(01,5,01)->FPC06FE1(1,04) OK
FPC06FE1(1,02)->S01F1_0(15,2,15) OK      S01F1_0(01,7,01)->FPC06FE1(1,02) OK
FPC06FE2(1,02)->S01F1_0(01,4,01) OK      S01F1_0(00,7,00)->FPC06FE2(1,02) OK
FPC06FE2(1,00)->S01F1_0(02,5,02) OK      S01F1_0(01,4,01)->FPC06FE2(1,01) OK
FPC06FE2(1,01)->S01F1_0(02,7,02) OK      S01F1_0(01,6,01)->FPC06FE2(1,00) OK
FPC06FE3(0,00)->S01F1_0(01,6,01) OK      S01F1_0(00,5,00)->FPC06FE3(0,00) OK
FPC06FE3(1,04)->S01F1_0(19,4,19) OK      S01F1_0(02,4,02)->FPC06FE3(1,04) OK
FPC06FE3(1,02)->S01F1_0(19,6,19) OK      S01F1_0(02,6,02)->FPC06FE3(1,02) OK
FPC06FE4(0,08)->S01F1_0(01,7,01) OK      S01F1_0(01,3,01)->FPC06FE4(0,08) OK
FPC06FE4(0,10)->S01F1_0(03,1,03) OK      S01F1_0(02,0,02)->FPC06FE4(0,12) OK
FPC06FE4(0,12)->S01F1_0(03,3,03) OK      S01F1_0(02,2,02)->FPC06FE4(0,10) OK
FPC06FE5(0,00)->S01F1_0(01,5,01) OK      S01F1_0(01,1,01)->FPC06FE5(0,00) OK
FPC06FE5(1,04)->S01F1_0(19,0,19) OK      S01F1_0(03,0,03)->FPC06FE5(1,04) OK
FPC06FE5(1,02)->S01F1_0(19,2,19) OK      S01F1_0(03,2,03)->FPC06FE5(1,02) OK

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SIB 2  
Not Online

SIB 3  
Not Online

SIB 4  
Not Online

SIB 5  
Not Online

### show chassis fabric topology (QFX10008 Switch)

user@host> show chassis fabric topology

In-link : FPC# FE# ASIC# (TX inst#, TX sub-chnl #) ->  
SIB# ASIC#\_FCORE# (RX port#, RX sub-chnl #, RX inst#)

Out-link : SIB# ASIC#\_FCORE# (TX port#, TX sub-chnl #, TX inst#) ->  
FPC# FE# ASIC# (RX inst#, RX sub-chnl #)

SIB 0 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0(1,17)->S00F0_0(01,0,01)	OK	S00F0_0(00,0,00)->FPC00FE0(1,09)	OK
FPC00FE0(1,09)->S00F0_0(02,0,02)	OK	S00F0_0(00,1,00)->FPC00FE0(1,17)	OK
FPC00FE0(1,07)->S00F0_0(02,2,02)	OK	S00F0_0(00,2,00)->FPC00FE0(1,07)	OK
FPC00FE1(1,12)->S00F0_0(01,1,01)	OK	S00F0_0(00,3,00)->FPC00FE1(1,06)	OK
FPC00FE1(1,06)->S00F0_0(01,2,01)	OK	S00F0_0(01,1,01)->FPC00FE1(1,12)	OK
FPC00FE1(1,10)->S00F0_0(01,3,01)	OK	S00F0_0(01,3,01)->FPC00FE1(1,10)	OK
FPC00FE2(1,16)->S00F0_0(00,4,00)	OK	S00F0_0(00,4,00)->FPC00FE2(1,08)	OK
FPC00FE2(1,08)->S00F0_0(01,6,01)	OK	S00F0_0(00,5,00)->FPC00FE2(1,16)	OK
FPC00FE2(1,06)->S00F0_0(01,7,01)	OK	S00F0_0(00,6,00)->FPC00FE2(1,06)	OK

SIB 0 FCHIP 1 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0(1,15)->S00F1_0(15,4,15)	OK	S00F1_0(16,4,16)->FPC00FE0(1,15)	OK
FPC00FE0(1,11)->S00F1_0(17,4,17)	OK	S00F1_0(18,4,18)->FPC00FE0(1,11)	OK
FPC00FE0(1,13)->S00F1_0(17,6,17)	OK	S00F1_0(18,6,18)->FPC00FE0(1,13)	OK

```
FPC00FE1(1,08)->S00F1_0(15,6,15) OK      S00F1_0(16,6,16)->FPC00FE1(1,08) OK
FPC00FE1(1,14)->S00F1_0(17,5,17) OK      S00F1_0(18,5,18)->FPC00FE1(1,14) OK
FPC00FE1(1,16)->S00F1_0(17,7,17) OK      S00F1_0(18,7,18)->FPC00FE1(1,16) OK
FPC00FE2(1,14)->S00F1_0(16,0,16) OK      S00F1_0(16,0,16)->FPC00FE2(1,14) OK
FPC00FE2(1,10)->S00F1_0(18,0,18) OK      S00F1_0(18,0,18)->FPC00FE2(1,10) OK
FPC00FE2(1,12)->S00F1_0(18,2,18) OK      S00F1_0(18,2,18)->FPC00FE2(1,12) OK
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SIB 1
Not Online
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SIB 2
Not Online
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SIB 3
Not Online
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SIB 4
Not Online
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SIB 5
Not Online
```

## show chassis firmware

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<b>List of Syntax</b>	<a href="#">Syntax on page 806</a> <a href="#">Syntax (TX Matrix Routers) on page 806</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 806</a> <a href="#">Syntax (MX Series Routers) on page 806</a> <a href="#">Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) on page 806</a> <a href="#">Syntax (MX10008 3D Universal Edge Routers) on page 806</a> <a href="#">Syntax (PTX Series) on page 806</a> <a href="#">Syntax (QFX Series) on page 806</a> <a href="#">Syntax (OCX Series) on page 807</a> <a href="#">Syntax (ACX Series Universal Metro Routers) on page 807</a> <a href="#">Syntax (ACX5048 and ACX5096 Routers) on page 807</a> <a href="#">Syntax (ACX500 Routers) on page 807</a> <a href="#">Syntax (EX Series Switches) on page 807</a>
<b>Syntax</b>	show chassis firmware
<b>Syntax (TX Matrix Routers)</b>	show chassis firmware <lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Routers)</b>	show chassis firmware <lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (MX Series Routers)</b>	show chassis firmware <all-members> <local> <member <i>member-id</i> >
<b>Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers)</b>	show chassis firmware <satellite [slot-id <i>slot-id</i>   device-alias <i>alias-name</i> ]>
<b>Syntax (MX10008 3D Universal Edge Routers)</b>	show chassis firmware
<b>Syntax (PTX Series)</b>	show chassis firmware
<b>Syntax (QFX Series)</b>	show chassis firmware interconnect-device <i>name</i> node-device <i>name</i>



<b>Syntax (OCX Series)</b>	show chassis firmware
<b>Syntax (ACX Series Universal Metro Routers)</b>	show chassis firmware
<b>Syntax (ACX5048 and ACX5096 Routers)</b>	show chassis firmware interconnect-device <i>name</i> node-device <i>name</i>
<b>Syntax (ACX500 Routers)</b>	show chassis firmware
<b>Syntax (EX Series Switches)</b>	show chassis firmware <detail> <satellite [slot-id <i>slot-id</i> [device-alias <i>alias-name</i> ]]>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p>sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.</p> <p>Command introduced for EX8200 switches in Junos OS Release 10.2 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 and MX 2020 3D Universal Edge Routers, and ACX4000 Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.</p> <p><b>satellite</b> option introduced in Junos OS Release 14.2R3.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 3D Universal Edge Routers.</p>
<b>Description</b>	<p>On routers and switches, display the version levels of the firmware running on the System Control Board (SCB), Switching and Forwarding Module (SFM), System and Switch Board (SSB), Forwarding Engine Board (FEB), Flexible PIC Concentrators (FPCs), and Routing Engines. On a TX Matrix Plus router, display the version levels of the firmware running on the FPCs and the Switch Processor Mezzanine Board (SPMBs).</p> <p>On EX2200, EX3200, EX4200, QFX Series, and OCX Series switches, display the version levels of the firmware running on the switch. On an EX8208 switch, display the version levels of the firmware running on the Switch Fabric and Routing Engine (SRE) modules</p>

and on the line cards (shown as FPCs). On an EX8216 switch, display the version levels of the firmware running on the Routing Engine (RE) modules and on the line cards (shown as FPCs).

**Options** **none**—Display the version levels of the firmware running. For an EX4200 switch that is a member of a Virtual Chassis, display version levels for all members. For a TX Matrix router, display version levels for the firmware on the TX Matrix router and on all the T640 routers connected to the TX Matrix router. For a TX Matrix Plus router, display version levels for the firmware on the TX Matrix Plus router and on all the routers connected to the TX Matrix Plus router.

**all-members**—(MX Series routers only) (Optional) Display the version levels of the firmware running for all members of the Virtual Chassis configuration.

**interconnect-device *name***—(QFabric systems) (Optional) Display the version levels of the firmware running on the Interconnect device.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display version levels for the firmware on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the version levels for the firmware on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display the version levels of the firmware running for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display the version levels of the firmware running for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**node-device**—(QFabric systems only) (Optional) Display the version levels of the firmware running on the Node device.

**satellite [*slot-id slot-id* | *device-alias alias-name*]**—(Junos Fusion only) (Optional) Display version levels of the firmware running for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.

**scc**—(TX Matrix router only) (Optional) Display version levels for the firmware on the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus router only) (Optional) Display version levels for the firmware on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**detail**—(EX3200, EX3300, EX4200, and EX4500 standalone and Virtual Chassis member switches only) (Optional) Display version levels of the firmware running on the switch for its programmable hardware components.

**Required Privilege Level**

view

#### List of Sample Output

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[show chassis firmware \(ACX500 Router\) on page 821](#)

**Output Fields** Table 29 on page 810 lists the output fields for the show chassis firmware command. Output fields are listed in the approximate order in which they appear.

*Table 29: show chassis firmware Output Fields*

Field Name	Field Description
<b>Part</b>	(MX Series, MX2010, MX2020, and MX2008 routers) Chassis part name.
<b>Type</b>	(MX Series, MX2010, MX2020, and MX2008 routers) Type of firmware: On routers: ROM or O/S. On switches: uboot or loader.
<b>Version</b>	(MX Series, MX2010, MX2020, and MX2008 routers) Version of firmware running on the chassis part.
<b>FPC</b>	( <i>detail</i> option only) Number of FPC. For a standalone switch, the value is 0. For a Virtual Chassis configuration, value in the range of 0-9; refers to the member ID assigned to the switch.
<b>AFEB</b>	(MX104 routers) Version of the compact Forwarding Engine Board.
<b>Boot</b>	( <i>detail</i> option only) Version of the SYSPLD.
<b>PoE</b>	( <i>detail</i> option only) Version of the PoE firmware.
<b>PFE-&lt;number&gt;</b>	( <i>detail</i> option only) Version of the Packet Forwarding Engine used in the switch.
<b>PHY-</b>	( <i>detail</i> option only) Version of the physical layer device (PHY) used in the switch.
<b>microcode</b>	( <i>detail</i> option only) Microcode of the physical layer devices (PHY) used in the switch.
<b>uboot</b>	( <i>detail</i> option only) Version of the u-boot used in the switch.
<b>loader</b>	( <i>detail</i> option only) Version of the loader used in the switch.

## Sample Output

**show chassis firmware (M10 Router)**

```

user@host> show chassis firmware
Part          Type      Version
Forwarding engine board  ROM      Juniper ROM Monitor Version 4.1b2
                                O/S      Version 4.1I1 by usera on 2000-04-24 11:27

```

**show chassis firmware (M20 Router)**

```

user@host> show chassis firmware
Part                Type      Version
System switch board ROM       Juniper ROM Monitor Version 3.4b26
                  O/S       Version 3.4I16 by userc on 2000-02-29 2
FPC 1               ROM       Juniper ROM Monitor Version 3.0b1
                  O/S       Version 3.4I4 by userc on 2000-02-25 21
FPC 2               ROM       Juniper ROM Monitor Version 3.0b1
                  O/S       Version 3.4I4 by userc on 2000-02-25 21

```

**show chassis firmware (M40 Router)**

```

user@host> show chassis firmware
Part                Type      Version
System control board ROM       Juniper ROM Monitor Version 2.0i126Copyri
                  O/S       Version 2.0i1 by root on Thu Jul 23 00:51
FPC 5               ROM       Juniper ROM Monitor Version 2.0i49Copyrig
                  O/S       Version 2.0i1 by root on Thu Jul 23 00:59

```

**show chassis firmware (M120 Router)**

```

user@host> show chassis firmware
FPC 2               ROM       Juniper ROM Monitor Version 8.0b29
                  O/S       Version 8.2B1 by userb on 2006-10-18 16:2
FPC 3               ROM       Juniper ROM Monitor Version 8.0b29
                  O/S       Version 8.2B1 by userb on 2006-10-18 16:2
FPC 4               ROM       Juniper ROM Monitor Version 8.0b29
                  O/S       Version 8.2B1 by userb on 2006-10-18 16:2
FEB 3               ROM       Juniper ROM Monitor Version 8.0b29
                  O/S       Version 8.2B1 by userb on 2006-10-18 16:1
FEB 4               ROM       Juniper ROM Monitor Version 8.0b29
                  O/S       Version 8.2B1 by userb on 2006-10-18 16:1

```

**show chassis firmware (M160 Router)**

```

user@host> show chassis firmware
Part                Type      Version
SFM 0               ROM       Juniper ROM Monitor Version 4.0b2
                  O/S       Version 4.0I1 by usera on 2000-02-29 11:50
SFM 1               ROM       Juniper ROM Monitor Version 4.0b2
                  O/S       Version 4.0I1 by usera on 2000-02-29 11:50
FPC 0               ROM       Juniper ROM Monitor Version 4.0b2
                  O/S       Version 4.0I1 by usera on 2000-02-29 11:56
FPC 1               ROM       Juniper ROM Monitor Version 4.0b2
                  O/S       Version 4.0I1 by usera on 2000-02-29 11:56
FPC 2               ROM       Juniper ROM Monitor Version 4.0b3
                  O/S       Version 4.0I1 by usera on 2000-02-29 11:56

```

**show chassis firmware (MX150)**

```

user@host > show chassis firmware
Part                Type      Version
FPC                 ROM       PC Bios
                  O/S       Version 17.2I20170220_0929_rohitn by rohitn
on 2017-02-20 09:38:59 UTC

```

**show chassis firmware (MX104 Router)**

```
user@host > show chassis firmware
Part      Type      Version
FPC 0     ROM       Juniper ROM Monitor Version 13.1b24
           O/S      Version 13.2-20130514.1 by userb on 2013-
FPC 1     ROM       Juniper ROM Monitor Version 13.1b24
           O/S      Version 13.2-20130514.1 by userb on 2013-
FPC 2     ROM       Juniper ROM Monitor Version 13.1b24
           O/S      Version 13.2-20130514.1 by userb on 2013-
AFEB      ROM       Juniper ROM Monitor Version 13.1b24
           O/S      Version 13.2-20130514.1 by userb on 2013-
```

**show chassis firmware (MX240 Router)**

```
user@host> show chassis firmware
Part      Type      Version
FPC 1     ROM       Juniper ROM Monitor Version 8.3b1
           O/S      Version 9.0-20080103.0 by userb on 2008-0
FPC 2     ROM       Juniper ROM Monitor Version 8.3b1
           O/S      Version 9.0-20080103.0 by userb on 2008-0
```

**show chassis firmware (MX480 Router)**

```
user@host> show chassis firmware
Part      Type      Version
FPC 1     ROM       Juniper ROM Monitor Version 8.3b1
           O/S      Version 9.0-20070916.3 by userb on 2007-0
```

**show chassis firmware (MX960 Router)**

```
user@host> show chassis firmware
Part      Type      Version
FPC 4     ROM       Juniper ROM Monitor Version 8.0b8
           O/S      Version 8.2I59 by user3 on 2006-10-31 19:22
FPC 7     ROM       Juniper ROM Monitor Version 8.2b1
           O/S      Version 8.2-20061026.1 by userb on 2006-1
```

**show chassis firmware (MX2010 Router)**

```
user@host> show chassis firmware
Part      Type      Version
FPC 0     ROM       Juniper ROM Monitor Version 12.3b1
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 1     ROM       Juniper ROM Monitor Version 10.1b3
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 2     ROM       Juniper ROM Monitor Version 10.1b3
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 3     ROM       Juniper ROM Monitor Version 10.1b3
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 4     ROM       Juniper ROM Monitor Version 10.0b39
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 5     ROM       Juniper ROM Monitor Version 10.0b39
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 6     ROM       Juniper ROM Monitor Version 10.4b1
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 7     ROM       Juniper ROM Monitor Version 10.1b3
           O/S      Version 12.3-20121220.0 by userb on 2012-
FPC 8     ROM       Juniper ROM Monitor Version 10.4b1
```

	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 9	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
SPMB 0	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
SPMB 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20121220.0 by userb on 2012-

### show chassis firmware (MX2020 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 1	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 2	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 3	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 4	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 5	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 6	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 7	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 8	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 9	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 10	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 11	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 12	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 13	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 14	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 15	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 16	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 17	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 18	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 19	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 0	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-

### show chassis firmware (MX2008 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 17.2-20170412.0 by builder on
2017-04-12 01:15:48 UTC		
FPC 3	ROM	Juniper ROM Monitor Version 13.3b1
	O/S	Version 17.2-20170412.0 by builder on
2017-04-12 01:16:31 UTC		
FPC 5	ROM	Juniper ROM Monitor Version 13.3b1
	O/S	Version 17.2-20170412.0 by builder on
2017-04-12 01:16:31 UTC		
FPC 7	ROM	Juniper ROM Monitor Version 11.4b2
	O/S	Version 17.2-20170412.0 by builder on
2017-04-12 01:15:48 UTC		
FPC 9	ROM	Juniper ROM Monitor Version 13.2b1
	O/S	Version 17.2-20170412.0 by builder on
2017-04-12 01:15:58 UTC		

**show chassis firmware (MX10003)**

```
user@host> show chassis firmware
```

Part	Type	Version
RE 0	PRI BIOS	CBEP_P_SUM0_00.11.01
	RE-FPGA	402
RE 1	PRI BIOS	CBEP_P_SUM0_00.11.01
	RE-FPGA	301
FPC 0	ROM	PC Bios
	O/S	Version 17.3-20170719.0 by builder on
2017-07-19 01:27:58 UTC		
FPC 1	ROM	PC Bios
	O/S	Version 17.3-20170719.0 by builder on
2017-07-19 01:27:58 UTC		

**show chassis firmware (MX204 Router)**

```
user@host> show chassis firmware
```

Part	Type	Version
RE 0	PRI BIOS	CBEP_P_SUM1_00.11.01
	RE-FPGA	300
FPC	ROM	PC Bios
	O/S	Version 17.4I20171105_0609_aahluwalia by
aahluwalia on 2017-11-05 06:09:28 UTC		

**show chassis firmware (MX10008 Router)**

```
user@host> show chassis firmware
```

Part	Type	Version
RE 0	PRI BIOS	CBEP_P_VAL0_00.13.01
	FPGA	261.0
	RE-FPGA	41.0
	RE-SSD1	SF-SBR12034
	RE-SSD2	SF-SBR12034
	i40e-NVM	6.01
RE 1	PRI BIOS	CBEP_P_VAL0_00.13.01
	FPGA	263.0
	RE-FPGA	41.0
	RE-SSD1	SF-SBR12034
	RE-SSD2	SF-SBR12034



```

FPC 1          i40e-NVM  6.01
               ROM      PC Bios
               O/S      Version 18.2R1 by builder on 2018-05-26

17:08:55 UTC

               ROM Monitor 0 9.10.0
               PCIE Sw(0) 1.0.0
               MPCS(0)   0.2.0
               I2CS CPLD 0.4.0
               BOOT CPLD 0.2.0

FPC 2
FPC 5          ROM      PC Bios
               O/S      Version 18.2R1 by builder on 2018-05-26

17:08:55 UTC

               ROM Monitor 0 9.10.0
               PCIE Sw(0) 1.0.0
               MPCS(0)   0.2.0
               I2CS CPLD 0.4.0
               BOOT CPLD 0.2.0

FPM            FPGA     1.9
FTC 0          FPGA     2.0
FTC 1          FPGA     2.0
SFB 0          FPGA     3.0
SFB 1          FPGA     3.0
SFB 2          FPGA     3.0
SFB 3          FPGA     3.0

```

#### show chassis firmware (MX240, MX480, MX960 Router with Application Services Modular Line Card)

```
user@host> show chassis firmware
```

```

Part          Type      Version
FPC 1         ROM        Juniper ROM Monitor Version 12.1b1
              O/S        Version 12.2I21 by user1 on 2012-06-19 17:

```

#### show chassis firmware (EX4200 Switch)

```
user@switch> show chassis firmware
```

```

Part          Type      Version
FPC 0         uboot      U-Boot 1.1.6 (Feb  6 2008 - 11:27:42)
              loader     FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 1         uboot      U-Boot 1.1.6 (Feb  6 2008 - 11:27:42)
              loader     FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 2         uboot      U-Boot 1.1.6 (Feb  6 2008 - 11:27:42)
              loader     FreeBSD/PowerPC U-Boot bootstrap loader 2.1

```

#### show chassis firmware (EX8200 Switch)

```
user@switch> show chassis firmware
```

```

Part          Type      Version
FPC 0         U-Boot     U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0
              loader     FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 3         U-Boot     U-Boot 1.1.6 (Dec  4 2009 - 13:17:34) 3.1.0
              loader     FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 5         U-Boot     U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0
              loader     FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 7         U-Boot     U-Boot 1.1.6 (Feb  6 2009 - 05:31:46) 2.4.0
              loader     FreeBSD/PowerPC U-Boot bootstrap loader 2.2
Routing Engine 0 U-Boot     U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0

```

		FreeBSD/PowerPC U-Boot bootstrap loader 2.2
Routing Engine 1	Loader	
	U-Boot	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0
	Loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.2

**show chassis firmware (EX9200 Switch)**

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 2	ROM	Juniper ROM Monitor Version 11.4b2
	O/S	Version 14.1I20140312_0741 by userd o
FPC 3	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 14.1I20140312_0741 by userd o

**show chassis firmware (EX9251 Switch)**

```
user@switch> show chassis firmware
```

Part	Type	Version
RE 0	PRI BIOS	CBEP_P_SUM1_00.11.01
	RE-FPGA	301
FPC	ROM	PC Bios
	O/S	Version 18.1R1.4 by builder on 2018-03-06

00:31:54 UTC

**show chassis firmware (EX9253 Switch)**

```
user@switch> show chassis firmware
```

Part	Type	Version
RE 0	PRI BIOS	CBEP_P_SUM1_00.11.01
	RE-FPGA	402
RE 1	PRI BIOS	CBEP_P_SUM1_00.11.01
	RE-FPGA	402
FPC 0	ROM	PC Bios
	O/S	Version 18.2-20180129_dev_common.1 by builder
		on 2018-01-29 13:35:11 UTC
FPC 1	ROM	PC Bios
	O/S	Version 18.2-20180129_dev_common.1 by builder
		on 2018-01-29 13:35:11 UTC

**show chassis firmware lcc (TX Matrix Router)**

```
user@host> show chassis firmware lcc 0
```

lcc0-re0:

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 6.4b18
	O/S	Version 7.0-20040804.0 by userb on 2004-0
FPC 2	ROM	Juniper ROM Monitor Version 6.4b20
	O/S	Version 7.0-20040804.0 by userb on 2004-0
SPMB 0	ROM	Juniper ROM Monitor Version 6.4b18
	O/S	Version 7.0-20040804.0 by userb on 2004-0

**show chassis firmware scc (TX Matrix Router)**

```
user@host> show chassis firmware scc
```

scc-re0:

Part	Type	Version
------	------	---------

```

SPMB 0          ROM      Juniper ROM Monitor Version 6.4b18
                O/S      Version 7.0-20040804.0 by userb on 2004-0

```

### show chassis firmware (TX Matrix Plus Router)

```

user@host> show chassis firmware
sfc0-re0:

```

```

-----
Part          Type      Version
Global FPC 4
Global FPC 6
Global FPC 7
Global FPC 12
Global FPC 14
Global FPC 15
Global FPC 20
Global FPC 21
Global FPC 22
Global FPC 23
Global FPC 24
Global FPC 25
Global FPC 26
Global FPC 28
Global FPC 29
Global FPC 31
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0

```

```

lcc0-re1:

```

```

-----
Part          Type      Version
FPC 4          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0

```

```

lcc1-re1:

```

```

-----
Part          Type      Version
FPC 4          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0

```

```

lcc2-re1:

```

```

-----
Part          Type      Version

```

FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 5	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 7.5b4
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

lcc3-re1:

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 1	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 2	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 4	ROM	Juniper ROM Monitor Version 7.5b4
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 5	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

**show chassis firmware lcc (TX Matrix Plus Router)**

user@host&gt; show chassis firmware lcc 0

lcc0-re1:

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

**show chassis firmware sfc (TX Matrix Plus Router)**

user@host&gt; show chassis firmware sfc 0

sfc0-re0:

Part	Type	Version
Global FPC 4		
Global FPC 6		
Global FPC 7		
Global FPC 12		

```

Global FPC 14
Global FPC 15
Global FPC 20
Global FPC 21
Global FPC 22
Global FPC 23
Global FPC 24
Global FPC 25
Global FPC 26
Global FPC 28
Global FPC 29
Global FPC 31
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0

```

#### show chassis firmware (QFX Series and OCX Series)

```

user@switch> show chassis firmware
Part          Type          Version
FPC 0
Routing Engine 0  U-Boot      U-Boot 1.1.6 (Sep 15 2010 - 02:11:11) 1.0.5
                  loader      FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

#### show chassis firmware (PTX1000 Packet Transport Routers)

```

user@host> show chassis firmware
Part          Type          Version
FPC 0          U-Boot      ***
                  loader      FreeBSD/i386 bootstrap loader 1.2
                  BIOS        V0018.2U
                  EC FPGA     2.0
                  MAIN_CPLD    1.f
                  MEZZ_CPLD    1.f
                  RE FPGA      2.3

```

#### show chassis firmware (PTX10008 Routers)

```

user@host> show chassis firmware
Part          Type          Version
RE 0          PRI BIOS      QFXS_SFP_00.31_01.01
              GDN BIOS      QFXS_SFP_00.31_01.01
              FPGA          2.4
              RE-FPGA        3.2
RE 1          PRI BIOS      QFXS_SFP_00.31_01.01
              GDN BIOS      QFXS_SFP_00.31_01.01
              FPGA          2.3
              RE-FPGA        3.2
FPC 0          U-Boot      Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)
              CTRL FPGA     4.1
              PORT FPGA     2.0
FPC 5          U-Boot      Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)
              CTRL FPGA     3.1
              PORT FPGA     2.0
FPC 6          U-Boot      Bank B: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)
              CTRL FPGA     3.1

```

	PORT	FPGA	2.0
FPM		FPGA	1.9
FTC 0		FPGA	2.0
FTC 1		FPGA	2.0
SIB 0		FPGA	3.0
SIB 1		FPGA	3.0

**show chassis firmware interconnect-device (QFabric System)**

```

user@switch> show chassis firmware interconnect-device interconnect1
Part                Type      Version
Routing Engine 0    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                  loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1
Routing Engine 1    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                  loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

**show chassis firmware (ACX2000 Universal Metro Router)**

```

user@switch> show chassis firmware
Part      Type      Version
FPC       O/S       Version 12.2I13 by user2 on 2012-05-29 06:
FEB       O/S       Version 12.2I13 by user2 on 2012-05-29 06:

```

**show chassis firmware detail (EX3300 Switch)**

```

user@switch> show chassis firmware detail
FPC 0
  Boot SYSPLD          3
  PoE firmware         4.1.6
  PFE-0                3
  PFE-1                3
  PHY
    microcode          0x514
  Boot Firmware
    uboot              U-Boot 1.1.6 (Aug 21 2011 - 01:45:26) 1.0.0
    loader              FreeBSD/arm U-Boot loader 1.0

```

**show chassis firmware (MX Routers with Media Services Blade [MSB])**

```

user@switch> show chassis firmware
Part      Type      Version
FPC 1     ROM      Juniper ROM Monitor Version 12.1b1
          O/S      Version 12.2I21 by user1 on 2012-06-19 17:

```

**show chassis firmware (ACX5048 Router)**

```

user@host> show chassis firmware
Part      Type      Version
FPC       loader    FreeBSD/i386 bootstrap loader 1.2
          BIOS     V0018.7
          TMC FPGA  6.d8
          PICO CPLD0 7.b
          PICO CPLD1 7.b
          PICO CPLD2 7.b
          PICO CPLD3 7.b
          PICO CPLD4 7.b
          PICO CPLD5 7.b
          PICO CPLD6 6.a

```

```

MRE          17.9
Power CPLD   3.a

```

#### show chassis firmware (ACX5096 Router)

```

user@host> show chassis firmware
Part          Type          Version
FPC
loader        FreeBSD/i386 bootstrap loader 1.2
BIOS          V0018.7
TMC FPGA      3000001.5
PICO CPLD0    7.b
PICO CPLD1    7.b
PICO CPLD2    7.b
PICO CPLD3    7.b
PICO CPLD4    7.b
PICO CPLD5    7.b
PICO CPLD6    c6.a
PICO CPLD7    -NA-
PICO CPLD8    7.b
PICO CPLD9    7.b
PICO CPLD10   7.b

PICO CPLD11   7.b

PICO CPLD12   7.b

PICO CPLD13   7.b

PICO CPLD14   c6.a

MRE           7.5
Power CPLD    4.1

```

#### show chassis firmware (ACX500 Router)

```

user@host> show chassis firmware
Part          Type          Version
FPC           O/S           Version 15.2-20150815_dev_rbu_1_16q1.0 by
userb on 2015-08-15 04:18:02 UTC
FEB           O/S           Version 15.2-20150815_dev_rbu_1_16q1.0 by
userb on 2015-08-15 04:18:02 UTC

```

## show chassis fpc

---

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	<a href="#">Syntax (T4000 Routers) on page 822</a>
	<a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 822</a>
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	<a href="#">Syntax (ACX500 Routers) on page 823</a>
<b>Syntax</b>	<code>show chassis fpc</code> <code>&lt;detail &lt;slot&gt;&gt;   &lt;pic-status &lt;slot&gt;&gt;</code>
<b>Syntax (EX Series Switches)</b>	<code>show chassis fpc</code> <code>&lt;detail &lt;fpc-slot&gt;&gt;   &lt;pic-status &lt;fpc-slot&gt;&gt;</code> <code>&lt;fpc-slot&gt;</code>
<b>Syntax (T4000 Routers)</b>	<code>show chassis fpc</code> <code>&lt;detail &lt;fpc-slot&gt;&gt;</code> <code>&lt;pic-status &lt;fpc-slot&gt;&gt;</code>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	<code>show chassis fpc</code> <code>&lt;detail &lt;fpc-slot&gt;&gt;   &lt;pic-status &lt;fpc-slot&gt;&gt;</code> <code>&lt;slot&gt;</code>
<b>Syntax (MX Series Routers and EX Series switches)</b>	<code>show chassis fpc</code> <code>&lt;detail &lt;slot&gt;&gt;   &lt;pic-status &lt;slot&gt;&gt;</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member member-id&gt;</code>
<b>Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers)</b>	<code>show chassis fpc</code> <code>&lt;slot&gt; detail   &lt;detail &lt;slot&gt;&gt;   &lt;pic-status &lt;slot&gt;&gt;</code> <code>&lt;fpc-slot&gt;</code>
<b>Syntax (Mx10008 3D Universal Edge Routers)</b>	<code>show chassis fpc</code> <code>&lt;detail&gt;</code> <code>&lt;errors&gt;</code> <code>&lt;fpc-slot&gt;</code> <code>pic-status &lt;fpc-slot&gt;</code>



<b>Syntax (QFX Series)</b>	<pre>show chassis fpc &lt;detail&gt; &lt;interconnect-device <i>name</i> &lt;fpc-slot <i>fpc-slot</i>&gt;&gt; &lt;node-device <i>name</i>&gt;</pre>
<b>Syntax (OCX Series)</b>	<pre>show chassis fpc &lt;detail&gt;</pre>
<b>Syntax (PTX Series Packet Transport Routers)</b>	<pre>show chassis fpc &lt;detail &lt;<i>fpc-slot</i>&gt;&gt;   &lt;pic-status &lt;<i>fpc-slot</i>&gt;&gt; &lt;<i>fpc-slot</i>&gt;</pre>
<b>Syntax (ACX Series Universal Metro Routers)</b>	<pre>show chassis fpc &lt;detail &lt;<i>fpc-slot</i>&gt;&gt;   &lt;pic-status &lt;<i>fpc-slot</i>&gt;&gt; &lt;<i>fpc-slot</i>&gt;</pre>
<b>Syntax (ACX500 Routers)</b>	<pre>show chassis fpc &lt;<i>fpc-slot</i>&gt; detail &lt;<i>fpc-slot</i>&gt; pic-status &lt;<i>fpc-slot</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switch.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p>
<b>Description</b>	Display status information about the installed Flexible PIC Concentrators (FPCs) and PICs.
<b>Options</b>	<p><b>none</b>—Display status information for all FPCs. On a TX Matrix router, display status information for all FPCs on the attached T640 routers in the routing matrix. On a TX Matrix Plus router, display status information for all FPCs on the attached routers in the routing matrix.</p>



**NOTE:** In EX8200 switches, line cards initialize Packet Forwarding Engine during startup. If an error occurs during hardware initialization, the FPCs with bad hardware parts power down after transferring the debug information to the Routing Engine. The Routing Engine marks the FPC offline, logs the error in system log messages (/var/log/messages), and generates an alarm to inform the user.

See the following sample output:

```
user@host> show chassis fpc
```

Utilization (%)	Temp	CPU Utilization (%)	Memory		
Slot State	(C)	Total	Interrupt	DRAM (MB)	Heap
Buffer					
0 Empty					
1 Empty					
2 Empty					
3 Empty					
4 Empty					
5 Offline		---Hard FPC error---			
6 Empty					
7 Online	26	4	0	1024	0
32					

The following sample output shows the alarm raised for the failed FPCs:

```
user@host> show chassis alarms
4 alarms currently active
```

Alarm time	Class	Description
2011-03-24 00:52:51 UTC	Major	FPC 5 Hard errors
2011-03-24 00:52:31 UTC	Major	Fan Tray Failure
2011-03-24 00:52:31 UTC	Major	Fan Tray Failure
2011-03-24 00:51:26 UTC	Minor	Loss of communication with Backup RE



**NOTE:** On T4000 routers, when you include the enhanced-mode statement at the [edit chassis network-services] hierarchy level and reboot the system, only the T4000 Type 5 FPCs present on the router become online while the remaining FPCs are offline, and FPC misconfiguration alarms are generated. The show chassis alarm command output displays FPC misconfiguration (FPC *fpc-slot* misconfig) as the reason for the generation the alarms.

The following sample output shows the FPC status after the enhanced-mode statement is configured on the T4000 router. The T4000 Type 5 FPC present in slot 5 becomes online while the remaining FPCs are offline.

```
user@host> show chassis fpc
```

	Temp	CPU Utilization (%)	Memory
Utilization (%)			
Slot State	(C)	Total	Interrupt
Buffer			DRAM (MB) Heap
0 offline	---	FPC misconfiguration---	
1 offline	---	FPC misconfiguration---	
2 offline	---	FPC misconfiguration---	
3 Empty			
4 Empty			
5 Online	66	50	0
27			2816 29

The following sample output shows FPC misconfiguration alarms:

```
user@host> show chassis alarms
```

3 alarms currently active

Alarm time	Class	Description
2011-03-24 00:52:51 PST	Major	FPC 1 misconfig
2011-03-24 00:52:31 PST	Major	FPC 2 misconfig
2011-03-24 00:52:31 PST	Major	FPC 3 misconfig

**detail**—(Optional) Display detailed status information for all FPCs or for the FPC in the specified slot (see *fpc-slot* or *slot*).

**all-members**—(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on all members of the Virtual Chassis configuration.

**interconnect-device *name***—(QFabric systems only) (Optional) Display status information for all FPCs on the Interconnect device.

***fpc-slot***—(Optional) FPC slot number:

- (TX Matrix and TX Matrix Plus routers only)—On a TX Matrix router, if you specify the number of the T640 router (line-card chassis) by using the **lcc *number*** option (the recommended method), replace *fpc-slot* with a value from 0 through 7. Otherwise, replace *fpc-slot* with a value from 0 through 31. Likewise, on a TX Matrix

Plus router, if you specify the number of the specified router (line-card chassis) by using the **lcc number** option (the recommended method), replace **fpc-slot** with a value from 0 through 7. Otherwise, replace **fpc-slot** with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis fpc detail 1 lcc 1
user@host> show chassis fpc detail 9
```

- M120 router—Replace **fpc-slot** with a value from 0 through 5.
- MX80 router—Replace **fpc-slot** with a value from 0 through 1.
- MX104 and MX104-40G routers—Replace **fpc-slot** with a value from 0 through 2.
- MX240 router—Replace **fpc-slot** with a value from 0 through 2.
- MX480 router—Replace **fpc-slot** with a value from 0 through 5.
- MX-960 router—Replace **fpc-slot** with a value from 0 through 11.
- MX2010 router—Replace **fpc-slot-number** with a value from 0 through 9.
- MX2008 router—Replace **fpc-slot-number** with a value from 0 through 9.
- MX2020 router—Replace **fpc-slot-number** with a value from 0 through 19.
- Other routers—Replace **fpc-slot** with a value from 0 through 7.
- EX Series switches:
  - EX3200 switches and EX4200 standalone switches—Replace **fpc-slot** with 0.
  - EX4200 switches in a Virtual Chassis configuration—Replace **fpc-slot** with a value from 0 through 9.
  - EX6210 switches—Replace **fpc-slot** with a value from 0 through 9.
  - EX8208 switches—Replace **fpc-slot** with a value from 0 through 7.
  - EX8216 switches—Replace **fpc-slot** with a value from 0 through 15.
  - EX9204 switches—Replace **fpc-slot** with a value from 0 through 2.
  - EX9208 switches—Replace **fpc-slot** with a value from 0 through 5.
  - EX9214 switches—Replace **fpc-slot** with a value from 0 through 11.
- QFX Series:
  - QFXSeries and OCX Series switches—Replace **fpc-slot** with 0.
  - QFabric systems—Replace **fpc-slot** with 0 through 31 on the Interconnect device.
- PTX Series Packet Transport Routers:
  - PTX5000 Packet Transport Router—Replace **fpc-slot** with a value from 0 through 7.
- ACX Series Universal Metro Routers:

- ACX1000 and ACX2000 Universal Metro Routers—Replace **fpc-slot** with **0**.

**local**—(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on the local Virtual Chassis member.

**member *member-id***—(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on the specified member of the Virtual Chassis configuration. Replace ***member-id*** with a value of 0 or 1.

**node-device *name***—(QFabric systems only) (Optional) Display status information for each Node device. Each Node device is equivalent to an FPC.

**pic-status**—(Optional) Display status information for all PICs or for the PIC in the specified slot (see **fpc-slot**).



**NOTE:** On T1600 routers, Type 4 FPCs with ASICs based on the SL2.0 chipset do not support the 10-Gigabit Ethernet LAN/WAN PIC with SFP+ (10x10GE [LAN/WAN] SFPP). If you issue the `show chassis fpc` command with the `pic-status` option, the CLI displays the string “Not Supported” for 10x10GE (LAN/WAN) SFPP PICs installed on such FPCs. The following is a sample output:

```
user@host> show chassis fpc pic-status
Slot 0  Online      E2-FPC Type 1
        PIC 0  Online      1x G/E SFP, 1000 BASE
        PIC 1  Online      Adaptive Services-II
        PIC 2  Online      1x G/E IQ, 1000 BASE
        PIC 3  Online      1x G/E IQ, 1000 BASE
Slot 1  Online      FPC Type 3-ES
        PIC 0  Present     UNUSED- Not Supported
Slot 2  Online      FPC Type 4-ES
        PIC 0  Offline     4x OC-192 SONET XFP
        PIC 1  Present     10x10GE (LAN/WAN) SFPP- Not Supported
<<<<<<
Slot 4  Offline     FPC Type 1-ES
Slot 5  Offline     FPC Type 2-ES
Slot 6  Online      E2-FPC Type 3
        PIC 0  Online      1x OC-192 SONET XFP
        PIC 1  Online      4x OC-48 SONET
        PIC 2  Online      4x OC-48 SONET
        PIC 3  Online      MultiServices 500
Slot 7  Online      FPC Type 4-ES
        PIC 0  Online      4x 10GE (LAN/WAN) XFP
        PIC 1  Online      4x 10GE (LAN/WAN) XFP
```

In addition, an entry is logged in the system log messages (`/var/log/messages`) that the PIC is not supported. The following is a sample message logged in the system log:

```
Apr  5 08:47:36 router1 chassisd[2770]: CHASSISD_UNSUPPORTED_PIC:
PIC 1 in FPC 2 (type 763, version 257) is not supported
```

If you see this issue, contact Juniper Networks Technical Assistance Center (JTAC) for a possible fix. For more information about this issue and a possible solution, see [PSN-2010-03-696](#).



**NOTE:** When there is a double-bit ECC error in a network processor's memory, the Channelized OC3/STM1 (Multi-Rate) Circuit Emulation MIC with SFP or Channelized E1/T1 Circuit Emulation MIC is switched to the offline state.

```
user@host> show chassis fpc pic-status
Slot 1  Online      MPC Type 2 3D Q
PIC 0  Offline      1xCOC12/4xCOC3 CH-CE- ECC error detected
```

**lcc *number***—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [request chassis fpc on page 279](#)
- [show chassis fpc-feb-connectivity](#)
- [show chassis fabric fpcs on page 639](#)
- *Configuring the Junos OS to Resynchronize FPC Sequence Numbers with Active FPCs when an FPC Comes Online*
- *MX960 Flexible PIC Concentrator Description*
- *ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping*
- *enhanced-mode*

**List of Sample Output**

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[show chassis fpc \(M10 Router\) on page 834](#)  
[show chassis fpc \(M20 Router\) on page 834](#)  
[show chassis fpc detail \(M Series Routers\) on page 835](#)  
[show chassis fpc detail \(MX150\) on page 835](#)  
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**Output Fields** [Table 30 on page 832](#) lists the output fields for the **show chassis fpc** command. Output fields are listed in the approximate order in which they appear.

Table 30: show chassis fpc Output Fields

Field Name	Field Description	Level of Output
<b>Slot or Slot State</b>	Slot number and state. The state can be one of the following conditions: <ul style="list-style-type: none"> <li>• <b>Dead</b>—Held in reset because of errors.</li> <li>• <b>Diag</b>—Slot is being ignored while the FPC is running diagnostics.</li> <li>• <b>Dormant</b>—Held in reset.</li> <li>• <b>Empty</b>—No FPC is present.</li> <li>• <b>Offline</b>—(PTX Series Packet Transport Routers only) One of the following two states is displayed: <ul style="list-style-type: none"> <li>• <b>FPC offlined due to unreachable destinations</b></li> <li>• <b>FPC Offlined due to degraded FPC action</b></li> </ul> </li> <li>• <b>Online</b>—FPC is online and running.</li> <li>• <b>Present</b>—FPC is detected by the chassis daemon but either is not supported by the current version of Junos OS or is inserted in the wrong slot. The output also states either <b>Hardware Not Supported</b> or <b>Hardware Not In Right Slot</b>. The FPC is coming up but not yet online.</li> <li>• <b>Probed</b>—Probe is complete; awaiting restart of the Packet Forwarding Engine.</li> <li>• <b>Probe-wait</b>—Waiting to be probed.</li> </ul>	all levels
<b>Logical slot</b>	Slot number.	all levels
<b>Temp (C) or Temperature</b>	Temperature of the air passing by the FPC, in degrees Celsius or in both Celsius and Fahrenheit.	all levels all levels
<b>Temperature (PTX Series)</b>	On PTX Series Packet Transport Routers, temperature details are provided in degrees Celsius and Fahrenheit. Output includes: <ul style="list-style-type: none"> <li>• Temperature (PMB)—Temperature of the air passing by the Processor Mezzanine Board (PMB) at the bottom of the FPC.</li> <li>• Temperature (Intake)—Temperature of the air flowing into the chassis.</li> <li>• Temperature (Exhaust)—Exhaust temperatures for multiple zones (Exhaust A and Exhaust B).</li> <li>• Temperature (TLn)—Temperature of the specified Lookup ASIC (TL) of the packet forwarding engine on the FPC.</li> <li>• Temperature (TQn)—Temperature of the specified Queuing and Memory Interface ASIC (TQ) of the packet forwarding engine on the FPC.</li> </ul>	detail
<b>Total CPU Utilization (%)</b>	Total percentage of CPU being used by the FPC's processor.	all levels
<b>Interrupt CPU Utilization (%)</b>	Of the total CPU being used by the FPC's processor, the percentage being used for interrupts.	none specified

Table 30: show chassis fpc Output Fields (continued)

Field Name	Field Description	Level of Output
<b>1 min CPU utilization (%)</b>  <i>NOTE:</i> Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008.	Information about the Routing Engine's CPU utilization in the past 1 minute.	none specified
<b>5 min CPU utilization (%)</b>  <i>NOTE:</i> Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008.	Information about the Routing Engine's CPU utilization in the past 5 minutes.	none specified
<b>15 min CPU utilization (%)</b>  <i>NOTE:</i> Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008.	Information about the Routing Engine's CPU utilization in the past 15 minutes.	none specified
<b>Memory DRAM (MB)</b>	Total DRAM, in megabytes, available to the FPC's processor.	none specified
<b>Heap Utilization (%)</b>	Percentage of heap space (dynamic memory) being used by the FPC's processor. If this number exceeds 80 percent, there may be a software problem (memory leak).  <i>NOTE:</i> On MX Series routers and EX Series switches in a broadband edge environment, heap utilization levels higher than 70 percent can affect unified ISSU, router stability, or scaling capability.	none specified
<b>Buffer Utilization (%)</b>	Percentage of buffer space being used by the FPC's processor for buffering internal messages.	none specified
<b>Total CPU DRAM</b>	Amount of DRAM available to the FPC's CPU.	detail
<b>Total RLDRAM</b>	Amount of reduced latency dynamic random access memory (RLDRAM) available to the FPC CPU.	detail
<b>Total DDR DRAM</b>	Amount of double data rate dynamic random access memory (DDR DRAM) available to the FPC CPU.	detail
<b>Total SRAM</b>	Amount of static RAM (SRAM) used by the FPC's CPU.	detail
<b>Total SDRAM</b>	Total amount of memory used for storing packets and notifications.	detail

Table 30: show chassis fpc Output Fields (continued)

Field Name	Field Description	Level of Output
I/O Manager ASICs information	I/O Manager version number, manufacturer, and part number.	detail
Start time	Time when the Routing Engine detected that the FPC was running.	detail
Uptime	How long the Routing Engine has been connected to the FPC and, therefore, how long the FPC has been up and running.	detail
PIC type	(pic-status output only) Type of PIC.	none specified
GNF (Node slicing)	GNF identifier associated with each line card. (pic-status output only) GNF identifier associated with each PIC.	all levels

## Sample Output

### show chassis fpc (EX6210 Switch)

```

user@switch> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap Buffer
0	Empty				
1	Online	7	5 0	1024	0 32
2	Empty				
3	Empty				
4	Online	25	17 2	2048	0 30
5	Online	25	3 0	2048	0 24
6	Online	6	5 0	1024	0 32
7	Empty				
8	Empty				
9	Online	8	7 0	1024	0 32

### show chassis fpc (M10 Router)

```

user@host> show chassis fpc
FPC status:

```

Slot	State	Temp (C)
0	Online	27
1	Online	28

### show chassis fpc (M20 Router)

```

user@host> show chassis fpc
FPC status:

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap Buffer
0	Empty	0	0 0	0	0 0
1	Online	38	0 0	8	0 4
2	Online	35	0 0	8	0 3
3	Empty	0	0 0	0	0 0

**show chassis fpc detail (M Series Routers)**

```

user@host> show chassis fpc detail 1
Slot 1 information:
  State                               Online
  Temperature                         48 degrees C
  Total CPU DRAM                      32 MB
  Total SRAM                          4 MB
  Total SDRAM                         256 MB
  I/O Manager ASICs information      Version 2.0, Foundry IBM, Part number 0
  I/O Manager ASICs information      Version 2.0, Foundry IBM, Part number 0
  Start time                         2000-02-08 02:18:49 UTC
  Uptime                             14 hours, 41 minutes, 41 seconds

```

**show chassis fpc detail (MX150)**

```

user@host> show chassis fpc detail
Slot 0 information:
  State                               Online
  Temperature                         42 degrees C / 107 degrees F
  Total CPU DRAM                      2048 MB
  Total RLDRAM                        10 MB
  Total DDR DRAM                      0 MB
  Start time                         2017-04-04 04:44:04 PDT
  Uptime                             7 days, 19 hours, 45 minutes, 50 seconds

```

**show chassis fpc detail (MX80 Router)**

```

user@host> show chassis fpc detail
Slot 0 information:
  State                               Online
  Temperature                         47 degrees C / 116 degrees F
  Total CPU DRAM                      1024 MB
  Total SRAM                          331 MB
  Total SDRAM                         1280 MB
  Start time                         2010-02-08 12:25:33 PST
  Uptime                             2 hours, 13 minutes, 19 seconds
Slot 1 information:
  State                               Online
  Temperature                         47 degrees C / 116 degrees F
  Total CPU DRAM                      1024 MB
  Total SRAM                          331 MB
  Total SDRAM                         1280 MB
  Start time                         2010-02-08 12:25:33 PST
  Uptime                             2 hours, 13 minutes, 19 seconds

```

**show chassis fpc (MX104 Router)**

```

user@host> show chassis fpc

```

Temp	CPU Utilization (%)	Memory	Utilization (%)	DRAM (MB)	Heap	Buffer	
Slot	State	(C)	Total	Interrupt			
0	Online	32	15	5	2048	22	13
1	Online	32	15	5	2048	22	13
2	Online	32	15	5	2048	22	13

**show chassis fpc detail (MX104 Router)**

```

user@host> show chassis fpc detail

```

```

Slot 0 information:
  State                Online
  Temperature          32 (C)
  Total CPU DRAM       2048 MB
  Total SRAM           403 MB
  Total SDRAM          1316 MB
  Start time           2013-05-23 14:39:18 IST
  Uptime               1 hour, 20 minutes, 22 seconds
Slot 1 information:
  State                Online
  Temperature          32 (C)
  Total CPU DRAM       2048 MB
  Total SRAM           403 MB
  Total SDRAM          1316 MB
  Start time           2013-05-23 14:39:18 IST
  Uptime               1 hour, 20 minutes, 22 seconds
Slot 2 information:
  State                Online
  Temperature          32 (C)
  Total CPU DRAM       2048 MB
  Total SRAM           403 MB
  Total SDRAM          1316 MB
  Start time           2013-05-23 14:39:18 IST
  Uptime               1 hour, 20 minutes, 22 seconds

```

#### show chassis fpc pic-status (MX104 Router)

```

user@host> show chassis fpc pic-status
Slot 0  Online
Slot 1  Online
  PIC 0  Online      10x 1GE(LAN) -E  SFP
  PIC 1  Online      10x 1GE(LAN) -E  SFP
Slot 2  Online
  PIC 0  Online      4x 10GE(LAN) SFP+

```

#### show chassis fpc (MX240 Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory DRAM (MB)	Utilization (%)	
			Total	Heap	Buffer	
0	Empty					
1	Online	34	6	1024	18	30
2	Online	33	9	1024	24	30

#### show chassis fpc (MX480 Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory DRAM (MB)	Utilization (%)	
			Total	Heap	Buffer	
0	Empty					
1	Online	36	9	1024	17	57
2	Empty					
3	Empty					
4	Empty					
5	Empty					

#### show chassis fpc detail (EX9200 Switch)

```

user@switch> show chassis fpc detail

```

```

Slot 2 information:
  State                Online
  Temperature          37
  Total CPU DRAM       2048 MB
  Total RLDRAM         331 MB
  Total DDR DRAM       1536 MB
  Start time:          2014-03-12 15:35:28 UTC
  Uptime:              1 hour, 4 minutes, 29 seconds
  Max Power Consumption 239 Watts

Slot 3 information:
  State                Online
  Temperature          39
  Total CPU DRAM       2048 MB
  Total RLDRAM         1036 MB
  Total DDR DRAM       6656 MB
  Start time:          2014-03-12 15:00:18 UTC
  Uptime:              1 hour, 39 minutes, 39 seconds
  Max Power Consumption 520 Watts

```

#### show chassis fpc (MX480 Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	CPU Utilization (%)	Memory
			Total	Interrupt	DRAM (MB)
0	Online		1	0	1024
4		56			
1	Online		1	0	1024
4		56			

#### show chassis fpc (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory	Utilization (%)
			Total	Interrupt	DRAM (MB)
0	Online	33	4	0	2048
1	Online	36	7	0	2048
2	Online	29	6	0	1024
3	Online	33	0	0	0
4	Online	36	7	0	2048
5	Online	34	31	11	2048

#### show chassis fpc pic-status (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis fpc pic-status

```

Slot	State	PIC	Type
1	Online	MPC	Type 3
2	Online	1X100GE	CFP
2	Online	DPCE	40x 1GE R EQ
0	Online	10x 1GE(LAN)	EQ
1	Online	10x 1GE(LAN)	EQ
2	Online	10x 1GE(LAN)	EQ
3	Online	10x 1GE(LAN)	EQ
3	Online	MPC	Type 3
0	Online	1X100GE	CFP
2	Online	1X100GE	CFP
4	Online	MPC	Type 3
0	Online	1X100GE	CFP
2	Online	1X100GE	CFP
5	Online	MPC	Type 2 3D EQ

```

PIC 0 Online      2x 10GE XFP
PIC 1 Online      2x 10GE XFP
PIC 2 Online      10x 1GE(LAN) SFP
PIC 3 Online      10x 1GE(LAN) SFP

```

#### show chassis fpc pic-status (EX Series Switch)

```

user@host> show chassis fpc pic-status
Slot 1 Online      EX9200 32x10G SFP
    PIC 0 Online      8X10GE SFPP
    PIC 1 Online      8X10GE SFPP
    PIC 2 Online      8X10GE SFPP
    PIC 3 Online      8X10GE SFPP
Slot 2 Online      EX9200 32x10G SFP
    PIC 0 Online      8X10GE SFPP
    PIC 1 Online      8X10GE SFPP
    PIC 2 Online      8X10GE SFPP
    PIC 3 Online      8X10GE SFPP

```

#### show chassis fpc (MX480 Router with MPC4E)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Interrupt	Utilization (%)	DRAM (MB)	Heap	Buffer
0	Empty							
1	Empty							
2	Online	38	7	0		2048	19	14
3	Online	39	8	0		2048	18	14
4	Online	39	7	0		2048	17	14
5	Empty							

#### show chassis fpc detail (MX480 Router with MPC4E)

```

user@host> show chassis fpc detail
Slot 2 information:
State Online
Temperature 38
Total CPU DRAM 2048 MB
Total RDRAM 1036 MB
Total DDR DRAM 11264 MB
Start time: 2013-02-18 05:06:57 PST
Uptime: 17 hours, 41 minutes, 9 seconds
Max Power Consumption 610 Watts
Slot 3 information:
State Online
Temperature 38
Total CPU DRAM 2048 MB
Total RDRAM 1036 MB
Total DDR DRAM 11264 MB
Start time: 2013-02-18 05:07:00 PST
Uptime: 17 hours, 41 minutes, 6 seconds
Max Power Consumption 610 Watts
Slot 4 information:
State Diagnostics
Temperature 37
Total CPU DRAM 0 MB
Total RDRAM 0 MB
Total DDR DRAM 0 MB
Max Power Consumption 520 Watts

```



**show chassis fpc (MX480 Router with MPC4E)**

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Empty						
1	Empty						
2	Online	38	7	0	2048	19	14
3	Online	39	8	0	2048	18	14
4	Online	39	7	0	2048	17	14
5	Empty						

**show chassis fpc detail (MX480 Router with MPC4E)**

```

user@host> show chassis fpc detail

```

Slot 2 information:

State	Online
Temperature	38
Total CPU DRAM	2048 MB
Total RLDRAM	1036 MB
Total DDR DRAM	11264 MB
Start time:	2013-02-18 05:06:57 PST
Uptime:	17 hours, 41 minutes, 9 seconds
Max Power Consumption	610 Watts

Slot 3 information:

State	Online
Temperature	38
Total CPU DRAM	2048 MB
Total RLDRAM	1036 MB
Total DDR DRAM	11264 MB
Start time:	2013-02-18 05:07:00 PST
Uptime:	17 hours, 41 minutes, 6 seconds
Max Power Consumption	610 Watts

Slot 4 information:

State	Diagnostics
Temperature	37
Total CPU DRAM	0 MB
Total RLDRAM	0 MB
Total DDR DRAM	0 MB
Max Power Consumption	520 Watts

**show chassis fpc (MX960 Router)**

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Empty						
1	Empty						
2	Empty						
3	Online	25	19	0	1024	15	57
4	Empty						
5	Online	26	27	0	1024	15	57
6	Empty						
7	Empty						
8	Empty						
9	Empty						
10	Empty						
11	Empty						

**show chassis fpc (MX960 Router with MPC5EQ)**

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap Buffer
0	Online	38	16 0	3584	7 13
1	Online	31	15 0	2048	17 13
2	Empty				
3	Online	31	14 0	2048	20 13
4	Online	34	16 0	3584	7 13
5	Online	34	16 0	3584	7 13
6	Empty				
7	Online	32	9 0	2048	18 14
8	Online	36	19 0	3584	7 13
9	Online	31	9 0	2048	13 13
10	Online	35	14 0	3584	7 13
11	Online	33	11 0	2048	18 14

**show chassis fpc detail (MX960 Router with MPC5EQ)**

```

user@host> show chassis fpc detail

```

Slot 0 information:

State	Online
Temperature	38
Total CPU DRAM	3584 MB
Total XR2	291 MB
Total DDR DRAM	24960 MB
Start time:	2014-04-22 10:01:46 PDT
Uptime:	1 hour, 23 minutes, 40 seconds
Max Power Consumption	607 Watts

Slot 1 information:

State	Online
Temperature	31
Total CPU DRAM	2048 MB
Total RLD RAM	1036 MB
Total DDR DRAM	6656 MB
Start time:	2014-04-22 10:01:50 PDT
Uptime:	1 hour, 23 minutes, 36 seconds
Max Power Consumption	520 Watts

Slot 3 information:

State	Online
Temperature	31
Total CPU DRAM	2048 MB
Total RLD RAM	1324 MB
Total DDR DRAM	5120 MB
Start time:	2014-04-22 10:01:50 PDT
Uptime:	1 hour, 23 minutes, 36 seconds
Max Power Consumption	440 Watts

Slot 4 information:

State	Online
Temperature	34
Total CPU DRAM	3584 MB
Total XR2	291 MB
Total DDR DRAM	24960 MB
Start time:	2014-04-22 10:01:54 PDT
Uptime:	1 hour, 23 minutes, 32 seconds
Max Power Consumption	607 Watts

Slot 5 information:

State	Online
Temperature	34

```

Total CPU DRAM          3584 MB
Total XR2                291 MB
Total DDR DRAM          24960 MB
Start time:              2014-04-22 10:01:56 PDT
Uptime:                  1 hour, 23 minutes, 30 seconds
Max Power Consumption    607 Watts
Slot 7 information:
State                    Online
Temperature              32
Total CPU DRAM          2048 MB
Total RLDRAM             1036 MB
Total DDR DRAM          11264 MB
Start time:              2014-04-22 10:02:02 PDT
Uptime:                  1 hour, 23 minutes, 24 seconds
Max Power Consumption    608 Watts
Slot 8 information:
State                    Online
Temperature              36
Total CPU DRAM          3584 MB
Total XR2                291 MB
Total DDR DRAM          24960 MB
Start time:              2014-04-22 10:02:07 PDT
Uptime:                  1 hour, 23 minutes, 19 seconds
Max Power Consumption    607 Watts
Slot 9 information:
State                    Online
Temperature              31
Total CPU DRAM          2048 MB
Total RLDRAM             734 MB
Total DDR DRAM          3108 MB
Start time:              2014-04-22 10:02:05 PDT
Uptime:                  1 hour, 23 minutes, 21 seconds
Max Power Consumption    368 Watts
Slot 10 information:
State                    Online
Temperature              35
Total CPU DRAM          3584 MB
Total XR2                291 MB
Total DDR DRAM          24960 MB
Start time:              2014-04-22 10:02:11 PDT
Uptime:                  1 hour, 23 minutes, 15 seconds
Max Power Consumption    607 Watts
Slot 11 information:
State                    Online
Temperature              33
Total CPU DRAM          2048 MB
Total RLDRAM             1036 MB
Total DDR DRAM          11264 MB
Start time:              2014-04-22 10:02:16 PDT
Uptime:                  1 hour, 23 minutes, 10 seconds
Max Power Consumption    608 Watts

```

#### show chassis fpc pic-status(MX960 Router with MPC5EQ)

```

user@host> show chassis fpc pic-status
Slot 0  Online      MPC5E 3D Q 2CGE+4XGE
PIC 0   Online      2X10GE SFPP OTN
PIC 1   Online      1X100GE CFP2 OTN
PIC 2   Online      2X10GE SFPP OTN
PIC 3   Online      1X100GE CFP2 OTN

```

```

Slot 1  Online      MPCE Type 3 3D
        PIC 0 Online  10X10GE SFPP
        PIC 2 Online  1X100GE CXP
Slot 3  Online      MPC 3D 16x 10GE
        PIC 0 Online  4x 10GE(LAN) SFP+
        PIC 1 Online  4x 10GE(LAN) SFP+
        PIC 2 Online  4x 10GE(LAN) SFP+
        PIC 3 Online  4x 10GE(LAN) SFP+
Slot 4  Online      MPC5E 3D Q 2CGE+4XGE
        PIC 0 Online  2X10GE SFPP OTN
        PIC 1 Online  1X100GE CFP2 OTN
        PIC 2 Online  2X10GE SFPP OTN
        PIC 3 Online  1X100GE CFP2 OTN
Slot 5  Online      MPC5E 3D Q 2CGE+4XGE
        PIC 0 Online  2X10GE SFPP OTN
        PIC 1 Online  1X100GE CFP2 OTN
        PIC 2 Online  2X10GE SFPP OTN
        PIC 3 Online  1X100GE CFP2 OTN
Slot 7  Online      MPC4E 3D 2CGE+8XGE
        PIC 0 Online  4x10GE SFPP
        PIC 1 Online  1X100GE CFP
        PIC 2 Online  4x10GE SFPP
        PIC 3 Online  1X100GE CFP
Slot 8  Online      MPC5E 3D Q 24XGE+6XLGE
        PIC 0 Offline 12X10GE SFPP OTN
        PIC 1 Offline 12X10GE SFPP OTN
        PIC 2 Online  3X40GE QSFPP
        PIC 3 Online  3X40GE QSFPP
Slot 9  Online      MPCE Type 2 3D P
        PIC 0 Online  2x 10GE XFP
        PIC 1 Online  2x 10GE XFP
Slot 10 Online      MPC5E 3D Q 24XGE+6XLGE
        PIC 0 Online  12X10GE SFPP
        PIC 1 Online  12X10GE SFPP
        PIC 2 Offline 3X40GE QSFPP
        PIC 3 Offline 3X40GE QSFPP
Slot 11 Online      MPC4E 3D 2CGE+8XGE
        PIC 0 Online  4x10GE SFPP
        PIC 1 Online  1X100GE CFP
        PIC 2 Online  4x10GE SFPP
        PIC 3 Online  1X100GE CFP

```

#### show chassis fpc (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```

user@host> show chassis fpc 1
      Temp CPU Utilization (%)  Memory  Utilization (%)
Slot State      (C) Total Interrupt  DRAM (MB) Heap  Buffer
  1  Online      34      5         0    3072      5    13

```

#### show chassis fpc (MX240, MX480, MX960 with Application Services Modular Line Card)

```

user@host> show chassis fpc 1 detail
Slot 1 information:
State                               Online
Temperature                         34
Total CPU DRAM                      3072 MB
Total RLDRAM                        259 MB
Total DDR DRAM                      4864 MB
Start time:                         2012-06-19 10:51:43 PDT

```

```

Uptime:                               16 minutes, 48 seconds
Max Power Consumption                  550 Watts

```

### show chassis fpc (MX240, MX480, MX960, MX2010, MX2020, and MX2008 3D Universal Edge Routers with Dynamic Power Management)

```
user@host> show chassis fpc 2 detail
```

```

Slot 2 information:
State                               Online
Temperature                         37
Total CPU DRAM                     3584 MB
Total XR2                          275 MB
Total DDR DRAM                     20352 MB
Start time:                        2014-07-18 02:51:23 PDT
Uptime:                            5 minutes, 19 seconds
Max MPC Base Power Consumption     485 Watts
Max MICO Power Consumption         50 Watts
Max MIC1 Power Consumption         50 Watts
Max MPC Total Power Consumption    585 Watts

```

### show chassis fpc (MX2010 Routers)

```
user@host> show chassis fpc
```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Total	Memory Interrupt	Utilization (%)	DRAM (MB)	Heap	Buffer
0	Online	34	9	0	2048	18	13		
1	Online	32	9	0	2048	15	13		
2	Empty								
3	Empty								
4	Empty								
5	Empty								
6	Empty								
7	Empty								
8	Online	31	13	0	2048	11	13		
9	Online	33	10	0	2048	18	13		

### show chassis fpc (MX2010 Router with Fabric Grant Bypass Enabled)

Following is the output of the **show chassis fpc** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass is enabled by default. All MPCs power on.

```
user@host> show chassis fpc
```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Total	Memory Interrupt	Utilization (%)	DRAM (MB)	Heap	Buffer
0	Online	34	20	0	2048	9	14		
1	Offline	33	22	0	2048	9	14		
2	Online	33	17	0	2048	9	14		
3	Offline	34	25	0	2048	9	14		
4	Online	32	27	0	2048	9	14		
5	Offline	32	26	0	2048	9	14		
6	Empty								
7	Empty								
8	Empty								
9	Empty								

**show chassis fpc (MX2010 Router with Fabric Grant Bypass Disabled)**

Following is the output of the **show chassis fpc** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass and reboot the router. Also, FPC misconfiguration alarms are generated.

```
user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State             (C) Total Interrupt    DRAM (MB) Heap      Buffer
0  Online              34    20          0    2048        9        14
1  Offline             ---FPC misconfiguration---
2  Online              33    17          0    2048        9        14
3  Offline             ---FPC misconfiguration---
4  Online              32    27          0    2048        9        14
5  Offline             ---FPC misconfiguration---
6  Empty
7  Empty
8  Empty
9  Empty
```

**show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Enabled)**

Following is the output of the **show chassis fpc pic-status** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been enabled by default. All MPCs power on.

```
user@host> show chassis fpc pic-status
Slot 0  Present      MPCE Type 3 3D
Slot 1  Present      MPC Type 2 3D EQ
Slot 2  Present      MPCE Type 3 3D
Slot 3  Present      MPC 3D 16x 10GE
Slot 4  Present      MPCE Type 3 3D
Slot 5  Present      MPCE Type 1 3D Q
```

**show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Disabled)**

Following is the output of the **show chassis fpc pic-status** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass mode and reboot the router.

```
user@host> show chassis fpc pic-status
Slot 0  Present      MPCE Type 3 3D
Slot 1  Offline      MPC Type 2 3D EQ
Slot 2  Present      MPCE Type 3 3D
Slot 3  Offline      MPC 3D 16x 10GE
Slot 4  Present      MPCE Type 3 3D
Slot 5  Offline      MPCE Type 1 3D Q
```

**show chassis fpc (MX2020 Routers)**

```
user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State             (C) Total Interrupt    DRAM (MB) Heap      Buffer
```

0	Online	10	12	0	2048	18	13
1	Online	8	9	0	2048	18	13
2	Online	7	9	0	2048	18	13
3	Online	8	10	0	2048	18	13
4	Online	9	10	0	2048	18	13
5	Online	8	9	0	2048	18	13
6	Online	8	10	0	2048	18	13
7	Online	9	9	0	2048	18	13
8	Online	9	10	0	2048	18	13
9	Online	10	9	0	2048	18	13
10	Online	16	8	0	2048	18	13
11	Online	11	10	0	2048	18	13
12	Online	10	10	0	2048	18	13
13	Online	11	9	0	2048	18	13
14	Online	12	10	0	2048	18	13
15	Online	13	9	0	2048	18	13
16	Online	13	9	0	2048	18	13
17	Online	12	9	0	2048	18	13
18	Online	12	8	0	2048	18	13
19	Online	14	10	0	2048	18	13

#### show chassis fpc (MX2020 Router with MPC4E)

```

user@host> show chassis fpc

```

Slot	Temp	CPU Utilization (%)	Memory	Utilization (%)	Heap	Buffer
State	(C)	Total	Interrupt	DRAM (MB)		
0	Online	33	12	2	2048	11
1	Empty					
2	Empty					
3	Empty					
4	Empty					
5	Empty					
6	Empty					
7	Empty					
8	Empty					
9	Online	31	10	0	2048	11
10	Online	32	7	0	2048	14
11	Empty					
12	Empty					
13	Empty					
14	Online	28	12	0	2048	15
15	Empty					
16	Empty					
17	Empty					
18	Empty					
19	Online	38	8	0	2048	18

#### show chassis fpc (MX10003 Router)

```

user@host> show chassis fpc

```

Slot	Temp	CPU Utilization (%)	CPU Utilization (%)	Memory				
State	(C)	Total	Interrupt	DRAM (MB)				
Heap	Buffer							
0	Online	59	25	0	25	24	23	3136
12								
1	Online	62	29	0	26	24	23	3136
12								

**show chassis fpc detail (MX10003 Router)**

```

user@host> show chassis fpc detail

Slot 0 information:
  State                               Online
  Total CPU DRAM                       3136 MB
  Total RLDRAM                         771 MB
  Total DDR DRAM                       18432 MB
  Temperature                          60 degrees C / 140 degrees F
  Start time                          2017-07-19 20:49:58 PDT
  Uptime                              2 hours, 29 minutes, 22 seconds
  Max MPC base power consumption      910 Watts
  Max MIC1 power consumption          95 Watts
  Max MPC total power consumption     1005 Watts
Slot 1 information:
  State                               Online
  Total CPU DRAM                       3136 MB
  Total RLDRAM                         771 MB
  Total DDR DRAM                       18432 MB
  Temperature                          63 degrees C / 145 degrees F
  Start time                          2017-07-19 20:48:01 PDT
  Uptime                              2 hours, 31 minutes, 19 seconds
  Max MPC base power consumption      910 Watts
  Max MIC1 power consumption          155 Watts
  Max MPC total power consumption     1065 Watts

```

**show chassis fpc <fpc-slot> (MX10003 Router)**

```

user@host> show chassis fpc 0

```

Utilization (%)		Temp	CPU Utilization (%)		CPU Utilization (%)			Memory
Slot	State	(C)	Total	Interrupt	1min	5min	15min	DRAM (MB)
0	Online	49	26	0	22	22	23	3136
12	11							

**show chassis fpc (MX204 Router)**

```

user@host> show chassis fpc

```

Utilization (%)		Temp	CPU Utilization (%)		CPU Utilization (%)			Memory
Slot	State	(C)	Total	Interrupt	1min	5min	15min	DRAM (MB)
0	Online	Absent	8	0	8	8	8	3136
8	8							

**show chassis fpc detail (MX204 Router)**

```

user@host> show chassis fpc detail
Slot 0 information:
  State                               Online
  Total CPU DRAM                       3136 MB
  Total RLDRAM                         257 MB
  Total DDR DRAM                       4096 MB
  Temperature                          Absent
  Start time                          2017-11-05 22:14:01 PST
  Uptime                              2 days, 8 hours, 5 minutes, 55 seconds

```



**show chassis fpc <fpc-slot> (MX204 Router)**

```
user@host> show chassis fpc 0
```

Utilization (%)		Temp	CPU Utilization (%)		CPU Utilization (%)			Memory
Slot	State	(C)	Total	Interrupt	1min	5min	15min	DRAM (MB)
Heap	Buffer							
0	Online	Absent	8	0	8	8	8	3136
8	8							

**show chassis fpc (MX10008 Router)**

```
user@host> show chassis fpc
```

Utilization (%)		Temp	CPU Utilization (%)		CPU Utilization (%)			Memory
Slot	State	(C)	Total	Interrupt	1min	5min	15min	DRAM (MB)
Heap	Buffer							
0	Empty							
1	Online	42	29	0	26	27	27	3136
20	26							
2	Offline	---Unresponsive---						
3	Empty							
4	Empty							
5	Online	52	20	0	22	23	23	3136
20	26							
6	Empty							
7	Empty							

**show chassis fpc detail (MX10008 Router)**

```
user@host> show chassis fpc detail
```

```
Slot 1 information:
```

```

State                               Online
Total CPU DRAM                     3136 MB
Total RLDRAM                       1542 MB
Total DDR DRAM                     36864 MB
Temperature                         43 degrees C / 109 degrees F
Start time                         2018-05-29 06:15:55 PDT
Uptime                             15 hours, 53 minutes, 18 seconds
Max power consumption              1535 Watts
Configured Bandwidth               2400 G
Operating Bandwidth                2400 G

```

```
Slot 2 information:
```

```

State                               Offline
Reason                             Unresponsive
Total CPU DRAM                     0 MB
Total RLDRAM                       0 MB
Total DDR DRAM                     0 MB
Temperature                         34 degrees C / 93 degrees F
Max power consumption              1535 Watts
Configured Bandwidth               2400 G
Operating Bandwidth                2400 G

```

```
Slot 5 information:
```

```

State                               Online
Total CPU DRAM                     3136 MB
Total RLDRAM                       1542 MB
Total DDR DRAM                     36864 MB
Temperature                         53 degrees C / 127 degrees F
Start time                         2018-05-29 03:08:40 PDT

```

```

Uptime                      19 hours, 33 seconds
Max power consumption        1535 Watts
Configured Bandwidth         2400 G
Operating Bandwidth          2400 G

```

### show chassis fpc <fpc-slot> (MX10008 Router)

```
user@host> show chassis fpc 0
```

Utilization (%)	Temp	CPU Utilization (%)	CPU Utilization (%)	Memory
Slot State	(C)	Total	Interrupt	1min 5min 15min DRAM (MB)
Heap				
Buffer				
0 Empty				

### show chassis fpc detail (MX2020 Router with MPC4E)

```
user@host> show chassis fpc detail
```

```
Slot 0 information:
```

```

State                      Online
Temperature                 34
Total CPU DRAM              2048 MB
Total RLDRAM                806 MB
Total DDR DRAM              2632 MB
Start time:                 2013-02-17 08:17:35 PST
Uptime:                     1 day, 14 hours, 50 minutes, 39 seconds
Max Power Consumption       368 Watts

```

```
Slot 9 information:
```

```

State                      Online
Temperature                 32
Total CPU DRAM              2048 MB
Total RLDRAM                806 MB
Total DDR DRAM              2632 MB
Start time:                 2013-02-17 08:17:43 PST
Uptime:                     1 day, 14 hours, 50 minutes, 31 seconds
Max Power Consumption       368 Watts

```

```
Slot 10 information:
```

```

State                      Online
Temperature                 37
Total CPU DRAM              2048 MB
Total RLDRAM                1036 MB
Total DDR DRAM              6656 MB
Start time:                 2013-02-17 08:17:54 PST
Uptime:                     1 day, 14 hours, 50 minutes, 20 seconds
Max Power Consumption       520 Watts

```

```
Slot 14 information:
```

```

State                      Online
Temperature                 32
Total CPU DRAM              2048 MB
Total RLDRAM                1036 MB
Total DDR DRAM              11264 MB
Start time:                 2013-02-17 08:18:01 PST
Uptime:                     1 day, 14 hours, 50 minutes, 13 seconds
Max Power Consumption       610 Watts

```

```
Slot 19 information:
```

```

State                      Online
Temperature                 38
Total CPU DRAM              2048 MB
Total RLDRAM                1324 MB
Total DDR DRAM              5120 MB

```

```

Start time:                2013-02-17 08:18:08 PST
Uptime:                    1 day, 14 hours, 50 minutes, 6 seconds
Max Power Consumption      440 Watts

```

#### show chassis fpc (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Online	31	20	0	3584	7	13
1	Online	28	19	0	2048	17	13
2	Online	27	10	0	2048	18	14
3	Online	26	10	0	2048	13	13
4	Online	29	19	0	3584	7	13
5	Online	28	68	0	2048	20	13
6	Empty						
7	Empty						
8	Empty						
9	Online	36	19	0	3584	10	13
10	Online	37	26	0	3584	10	13
11	Empty						
12	Empty						
13	Empty						
14	Empty						
15	Empty						
16	Empty						
17	Online	28	43	0	3584	10	13
18	Online	29	19	0	3584	7	13
19	Online	31	19	0	3584	7	13

#### show chassis fpc detail (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc detail
Slot 0 information:
  State                Online
  Temperature          31
  Total CPU DRAM       3584 MB
  Total XR2            291 MB
  Total DDR DRAM       24960 MB
  Start time:          2014-04-22 23:33:19 PDT
  Uptime:               6 minutes, 24 seconds
  Max Power Consumption 607 Watts
Slot 1 information:
  State                Online
  Temperature          28
  Total CPU DRAM       2048 MB
  Total RLDRAM         1036 MB
  Total DDR DRAM       6656 MB
  Start time:          2014-04-22 23:33:24 PDT
  Uptime:               6 minutes, 19 seconds
  Max Power Consumption 520 Watts
Slot 2 information:
  State                Online
  Temperature          27
  Total CPU DRAM       2048 MB
  Total RLDRAM         1036 MB
  Total DDR DRAM       11264 MB
  Start time:          2014-04-22 23:33:34 PDT
  Uptime:               6 minutes, 9 seconds

```

Max Power Consumption	608 Watts
Slot 3 information:	
State	Online
Temperature	26
Total CPU DRAM	2048 MB
Total RLDRAM	734 MB
Total DDR DRAM	3108 MB
Start time:	2014-04-22 23:33:39 PDT
Uptime:	6 minutes, 4 seconds
Max Power Consumption	368 Watts
Slot 4 information:	
State	Online
Temperature	29
Total CPU DRAM	3584 MB
Total XR2	291 MB
Total DDR DRAM	24960 MB
Start time:	2014-04-22 23:33:51 PDT
Uptime:	5 minutes, 52 seconds
Max Power Consumption	607 Watts
Slot 5 information:	
State	Online
Temperature	28
Total CPU DRAM	2048 MB
Total RLDRAM	1324 MB
Total DDR DRAM	5120 MB
Start time:	2014-04-22 23:33:57 PDT
Uptime:	5 minutes, 46 seconds
Max Power Consumption	440 Watts
Slot 9 information:	
State	Online
Temperature	25
Total CPU DRAM	3584 MB
Total XR2	518 MB
Total DDR DRAM	49920 MB
Start time:	2014-04-22 23:31:20 PDT
Uptime:	8 minutes, 23 seconds
Max Power Consumption	1130 Watts
Slot 10 information:	
State	Online
Temperature	32
Total CPU DRAM	3584 MB
Total XR2	518 MB
Total DDR DRAM	49920 MB
Start time:	2014-04-22 23:31:25 PDT
Uptime:	8 minutes, 18 seconds
Max Power Consumption	1130 Watts
Slot 17 information:	
State	Online
Temperature	25
Total CPU DRAM	3584 MB
Total XR2	518 MB
Total DDR DRAM	49920 MB
Start time:	2014-04-22 23:31:29 PDT
Uptime:	8 minutes, 14 seconds
Max Power Consumption	1130 Watts
Slot 18 information:	
State	Online
Temperature	29
Total CPU DRAM	3584 MB
Total XR2	291 MB
Total DDR DRAM	24960 MB

```

Start time:                2014-04-22 23:34:11 PDT
Uptime:                    5 minutes, 32 seconds
Max Power Consumption      607 Watts
Slot 19 information:
State                      Online
Temperature                 32
Total CPU DRAM             3584 MB
Total XR2                  291 MB
Total DDR DRAM            24960 MB
Start time:                2014-04-22 23:34:20 PDT
Uptime:                    5 minutes, 23 seconds
Max Power Consumption      607 Watts

```

### show chassis fpc detail (MX2008 Router)

```

user@host>show chassis fpc detail
Slot 0 information:
State                      Online
Temperature                 33 degrees C / 91 degrees F
Total CPU DRAM             2048 MB
Total RLD RAM              734 MB
Total DDR DRAM            2596 MB
Start time                 2017-04-14 07:14:26 PDT
Uptime                     15 hours, 29 minutes, 20 seconds
Max power consumption      347 Watts
Slot 3 information:
State                      Online
Temperature                 31 degrees C / 87 degrees F
Total CPU DRAM             3584 MB
Total RLD RAM              259 MB
Total DDR DRAM            20352 MB
Start time                 2017-04-14 07:14:38 PDT
Uptime                     15 hours, 29 minutes, 8 seconds
Max MPC base power consumption 376 Watts
Max MICO power consumption   0 Watts
Max MIC1 power consumption   0 Watts
Max MPC total power consumption 376 Watts
Slot 5 information:
State                      Online
Temperature                 32 degrees C / 89 degrees F
Total CPU DRAM             3584 MB
Total RLD RAM              275 MB
Total DDR DRAM            20352 MB
Start time                 2017-04-14 07:14:46 PDT
Uptime                     15 hours, 29 minutes
Max MPC base power consumption 422 Watts
Max MICO power consumption   18 Watts
Max MIC1 power consumption   0 Watts
Max MPC total power consumption 440 Watts
Slot 7 information:
State                      Online
Temperature                 28 degrees C / 82 degrees F
Total CPU DRAM             2048 MB
Total RLD RAM              403 MB
Total DDR DRAM            1572 MB
Start time                 2017-04-14 07:14:50 PDT
Uptime                     15 hours, 28 minutes, 56 seconds
Max power consumption      347 Watts
Slot 9 information:
State                      Online
Temperature                 29

```

```

Total CPU DRAM          3584 MB
Total XR2               518 MB
Total DDR DRAM          49920 MB
Start time              2017-04-14 07:13:16 PDT
Uptime                  15 hours, 30 minutes, 30 seconds
Max MPC base power consumption  834 Watts
Max MICO power consumption    56 Watts
Max MIC1 power consumption     0 Watts
Max MPC total power consumption 890 Watts

```

#### show chassis fpc pic-status (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc pic-status
Slot 0  Online      MPC5E 3D Q 24XGE+6XLGE
PIC 0   Online      12X10GE SFPP OTN
PIC 1   Online      12X10GE SFPP OTN
PIC 2   Offline     3X40GE QSFPP
PIC 3   Offline     3X40GE QSFPP
Slot 1  Online      MPCE Type 3 3D
PIC 0   Online      10X10GE SFPP
PIC 2   Online      1X100GE CXP
Slot 2  Online      MPC4E 3D 2CGE+8XGE
PIC 0   Online      4x10GE SFPP
PIC 1   Online      1X100GE CFP
PIC 2   Online      4x10GE SFPP
PIC 3   Online      1X100GE CFP
Slot 3  Online      MPCE Type 2 3D P
PIC 0   Online      2x 10GE XFP
PIC 1   Online      2x 10GE XFP
Slot 4  Online      MPC5E 3D Q 2CGE+4XGE
PIC 0   Online      2X10GE SFPP OTN
PIC 1   Online      1X100GE CFP2 OTN
PIC 2   Online      2X10GE SFPP OTN
PIC 3   Online      1X100GE CFP2 OTN
Slot 5  Online      MPC 3D 16x 10GE
PIC 0   Online      4x 10GE(LAN) SFP+
PIC 1   Online      4x 10GE(LAN) SFP+
PIC 2   Online      4x 10GE(LAN) SFP+
PIC 3   Online      4x 10GE(LAN) SFP+
Slot 9  Online      MPC6E 3D
PIC 0   Online      2X100GE CFP2 OTN
PIC 1   Online      2X100GE CFP2 OTN
Slot 10 Online      MPC6E 3D
PIC 0   Online      24X10GE SFPP OTN
PIC 1   Online      4X100GE CXP
Slot 17 Online      MPC6E 3D
PIC 0   Online      24X10GE SFPP
PIC 1   Online      4X100GE CXP
Slot 18 Online      MPC5E 3D Q 24XGE+6XLGE
PIC 0   Offline     12X10GE SFPP OTN
PIC 1   Offline     12X10GE SFPP OTN
PIC 2   Online      3X40GE QSFPP
PIC 3   Online      3X40GE QSFPP
Slot 19 Online      MPC5E 3D Q 24XGE+6XLGE
PIC 0   Online      12X10GE SFPP OTN
PIC 1   Offline     12X10GE SFPP OTN
PIC 2   Offline     3X40GE QSFPP
PIC 3   Online      3X40GE QSFPP

```

**show chassis fpc detail (MX Series Routers)**

```

user@host> show chassis fpc detail 2
Slot 0 information:
  State                               Online
  Temperature                         36 degrees C / 96 degrees F
  Total CPU DRAM                      1024 MB
  Total RLDRAM                        256 MB
  Total DDR DRAM                      4096 MB
  Start time:                         2009-08-11 21:20:30 PDT
  Uptime:                             2 hours, 8 minutes, 50 seconds
  Max Power Consumption               335 Watts

```

**show chassis fpc detail (EX Series Switches)**

```

user@host> show chassis fpc detail 2
Slot 1 information:
  State                               Online
  Temperature                         41
  Total CPU DRAM                      2048 MB
  Total RLDRAM                        1036 MB
  Total DDR DRAM                      11264 MB
  Start time:                         2013-04-02 00:04:52 PDT
  Uptime:                             7 days, 9 hours, 47 minutes, 46 seconds
  Max Power Consumption               610 Watts
Slot 2 information:
  State                               Online
  Temperature                         41
  Total CPU DRAM                      2048 MB
  Total RLDRAM                        1036 MB
  Total DDR DRAM                      11264 MB
  Start time:                         2013-04-02 00:04:56 PDT
  Uptime:                             7 days, 9 hours, 47 minutes, 42 seconds
  Max Power Consumption               610 Watts

```

**show chassis fpc detail (EX9251 Switches)**

```

user@switch> show chassis fpc detail 2
Slot 0 information:
  State                               Online
  Total CPU DRAM                      3136 MB
  Total RLDRAM                        257 MB
  Total DDR DRAM                      4096 MB
  Temperature                         Absent
  Start time                          2018-03-12 14:59:49 PDT
  Uptime                              1 day, 1 hour, 10 minutes, 48 seconds

```

**show chassis fpc detail (EX9253 Switches)**

```

user@switch> show chassis fpc detail 1
Slot 1 information:
  State                               Online
  Total CPU DRAM                      3136 MB
  Total RLDRAM                        771 MB
  Total DDR DRAM                      18432 MB
  Temperature                         59 degrees C / 138 degrees F
  Start time                          2018-03-04 14:20:42 PST
  Uptime                              3 days, 10 hours, 40 minutes, 57 seconds
  Max MPC base power consumption      910 Watts

```

Max MIC1 power consumption 95 Watts  
 Max MPC total power consumption 1005 Watts

### show chassis fpc (Hardware Not Supported)

```
user@host> show chassis fpc
show chassis fpc
```

Slot	State	Temp (C)	CPU Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Online				CPU less FPC		
1	Present				Hardware Not In Right Slot		
2	Online		0	0	0	0	0
3	Present				Hardware Not Supported		
4	Empty						
5	Empty						
6	Online		0	0	0	0	0

### show chassis fpc detail (Hardware Not Supported)

```
user@host> show chassis fpc detail
Slot 0 information:
  State Online
  Total CPU DRAM ---- CPU less FPC ----
  Start time 2006-07-07 03:21:00 UTC
  Uptime 27 minutes, 51 seconds
Slot 1 information:
  State Present
  Reason --- Hardware Not In Right Slot ---
Slot 2 information:
  State Online
  Total CPU DRAM 32 MB
  Start time 2006-07-07 03:20:59 UTC
  Uptime 27 minutes, 52 seconds
Slot 3 information:
  State Present
  Reason --- Hardware Not Supported ---
  Total CPU DRAM 0 MB
Slot 6 information:
  State Online
  Total CPU DRAM 32 MB
  Start time 2006-07-07 03:21:01 UTC
  Uptime 27 minutes, 50 seconds
```

### show chassis fpc pic-status

```
user@host> show chassis fpc pic-status
Slot 0 Online
  PIC 1 1x OC-12 ATM, MM
  PIC 2 1x OC-12 ATM, MM
  PIC 3 1x OC-12 ATM, MM
Slot 1 Online
  PIC 0 1x OC-48 SONET, SMIR
Slot 2 Online
  PIC 0 1x OC-192 SONET, SMSR
```

### show chassis fpc pic-status (M Series Routers)

```
user@host> show chassis fpc pic-status
```



```

Slot 1  Online      FPC Type 1
      PIC 0 Present  2x OC-3 ATM, MM- Hardware Error
      PIC 1 Online   4x OC-3 SONET, SMIR
Slot 2  Online      E-FPC Type 2
      PIC 0 Online   4x G/E, 1000 BASE-SX
      PIC 1 Online   2x G/E SFP, 1000 BASE
      PIC 3 Online   1x Tunnel
Slot 3  Online      E-FPC Type 1
      PIC 0 Online   1x G/E IQ, 1000 BASE
      PIC 2 Online   1x G/E SFP, 1000 BASE
Slot 4  Online      E-FPC Type 2
      PIC 0 Online   4x G/E SFP, 1000 BASE
      PIC 1 Online   4x G/E SFP, 1000 BASE
      PIC 2 Online   4x G/E SFP, 1000 BASE
      PIC 3 Online   4x G/E SFP, 1000 BASE
Slot 5  Online      FPC Type 2
...

```

#### show chassis fpc pic-status (M120 Router)

```

user@host> show chassis fpc pic-status
Slot 1  Online      M120 CFPC 10GE
      PIC 0 Online   1x 10GE(LAN/WAN) XFP
Slot 3  Online      M120 FPC Type 2 (proto)
      PIC 0 Online   2x G/E IQ, 1000 BASE
      PIC 1 Online   4x OC-3 SONET, SMIR
      PIC 2 Online   2x G/E IQ, 1000 BASE
      PIC 3 Online   8x 1GE(LAN), IQ2
Slot 4  Online      M120 FPC Type 3 (proto)
      PIC 0 Online   10x 1GE(LAN), 1000 BASE
Slot 5  Online      M120 FPC Type 1 (proto)
      PIC 0 Present  1x G/E, 1000 BASE-LX- Not Supported
      PIC 1 Online   1x CHOC3 IQ SONET, SMLR
      PIC 2 Online   4x CHDS3 IQ
      PIC 3 Online   1x G/E SFP, 1000 BASE

```

#### show chassis fpc pic-status (MX240, MX480, and MX960 Routers with Application Services Modular Line Card)

In the following output **Slot 1** and **Slot 5** are the Application Services Modular Carrier Cards (AS MCC), **PIC 0** is the Application Services Modular Storage Card (AS MSC), and **PIC 2** is the Application Services Modular Processing Card (AS MXC).

```

user@host>show chassis fpc pic-status
Slot 2  Online      MPC Type 1 3D Q
  Slot 1  Online      AS-MCC
    PIC 0 Online      AS-MSC
    PIC 2 Online      AS-MXC
Slot 4  Offline     MPC 3D 16x 10GE
Slot 5  Offline     AS-MCC

```

#### show chassis fpc lcc (TX Matrix Router)

```

user@host> show chassis fpc lcc 0
lcc0-re0:
-----
Slot State      Temp CPU      Utilization (%)  Memory  Utilization (%)
      (C) Total Interrupt  DRAM (MB)  Heap    Buffer
0 Empty
1 Online        27    2         0          256      8       44

```

```

2 Online      27      3      0      256      15      44
3 Empty
4 Empty
5 Empty
6 Empty
7 Empty

```

### show chassis fpc pic-status (TX Matrix Router)

```

user@host> show chassis fpc pic-status
lcc0-re0:
-----
Slot 0  Online      FPC Type 3
  PIC 0  Online      1x OC-192 SM SR1
  PIC 1  Online      1x OC-192 SM SR2
  PIC 2  Online      1x OC-192 SM SR1
  PIC 3  Online      1x Tunnel
Slot 1  Online      FPC Type 2
  PIC 0  Online      1x OC-48 SONET, SMSR
  PIC 1  Online      1x OC-48 SONET, SMSR

lcc1-re0:
-----

lcc2-re0:
-----
Slot 1  Online      FPC Type 3
  PIC 0  Online      1x OC-192 SM SR1
Slot 5  Online      FPC Type 2
  PIC 0  Online      1x OC-48 SONET, SMSR
  PIC 1  Online      2x G/E, 1000 BASE-LX
  PIC 2  Online      2x G/E, 1000 BASE-LX
  PIC 3  Online      1x OC-48 SONET, SMSR

lcc3-re0:
-----

```

### show chassis fpc pic-status lcc (TX Matrix Router)

```

user@host> show chassis fpc pic-status lcc 0
lcc0-re0:
-----
Slot 0  Online      FPC Type 3
  PIC 0  Online      1x OC-192 SM SR2
Slot 1  Online      FPC Type 2
  PIC 0  Online      2x OC-12 ATM2 IQ, MM
  PIC 1  Online      1x OC-48 SONET, SMSR
  PIC 2  Online      1x OC-48 SONET, SMSR
  PIC 3  Online      4x G/E, 1000 BASE-SX

```

### show chassis fpc (TX Matrix Plus Router)

```

user@host> show chassis fpc
lcc0-re0:
-----

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap Buffer
0	Empty				
1	Online	38	4 0	2048	3 24
2	Online	43	8 0	2048	6 24

```

3 Empty
4 Online      43      6      0      2048      6      24
5 Empty
6 Online      42     13      0      2048      6      24
7 Online      45      7      0      2048      3      24

```

lcc2-re0:

Slot	State	Temp (C)	CPU Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Online	42	10	0	2048	6	24
1	Empty						
2	Online	42	11	0	2048	6	24
3	Online	40	5	0	2048	3	24
4	Online	33	26	0	1024	8	49
5	Empty						
6	Online	43	8	0	2048	6	24
7	Online	46	6	0	2048	3	24

lcc3-re0:

Slot	State	Temp (C)	CPU Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Empty						
1	Empty						
2	Online	39	30	0	2048	7	24
3	Empty						
4	Online	41	8	0	2048	6	24
5	Online	41	12	0	2048	6	24
6	Online	40	8	0	2048	6	24
7	Online	42	4	0	2048	3	24

### show chassis fpc lcc (TX Matrix Plus Router)

```
user@host> show chassis fpc lcc 0
```

lcc0-re0:

Slot	State	Temp (C)	CPU Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Empty						
1	Online	38	4	0	2048	3	24
2	Online	43	8	0	2048	6	24
3	Empty						
4	Online	43	6	0	2048	6	24
5	Empty						
6	Online	42	14	0	2048	6	24
7	Online	45	6	0	2048	3	24

### show chassis fpc detail (TX Matrix Plus Router)

```
user@host> show chassis fpc details
```

lcc0-re0:

Slot 1 information:

```

State                Online
Temperature          38 degrees C / 100 degrees F
Total CPU DRAM       2048 MB
Total SRAM            64 MB
Total SDRAM          1280 MB

```

```

Start time                2010-10-04 20:06:22 PDT
Uptime                    1 hour, 32 minutes, 51 seconds
Slot 2 information:
State                     Online
Temperature               43 degrees C / 109 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:37 PDT
Uptime                    1 hour, 32 minutes, 36 seconds
Slot 4 information:
State                     Online
Temperature               43 degrees C / 109 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:40 PDT
Uptime                    1 hour, 32 minutes, 33 seconds
Slot 6 information:
State                     Online
Temperature               42 degrees C / 107 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:42 PDT
Uptime                    1 hour, 32 minutes, 31 seconds
Slot 7 information:
State                     Online
Temperature               45 degrees C / 113 degrees F
Total CPU DRAM            2048 MB
Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 20:06:43 PDT
Uptime                    1 hour, 32 minutes, 30 seconds

```

```
lcc2-re0:
```

```

-----
Slot 0 information:
State                     Online
Temperature               42 degrees C / 107 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:35 PDT
Uptime                    1 hour, 32 minutes, 38 seconds
Slot 2 information:
State                     Online
Temperature               42 degrees C / 107 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:37 PDT
Uptime                    1 hour, 32 minutes, 36 seconds
Slot 3 information:
State                     Online
Temperature               40 degrees C / 104 degrees F
Total CPU DRAM            2048 MB
Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 20:06:28 PDT
Uptime                    1 hour, 32 minutes, 45 seconds

```

```

Slot 4 information:
  State                Online
  Temperature          33 degrees C / 91 degrees F
  Total CPU DRAM       1024 MB
  Total SRAM           64 MB
  Total SDRAM          1280 MB
  Start time           2010-10-04 20:08:03 PDT
  Uptime               1 hour, 31 minutes, 10 seconds
Slot 6 information:
  State                Online
  Temperature          43 degrees C / 109 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           128 MB
  Total SDRAM          2560 MB
  Start time           2010-10-04 20:06:44 PDT
  Uptime               1 hour, 32 minutes, 29 seconds
Slot 7 information:
  State                Online
  Temperature          46 degrees C / 114 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           64 MB
  Total SDRAM          1280 MB
  Start time           2010-10-04 20:06:46 PDT
  Uptime               1 hour, 32 minutes, 27 seconds

```

```
lcc3-re0:
```

```

-----
Slot 2 information:
  State                Online
  Temperature          38 degrees C / 100 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           128 MB
  Total SDRAM          2560 MB
  Start time           2010-10-04 20:17:31 PDT
  Uptime               1 hour, 21 minutes, 42 seconds
Slot 4 information:
  State                Online
  Temperature          41 degrees C / 105 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           128 MB
  Total SDRAM          2560 MB
  Start time           2010-10-04 20:17:34 PDT
  Uptime               1 hour, 21 minutes, 39 seconds
Slot 5 information:
  State                Online
  Temperature          41 degrees C / 105 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           128 MB
  Total SDRAM          2560 MB
  Start time           2010-10-04 20:17:36 PDT
  Uptime               1 hour, 21 minutes, 37 seconds
Slot 6 information:
  State                Online
  Temperature          40 degrees C / 104 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           128 MB
  Total SDRAM          2560 MB
  Start time           2010-10-04 20:17:39 PDT
  Uptime               1 hour, 21 minutes, 34 seconds
Slot 7 information:
  State                Online

```

```

Temperature                42 degrees C / 107 degrees F
Total CPU DRAM             2048 MB
Total SRAM                 64 MB
Total SDRAM                1280 MB
Start time                 2010-10-04 20:17:41 PDT
Uptime                     1 hour, 21 minutes, 32 seconds

```

### show chassis fpc pic-status (TX Matrix Plus Router)

```
user@host> show chassis fpc pic-status
```

```
1cc0-re0:
```

```

-----
Slot 1  Online      FPC Type 2-ES
      PIC 0  Online      8x 1GE(LAN), IQ2
Slot 2  Online      FPC Type 4-ES
      PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 4  Online      FPC Type 4-ES
      PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 6  Online      FPC Type 4-ES
      PIC 0  Online      4x 10GE (LAN/WAN) XFP
      PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 7  Online      FPC Type 3-ES
      PIC 0  Online      10x 1GE(LAN), 1000 BASE
      PIC 2  Online      1x OC-192 SM SR2
      PIC 3  Online      10x 1GE(LAN), 1000 BASE

```

```
1cc2-re0:
```

```

-----
Slot 0  Online      FPC Type 4-ES
      PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 2  Online      FPC Type 4-ES
      PIC 0  Online      4x 10GE (LAN/WAN) XFP
      PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 3  Online      FPC Type 2-ES
      PIC 0  Online      8x 1GE(LAN), IQ2
Slot 4  Online      FPC Type 4
      PIC 0  Online      10x10GE(LAN/WAN) SFPP
Slot 6  Online      FPC Type 4-ES
      PIC 0  Online      4x OC-192 SONET XFP
Slot 7  Online      FPC Type 3-ES
      PIC 0  Online      10x 1GE(LAN), 1000 BASE
      PIC 1  Offline     1x 10GE(LAN/WAN) IQ2E
      PIC 2  Online      1x OC-192 SM SR2
      PIC 3  Online      1x Tunnel

```

```
1cc3-re0:
```

```

-----
Slot 2  Online      FPC Type 4-ES
      PIC 0  Online      10x10GE(LAN/WAN) SFPP
Slot 4  Online      FPC Type 4-ES
      PIC 0  Online      4x OC-192 SONET XFP
Slot 5  Online      FPC Type 4-ES
      PIC 0  Online      4x OC-192 SONET XFP
      PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 6  Online      FPC Type 4-ES
      PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 7  Online      FPC Type 3-ES
      PIC 0  Online      10x 1GE(LAN), 1000 BASE
      PIC 1  Online      8x 1GE(TYPE3), IQ2E
      PIC 2  Online      4x OC-48 SONET

```

**show chassis fpc (TI600 Router)**

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Empty					
1	Empty					
2	Online	49	3 0	2048	3	24
3	Online	46	6 0	2048	6	24
4	Empty					
5	Online	46	5 0	2048	3	24
6	Empty					
7	Online	44	8 0	1024	7	49

**show chassis fpc detail (TI600 Router)**

```

user@host> show chassis fpc detail

```

show chassis fpc detail

Slot 2 information:

State	Online
Temperature	49 degrees C / 120 degrees F
Total CPU DRAM	2048 MB
Total SRAM	64 MB
Total SDRAM	1280 MB
Start time	2010-10-04 21:12:52 PDT
Uptime	32 minutes, 9 seconds

Slot 3 information:

State	Online
Temperature	47 degrees C / 116 degrees F
Total CPU DRAM	2048 MB
Total SRAM	128 MB
Total SDRAM	2560 MB
Start time	2010-10-04 21:13:06 PDT
Uptime	31 minutes, 55 seconds

Slot 5 information:

State	Online
Temperature	46 degrees C / 114 degrees F
Total CPU DRAM	2048 MB
Total SRAM	64 MB
Total SDRAM	1280 MB
Start time	2010-10-04 21:12:56 PDT
Uptime	32 minutes, 5 seconds

Slot 7 information:

State	Online
Temperature	44 degrees C / 111 degrees F
Total CPU DRAM	1024 MB
Total SRAM	64 MB
Total SDRAM	1280 MB
Start time	2010-10-04 21:14:34 PDT
Uptime	30 minutes, 27 seconds

**show chassis fpc <fpc-slot> (EX Series Switch)**

```

user@host> show chassis fpc 2

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
2	Online	40	12 0	2048	19	14

**show chassis fpc slot (T1600 Router)**

```
user@host> show chassis fpc slot 2
```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
2	Online	49	3 0	2048	3	24

**show chassis fpc pic-status (T1600 Router)**

```
user@host> show chassis fpc pic-status
```

```
Slot 2  Online      FPC Type 1-ES
PIC 0   Online      Load Type 1
PIC 1   Online      4x 1GE(LAN), IQ2E
PIC 3   Online      1x OC-12-3 SFP
Slot 3  Online      FPC Type 4-ES
PIC 0   Online      4x 10GE (LAN/WAN) XFP
PIC 1   Online      4x OC-192 SONET XFP
Slot 5  Online      FPC Type 2-ES
PIC 0   Online      Load Type 2
PIC 1   Online      8x 1GE(LAN), IQ2E
PIC 2   Online      8x 1GE(LAN), IQ2E
PIC 3   Online      1x OC-48-12-3 SFP
Slot 7  Online      FPC Type 4
PIC 0   Online      4x 10GE (LAN/WAN) XFP
```

**show chassis fpc (T4000 Router)**

```
user@host> show chassis fpc
```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Online	48	15 0	2816	21	27
1	Empty					
2	Empty					
3	Online	51	15 0	2816	21	27
4	Empty					
5	Online	39	8 0	2048	6	23
6	Online	49	15 0	2816	21	27
7	Empty					

**show chassis fpc detail (T4000 Router)**

```
user@host> show chassis fpc detail
```

```
Slot 0 information:
State                Online
Temperature          48 degrees C / 118 degrees F
Total CPU DRAM       2816 MB
Total SRAM           1554 MB
Total SDRAM          10752 MB
Start time           2012-02-09 22:56:25 PST
Uptime               2 hours, 40 minutes, 52 seconds

Slot 3 information:
State                Online
Temperature          51 degrees C / 123 degrees F
Total CPU DRAM       2816 MB
Total SRAM           1554 MB
Total SDRAM          10752 MB
```



```

Start time                2012-02-09 22:56:22 PST
Uptime                    2 hours, 40 minutes, 55 seconds
Slot 5 information:
State                      Online
Temperature                39 degrees C / 102 degrees F
Total CPU DRAM             2048 MB
Total SRAM                 128 MB
Total SDRAM                2560 MB
Start time                2012-02-09 22:51:27 PST
Uptime                    2 hours, 45 minutes, 50 seconds
Slot 6 information:
State                      Online
Temperature                49 degrees C / 120 degrees F
Total CPU DRAM             2816 MB
Total SRAM                 1554 MB
Total SDRAM                10752 MB
Start time                2012-02-09 22:56:29 PST
Uptime                    2 hours, 40 minutes, 48 seconds

```

#### show chassis fpc pic-status (T4000 Router)

```

user@host> show chassis fpc pic-status
Slot 0  Online      FPC Type 5-3D
PIC 0   Online      12x10GE (LAN/WAN) SFPP
PIC 1   Online      12x10GE (LAN/WAN) SFPP
Slot 3  Online      FPC Type 5-3D
PIC 0   Online      1x100GE
PIC 1   Online      12x10GE (LAN/WAN) SFPP
Slot 5  Online      FPC Type 4-ES
PIC 0   Online      100GE
PIC 1   Online      100GE CFP
Slot 6  Online      FPC Type 5-3D
PIC 0   Online      12x10GE (LAN/WAN) SFPP
PIC 1   Online      12x10GE (LAN/WAN) SFPP

```

#### show chassis fpc (QFX Series and OCX Series)

```

user@switch> show chassis fpc
Temp CPU Utilization (%)  Memory  Utilization (%)
Slot State                (C) Total Interrupt  DRAM (MB) Heap  Buffer
0  Online                  26      2          0      2820      0      49

```

#### show chassis fpc detail (QFX3500 Switches)

```

user@switch> show chassis fpc detail
Slot 0 information:
State                      Online
Temperature                28 degrees C / 82 degrees F
Total CPU DRAM             2820 MB
Total SRAM                 0 MB
Total SDRAM                0 MB
Start time                2010-09-20 01:34:13 PDT
Uptime                    3 days, 3 hours, 31 minutes, 48 seconds

```

#### show chassis fpc pic-status (QFX3500 Switches)

```

user@switch> show chassis fpc pic-status
Slot 0  Online      QFX 48x10G 4x40G Switch
PIC 0   Online      48x 10G-SFP+
PIC 1   Online      15x 10G-SFP+

```

### show chassis fpc interconnect-device (QFabric System)

```
user@switch> show chassis fpc interconnect-device interconnect1
FPC status:

```

Slot	State	Temp (C)
0	Online	0
1	Online	0
2	Online	0
3	Online	0
4	Online	0
5	Online	0
6	Online	0
7	Online	0
8	Online	0
9	Online	0
10	Online	0
11	Online	0
12	Online	0
13	Online	0
14	Online	0
15	Online	0

### show chassis fpc interconnect-device (QFabric System)

```
user@switch> show chassis fpc interconnect-device interconnect1 3
FPC status:

```

Slot	State	Temp (C)
3	Online	0

### show chassis fpc interconnect-device detail (QFabric System)

```
user@switch> show chassis fpc interconnect-device interconnect1 3 detail
Slot 3 information:

```

State	Online
Temperature	0 degrees C / 32 degrees F
Start time	2011-08-18 10:45:04 PDT
Uptime	1 minute, 49 seconds

### show chassis fpc pic-status interconnect-device (QFabric System)

```
user@switch> show chassis fpc pic-status interconnect-device interconnect1
Slot 0  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 1  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 2  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 3  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 4  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 5  Online      QFX 16-port QSFP+ Front Card
```

```

PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 6 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 7 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 8 Online     QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 9 Online     QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 10 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 11 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 12 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 13 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 14 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 15 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE

```

#### show chassis fpc pic-status node-device (QFabric System)

```

user@switch> show chassis fpc pic-status node-device node1
Slot node1 Online      QFX 48x10G 4x40G Switch
PIC 0 Online          48x 10G-SFP+
PIC 1 Online          4x 40G-QSFP+

```

#### show chassis fpc (PTX5000 Packet Transport Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory DRAM (MB)	Utilization (%)
			Total Interrupt	Heap	Buffer
0	Empty				
1	Empty				
2	Online	50	6 0	2816	5 27
3	Empty				
4	Empty				
5	Online	48	9 0	2816	5 27
6	Empty				
7	Online	49	8 0	2816	5 27

#### show chassis fpc detail (PTX5000 Packet Transport Router)

```

user@host> show chassis fpc detail
Slot 2 information:
State Online
Temperature 35 degrees C / 95 degrees F (PMB)
Temperature 35 degrees C / 95 degrees F (Intake)
Temperature 50 degrees C / 122 degrees F (Exhaust A)
Temperature 54 degrees C / 129 degrees F (Exhaust B)
Temperature 54 degrees C / 129 degrees F (TL0)
Temperature 52 degrees C / 125 degrees F (TQ0)
Temperature 61 degrees C / 141 degrees F (TL1)
Temperature 58 degrees C / 136 degrees F (TQ1)

```

```

Temperature          57 degrees C / 134 degrees F (TL2)
Temperature          58 degrees C / 136 degrees F (TQ2)
Temperature          62 degrees C / 143 degrees F (TL3)
Temperature          61 degrees C / 141 degrees F (TQ3)
Total CPU DRAM      2816 MB
Total SRAM           0 MB
Total SDRAM          0 MB
Start time          2012-01-12 12:05:42 PST
Uptime              3 hours, 14 minutes, 7 seconds
Slot 5 information:
State               Online
Temperature         35 degrees C / 95 degrees F (PMB)
Temperature         34 degrees C / 93 degrees F (Intake)
Temperature         48 degrees C / 118 degrees F (Exhaust A)
Temperature         53 degrees C / 127 degrees F (Exhaust B)
Temperature         54 degrees C / 129 degrees F (TL0)
Temperature         52 degrees C / 125 degrees F (TQ0)
Temperature         69 degrees C / 156 degrees F (TL1)
Temperature         56 degrees C / 132 degrees F (TQ1)
Temperature         54 degrees C / 129 degrees F (TL2)
Temperature         56 degrees C / 132 degrees F (TQ2)
Temperature         59 degrees C / 138 degrees F (TL3)
Temperature         60 degrees C / 140 degrees F (TQ3)
Total CPU DRAM      2816 MB
Total SRAM           0 MB
Total SDRAM          0 MB
Start time          2012-01-12 12:05:43 PST
Uptime              3 hours, 14 minutes, 6 seconds
Slot 7 information:
State               Online
Temperature         35 degrees C / 95 degrees F (PMB)
Temperature         33 degrees C / 91 degrees F (Intake)
Temperature         50 degrees C / 122 degrees F (Exhaust A)
Temperature         55 degrees C / 131 degrees F (Exhaust B)
Temperature         56 degrees C / 132 degrees F (TL0)
Temperature         56 degrees C / 132 degrees F (TQ0)
Temperature         61 degrees C / 141 degrees F (TL1)
Temperature         57 degrees C / 134 degrees F (TQ1)
Temperature         55 degrees C / 131 degrees F (TL2)
Temperature         59 degrees C / 138 degrees F (TQ2)
Temperature         62 degrees C / 143 degrees F (TL3)
Temperature         62 degrees C / 143 degrees F (TQ3)
Total CPU DRAM      2816 MB
Total SRAM           0 MB
Total SDRAM          0 MB
Start time          2012-01-12 12:05:44 PST
Uptime              3 hours, 14 minutes, 5 seconds

```

#### show chassis fpc pic-status (PTX5000 Packet Transport Router)

```

user@host> show chassis fpc pic-status
Slot 2  Online      FPC
PIC 0   Online      24x 10GE(LAN) SFP+
PIC 1   Online      24x 10GE(LAN) SFP+
Slot 5  Online      FPC
PIC 0   Online      24x 10GE(LAN) SFP+
PIC 1   Online      2x 40GE CFP
Slot 7  Online      FPC
PIC 0   Online      24x 10GE(LAN) SFP+
PIC 1   Online      2x 40GE CFP

```

**show chassis fpc (PTX10008 Router)**

```

user@host> show chassis fpc

```

Utilization (%)		Temp	CPU Utilization (%)		CPU Utilization (%)			Memory
Slot	State	(C)	Total	Interrupt	1min	5min	15min	DRAM (MB)
Heap	Buffer							
0	Online	38	26	2	26	26	26	1953
20	32							
1	Empty							
2	Empty							
3	Empty							
4	Empty							
5	Online	67	26	2	26	26	26	1953
25	32							
6	Online	52	26	2	26	26	26	1953
25	32							
7	Empty							

**show chassis fpc (PTX10016 Router)**

```

user@host> show chassis fpc

```

Utilization (%)		Temp	CPU Utilization (%)		CPU Utilization (%)			Memory
Slot	State	(C)	Total	Interrupt	1min	5min	15min	DRAM (MB)
Heap	Buffer							
0	Empty							
1	Online	36	27	2	27	27	27	1953
22	32							
2	Empty							
3	Online	36	27	2	27	27	27	1953
22	32							
4	Empty							
5	Empty							
6	Online	35	27	2	27	27	27	1953
22	32							
7	Empty							
8	Online	34	27	2	27	27	27	1953
22	32							
9	Online	46	24	2	24	24	24	1953
26	32							
10	Empty							
11	Empty							
12	Empty							
13	Empty							
14	Empty							
15	Empty							

**show chassis fpc (ACX2000 Universal Metro Router)**

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)		Memory DRAM (MB)	Utilization (%)	
			Total	Interrupt		Heap	Buffer
0	Online	61	17	6	512	21	37

**show chassis fpc 0 (ACX2000 Universal Metro Router)**

```

user@host> show chassis fpc 0

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap Buffer
0	Online	61	17 6	512	21 37

#### show chassis fpc detail (ACX2000 Universal Metro Router)

```

user@host> show chassis fpc detail
Slot 0 information:
  State Online
  Temperature 61 degrees C / 141 degrees F
  Total CPU DRAM 512 MB
  Start time 2012-05-29 02:52:06 PDT
  Uptime 27 minutes, 17 seconds

```

#### show chassis fpc pic-status (ACX2000 Universal Metro Router)

```

user@host> show chassis fpc pic-status
Slot 0 Online
  PIC 0 Online 16x CHE1T1, RJ48
  PIC 1 Online 8x 1GE(LAN) RJ45
  PIC 2 Online 2x 1GE(LAN) SFP
  PIC 3 Online 2x 10GE(LAN) SFP+

```

#### show chassis FPC 1 (MX Routers with Media Services Blade [MSB])

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	Memory DRAM (MB)	Utilization (%) Heap Buffer
1	Online	34	5 0	3072	5 13

#### show chassis FPC 1 detail (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis fpc 1 detail
Slot 1 information:
  State Online
  Temperature 34
  Total CPU DRAM 3072 MB
  Total RLDRAM 259 MB
  Total DDR DRAM 4864 MB
  Start time: 2012-06-19 10:51:43 PDT
  Uptime: 16 minutes, 48 seconds
  Max Power Consumption 550 Watts

```

## Sample Output

#### show chassis fpc (Node Slicing)

```

user@router> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total Interrupt	CPU Utilization (%) 1min 5min 15min	Memory DRAM (MB)
0	Online	45	12 0	12 12 12	3584
6		3			
1	Online	57	22 0	20 20 20	3136
16		2			
2	Online	50	19 0	17 17 16	3584

6	25	3							
3	Online	28	10	0	11	11	11	2048	
10	20	6							
4	Online	42	20	0	20	19	19	3584	
8	25	6							
5	Online	58	22	0	21	20	20	3136	
16	22	4							
6	Online	49	17	0	15	16	16	3136	
13	20	1							
7	Online	44	11	0	10	10	10	3584	
6	25	5							
8	Online	40	19	0	18	18	18	3584	
8	25	5							
9	Online	44	19	0	20	20	20	3584	
8	25	5							

## Sample Output

### show chassis fpc pic-status (Node Slicing)

```

user@router> show chassis fpc pic-status
Slot 0  Online      MPC5E 3D 24XGE+6XLGE      GN  3
PIC 0  Online      12X10GE SFPP OTN
PIC 1  Offline     12X10GE SFPP OTN
PIC 2  Offline     3X40GE QSFPP
PIC 3  Online      3X40GE QSFPP
Slot 1  Online      MPC9E 3D                  GN  2
PIC 1  Online      MRATE-12xQSFPP-XGE-XLGE-CGE
Slot 2  Online      MPC5E 3D Q 2CGE+4XGE      GN  3
PIC 0  Online      2X10GE SFPP OTN
PIC 1  Online      1X100GE CFP2 OTN
PIC 2  Online      2X10GE SFPP OTN
PIC 3  Online      1X100GE CFP2 OTN
Slot 3  Online      MPCE Type 2 3D EQ         GN  6
Slot 4  Online      MPC6E 3D                  GN  6
PIC 0  Online      24X10GE SFPP
PIC 1  Online      2X100GE CFP2 OTN
Slot 5  Online      MPC9E 3D                  GN  4
PIC 0  Online      MRATE-12xQSFPP-XGE-XLGE-CGE
Slot 6  Online      MPC7E 3D MRATE-12xQSFPP-XGE-XLGE-CGE GN  1
PIC 0  Online      MRATE-6xQSFPP-XGE-XLGE-CGE
PIC 1  Online      MRATE-6xQSFPP-XGE-XLGE-CGE
Slot 7  Online      MPC5E 3D 2CGE+4XGE        GN  5
PIC 0  Online      2X10GE SFPP OTN
PIC 1  Online      1X100GE CFP2 OTN
PIC 2  Online      2X10GE SFPP OTN
PIC 3  Online      1X100GE CFP2 OTN
Slot 8  Online      MPC6E 3D                  GN  5
PIC 0  Online      24X10GE SFPP OTN
Slot 9  Online      MPC6E 3D                  GN  5
PIC 0  Online      24X10GE SFPP
PIC 1  Online      4X100GE CXP

```

## show chassis hardware

---

<b>List of Syntax</b>	<a href="#">Syntax on page 870</a> <a href="#">Syntax (EX Series) on page 870</a> <a href="#">Syntax (T4000 Router) on page 870</a> <a href="#">Syntax (TX Matrix Router) on page 870</a> <a href="#">Syntax (TX Matrix Plus Router) on page 870</a> <a href="#">Syntax (MX Series Routers) on page 870</a> <a href="#">Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 3D Universal Edge Routers) on page 871</a> <a href="#">Syntax (QFX Series) on page 871</a> <a href="#">Syntax (OCX Series) on page 871</a> <a href="#">Syntax (PTX Series Packet Transport Routers) on page 871</a> <a href="#">Syntax (ACX Series Universal Metro Routers) on page 871</a> <a href="#">Syntax (ACX5048 and ACX5096 Routers) on page 871</a> <a href="#">Syntax (ACX500 Routers) on page 871</a>
<b>Syntax</b>	<code>show chassis hardware</code> <code>&lt;detail   extensive&gt;</code> <code>&lt;clei-models&gt;</code> <code>&lt;models&gt;</code>
<b>Syntax (EX Series)</b>	<code>show chassis hardware</code> <code>&lt;clei-models&gt;</code> <code>&lt;detail   extensive&gt;</code> <code>&lt;models&gt;</code> <code>&lt;satellite [slot-id <i>slot-id</i>   device-alias <i>alias-name</i>]&gt;</code>
<b>Syntax (T4000 Router)</b>	<code>show chassis hardware</code> <code>&lt;clei-models&gt;</code> <code>&lt;detail   extensive&gt;</code> <code>&lt;models&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>show chassis hardware</code> <code>&lt;clei-models&gt;</code> <code>&lt;detail   extensive&gt;</code> <code>&lt;models&gt;</code> <code>&lt;lcc <i>number</i>   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show chassis hardware</code> <code>&lt;clei-models&gt;</code> <code>&lt;detail   extensive&gt;</code> <code>&lt;models&gt;</code> <code>&lt;lcc <i>number</i>   sfc <i>number</i>&gt;</code>
<b>Syntax (MX Series Routers)</b>	<code>show chassis hardware</code> <code>&lt;detail   extensive&gt;</code> <code>&lt;clei-models&gt;</code> <code>&lt;models&gt;</code>



	<all-members> <local> <member <i>member-id</i> >
<b>Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 3D Universal Edge Routers)</b>	show chassis hardware <clei-models> <detail   extensive> <models> <satellite [slot-id <i>slot-id</i>  device-alias <i>alias-name</i> ]>
<b>Syntax (QFX Series)</b>	show chassis hardware <detail   extensive> <clei-models> <interconnect-device <i>name</i> > <node-device <i>name</i> > <models>
<b>Syntax (OCX Series)</b>	show chassis hardware <detail   extensive> <clei-models> <models>
<b>Syntax (PTX Series Packet Transport Routers)</b>	show chassis hardware <detail   extensive> <clei-models> <models>
<b>Syntax (ACX Series Universal Metro Routers)</b>	show chassis hardware <detail   extensive> <clei-models> <models>
<b>Syntax (ACX5048 and ACX5096 Routers)</b>	show chassis hardware <detail   extensive> <clei-models> <models>
<b>Syntax (ACX500 Routers)</b>	show chassis hardware <detail   extensive> <clei-models> <models>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. <b>models</b> option introduced in Junos OS Release 8.2. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced in Junos OS Release 9.6 for the TX Matrix Plus router. Command introduced in Junos OS Release 11.1 for QFX Series.

Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.

Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 3D Universal Edge Routers.

Information for **disk** and **usb** introduced in Junos OS Release 15.1X53-D60 for QFX10002, QFX10008, and QFX10016 switches.

Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.

Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.

Command introduced in Junos OS Release 17.4 for MX204 Routers.

Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.

Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Command introduced in Junos OS Release 18.2R1 for MX10008 Routers

**Description** Display a list of all Flexible PIC Concentrators (FPCs) and PICs installed in the router or switch chassis, including the hardware version level and serial number.

In the EX Series switch command output, FPC refers to the following:

- On EX2200 switches, EX3200 switches, EX4200 standalone switches, and EX4500 switches—Refers to the switch; FPC *number* is always 0.
- On EX4200 switches in a Virtual Chassis configuration—Refers to the member of a Virtual Chassis; FPC *number* equals the member ID, from 0 through 9.
- On EX8208 and EX8216 switches—Refers to a line card; FPC *number* equals the slot number for the line card.

On QFX3500, QFX5100, and OCX Series standalone switches, and PTX1000 routers both the FPC and FPC *number* are always 0.

On T4000 Type 5 FPCs, there are no **top temperature sensor** or **bottom temperature sensor** parameters. Instead, **fan intake temperature sensor** and **fan exhaust temperature sensors** parameters are displayed.

Starting from Junos OS Release 11.4, the output of the **show chassis hardware models** operational mode command displays the enhanced midplanes FRU model numbers (CHAS-BP3-MX240-S, CHAS-BP3-MX480-S or CHAS-BP3-MX960-S) based on the router. Prior to release 11.4, the FRU model numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through the Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 14.1, the output of the **show chassis hardware detail | extensive | clei-models | models** operational mode command displays the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-P1A) and other components in a PTX5000 Packet Transport Router.

**Options** **none**—Display information about hardware. For a TX Matrix router, display information about the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display information about the TX Matrix Plus router and its attached routers.

**clei-models**—(Optional) Display Common Language Equipment Identifier (CLEI) barcode and model number for orderable field-replaceable units (FRUs).

**detail**—(Optional) Include RAM and disk information in output.

**extensive**—(Optional) Display ID EEPROM information.

**all-members**—(MX Series routers only) (Optional) Display hardware-specific information for all the members of the Virtual Chassis configuration.

**interconnect-device *name***—(QFabric systems only) (Optional) Display hardware-specific information for the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus router only) (Optional) On a TX Matrix router, display hardware information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display hardware information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display hardware-specific information for the local Virtual Chassis members.

**member *member-id***—(MX Series routers and EX Series switches) (Optional) Display hardware-specific information for the specified member of the Virtual Chassis configuration. Replace *member-id* variable with a value 0 or 1.

**models**—(Optional) Display model numbers and part numbers for orderable FRUs and, for components that use ID EEPROM format v2, the CLEI code.

**node-device *name***—(QFabric systems only) (Optional) Display hardware-specific information for the Node device.

**satellite [*slot-id slot-id* | *device-alias alias-name*]**—(Junos Fusion only) (Optional) Display hardware information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

**scc**—(TX Matrix router only) (Optional) Display hardware information for the TX Matrix router (switch-card chassis).

**sfc number**—(TX Matrix Plus router only) (Optional) Display hardware information for the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

**Additional Information** The **show chassis hardware detail** command now displays DIMM information for the following Routing Engines, as shown in [Table 31 on page 874](#).

**Table 31: Routing Engines Displaying DIMM Information**

Routing Engines	Routers
RE-S-1800x2 and RE-S-1800x4	MX240, MX480, and MX960 routers
RE-A-1800x2	M120 and M320 routers

In Junos OS Release 11.4 and later, the output for the **show chassis hardware models** operational mode command for MX Series routers display the enhanced midplanes FRU model numbers—CHAS-BP3-MX240-S, CHAS-BP3-MX480-S, or CHAS-BP3-MX960-S—based on the router. In releases before Junos OS Release 11.4, the FRU model numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 17.3R1, the output of the **show chassis hardware** command displays the mode in which vMX is running (performance mode or lite mode) in the part number field for the FPC. **RIOT-PERF** indicates performance mode and **RIOT-LITE** indicates lite mode.

**Required Privilege Level** view

**Related Documentation**

- [show chassis power](#)

**List of Sample Output**

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- [show chassis hardware clei-models \(EX8216 Switch\) on page 883](#)
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**Output Fields** [Table 32 on page 879](#) lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.



Table 32: show chassis hardware Output Fields

Field Name	Field Description	Level of Output
<b>Item</b>	<p>Chassis component:</p> <ul style="list-style-type: none"> <li>(EX Series switches)—Information about the chassis, Routing Engine (SRE and Routing Engine modules in EX8200 switches), power supplies, fan trays, and LCD panel. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs). Information about the backplane, midplane, and SIBs (SF modules) is displayed for EX8200 switches.</li> <li>(MX Series routers and EX Series switches)—Information about the backplane, Routing Engine, Power Entry Modules (PEMs), and fan trays. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs), Modular Port Concentrators (MPCs) and associated Modular Interface Cards (MICs), or Dense Port Concentrators (DPCs). MX80 routers have a single Routing Engine and a built-in Packet Forwarding Engine that attaches directly to MICs. The Packet Forwarding Engine has two “pseudo” FPCs (FPC 0 and FPC1). MX80 routers also have a Forwarding Engine Board (FEB). MX104 routers have a built-in Packet forwarding Engine and a Forwarding Engine Board (FEB). The Packet Forwarding Engine of the MX104 router has three “pseudo” FPCs (FPC0, FPC1, and FPC2).</li> <li>(M Series routers, except for the M320 router)—Information about the backplane; power supplies; fan trays; Routing Engine; maxicab (the connection between the Routing Engine and the backplane, for the M40 router only); SCB, SSB, SFM, or FEB; MCS and PCG (for the M160 router only); each FPC and PIC; and each fan, blower, and impeller.</li> <li>(M120, M320, and T Series routers)—Information about the backplane, power supplies, fan trays, midplane, FPM (craft interface), CIP, PEM, SCG, CB, FPC, PIC, SFP, SPMB, and SIB.</li> <li>(QFX Series)—Information about the chassis, Pseudo CB, Routing Engine, power supplies, fan trays, Interconnect devices, and Node devices. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs).</li> <li>(PTX Series)—Information about the chassis, midplane, craft interface (FPM), power distribution units (PDUs) and Power Supply Modules (PSMs), Centralized Clock Generators (CCGs), Routing Engines, Control Boards (CBs) and Switch Processor Mezzanine Boards (SPMBs), Flexible PIC Concentrators (FPCs), PICs, Switch Interface Boards (SIBs), and fan trays (vertical and horizontal).</li> <li>(MX2010, MX2020, and MX2008 routers)—Information about the chassis, midplane, craft interface (FPM), power midplane (PMP), Power Supply Modules (PSMs), Power Distribution Modules (PDMs), Routing Engines, Control Boards (CBs) and Switch Processor Mezzanine Boards (SPMBs), Switch Fabric Boards (SFBs), Flexible PIC Concentrators (FPCs), PICs, adapter cards (ADCs) and fan trays.</li> <li>(vMX routers)—Information about the chassis, midplane, Routing Engines, and Control Boards (CBs). Also displays information about Flexible PIC Concentrators (FPCs) and associated Modular Interface Cards (MICs) and Physical Interface Cards (PICs).</li> </ul>	All levels
<b>Version</b>	Revision level of the chassis component.	All levels
<b>Part number</b>	Part number of the chassis component.	All levels

Table 32: show chassis hardware Output Fields (continued)

Field Name	Field Description	Level of Output
<b>Serial number</b>	Serial number of the chassis component. The serial number of the backplane is also the serial number of the router chassis. Use this serial number when you need to contact Juniper Networks Customer Support about the router or switch chassis.	All levels
<b>Assb ID or Assembly ID</b>	( <b>extensive</b> keyword only) Identification number that describes the FRU hardware.	<b>extensive</b>
<b>Assembly Version</b>	( <b>extensive</b> keyword only) Version number of the FRU hardware.	<b>extensive</b>
<b>Assembly Flags</b>	( <b>extensive</b> keyword only) Flags.	<b>extensive</b>
<b>FRU model number</b>	( <b>clei-models</b> , <b>extensive</b> , and <b>models</b> keyword only) Model number of the FRU hardware component.	none specified
<b>CLEI code</b>	( <b>clei-models</b> and <b>extensive</b> keyword only) Common Language Equipment Identifier code. This value is displayed only for hardware components that use ID EEPROM format v2. This value is not displayed for components that use ID EEPROM format v1.	none specified
<b>EEPROM Version</b>	ID EEPROM version used by the hardware component: <b>0x00</b> (version 0), <b>0x01</b> (version 1), or <b>0x02</b> (version 2).	<b>extensive</b>
<b>Description</b>	<p>Brief description of the hardware item:</p> <ul style="list-style-type: none"> <li>• Type of power supply.</li> <li>• Type of PIC. If the PIC type is not supported on the current software release, the output states <b>Hardware Not Supported</b>.</li> <li>• Type of FPC: <b>FPC Type 1</b>, <b>FPC Type 2</b>, <b>FPC Type 3</b>, <b>FPC Type 4</b>, or <b>FPC TypeOC192</b>.</li> </ul> <p>On EX Series switches, a brief description of the FPC.</p> <p>The following list shows the PIM abbreviation in the output and the corresponding PIM name.</p> <ul style="list-style-type: none"> <li>• <b>2x FE</b>—Either two built-in Fast Ethernet interfaces (fixed PIM) or dual-port Fast Ethernet PIM</li> <li>• <b>4x FE</b>—4-port Fast Ethernet ePIM</li> <li>• <b>1x GE Copper</b>—Copper Gigabit Ethernet ePIM (one 10-Mbps, 100-Mbps, or 1000-Mbps port)</li> <li>• <b>1x GE SFP</b>—SFP Gigabit Ethernet ePIM (one fiber port)</li> <li>• <b>2x Serial</b>—Dual-port serial PIM</li> <li>• <b>2x T1</b>—Dual-port T1 PIM</li> <li>• <b>2x E1</b>—Dual-port E1 PIM</li> <li>• <b>2x CT1E1</b>—Dual-port channelized T1/E1 PIM</li> <li>• <b>1x T3</b>—T3 PIM (one port)</li> <li>• <b>1x E3</b>—E3 PIM (one port)</li> <li>• <b>4x BRI S/T</b>—4-port ISDN BRI S/T PIM</li> <li>• <b>4x BRI U</b>—4-port ISDN BRI U PIM</li> <li>• <b>1x ADSL Annex A</b>—ADSL 2/2+ Annex A PIM (one port, for POTS)</li> </ul>	All levels

Table 32: show chassis hardware Output Fields (continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> <li>• <b>1x ADSL Annex B</b>—ADSL 2/2+ Annex B PIM (one port, for ISDN)</li> <li>• <b>2x SHDSL (ATM)</b>—G SHDSL PIM (2-port two-wire module or 1-port four-wire module)</li> <li>• <b>1x TGM550</b>—TGM550 Telephony Gateway Module (Avaya VoIP gateway module with one console port, two analog <b>LINE</b> ports, and two analog <b>TRUNK</b> ports)</li> <li>• <b>1x DS1 TIM510</b>—TIM510 E1/T1 Telephony Interface Module (Avaya VoIP media module with one E1 or T1 trunk termination port and ISDN PRI backup)</li> <li>• <b>4x FXS, 4x FXO, TIM514</b>—TIM514 Analog Telephony Interface Module (Avaya VoIP media module with four analog <b>LINE</b> ports and four analog <b>TRUNK</b> ports)</li> <li>• <b>4x BRI TIM521</b>—TIM521 BRI Telephony Interface Module (Avaya VoIP media module with four ISDN BRI ports)</li> <li>• <b>Crypto Accelerator Module</b>—For enhanced performance of cryptographic algorithms used in IP Security (IPsec) services</li> <li>• <b>MPC M16x10GE</b>—16-port 10-Gigabit Module Port Concentrator that supports SFP+ optical transceivers. (Not on EX Series switches.)</li> <li>• For hosts, the Routing Engine type.</li> <li>• For small form-factor pluggable transceiver (SFP) modules, the type of fiber: <b>LX</b>, <b>SX</b>, <b>LH</b>, or <b>T</b>.</li> <li>• LCD description for EX Series switches (except EX2200 switches).</li> <li>• <b>MPC2</b>—1-port MPC2 that supports two separate slots for MICs.</li> <li>• <b>MPC3E</b>—1-port MPC3E that supports two separate slots for MICs (MIC-3D-1X100GE-CFP and MIC-3D-20GE-SFP) on MX960, MX480, and MX240 routers. The MPC3E maps one MIC to one PIC (1 MIC, 1 PIC), which differs from the mapping of legacy MPCs.</li> <li>• 100GBASE-LR4, pluggable CFP optics</li> <li>• Supports the Enhanced MX Switch Control Board with fabric redundancy and existing SCBs without fabric redundancy.</li> <li>• Interoperates with existing MX Series line cards, including Flexible Port Concentrators (FPC), Dense Port Concentrators (DPCs), and Modular Port Concentrators (MPCs).</li> <li>• <b>MPC4E</b>—Fixed configuration MPC4E that is available in two flavors: MPC4E-3D-32XGE-SFP and MPC4E-3D-2CGE-8XGE on MX2020, MX960, MX480, and MX240 routers.</li> <li>• LCD description for MX Series routers</li> </ul>	

## Sample Output

### show chassis hardware (EX8216 Switch)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis       REV 06   710-016845   BA0909120112   EX8216
Midplane      REV 06   710-020771   AX0109197723   EX8216-MP
CB 0          REV 22   710-020771   AX0109197723   EX8216-RE320
CB 1          REV 22   710-020771   AX0109197726   EX8216-RE320
Routing Engine 1  BUILTIN BUILTIN      RE-EX8216

```

FPC 3	REV 19	710-020683	BC0109083125	EX8200-48F
CPU	REV 13	710-020598	BF0109144549	EX8200-CPU
FPC 4	REV 17	710-020683	BC0108500127	EX8200-48F
CPU	REV 10	710-020598	BF0108460510	EX8200-CPU
PIC 0		BUILTIN	BUILTIN	48x 100 Base-QFX/1000
Base-X				
Xcvr 1	REV 01	740-011613	PE70V89	SFP-SX
Xcvr 11	REV 01	740-011613	PE70YCE	SFP-SX
Xcvr 12	REV 01	740-011613	PE70VSH	SFP-SX
Xcvr 13	REV 01	740-011613	E08C02063	SFP-SX
Xcvr 14	REV 01	740-011613	PE70VKU	SFP-SX
Xcvr 15	REV 01	740-011613	E08E03372	SFP-SX
Xcvr 21	REV 01	740-011613	PE70VAD	SFP-SX
Xcvr 22	REV 01	740-011613	E08E01228	SFP-SX
Xcvr 23	REV 01	740-011613	PE70VSL	SFP-SX
Xcvr 24	REV 01	740-011613	E08E03409	SFP-SX
Xcvr 25	REV 01	740-011613	PE70VL4	SFP-SX
Xcvr 26	REV 01	740-011613	PDQ4L2Z	SFP-SX
Xcvr 27	REV 01	740-011613	PE70WFK	SFP-SX
Xcvr 28	REV 01	740-011782	PBD2B5U	SFP-SX
Xcvr 29	REV 01	740-011613	PE70UQX	SFP-SX
Xcvr 30	REV 01	740-011613	PE70VL5	SFP-SX
Xcvr 31	REV 01	740-011613	PE70V0F	SFP-SX
Xcvr 32	REV 01	740-011613	E08C02052	SFP-SX
Xcvr 33	REV 01	740-011613	E08C02197	SFP-SX
Xcvr 34	REV 01	740-011613	PE70V0L	SFP-SX
Xcvr 35	REV 01	740-011613	E08E03390	SFP-SX
Xcvr 36	REV 01	740-011613	PDQ4VL9	SFP-SX
Xcvr 37	REV 01	740-011613	E08E03370	SFP-SX
Xcvr 38	REV 01	740-011613	E08E03362	SFP-SX
Xcvr 39	REV 01	740-011613	E08C02065	SFP-SX
Xcvr 40	REV 01	740-011613	E08E03405	SFP-SX
Xcvr 41	REV 01	740-011613	E08E03411	SFP-SX
Xcvr 43	REV 01	740-011613	E08C02171	SFP-SX
Xcvr 45	REV 01	740-011613	E08E03410	SFP-SX
FPC 13	REV 16	710-016837	BB0109051344	EX8200-8XS
CPU				
SIB 0	REV 10	710-021613	AY0109166244	EX8216-SF320
SIB 1	REV 10	710-021613	AY0109166357	EX8216-SF320
SIB 2	REV 10	710-021613	AY0109166362	EX8216-SF320
SIB 3	REV 10	710-021613	AY0109166338	EX8216-SF320
SIB 4	REV 10	710-021613	AY0109166350	EX8216-SF320
SIB 5	REV 10	710-021613	AY0109166365	EX8216-SF320
SIB 6	REV 10	710-021613	AY0109166361	EX8216-SF320
SIB 7	REV 10	710-021613	AY0109166399	EX8216-SF320
PSU 0	REV 17	740-021466	BG0709170003	EX8200-AC2K
PSU 1	REV 17	740-021466	BG0709170004	EX8200-AC2K
PSU 2	REV 17	740-021466	BG0709170020	EX8200-AC2K
PSU 3	REV 17	740-021466	BG0709170017	EX8200-AC2K
PSU 4	REV 17	740-021466	BG0709170008	EX8200-AC2K
PSU 5	REV 17	740-021466	BG0709170018	EX8200-AC2K
Top Fan Tray				
FTC 0	REV 4	760-022620	CX1209140212	EX8216-FT
FTC 1	REV 4	760-022620	CX1209140212	EX8216-FT
Bottom Fan Tray				
FTC 0	REV 4	760-022620	CX1209140211	EX8216-FT
FTC 1	REV 4	760-022620	CX1209140211	EX8216-FT
LCD 0	REV 04	710-025742	CE0109186919	EX8200 LCD

**show chassis hardware clei-models (EX8216 Switch)**

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 08    710-016845
PSU 0         REV 05    740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 1         REV 05    740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 2         REV 05    740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 3         REV 05    740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 4         REV 05    740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 5         REV 05    740-023002  COUPAEAEAA EX8200-PWR-AC3KR
Top Fan Tray
Bottom Fan Tray

```

**show chassis hardware clei-models (T1600 Router)**

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 03    710-005608
FPM Display   REV 05    710-002897
CIP           REV 06    710-002895
PEM 0         Rev 07    740-017906  IPUPAC7KTA PWR-T1600-3-80-DC-S
PEM 1         Rev 18    740-002595  PWR-T-DC-S
SCG 0         REV 15    710-003423  SCG-T-S
Routing Engine 0 REV 08    740-014082  RE-A-2000-4096-S
Routing Engine 1 REV 07    740-014082  RE-A-2000-4096-S
CB 0          REV 05    710-007655  CB-T-S
CB 1          REV 03    710-017707  CB-T-S
FPC 0         REV 07    710-013558  T640-FPC2-E2
  PIC 0       REV 01    750-010618  PB-4GE-SFP
  PIC 1       REV 06    750-001900  PB-10C48-SON-SMSR
  PIC 2       REV 14    750-001901  PB-40C12-SON-SMIR
  PIC 3       REV 07    750-001900  PB-10C48-SON-SMSR
FPC 1         REV 06    710-013553  T640-FPC1-E2
  PIC 0       REV 08    750-001072  P-1GE-SX
  PIC 1       REV 10    750-012266  PB-4GE-TYPE1-SFP-IQ2
  PIC 2       REV 22    750-005634  PB-1CHOC12SMIR-QPP
FPC 2
  PIC 0       REV 16    750-007141  PC-10GE-SFP
  PIC 1       REV 06    750-015217  PC-8GE-TYPE3-SFP-IQ2
  PIC 2       REV 05    750-004695  PC-TUNNEL
  PIC 3       REV 17    750-009553  PC-40C48-SON-SFP
FPC 3         REV 01    710-010154  T640-FPC3-E
  PIC 0       REV 07    750-012793  PC-1XGE-TYPE3-XFP-IQ2
  PIC 1       REV 25    750-007141  PC-10GE-SFP
  PIC 2       REV 17    750-009553  PC-40C48-SON-SFP
  PIC 3       REV 32    750-003700  PC-10C192-SON-VSR
FPC 4         REV 16    710-013037  T1600-FPC4-ES
  PIC 1       REV 06    750-034781  PD-1CE-CFP
FPC 5         REV 02    710-013037  T1600-FPC4-ES
  PIC 0       REV 16    750-012518  PD-40C192-SON-XFP
  PIC 1       REV 01    750-010850  PD-10C768-SON-SR
FPC 6         REV 14    710-013037  T1600-FPC4-ES
  PIC 0       REV 11    750-017405  PD-4XGE-XFP
  PIC 1       REV 13    750-017405  PD-4XGE-XFP
FPC 7         REV 09    710-007529  T640-FPC3
  PIC 0       REV 10    750-012793  PC-1XGE-TYPE3-XFP-IQ2
  PIC 1       REV 01    750-015217  PC-8GE-TYPE3-SFP-IQ2

```

PIC 2	REV 01	750-015217	PC-8GE-TYPE3-SFP-IQ2
PIC 3	REV 15	750-009450	PC-10C192-SON-SR2
SIB 0	REV 07	710-013074	SIB-I-T1600-S
SIB 1	REV 07	710-013074	SIB-I-T1600-S
SIB 2	REV 07	710-013074	SIB-I-T1600-S
SIB 3	REV 07	710-013074	SIB-I-T1600-S
SIB 4	REV 07	710-013074	SIB-I-T1600-S
Fan Tray 0			FANTRAY-T-S
Fan Tray 1			FANTRAY-T-S
Fan Tray 2			FAN-REAR-TX-T640-S

### show chassis hardware clei-models (PTX10008 Routers)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 27	750-054097	CMMUM00ARA	QFX10008-CHAS
CB 0	REV 02	750-068820	CMUCAH3CTB	QFX10000-RE
CB 1	REV 02	750-068820	CMUCAH3CTB	QFX10000-RE
FPC 0	REV 36	750-051354	CMUIAM9BAA	QFX10000-36Q
PIC 0		BUILTIN		
FPC 1	REV 33	750-051354	CMUIAM9BAA	QFX10000-36Q
PIC 0		BUILTIN		
FPC 2	REV 32	750-051357	CMUIANABAA	QFX10000-30C
PIC 0		BUILTIN		
FPC 3	REV 35	750-051357	CMUIANABAA	QFX10000-30C
PIC 0		BUILTIN		
FPC 5	REV 08	750-068822	CMUIAM9BAB	QFX10000-36Q
PIC 0		BUILTIN		
FPC 6	REV 08	750-068822	CMUIAM9BAB	QFX10000-36Q
PIC 0		BUILTIN		
FPD Board	REV 07	711-054687		
Power Supply 0	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 1	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 2	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 3	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 4	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 5	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
Fan Tray 0	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN
Fan Tray 1	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN
SIB 0	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 1	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 2	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 3	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 4	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 5	REV 23	750-050058	CMUCAH0CAA	QFX10008-SF

### show chassis hardware clei-models (PTX10016 Routers)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 24	750-077138	CMMUN00ARA	JNP10016
CB 0	REV 04	711-065897	PROTOXCLEI	PROTO-ASSEMBLY
CB 1	REV 05	711-065897	PROTOXCLEI	PROTO-ASSEMBLY
FPC 2		BUILTIN		
PIC 0		BUILTIN		
FPC 4	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101

PIC 0		BUILTIN		
FPC 5	REV 13	750-068822	CMUIAM9BAC	QFX10000-36Q
PIC 0		BUILTIN		
FPC 6	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 7	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 8	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 9	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 10	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 11	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 13	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 15	REV 37	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
Power Supply 0	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 1	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 2	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 3	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 4	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 5	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 6	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 7	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 8	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 9	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Fan Tray 0				QFX5100-FAN-AFO
Fan Tray 1				QFX5100-FAN-AFO
SIB 0	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 1	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 2	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 3	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 4	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 5	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
FPD Board	REV 07	711-054687		

### show chassis hardware (EX2300-C Switch)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
FPC 0          REV 04    650-059984  HV0215410003  EX2300-C-12P
  CPU          BUILTIN   BUILTIN     12x10/100/1000 Base-T
  PIC 0        REV 04    650-059984  HV0215410003  2x10G SFP/SFP+
    Xcvr 0     REV 01    740-021309  T09K00695     SFP+-10G-LR
    Xcvr 1     REV 01    740-030658  AD1146A05JT   SFP+-10G-USR
Power Supply 0 JPSU-170W-AC

```

### show chassis hardware (EX2300 Switch)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description

```

Chassis			JY0215410033	EX2300-24P
Pseudo CB 0				
Routing Engine 0		BUILTIN	BUILTIN	RE-EX2300-24P
FPC 0	REV 05	650-059968	JY0215410033	EX2300-24P
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0	REV 05	BUILTIN	BUILTIN	24x10/100/1000 Base-T
PIC 1	REV 05	650-059968	JY0215410033	4x10G SFP/SFP+
Xcvr 0	REV 01	740-030658	AD1125A03ES	SFP+-10G-USR
Xcvr 1	REV 01	740-021308	AJP0TDZ	SFP+-10G-SR
Xcvr 3	REV 01	740-021309	A9401FL	SFP+-10G-LR
Power Supply 0				JPSU-450W-AC-AFO
Fan Tray 0 (AFO)				Fan Module, Airflow Out
Fan Tray 1 (AFO)				Fan Module, Airflow Out

#### show chassis hardware detail (EX4200 Switch)

```
user@host> show chassis hardware detail
```

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			BM0208327733	EX4200-24T
Routing Engine 0	REV 11	750-021256	BM0208327733	EX4200-24T, 8 POE
Routing Engine 0			BM0208327733	EX4200-24T, 8 POE
FPC 0	REV 11	750-021256	BM0208327733	EX4200-24T, 8 POE
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	24x 10/100/1000 Base-T
PIC 1	REV 03B	711-021270	AR0208162285	4x GE SFP
BRD	REV 08	711-021264	AK0208328289	EX4200-24T, 8 POE
Power Supply 0	REV 03	740-020957	AT0508346354	PS 320W AC
Fan Tray				Fan Tray

#### show chassis hardware (EX4300 Switch)

```
user@host> show chassis hardware
```

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			PD3713160055	EX4300-48P
Routing Engine 0	REV 04	650-044930	PD3713160055	EX4300-48P
FPC 0	REV 04	650-044930	PD3713160055	EX4300-48P
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0	REV 04	BUILTIN	BUILTIN	48x 10/100/1000 Base-T
PIC 1	REV 04	BUILTIN	BUILTIN	4x 40GE
Power Supply 0	REV 01	740-046871	1EDA3090026	JPSU-1100-AC-AFO-A
Fan Tray 0 (AFO)				Fan Module, Airflow Out
Fan Tray 1 (AFO)				Fan Module, Airflow Out

#### show chassis hardware models (EX4500 Switch)

```
user@host> show chassis hardware models
```

Hardware inventory:				
Item	Version	Part number	Serial number	FRU model number
Routing Engine 0	REV 01	750-035700	GG0210271867	EX4500-40F-FB-C
FPC 0	REV 01	750-035700	GG0210271867	EX4500-40F-FB-C
PIC 0		BUILTIN	BUILTIN	EX4500-40F-FB-C
Power Supply 1	REV 01	740-029654	H884FS00JC09	EX4500-PWR1-AC-FB



## show chassis hardware detail (EX9200 Switch)

```
user@switch> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN111DA44RFB	EX9208
Midplane	REV 05	710-017414	TS2912	EX9208-BP
FPM Board	REV 02	710-017254	XN1804	Front Panel Display
PEM 0	Rev 01	740-022697	QCS0906C033	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 01	740-022697	QCS0906C095	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 08	740-031116	9009122883	RE-S-EX9200-1800X4
CB 0	REV 16	750-031391	CAAW4391	EX9200-SCBEF
PC 0	REV 07	750-049612	CABJ9312	EX9200 40x1G Copper
CPU	REV 04	711-038484	CABH8268	MPCE PMB 2G
MIC 0	REV 02	750-049607	CABT9623	40x 1GE RJ45
PIC 0		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 1		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 2		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 3		BUILTIN	BUILTIN	10x 1GE RJ45
FPC 1	REV 10	710-013699	CAAN3529	EX9200-40x1G-SFP
CPU	REV 04	711-038484	CAAL7608	MPCE PMB 2G
MIC 0	REV 26	750-028392	CAAS5151	20x 1GE SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE SFP
PIC 1		BUILTIN	BUILTIN	10x 1GE SFP
MIC 1	REV 26	750-028392	CAAC8006	20x 1GE SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 8	REV 01	740-011613	E08L03674	SFP-SX
Xcvr 9	REV 01	740-011613	E08M00243	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE SFP
FPC 3	REV 10	710-013699	CAAR5261	EX9200-40x1G-SFP
CPU	REV 04	711-038484	CAAS2118	MPCE PMB 2G
MIC 0	REV 26	750-028392	CAAS5067	20x 1GE SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 2	REV 01	740-031851	PNA7L8U	SFP-SX
Xcvr 3	REV 02	740-011613	AM0943SEKGZ	SFP-SX
Xcvr 4	REV 02	740-011613	AM0943SEJZ9	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE SFP
MIC 1	REV 26	750-028392	CAAS5132	20x 1GE SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 4	REV 01	740-011613	E08D02625	SFP-SX
Xcvr 9	REV 02	740-011613	PJH4RD9	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 0	REV 01	740-011613	AM0813S8YME	SFP-SX
Fan Tray				Left Fan Tray

## show chassis hardware detail (EX9251 Switch)

```
user@switch> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			BLANK	EX9251
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 05	750-069579	CAGT1382	EX9251
FPC 0		BUILTIN	BUILTIN	MPC
PIC 0		BUILTIN	BUILTIN	4XSFP28 PIC
Xcvr 0	REV 01	740-044512	APF14500007NHC	QSFP+-40G-CU50CM
Xcvr 2	REV 01	740-046565	QH21035H	QSFP+-40G-SR4

PIC 1		BUILTIN	BUILTIN	8XSFP PIC
Xcvr 0	REV 01	740-031980	AA15393URH7	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AA162832LVG	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	MXA0NKJ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	MXA0K75	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	MXA138L	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	13T511102684	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	MXA138E	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	MXA152N	SFP+-10G-SR
PEM 0	REV 02	740-070749	1F186390060	AC AFO 650W PSU
PEM 1	REV 02	740-070749	1F186390045	AC AFO 650W PSU
Fan Tray 0				Fan Tray, Front to Back
Airflow - AFO				
Fan Tray 1				Fan Tray, Front to Back
Airflow - AFO				

### show chassis hardware detail (EX9253 Switch)

```
user@switch> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN126145CJCB	EX9253
Midplane	REV 06	750-074276	CAJE4108	Midplane 2
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 24	750-067071	CAJF6414	Control Board
Mezz	REV 14	711-066896	CAJF6327	Control Mezz Board
CB 1	REV 24	750-067071	CAJF6398	Control Board
Mezz	REV 14	711-066896	CAJF6314	Control Mezz Board
FPC 0	REV 19	750-066879	CAJD1692	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
Xcvr 0	REV 01	740-054053	QH20019A	QSFP+-4X10G-SR
PIC 1	REV 15	750-068806	CAJD1416	MIC1
Xcvr 0	REV 01	740-061405	1ECQ1151163	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-061405	1ECQ11511AK	QSFP-100GBASE-SR4
Xcvr 2	REV 01	740-032986	QB160112	QSFP+-40G-SR4
FPC 1	REV 19	750-066879	CAJD1685	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
PIC 1	REV 15	750-068806	CAJD1393	MIC1
Xcvr 0	REV 01	740-032986	QB120887	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QD465034	QSFP+-40G-SR4
Xcvr 2	REV 01	740-052009	UWE2CBQ	QSFP+-40G-LR4
Xcvr 4	REV 01	740-032986	QB120701	QSFP+-40G-SR4
PEM 0	REV 01	740-066937	1HS17070027	JNP-PWR1600-AC
PEM 1	REV 01	740-066937	1HS17070151	JNP-PWR1600-AC
PEM 4	REV 01	740-066937	1HS17070090	JNP-PWR1600-AC
PEM 5	REV 01	740-066937	1HS16480119	JNP-PWR1600-AC
Fan Tray 0	REV 08	760-069329	CAJF6944	JNP FAN 3RU
Fan Tray 1	REV 08	760-069329	CAJF6863	JNP FAN 3RU
Fan Tray 2	REV 08	760-069329	CAJF6891	JNP FAN 3RU
Fan Tray 3	REV 08	760-069329	CAJF6937	JNP FAN 3RU

### show chassis hardware detail (PTX10008 Routers)

```
user@switch> show chassis hardware detail
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
------	---------	-------------	---------------	-------------

Chassis			DE487	JNP10008 [PTX10008 -
PILOT BUILD V1.1]				
Midplane	REV 27	750-054097	ACPD4307	Midplane 8
Routing Engine 0		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB	QEMU		QM00002	Virtio Block Disk
usb0 (addr 0.1)	EHCI root HUB 0		Intel	uhub0
usb1 (addr 0.2)	product 0x0020 32		vendor 0x8087	uhub1
Routing Engine 1		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB	QEMU		QM00002	Virtio Block Disk
usb0 (addr 0.1)	EHCI root HUB 0		Intel	uhub0
usb1 (addr 0.2)	product 0x0020 32		vendor 0x8087	uhub1
CB 0	REV 02	750-068820	ACNZ4440	Control Board
CB 1	REV 02	750-068820	ACNZ8284	Control Board
FPC 0	REV 36	750-051354	ACNP4679	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058734	1ECQ113834D	QSFP-100GBASE-SR4
Xcvr 5	REV 01	740-058734	1ECQ1137067	QSFP-100GBASE-SR4
Xcvr 6	REV 01	740-054053	QF3205SD	QSFP+-4X10G-SR
Xcvr 7	REV 01	740-058734	1ECQ11381MP	QSFP-100GBASE-SR4
Xcvr 11	REV 01	740-061405	1ACQ110507K	QSFP-100GBASE-SR4
Xcvr 13	REV 01	740-058734	1ECQ11390ZB	QSFP-100GBASE-SR4
Xcvr 17	REV 01	740-058734	1ECQ11381M1	QSFP-100GBASE-SR4
Xcvr 19	REV 01	740-058734	1ECQ11381JS	QSFP-100GBASE-SR4
Xcvr 23	REV 01	740-058734	1ACQ112000E	QSFP-100GBASE-SR4
Xcvr 25	REV 01	740-058734	1ECQ11381NT	QSFP-100GBASE-SR4
Xcvr 28	REV 01	740-054053	QG1502WV	QSFP+-4X10G-SR
Xcvr 29	REV 01	740-058734	1ACQ112000D	QSFP-100GBASE-SR4
Xcvr 33	REV 01	740-058734	1ACQ1134065	QSFP-100GBASE-SR4
Xcvr 34	REV 01	740-067442	XV20L4L	QSFP+-40G-SR4
FPC 1	REV 33	750-051354	ACNX8831	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 5		NON-JNPR	37700171YY0084	QSFP-100GBASE-LR4
Xcvr 25		NON-JNPR	GDA2017459	QSFP-100GBASE-LR4
Xcvr 29		NON-JNPR	GDF2008750	QSFP-100GBASE-LR4
FPC 2	REV 32	750-051357	ACPB0341	LC1101 - 30C / 30Q / 96X
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	30x100GE/30x40GE/96x10GE
Xcvr 0		NON-JNPR	37700170YZC305	QSFP-100GBASE-LR4
Xcvr 4		NON-JNPR	37700170YZC306	QSFP-100GBASE-LR4
Xcvr 9	REV 01	740-054053	QF36013S	QSFP+-4X10G-SR
Xcvr 12	REV 01	740-067442	XV301AU	QSFP+-40G-SR4
Xcvr 14	REV 01	740-043308	UWE2CG9	QSFP+-40G-LR4
Xcvr 16	REV 01	740-043308	UWH141S	QSFP+-40G-LR4
Xcvr 17	REV 01	740-058734	1ECQ11180VH	QSFP-100GBASE-SR4
Xcvr 18	REV 01	740-054050	INF AJ0492237	QSFP+-4X10G-LR
Xcvr 26	REV 01	740-058734	1ACQ111803N	QSFP-100GBASE-SR4
Xcvr 27	REV 01	740-058734	1ACQ113405S	QSFP-100GBASE-SR4
FPC 3	REV 35	750-051357	ACPD2186	LC1101 - 30C / 30Q / 96X

CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 30x100GE/30x40GE/96x10GE
Xcvr 0	REV 01	740-061409	1GCQA1470A3	QSFP-100GBASE-LR4-T2
Xcvr 1	REV 01	740-061409	1GCQA1470XC	QSFP-100GBASE-LR4-T2
Xcvr 7		NON-JNPR	FG4550500008	QSFP-100G-CWDM4
Xcvr 24	REV 01	740-058734	1ECQ11381LX	QSFP-100GBASE-SR4
Xcvr 29	REV 01	740-043308	UWE0UYS	QSFP+-40G-LR4
FPC 5	REV 08	750-068822	ACPF0057	LC1102 - 12C / 36Q /
144X				
CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 12x100GE/36x40GE/144x10GE
FPC 6	REV 08	750-068822	ACPE9951	LC1102 - 12C / 36Q /
144X				
CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-054053	QF3208LG	QSFP+-4X10G-SR
Xcvr 7	REV 01	740-067442	XV20LGN	QSFP+-40G-SR4
Xcvr 8	REV 01	740-067442	XV20VMV	QSFP+-40G-SR4
Xcvr 9	REV 01	740-067442	XV20KCN	QSFP+-40G-SR4
Xcvr 10	REV 01	740-067442	XU504QD	QSFP+-40G-SR4
Xcvr 11	REV 01	740-067442	XU504X7	QSFP+-40G-SR4
Xcvr 12	REV 01	740-067442	XU504W8	QSFP+-40G-SR4
Xcvr 16	REV 01	740-032986	QF4301JP	QSFP+-40G-SR4
Xcvr 17	REV 01	740-032986	QF4303AE	QSFP+-40G-SR4
Xcvr 18	REV 01	740-054050	INF4J0492400	QSFP+-4X10G-LR
Xcvr 19	REV 01	740-054050	INF4J0492142	QSFP+-4X10G-LR
Xcvr 24	REV 01	740-032986	QF4301KB	QSFP+-40G-SR4
Xcvr 25	REV 01	740-032986	QF4303YP	QSFP+-40G-SR4
Xcvr 30	REV 01	740-067442	XV300ZX	QSFP+-40G-SR4
Xcvr 31	REV 01	740-043308	UWH2KBW	QSFP+-40G-LR4
Xcvr 34	REV 01	740-054053	QG1501YU	QSFP+-4X10G-SR
FPD Board	REV 07	711-054687	ACPC7142	Front Panel Display
Power Supply 0	REV 02	740-049388	1EDL62102N9	Power Supply AC
Power Supply 1	REV 02	740-049388	1EDL60300KX	Power Supply AC
Power Supply 2	REV 02	740-049388	1EDL60300DL	Power Supply AC
Power Supply 3	REV 02	740-049388	1EDL61701BT	Power Supply AC
Power Supply 4	REV 02	740-049388	1EDL62102P7	Power Supply AC
Power Supply 5	REV 02	740-049388	1EDL62102PP	Power Supply AC
FTC 0	REV 14	750-050108	ACPE4038	Fan Controller 8
FTC 1	REV 14	750-050108	ACPE4032	Fan Controller 8
Fan Tray 0	REV 09	760-054372	ACPD6799	Fan Tray 8
Fan Tray 1	REV 09	760-054372	ACNZ3584	Fan Tray 8
SIB 0	REV 24	750-050058	ACPD4587	Switch Fabric 8
SIB 1	REV 24	750-050058	ACNZ0635	Switch Fabric 8
SIB 2	REV 24	750-050058	ACPD4908	Switch Fabric 8
SIB 3	REV 24	750-050058	ACNZ0617	Switch Fabric 8
SIB 4	REV 24	750-050058	ACNZ0527	Switch Fabric 8
SIB 5	REV 23	750-050058	ACNX6980	Switch Fabric 8

## show chassis hardware detail (PTX10016 Routers)

```
user@switch> show chassis hardware detail
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			DH995	JNP10016 [PTX10016]
Midplane	REV 22	750-056555	ACPM7810	Midplane 16
Routing Engine 0		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk

vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB QEMU			QM00002	Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0			Intel	uhub0
usb1 (addr 0.2) product 0x0020 32			vendor 0x8087	uhub1
Routing Engine 1		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB QEMU			QM00002	Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0			Intel	uhub0
usb1 (addr 0.2) product 0x0020 32			vendor 0x8087	uhub1
CB 0	REV 03	750-068820	ACPL7238	Control Board
CB 1	REV 03	750-068820	ACPL7298	Control Board
FPC 1	REV 36	750-077140	ACNP4590	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-054053	QF3600AV	QSFP+-4X10G-SR
Xcvr 35	REV 01	740-061405	1ACQ110507K	QSFP-100GBASE-SR4
FPC 3	REV 07	750-071975	CAHA2224	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-054053	QG1505YM	QSFP+-4X10G-SR
Xcvr 11		NON-JNPR	GDA2017459	QSFP-100GBASE-LR4
Xcvr 35		NON-JNPR	GDF2008750	QSFP-100GBASE-LR4
FPC 5	REV 13	750-068822	ACPD6501	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058734	1ECQ11381LA	QSFP-100GBASE-SR4
Xcvr 2	REV 01	740-043308	UWH141S	QSFP+-40G-LR4
Xcvr 3	REV 01	740-043308	UWE2CG9	QSFP+-40G-LR4
FPC 6	REV 37	750-077140	ACNS2793	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-032986	QH0400VH	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QH0400VM	QSFP+-40G-SR4
Xcvr 35	REV 01	740-058734	1ECQ11390ZB	QSFP-100GBASE-SR4
FPC 8	REV 36	750-077140	ACNP4625	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058732	1AMQA14206D	QSFP-100GBASE-LR4
Xcvr 10	REV 01	740-032986	QF4301KB	QSFP+-40G-SR4
Xcvr 24	REV 01	740-054050	INF AJ0492244	QSFP+-4X10G-LR
FPC 9	REV 35	750-071976	ACPD3055	LC1101 - 30C / 30Q / 96X
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	30x100GE/30x40GE/96x10GE
Xcvr 0		NON-JNPR	INGBT7970007	QSFP-100GBASE-LR4
Xcvr 1		NON-JNPR	UWQ24D9	QSFP-100GBASE-LR4
Xcvr 2		NON-JNPR	INGBT7970011	QSFP-100GBASE-LR4
Xcvr 3		NON-JNPR	UX60AF1	QSFP-100G-CWDM4
Xcvr 4		NON-JNPR	UX408JJ	QSFP-100GBASE-LR4

Xcvr 11	REV 01	740-058734	1ECQ113835F	QSFP-100GBASE-SR4
Xcvr 18		NON-JNPR	Q7496	QSFP-100G-CWDM4
Xcvr 29	REV 01	740-058734	1ECQ11380LZ	QSFP-100GBASE-SR4
Power Supply 0	REV 02	740-049388	1EDL625039E	Power Supply AC
Power Supply 1	REV 02	740-049388	1EDL62503AD	Power Supply AC
Power Supply 2	REV 02	740-049388	1EDL625039P	Power Supply AC
Power Supply 3	REV 02	740-049388	1EDL702004E	Power Supply AC
Power Supply 4	REV 02	740-049388	1EDL625039D	Power Supply AC
Power Supply 5	REV 02	740-049388	1EDL63706JD	Power Supply AC
Power Supply 6	REV 02	740-049388	1EDL63706JH	Power Supply AC
FTC 0	REV 10	750-050309	ACPM2918	Fan Controller 16
FTC 1	REV 10	750-050309	ACPE8185	Fan Controller 16
Fan Tray 0	REV 10	760-077141	ACPV7288	Fan Tray 16
Fan Tray 1	REV 10	760-057901	ACPL0546	Fan Tray 16
SIB 0	REV 15	750-058270	ACPM2804	Switch Fabric 16
SIB 1	REV 15	750-058270	ACPM2808	Switch Fabric 16
SIB 2	REV 15	750-058270	ACPL4450	Switch Fabric 16
SIB 3	REV 15	750-058270	ACPJ9834	Switch Fabric 16
SIB 4	REV 15	750-058270	ACPM2814	Switch Fabric 16
SIB 5	REV 15	750-058270	ACPL4277	Switch Fabric 16
FPD Board	REV 07	711-054687	ACPL1407	Front Panel Display

## show chassis hardware (M7i Router)

user@host&gt; show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			31959	M7i
Midplane	REV 02	710-008761	CA0209	M7i Midplane
Power Supply 0	Rev 04	740-008537	PD10272	AC Power Supply
Routing Engine	REV 01	740-008846	1000396803	RE-5.0
CFEB	REV 02	750-009492	CA0166	Internet Processor Iiv1
FPC 0				E-FPC
PIC 0	REV 04	750-003163	HJ6416	1x G/E, 1000 BASE-SX
PIC 1	REV 04	750-003163	HJ6423	1x G/E, 1000 BASE-SX
PIC 2	REV 04	750-003163	HJ6421	1x G/E, 1000 BASE-SX
PIC 3	REV 02	750-003163	HJ0425	1x G/E, 1000 BASE-SX
FPC 1				E-FPC
PIC 2	REV 01	750-009487	HM2275	ASP - Integrated
PIC 3	REV 01	750-009098	CA0142	2x F/E, 100 BASE-TX

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			B1157	M7i
Midplane	REV 05	710-008761	DM0840	M7i Midplane
Power Supply 0	Rev 08	740-008537	TE53755	AC Power Supply
Routing Engine	REV 07	740-011202	1000736567	RE-850
CFEB	REV 09	750-010463	DK6952	Internet Processor II
FPC 0				E-FPC
PIC 0	REV 12	750-012838	DL7993	4x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011614	PD94TDJ	SFP-LX10
Xcvr 1	REV 01	740-011615	PA05EER	UNSUPPORTED
Xcvr 2	REV 01	740-011614	PD94THU	SFP-LX10
Xcvr 3		NON-JNPR	PDC2E7A	SFP-LX10
PIC 1	REV 03	750-023116	JT0203	4x CHSTM1 SDH CE SFP
Xcvr 0	REV 01	740-012434	AGT063832PS	SFP-SR
Xcvr 1	REV 01	740-012434	AGT063832LY	SFP-SR
Xcvr 3	REV 01	740-016064	C06J19018	SFP-LR
PIC 2	REV 15	750-014895	DM5757	MultiServices 100
PIC 3	REV 01	750-025390	JW9448	12x T1/E1 CE
FPC 1				E-FPC

PIC 2		BUILTIN	BUILTIN	1x Tunnel
PIC 3	REV 09	750-009099	DM0899	1x G/E, 1000 BASE
Xcvr 0	REV 01	740-012434	AGT07150HGJ	UNSUPPORTED
Fan Tray				Rear Fan Tray

### show chassis hardware (M10 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			1122	M10
Midplane	REV 1.1	710-001950	S/N AC6626	
Power supply A	Rev 01	740-002497	S/N LC36095	AC
Power supply B	Rev 01	740-002497	S/N LC36100	AC
Display	REV 1.2	710-001995	S/N AC6656	
Host			18000005dfb3fb01	teknor
FEB	REV 01	710-001948	S/N AC6632	Internet Processor II
FPC 0				
PIC 0	REV 08	750-001072	S/N AB2485	1x G/E, 1000 BASE-SX
PIC 1	REV 01	750-000613	S/N AA1048	1x OC-12 SONET, SMIR
FPC 1				
Fan Tray 0				FANTRAY-M10I-S
Fan Tray 1				FANTRAY-M10I-S

### show chassis hardware models (M10 Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	710-008920		CHAS-MP-M10i-S
Power Supply 0	Rev 06	740-008537		PWR-M10i-M7i-AC-S
Power Supply 1	Rev 06	740-008537		PWR-M10i-M7i-AC-S
HCM 0	REV 03	710-010580		HCM-M10i-S
HCM 1	REV 03	710-010580		HCM-M10i-S
Routing Engine 0	REV 09	740-009459		RE-400-256-S
CFEB 0	REV 05	750-010465		FEB-M10i-M7i-S
FPC 0				
PIC 0	REV 10	750-002971		PE-40C3-SON-MM
PIC 1	REV 11	750-002992		PE-4FE-TX
PIC 2	REV 03	750-002977		PE-20C3-ATM-MM
PIC 3	REV 08	750-005724		PE-20C3-ATM2-MM
FPC 1				
PIC 2	REV 12	750-008425		PE-AS
PIC 3	REV 13	750-005636		PE-4CHDS3-QPP
Fan Tray 0				FANTRAY-M10I-S
Fan Tray 1				FANTRAY-M10I-S

### show chassis hardware (M20 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			20033	M20
Backplane	REV 07	710-001517	S/N AA7940	
Power supply B	Rev 01	740-001465	S/N 000001	AC
Display	REV 02	710-001519	S/N AA9704	
Host 0			98000004f8f27501	teknor
SSB slot 0	REV 01	710-001951	S/N AD5905	Internet Processor II
SSRAM bank 0	REV 01	710-001385	S00480	2 MB
SSRAM bank 1	REV 01	710-001385	S00490	2 MB

SSRAM bank 2	REV 01	710-001385	S001:?	2 MB
SSRAM bank 3	REV 01	710-001385	S00483	2 MB
SSB slot 1	N/A	N/A	N/A	Backup
FPC 1	REV 01	710-001292	S/N AB7528	
SSRAM	REV 01	710-000077	S/N 304209	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 000603	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 000414	64 MB
PIC 0	REV 03	750-000612	S/N AB8433	2x OC-3 ATM, MM
PIC 1	REV 01	750-000616	S/N AA1168	1x OC-12 ATM, MM
PIC 2	REV 01	750-000613	S/N AA1008	1x OC-12 SONET, SMIR
PIC 3	REV 01	750-002501	S/N AD5810	4x E3
FPC 2	REV 01	710-001292	S/N AC0119	
SSRAM	REV 01	710-000077	S/N 503241	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 306835	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 306832	64 MB
Fan Tray 0				Front Upper Fan Tray
Fan Tray 1				Front Middle Fan Tray
Fan Tray 2				Front Bottom Fan Tray
Fan Tray 3				Rear Fan Tray

### show chassis hardware models (M20 Router)

```
user@host> show chassis hardware models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Backplane	REV 03	710-002334		CHAS-MP-M20-S
Power Supply A	REV 06	740-001465		PWR-M20-AC-S
Display	REV 04	710-001519		CRAFT-M20-S
Routing Engine 0	REV 06	740-003239		RE-333-768-S
Routing Engine 1	REV 06	740-003239		RE-333-768-S
SSB 0	REV 02	710-001951		SSB-E-M20
SSB 1	N/A	N/A		
FPC 0	REV 03	710-003308		FPC-E
PIC 0	REV 08	750-002303		P-4FE-TX
PIC 1	REV 07	750-004745		P-2MCDS3
PIC 2	REV 03	750-002965		PE-4CHDS3
FPC 1	REV 03	710-003308		FPC-E
PIC 0	REV 03	750-002914		P-2OC3-ATM-MM
Fan Tray 0				FANTRAY-F-M20-S
Fan Tray 1				FANTRAY-F-M20-S
Fan Tray 2				FANTRAY-F-M20-S
Fan Tray 3				FANTRAY-R-M20-S

### show chassis hardware (M40 Router)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Backplane	REV 02	710-000073	S/N AA0053	
Power supply A	Rev 2	740-000235	S/N 000042	DC
Maxicab	REV X1	710-000229	S/N AA0139	
Minicab	REV X1	710-000482	S/N AA0201	
Display	REV 06	710-000150	S/N AA0905	
Host				cpv5000
SCB	REV X1	710-000075	S/N AA0158	Internet Processor I
SSRAM bank 0	REV 02	710-000077	S/N AA2267	1 MB
SSRAM bank 1	REV 02	710-000077	S/N AA2270	1 MB
SSRAM bank 2	REV 02	710-000077	S/N AA2269	1 MB
SSRAM bank 3	REV 02	710-000077	S/N AA2268	1 MB
FPC 0	REV 01	710-000175	S/N AA0048	



SSRAM	REV 01	710-000077	S/N AA2333	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2332	64 MB
SDRAM bank 1	REV X1	710-000099	S/N AA2337	64 MB
PIC 0	REV 04	750-000613	S/N aa0343	1x OC-12 SONET, SMIR
PIC 1	REV 04	750-000613	S/N AA0379	1x OC-12 SONET, SMIR
PIC 2	REV 04	750-000613	S/N AA0377	1x OC-12 SONET, SMIR
PIC 3	REV 04	750-000613	S/N AA0378	1x Tunnel
FPC 2	REV 01	710-000175	S/N AA0042	
SSRAM	REV 02	710-000077	S/N AA2288	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2331	64 MB
SDRAM bank 1	REV 01	710-000099	S/N AA2330	64 MB
PIC 0	REV X1	750-000603	S/N AA0143	4x OC-3 SONET, SMIR
PIC 1	REV X1	750-000615	S/N AA0149	4x OC-3 SONET, MM
PIC 2	REV X1	750-000611	S/N AA0148	4x OC-3 SONET, MM
PIC 3	REV 04	750-000613	S/N AA0330	1x OC-12 SONET, SMIR
FPC 4	REV 01	710-000175	S/N AA0050	
SSRAM	REV 01	710-000077	S/N AA2327	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2329	64 MB
SDRAM bank 1	REV 01	710-000099	S/N AA2328	64 MB
PIC 0	REV 04	750-000613	S/N AA0320	1x OC-12 SONET, SMIR
PIC 2	REV 05	750-000616	S/N AA1341	1x OC-12 ATM, MM
PIC 3	REV 08	750-001072	S/N AB2462	1x G/E, 1000 BASE-SX
FPC 5	REV 10	710-000175	S/N AA7663	
SSRAM	REV 01	710-000077	S/N 501590	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 300949	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 300868	64 MB
PIC 1	REV 01	750-001323	S/N AB1670	1x Tunnel

### show chassis hardware (M40e Router)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				m40e
Midplane	REV 01	710-005071	AX3671	
FPM CMB	REV 03	710-001642	AR9074	
FPM Display	REV 03	710-001647	AR7331	
CIP	REV 04	710-002649	BB4449	
PEM 0	Rev 01	740-003787	MC12364	Power Entry Module
PEM 1	Rev 01	740-003787	MC12383	Power Entry Module
PCG 0	REV 07	710-001568	AG1332	
PCG 1	REV 07	710-001568	AR3789	
Host 0			3e000007c8176601	Present
MCS 0	REV 11	710-001226	AN5813	
SFM 0 SPP	REV 07	710-001228	AG4676	
SFM 0 SPR	REV 05	710-002189	AE4735	Internet Processor II
SFM 1 SPP	REV 07	710-001228	AP1347	
SFM 1 SPR	REV 05	710-002189	BE0063	Internet Processor II
FPC 0	REV 01	710-011725	BE0669	M40e-EP-FPC Type 1
CPU	REV 01	710-004600	BD9504	
PIC 0	REV 03	750-003737	AY3991	4x G/E, 1000 BASE-SX
FPC 1	REV 01	710-005197	BD9842	M40e-FPC Type 2
CPU	REV 01	710-004600	BB4869	
PIC 0	REV 07	750-001900	AR8278	1x OC-48 SONET, SMSR
FPC 2	REV 02	710-005197	BD9824	M40e-FPC Type 2
CPU	REV 01	710-004600	BD9531	
PIC 0	REV 03	750-003737	AY3986	4x G/E, 1000 BASE-SX
FPC 4	REV 02	710-005078	BE0664	M40e-FPC Type 1
CPU	REV 01	710-004600	BD9559	
PIC 0	REV 03	750-001894	AG7963	1x G/E, 1000 BASE-SX
PIC 2	REV 01	750-002575	AF2472	4x OC-3 SONET, SMIR

FPC 6	REV 02	710-005078	BE0652	M40e-FPC Type 1
CPU	REV 01	710-004600	BD9607	
PIC 0	REV 02	750-002911	AN2286	4x F/E, 100 BASE-TX
PIC 2	REV 01	750-002577	AP6345	4x OC-3 SONET, MM

## show chassis hardware (M120 Router)

user@host&gt; show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN000054AC	M120
Midplane	REV 01	710-013667	RB4170	M120 Midplane
FPM Board	REV 02	710-011407	CJ9186	M120 FPM Board
FPM Display	REV 02	710-011405	CJ9173	M120 FPM Display
FPM CIP	REV 02	710-011410	CJ9221	M120 FPM CIP
PEM 0	Rev 05	740-011936	RM28320	AC Power Entry Module
PEM 1	Rev 05	740-011936	RM28321	AC Power Entry Module
Routing Engine 0	REV 03	740-014080	1000642883	RE-A-1000
CB 0	REV 03	710-011403	CM8346	M120 Control Board
CB 1	REV 06	710-011403	CP6728	M120 Control Board
FPC 1	REV 02	710-015908	CP6925	M120 CFPC 10GE
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN) XFP
Xcvr 0	REV 01	740-014279	62E204N00007	XFP-10G-LR
FPC 3	REV 03	710-011393	CJ9234	M120 FPC Type 2
PIC 0	REV 16	750-008155	NB5229	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F15JB	SFP-SX
Xcvr 1	REV 01	740-007326	P4QOR9G	SFP-SX
PIC 1	REV 09	750-007745	CG4360	4x OC-3 SONET, SMIR
PIC 2	REV 16	750-008155	ND7787	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F12AS	SFP-SX
Xcvr 1	REV 01	740-011613	P9F1ALU	SFP-SX
PIC 3	REV 07	750-011800	JW1284	8x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011613	P9F1AM6	SFP-SX
Xcvr 6	REV 01	740-011613	P9F16NN	SFP-SX
Xcvr 7	REV 01	740-011782	P8C29Y7	SFP-SX
Board B	REV 02	710-011395	CN3754	M120 FPC Mezz
FPC 4	REV 02	710-011398	CP6741	M120 FPC Type 3
PIC 0	REV 16	750-007141	NB2855	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011782	P922A1F	SFP-SX
Xcvr 1	REV 01	740-011782	P922A16	SFP-SX
Xcvr 2	REV 01	740-011782	P922A0U	SFP-SX
Xcvr 3	REV 01	740-011782	P9229UZ	SFP-SX
Xcvr 4	REV 01	740-009029	P11JXWP	SFP-LX
Xcvr 6	REV 01	740-011613	P9F1ALW	SFP-SX
FPC 5	REV 01	710-011388	CJ9088	M120 FPC Type 1
PIC 0	*** Hardware Not Supported ***			
PIC 1	REV 05	750-012052	NB0410	1x CHOC3 IQ SONET, SMLR
PIC 2	REV 01	750-013167	CM3824	4x CHDS3 IQ
PIC 3	REV 01	750-010240	CB5366	1x G/E SFP, 1000 BASE
Board B	REV 01	710-011390	CJ9103	M120 FPC Mezz Board
FEB 3	REV 04	710-011663	CP6673	M120 FEB
FEB 4	REV 04	710-011663	CJ9368	M120 FEB
FEB 5	REV 04	710-011663	CJ9386	M120 FEB
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Top Fan Tray
Fan Tray 3				Rear Bottom Fan Tray

## show chassis hardware detail (M120 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN000054AC    M120
Midplane      REV 01   710-013667   RB4170         M120 Midplane
FPM Board     REV 02   710-011407   CJ9186         M120 FPM Board
FPM Display   REV 02   710-011405   CJ9173         M120 FPM Display
FPM CIP       REV 02   710-011410   CJ9221         M120 FPM CIP
PEM 0         Rev 05   740-011936   RM28320        AC Power Entry Module
PEM 1         Rev 05   740-011936   RM28321        AC Power Entry Module
Routing Engine 0 REV 03   740-014080   1000642883     RE-A-1000
  ad0         248 MB  SILICONSYSTEMS INC 256M 126CT505S0763SC00110 Compact Flash
  ad2         38154 MB HTE541040G9SA00    MPBBTOX2HS2E3M Hard Disk
CB 0          REV 03   710-011403   CM8346         M120 Control Board
CB 1          REV 06   710-011403   CP6728         M120 Control Board
FPC 1         REV 02   710-015908   CP6925         M120 CFPC 10GE
  PIC 0       BUILTIN BUILTIN        1x 10GE(LAN/WAN) XFP
    Xcvr 0    REV 01   740-014279   62E204N00007   XFP-10G-LR
FPC 3         REV 03   710-011393   CJ9234         M120 FPC Type 2
  PIC 0       REV 16   750-008155   NB5229         2x G/E IQ, 1000 BASE
    Xcvr 0    REV 01   740-011613   P9F15JB        SFP-SX
    Xcvr 1    REV 01   740-007326   P4Q0R9G        SFP-SX
  PIC 1       REV 09   750-007745   CG4360         4x OC-3 SONET, SMIR
  PIC 2       REV 16   750-008155   ND7787         2x G/E IQ, 1000 BASE
    Xcvr 0    REV 01   740-011613   P9F12AS        SFP-SX
    Xcvr 1    REV 01   740-011613   P9F1ALU        SFP-SX
  PIC 3       REV 07   750-011800   JW1284         8x 1GE(LAN), IQ2
    Xcvr 0    REV 01   740-011613   P9F1AM6        SFP-SX
    Xcvr 6    REV 01   740-011613   P9F16NN        SFP-SX
    Xcvr 7    REV 01   740-011782   P8C29Y7        SFP-SX
  Board B     REV 02   710-011395   CN3754         M120 FPC Mezz
FPC 4         REV 02   710-011398   CP6741         M120 FPC Type 3
  PIC 0       REV 16   750-007141   NB2855         10x 1GE(LAN), 1000 BASE

    Xcvr 0    REV 01   740-011782   P922A1F        SFP-SX
    Xcvr 1    REV 01   740-011782   P922A16        SFP-SX
    Xcvr 2    REV 01   740-011782   P922A0U        SFP-SX
    Xcvr 3    REV 01   740-011782   P9229UZ        SFP-SX
    Xcvr 4    REV 01   740-009029   P11JXWP        SFP-LX
    Xcvr 6    REV 01   740-011613   P9F1ALW        SFP-SX
FPC 5         REV 01   710-011388   CJ9088         M120 FPC Type 1
  PIC 0       *** Hardware Not Supported ***
  PIC 1       REV 05   750-012052   NB0410         1x CHOC3 IQ SONET, SMLR

    PIC 2     REV 01   750-013167   CM3824         4x CHDS3 IQ
    PIC 3     REV 01   750-010240   CB5366         1x G/E SFP, 1000 BASE
  Board B     REV 01   710-011390   CJ9103         M120 FPC Mezz Board
FEB 3         REV 04   710-011663   CP6673         M120 FEB
FEB 4         REV 04   710-011663   CJ9368         M120 FEB
FEB 5         REV 04   710-011663   CJ9386         M120 FEB
Fan Tray 0    Front Top Fan Tray
Fan Tray 1    Front Bottom Fan Tray
Fan Tray 2    Rear Top Fan Tray
Fan Tray 3    Rear Bottom Fan Tray

```

## show chassis hardware models (M120 Router)

```

user@host> show chassis hardware models

```

## Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-013667		
FPM CIP	REV 02	710-011410		CRAFT-M120-S
PEM 0	Rev 05	740-011936		PWR-M120-AC-S
PEM 1	Rev 05	740-011936		PWR-M120-AC-S
Routing Engine 0	REV 03	740-014080		RE-A-1000-2048-S
CB 0	REV 03	710-011403		CB-M120-S
CB 1	REV 06	710-011403		CB-M120-S
FPC 1	REV 02	710-015908		M120-cFPC-1XGE-XFP
FPC 3				
PIC 0	REV 16	750-008155		PB-2GE-SFP-QPP
PIC 1	REV 09	750-007745		PC-40C3-SON-SMIR
PIC 2	REV 16	750-008155		PB-2GE-SFP-QPP
PIC 3	REV 07	750-011800		PB-8GE-TYPE2-SFP-IQ2
FPC 4				
PIC 0	REV 16	750-007141		PC-10GE-SFP
FPC 5				
PIC 1	REV 05	750-012052		PB-1CHOC3-SMIR-QPP
PIC 2	REV 01	750-013167		PE-4CHDS3-QPP
PIC 3	REV 01	750-010240		PB-1GE-SFP
Fan Tray 0				FFANTRAY-M120-S
Fan Tray 1				FFANTRAY-M120-S
Fan Tray 2				RFANTRAY-M120-S
Fan Tray 3				RFANTRAY-M120-S

## show chassis hardware (M160 Router)

user@host&gt; show chassis hardware

Item	Version	Part number	Serial number	Description
Chassis			101	M160
Midplane	REV 02	710-001245	S/N AB4107	
FPM CMB	REV 01	710-001642	S/N AA2911	
FPM Display	REV 01	710-001647	S/N AA2999	
CIP	REV 02	710-001593	S/N AA9563	
PEM 0	Rev 01	740-001243	S/N KJ35769	DC
PEM 1	Rev 01	740-001243	S/N KJ35765	DC
PCG 0	REV 01	710-001568	S/N AA9794	
PCG 1	REV 01	710-001568	S/N AA9804	
Host 1			da000004f8d57001	teknor
MCS 1	REV 03	710-001226	S/N AA9777	
SFM 0 SPP	REV 04	710-001228	S/N AA2975	
SFM 0 SPR	REV 02	710-001224	S/N AA9838	Internet Processor I
SFM 1 SPP	REV 04	710-001228	S/N AA2860	
SFM 1 SPR	REV 01	710-001224	S/N AB0139	Internet Processor I
FPC 0	REV 03	710-001255	S/N AA9806	FPC Type 1
CPU	REV 02	710-001217	S/N AA9590	
PIC 1	REV 05	750-000616	S/N AA1527	1x OC-12 ATM, MM
PIC 2	REV 05	750-000616	S/N AA1535	1x OC-12 ATM, MM
PIC 3	REV 01	750-000616	S/N AA1519	1x OC-12 ATM, MM
FPC 1	REV 02	710-001611	S/N AA9523	FPC Type 2
CPU	REV 02	710-001217	S/N AA9571	
PIC 0	REV 03	750-001900	S/N AA9626	1x STM-16 SDH, SMIR
PIC 1	REV 01	710-002381	S/N AD3633	2x G/E, 1000 BASE-SX
FPC 2				FPC Type OC192
CPU	REV 03	710-001217	S/N AB3329	
PIC 0	REV 01			1x OC-192 SM SR-2
Fan Tray 0				Rear Bottom Blower
Fan Tray 1				Rear Top Blower
Fan Tray 2				Front Top Blower
Fan Tray 3				Front Fan Tray

## show chassis hardware models (M160 Router)

```

user@host> show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 03	710-009120		CHAS-BP-M320-S
FPM Display	REV 02	710-009351		CRAFT-M320-S
CIP	REV 03	710-005926		CIP-M320-S
PEM 2	Rev X4	740-009148		PWR-M-DC-S
PEM 3	Rev X4	740-009148		PWR-M-DC-S
Routing Engine 0	REV 02	740-008883		RE-1600-2048-S
Routing Engine 1	REV 02	740-008883		RE-1600-2048-S
FPC 0	REV 02	710-010419		M320-FPC1
PIC 0	REV 01	750-001323		P-TUNNEL
PIC 1	REV 02	750-002987		PE-10C12-SON-SMIR
PIC 2	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 04	750-001896		PB-10C12-SON-SMIR
FPC 1	REV 02	710-010419		M320-FPC1
PIC 0	REV 04	750-001894		PB-1GE-SX
PIC 1	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 03	750-001894		PB-1GE-SX
FPC 2	REV 02	710-010419		M320-FPC1
PIC 0	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
FPC 3				
PIC 0	REV 03	750-001895		PB-10C12-SON-MM
PIC 1	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 04	750-003141		PB-1GE-SX-B
FPC 4	REV 02	710-010419		M320-FPC1
FPC 5	REV 02	710-010419		M320-FPC1
FPC 6	REV 02	710-010419		M320-FPC1
FPC 7				
PIC 0	REV 15	750-001901		PB-40C12-SON-SMIR
PIC 1	REV 06	750-001900		PB-10C48-SON-SMSR
PIC 2	REV 07	750-001900		PB-10C48-SON-SMSR
PIC 3	REV 05	750-003737		PB-4GE-SX
SIB 0	REV 03	710-009184		SIB-M-S
SIB 1	REV 03	710-009184		SIB-M-S
SIB 2	REV 03	710-009184		SIB-M-S
SIB 3	REV 03	710-009184		SIB-M-S
Fan Tray 0				FFANTRAY-M320-S
Fan Tray 1				FFANTRAY-M320-S
Fan Tray 2				RFANTRAY-M320-S

## show chassis hardware detail (M160 Router)

```

user@host> show chassis hardware detail
Hardware inventory:

```

Item	Version	Part number	Serial number	Description
Chassis			101	M160
Midplane	REV 02	710-001245	S/N AB4107	
FPM CMB	REV 01	710-001642	S/N AA2911	
FPM Display	REV 01	710-001647	S/N AA2999	
CIP	REV 02	710-001593	S/N AA9563	
PEM 0	Rev 01	740-001243	S/N KJ35769	DC

PEM 1	Rev 01	740-001243	S/N KJ35765	DC
PCG 0	REV 01	710-001568	S/N AA9794	
PCG 1	REV 01	710-001568	S/N AA9804	
Host 1			da000004f8d57001	teknor
MCS 1	REV 03	710-001226	S/N AA9777	
SFM 0 SPP	REV 04	710-001228	S/N AA2975	
SFM 0 SPR	REV 02	710-001224	S/N AA9838	Internet Processor I
SSRAM bank 0	REV 01	710-000077	S/N 306456	1 MB
SSRAM bank 1	REV 01	710-000077	S/N 306474	1 MB
SSRAM bank 2	REV 01	710-000077	S/N 306388	1 MB
SSRAM bank 3	REV 01	710-000077	S/N 306392	1 MB
SFM 1 SPP	REV 04	710-001228	S/N AA2860	
SFM 1 SPR	REV 01	710-001224	S/N AB0139	Internet Processor I
SSRAM bank 0	REV 01	710-000077	S/N 302917	1 MB
SSRAM bank 1	REV 01	710-000077	S/N 302662	1 MB
SSRAM bank 2	REV 01	710-000077	S/N 302593	1 MB
SSRAM bank 3	REV 01	710-000077	S/N 100160	1 MB
FPC 0	REV 03	710-001255	S/N AA9806	FPC Type 1
CPU	REV 02	710-001217	S/N AA9590	
SSRAM	REV 01	710-000077	S/N 302836	1 MB
SDRAM 0	REV 01	710-001196	S00141	32 MB
SDRAM 1	REV 01	710-001196	S0010;	32 MB
SSRAM	REV 01	710-000077	S/N 302633	1 MB
SDRAM 0	REV 01	710-001196	S00143	32 MB
SDRAM 1	REV 01	710-001196	S00115	32 MB
SSRAM	REV 01	710-000077	S/N 302952	1 MB
SDRAM 0	REV 01	710-001196	S00135	32 MB
SDRAM 1	REV 01	710-001196	S001=3	32 MB
SSRAM	REV 01	710-000077	S/N 302892	1 MB
SDRAM 0	REV 01	710-001196	S000?6	32 MB
SDRAM 1	REV 01	710-001196	S001=5	32 MB
PIC 1	REV 05	750-000616	S/N AA1527	1x OC-12 ATM, MM
PIC 2	REV 05	750-000616	S/N AA1535	1x OC-12 ATM, MM
PIC 3	REV 01	750-000616	S/N AA1519	1x OC-12 ATM, MM
FPC 1	REV 02	710-001611	S/N AA9523	FPC Type 2
CPU	REV 02	710-001217	S/N AA9571	
SSRAM	REV 01	710-000077	S/N 306340	1 MB
SDRAM 0	REV 01	710-001196	S00012	32 MB
SDRAM 1	REV 01	710-001196	S0001?	32 MB
SSRAM	REV 01	710-000077	S/N 306454	1 MB
SDRAM 0	REV 01	710-001196	S00028	32 MB
SDRAM 1	REV 01	710-001196	S0002?	32 MB
SSRAM	REV 01	710-000077	S/N 306492	1 MB
SDRAM 0	REV 01	710-001196	S00015	32 MB
SDRAM 1	REV 01	710-001196	S00031	32 MB
SSRAM	REV 01	710-000077	S/N 306363	1 MB
SDRAM 0	REV 01	710-001196	S00013	32 MB
SDRAM 1	REV 01	710-001196	S00032	32 MB
PIC 0	REV 03	750-001900	S/N AA9626	1x STM-16 SDH, SMIR
PIC 1	REV 01	710-002381	S/N AD3633	2x G/E, 1000 BASE-SX
FPC 2				FPC Type OC192
... SSRAM	REV 01	710-000077	S/N 306466	1 MB

### show chassis hardware (M320 Router)

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			67245	M320
Midplane	REV 05	710-009120	RB1202	M320 Midplane
FPM GBUS	REV 04	710-005928	HZ5697	M320 Board

FPM Display	REV 05	710-009351	HR1464	M320 FPM Display
CIP	REV 04	710-005926	HT8672	M320 CIP
PEM 0	Rev 05	740-009148	QK34208	DC Power Entry Module
PEM 1	Rev 05	740-009148	QK34262	DC Power Entry Module
PEM 2	Rev 05	740-009148	QF10449	DC Power Entry Module
PEM 3	Rev 05	740-009148	QJ18257	DC Power Entry Module
Routing Engine 0	REV 06	740-008883	P11123901185	RE-4.0
CB 0	REV 07	710-009115	JB2382	M320 Control Board
FPC 0	REV 02	710-005017	CD9926	M320 FPC Type 2
CPU	REV 01	710-011659	CJ6940	M320 PCA SCPU
PIC 0	REV 07	750-001900	AT1594	1x OC-48 SONET, SMSR
PIC 1	REV 03	750-001850	HS2746	1x Tunnel
PIC 2	REV 05	750-010618	JE7117	4x G/E SFP, 1000 BASE
PIC 3	REV 06	750-001900	HE6083	1x OC-48 SONET, SMSR
FPC 2	REV 02	710-005017	CH0319	M320 FPC Type 1
CPU	REV 01	710-011659	CJ6942	M320 PCA SCPU
PIC 0	REV 05	750-003034	BD8705	4x OC-3 SONET, SMIR
FPC 5	REV 02	710-005017	CD9938	M320 FPC Type 2
CPU				
FPC 7	REV 02	710-005017	CD9934	M320 FPC Type 2
CPU				
SIB 0	REV 09	710-009184	JA6540	M320 SIB
SIB 1	REV 09	710-009184	HV9511	M320 SIB
SIB 2	REV 09	710-009184	HW2057	M320 SIB
SIB 3	REV 09	710-009184	JA6687	M320 SIB
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

### show chassis hardware models (M320 Router)

```
user@host> show chassis hardware models
```

Hardware inventory:				
Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 03	710-009120		CHAS-BP-M320-S
FPM Display	REV 02	710-009351		CRAFT-M320-S
CIP	REV 03	710-005926		CIP-M320-S
PEM 2	Rev X4	740-009148		PWR-M-DC-S
PEM 3	Rev X4	740-009148		PWR-M-DC-S
Routing Engine 0	REV 02	740-008883		RE-1600-2048-S
Routing Engine 1	REV 02	740-008883		RE-1600-2048-S
FPC 0	REV 02	710-010419		M320-FPC1
PIC 0	REV 01	750-001323		P-TUNNEL
PIC 1	REV 02	750-002987		PE-10C12-SON-SMIR
PIC 2	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 04	750-001896		PB-10C12-SON-SMIR
FPC 1	REV 02	710-010419		M320-FPC1
PIC 0	REV 04	750-001894		PB-1GE-SX
PIC 1	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 03	750-001894		PB-1GE-SX
FPC 2	REV 02	710-010419		M320-FPC1
PIC 0	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
FPC 3				
PIC 0	REV 03	750-001895		PB-10C12-SON-MM
PIC 1	REV 04	750-001894		PB-1GE-SX

PIC 3	REV 04	750-003141	PB-1GE-SX-B
FPC 4	REV 02	710-010419	M320-FPC1
FPC 5	REV 02	710-010419	M320-FPC1
FPC 6	REV 02	710-010419	M320-FPC1
FPC 7			
PIC 0	REV 15	750-001901	PB-40C12-SON-SMIR
PIC 1	REV 06	750-001900	PB-10C48-SON-SMSR
PIC 2	REV 07	750-001900	PB-10C48-SON-SMSR
PIC 3	REV 05	750-003737	PB-4GE-SX
SIB 0	REV 03	710-009184	SIB-M-S
SIB 1	REV 03	710-009184	SIB-M-S
SIB 2	REV 03	710-009184	SIB-M-S
SIB 3	REV 03	710-009184	SIB-M-S
Fan Tray 0			FFANTRAY-M320-S
Fan Tray 1			FFANTRAY-M320-S
Fan Tray 2			RFANTRAY-M320-S

### show chassis hardware (MX5 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              E1368      MX5-T
Midplane             REV 01     711-038215   YF5288         MX5-T
PEM 0                Rev 04     740-028288   VA01215        AC Power Entry Module
PEM 1                Rev 04     740-028288   VA01218        AC Power Entry Module
Routing Engine       BUILTIN    BUILTIN      BUILTIN        Routing Engine
TFEB 0               BUILTIN    BUILTIN      BUILTIN        Forwarding Engine
Processor
  QXM 0              REV 05     711-028408   ZA9136         MPC QXM
FPC 0                BUILTIN    BUILTIN      BUILTIN        MPC BUILTIN
  MIC 0              BUILTIN    BUILTIN      BUILTIN        4x 10GE XFP
    PIC 0            BUILTIN    BUILTIN      BUILTIN        4x 10GE XFP
FPC 1                BUILTIN    BUILTIN      BUILTIN        MPC BUILTIN
  MIC 0              REV 24     750-028392   YX9820         3D 20x 1GE(LAN) SFP
    PIC 0            BUILTIN    BUILTIN      BUILTIN        10x 1GE(LAN) SFP
      Xcvr 0          REV 01     740-031851   AM1045SUAQ3    SFP-SX
      Xcvr 1          REV 01     740-031851   AM1045SUAPA    SFP-SX
      Xcvr 2          REV 01     740-031851   AM1045SUAN7    SFP-SX
      Xcvr 3          REV 01     740-031851   AM1045SU91Q    SFP-SX
      Xcvr 4          REV 01     740-031851   AM1045SUDDR    SFP-SX
      Xcvr 9          REV 01     740-011613   AM0848SB6A1    SFP-SX
    PIC 1            BUILTIN    BUILTIN      BUILTIN        10x 1GE(LAN) SFP
      Xcvr 0          REV 01     740-031851   AM1045SUANO    SFP-SX
      Xcvr 1          REV 01     740-011613   AS0812S0719    SFP-SX
      Xcvr 2          REV 01     740-011613   AM0821SA121    SFP-SX
      Xcvr 3          REV 01     740-011613   PF21K21        SFP-SX
      Xcvr 4          REV 01     740-011613   AM0848SB69Z    SFP-SX
      Xcvr 5          REV 01     740-011782   P9POXV3        SFP-SX
      Xcvr 6          REV 01     740-011613   AM0812S8WJN    SFP-SX
      Xcvr 7          REV 01     740-011613   PAM3G9Q        SFP-SX
      Xcvr 8          REV 01     740-011613   AM0848SB4A6    SFP-SX
      Xcvr 9          REV 01     740-011782   P9MOU37        SFP-SX
    MIC 1            REV 20     750-028380   ZG2657         3D 2x 10GE XFP
    PIC 2            BUILTIN    BUILTIN      BUILTIN        1x 10GE XFP
    PIC 3            BUILTIN    BUILTIN      BUILTIN        1x 10GE XFP
Fan Tray

```



**show chassis hardware (MX10 Router)**

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               E1372         MX10-T
Midplane          REV 01   711-038211   YF5285        MX10-T
PEM 0             Rev 04   740-028288   VB01678       AC Power Entry Module
Routing Engine    BUILTIN BUILTIN      BUILTIN       Routing Engine
TFEB 0            BUILTIN BUILTIN      BUILTIN       Forwarding Engine
Processor
  QXM 0           REV 05   711-028408   ZA9053        MPC QXM
  FPC 0            BUILTIN BUILTIN      BUILTIN       MPC BUILTIN
    MIC 0          BUILTIN BUILTIN      BUILTIN       4x 10GE XFP
      PIC 0        BUILTIN BUILTIN      BUILTIN       4x 10GE XFP
  FPC 1            BUILTIN BUILTIN      BUILTIN       MPC BUILTIN
    MIC 0           REV 24   750-028392   YX9436        3D 20x 1GE(LAN) SFP
      PIC 0        BUILTIN BUILTIN      BUILTIN       10x 1GE(LAN) SFP
        Xcvr 0     REV 01   740-031851   AM1107SUFQW   SFP-SX
          PIC 1    BUILTIN BUILTIN      BUILTIN       10x 1GE(LAN) SFP
Fan Tray

```

**show chassis hardware (MX40 Router)**

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               E1367         MX40-T
Midplane          REV 01   711-038211   YF5284        MX40-T
PEM 0             Rev 04   740-028288   VB01680       AC Power Entry Module
PEM 1             Rev 04   740-028288   VB01700       AC Power Entry Module
Routing Engine    BUILTIN BUILTIN      BUILTIN       Routing Engine
TFEB 0            BUILTIN BUILTIN      BUILTIN       Forwarding Engine
Processor
  QXM 0           REV 05   711-028408   ZA9048        MPC QXM
  FPC 0            BUILTIN BUILTIN      BUILTIN       MPC BUILTIN
    MIC 0          BUILTIN BUILTIN      BUILTIN       4x 10GE XFP
      PIC 0        BUILTIN BUILTIN      BUILTIN       4x 10GE XFP
        Xcvr 0     REV 01   740-014279   M7067UUPP     XFP-10G-LR
          Xcvr 1    NON-JNPR K9J02UN       XFP-10G-LR
  FPC 1            BUILTIN BUILTIN      BUILTIN       MPC BUILTIN
    MIC 0           REV 24   750-028392   YX3504        3D 20x 1GE(LAN) SFP
      PIC 0        BUILTIN BUILTIN      BUILTIN       10x 1GE(LAN) SFP
        Xcvr 0     REV 01   740-011613   AM0812S8WTE   SFP-SX
          Xcvr 1    REV 01   740-011613   PFA6KV2       SFP-SX
            Xcvr 2  REV 01   740-031851   AM1045SUDDM   SFP-SX
              Xcvr 3 REV 01   740-011613   PD63C7M       SFP-SX
                Xcvr 4 REV 01   740-011613   PD63DJY       SFP-SX
                  Xcvr 5 REV 02   740-011613   AA0950STLL9   SFP-SX
                    Xcvr 6 REV 01   740-011782   PAR1YHC       SFP-SX
                      Xcvr 7 REV 01   740-011782   P9P0XXL       SFP-SX
                        Xcvr 8 REV 01   740-011613   PD63D95       SFP-SX
                          Xcvr 9 REV 01   740-031851   AM1045SU9B8   SFP-SX
  PIC 1            BUILTIN BUILTIN      BUILTIN       10x 1GE(LAN) SFP
    Xcvr 0          REV 01   740-011613   PF21L3Z       SFP-SX
      Xcvr 1         REV 01   740-031851   AM1045SU7M9   SFP-SX
        Xcvr 2        REV 01   740-031851   AM1045SUAPT   SFP-SX
          Xcvr 3        REV 01   740-011613   PFF2BZH       SFP-SX
            Xcvr 4        REV 01   740-031851   AM1045SUDDN   SFP-SX
              Xcvr 5        REV 01   740-031851   AM1039S00ZR   SFP-SX

```

Xcvr 6	REV 01	740-031851	AM1045SUD6Y	SFP-SX
Xcvr 8	REV 01	740-011613	PFM1QBS	SFP-SX
Xcvr 9	REV 01	740-011613	PFF2E25	SFP-SX
MIC 1	REV 01	750-021130	KG4391	3D 2x 10GE XFP
PIC 2		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-011571	C645XJ04G	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0		NON-JNPR	CA49BK0AE	XFP-10G-SR
Fan Tray				Fan Tray

#### show chassis hardware (Fixed MX80 Router)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX80-48T
Midplane	REV 01	711-031603	KF9250	MX80-48T
Routing Engine		BUILTIN	BUILTIN	Routing Engine
FEB 0		BUILTIN	BUILTIN	Forwarding Engine Board
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
Xcvr 0		NON-JNPR	M6439D41	XFP-10G-LR
Xcvr 1	REV 01	740-014279	6XE931N00202	XFP-10G-LR
Xcvr 2	REV 01	740-014289	C715XU05F	XFP-10G-SR
Xcvr 3	REV 01	740-014289	C650XU0EP	XFP-10G-SR
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 01	711-029399	JR6981	12x 1GE(LAN) RJ45
PIC 0		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 1		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
MIC 1	REV 01	BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 2		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 3		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
Fan Tray				Fan Tray

#### show chassis hardware (Modular MX80 Router)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX80
Midplane	REV 02	711-031594	JR7084	MX80
PEM 0	Rev 01	740-028288	000018	AC Power Entry Module
Routing Engine		BUILTIN	BUILTIN	Routing Engine
FEB 0		BUILTIN	BUILTIN	Forwarding Engine Board
QXM 0	REV 05	711-028408	JR7041	MPC QXM
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 02	750-028380	JR6598	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M86365	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M71094	XFP-10G-SR
MIC 1	REV 02	750-028380	JG8548	3D 2x 10GE XFP
PIC 2		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	T08L86302	XFP-10G-SR

PIC 3		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	C810XU0BA	XFP-10G-SR
Fan Tray				Fan Tray

### show chassis hardware (MX150)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DD2316AF0078  MX150
Midplane      REV 04   650-066113  DD2316AF0078  MX150
Power Supply 0
Routing Engine 0
CB 0          RE-VMX
CB 1          VMX SCB
FPC 0         VMX SCB
              Virtual FPC
CPU           Rev. 1.0 RIOT      BUILTIN
MIC 0
PIC 0
Xcvr 10      REV 02   740-013111  A331846       SFP-T
Xcvr 11      REV 02   740-013111  C248517       SFP-T
Fan Tray 0   fan-ctrl-0 0, Front to
Back Airflow - AFO
Fan Tray 1   fan-ctrl-0 1, Front to
Back Airflow - AFO
```

### show chassis hardware models (MX150)

```
user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 04   650-066113  DD2316AF0163  MX150
Fan Tray 0   Assy,Sub,Fan
Tray,AFO,Opus-AFO
Fan Tray 1   Assy,Sub,Fan
Tray,AFO,Opus-AFO
```

### show chassis hardware (MX104 Router)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               G3503          MX104
Midplane      REV 28   750-044219  CAAX5741      MX104
PEM 0         REV 03   740-045933  1H072500016  AC Power Entry Module
PEM 1         REV 03   740-045932  1H073050017  DC Power Entry Module
Routing Engine 0 REV 20   750-044228  CAAY7935      RE-MX-104
Routing Engine 1 REV 13   750-044228  CAAM6380      RE-MX-104
AFEB 0        BUILTIN  BUILTIN       Forwarding Engine
Processor
FPC 0         BUILTIN  BUILTIN       MPC BUILTIN
FPC 1         BUILTIN  BUILTIN       MPC BUILTIN
MIC 0         REV 15   750-036132  CAAF7948      2xOC12/8xOC3 CC-CE
PIC 0
Xcvr 0      REV 01   740-011615  PCQ0U2J       SFP-IR
Xcvr 1      REV 01   740-016068  PJL7A6G       SFP-SR
Xcvr 2      REV 01   740-016068  PJL7A5J       SFP-SR
Xcvr 3      REV 01   740-016065  PJN5HPZ       SFP-SR
Xcvr 4      REV 01   740-029122  PKB38TL       SFP-LR
Xcvr 5      REV 01   740-011787  P6A107G       SFP-LR
```

Xcvr 6	REV 01	740-029122	PKB38TR	SFP-LR
Xcvr 7	REV 01	740-011787	PBKONK3	SFP-LR
MIC 1				
FPC 2		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B10F00465	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10F00461	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B10G01545	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B10G01385	SFP+-10G-SR
Fan Tray 0	REV 02	711-049570	CAAX6538	Fan Tray

#### show chassis hardware detail (MX104 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               G3503         MX104
Midplane      REV 28   750-044219   CAAX5741      MX104
PEM 0         REV 03   740-045933   1H072500016   AC Power Entry Module
PEM 1         REV 03   740-045932   1H073050017   DC Power Entry Module
Routing Engine 0 REV 20   750-044228   CAAY7935      RE-MX-104
  da0 7836 MB ATP IG eUSB SSD Nand Flash 0
  usb0 (addr 1) EHCI root hub 0 Freescale      uhub0
  usb0 (addr 2) USB2513Bi 9491 SMSC            uhub1
  usb0 (addr 3) ATP IG eUSB SSD 44801 ATP Electronics umass0
Routing Engine 1 REV 13   750-044228   CAAM6380      RE-MX-104
  da0 7836 MB ATP IG eUSB SSD Nand Flash 0
AFEB 0                               BUILTIN       BUILTIN       Forwarding Engine
Processor
FPC 0                               BUILTIN       BUILTIN       MPC BUILTIN
FPC 1                               BUILTIN       BUILTIN       MPC BUILTIN
MIC 0         REV 15   750-036132   CAAF7948      2xOC12/8xOC3 CC-CE
PIC 0                               BUILTIN       BUILTIN       2xOC12/8xOC3 CC-CE
  Xcvr 0      REV 01   740-011615   PCQOU2J      SFP-IR
  Xcvr 1      REV 01   740-016068   PjL7A6G      SFP-SR
  Xcvr 2      REV 01   740-016068   PjL7A5J      SFP-SR
  Xcvr 3      REV 01   740-016065   PjN5HPZ      SFP-SR
  Xcvr 4      REV 01   740-029122   PKB38TL      SFP-LR
  Xcvr 5      REV 01   740-011787   P6A107G      SFP-LR
  Xcvr 6      REV 01   740-029122   PKB38TR      SFP-LR
  Xcvr 7      REV 01   740-011787   PBKONK3      SFP-LR
MIC 1
FPC 2                               BUILTIN       BUILTIN       MPC BUILTIN
MIC 0                               BUILTIN       BUILTIN       4x 10GE(LAN) SFP+
PIC 0                               BUILTIN       BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-031980   B10F00465    SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   B10F00461    SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   B10G01545    SFP+-10G-SR
  Xcvr 3      REV 01   740-031980   B10G01385    SFP+-10G-SR
Fan Tray 0    REV 02   711-049570   CAAX6538     Fan Tray

```

#### show chassis hardware detail (MX480 Packet Transport Router with details of virtual disk size)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN122FFD9AFB  MX480
Midplane      REV 05   710-017414   ACRB8882      MX480 Midplane
FPM Board     REV 02   710-017254   CADF7623      Front Panel Display

```

PEM 0	Rev 07	740-017343	QCS1128A0TY	DC Power Entry Module
PEM 1	Rev 07	740-017343	QCS1128A0JM	DC Power Entry Module
Routing Engine 0	REV 07	750-054758	CADG2028	RE-S-2X00x6
vtbd0	15361 MB			Virtio Block Disk
vtbd1	15360 MB			Virtio Block Disk
ada0	511 MB	QEMU HARDDISK	QM00002	Emulated IDE Disk
usb0 (addr 1)		UHCI root HUB 0	Intel	uhub0
Routing Engine 1	REV 00	750-054758		RE-S-2X00x6
vtbd0	15361 MB			Virtio Block Disk
vtbd1	15360 MB			Virtio Block Disk
ada0	511 MB	QEMU HARDDISK	QM00002	Emulated IDE Disk
usb0 (addr 1)		UHCI root HUB 0	Intel	uhub0
CB 0	REV 01	750-055976	CACS1837	Enhanced MX SCB 2
CB 1	REV 01	750-055976	CADD9894	Enhanced MX SCB 2
Xcvr 1	REV 01	740-031980	AP41KCL	SFP+-10G-SR
FPC 0	REV 09	750-049040	CACX1759	LOAD MPC Type 2
CPU	REV 10	711-035209	CACP9324	HMPC PMB 2G
FPC 4	REV 28	750-037355	CACY8384	MPC4E 3D 2CGE+8XGE
CPU	REV 10	711-035209	CACX0428	HMPC PMB 2G
Fan Tray				Enhanced Left Fan Tray

### show chassis hardware extensive (MX104 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
Jedec Code:         0x7fb0                EEPROM Version: 0x02
                                      S/N:          G3503
Assembly ID:         0x0560                Assembly Version: 00.00
Date:                00-00-0000            Assembly Flags:  0x00
ID: MX104
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 60 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 47 33 35 30 33 00 00 00 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane
Jedec Code:         0x7fb0                EEPROM Version: 0x02
P/N:                750-044219            S/N:          CAAX5741
Assembly ID:         0x0560                Assembly Version: 01.28
Date:                03-27-2013            Assembly Flags: 0x00
Version:            REV 28                CLEI Code:    PROTOXCLEI
ID: MX104                FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 08 00 b0 a8 6e a7 f8 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 60 01 1c 52 45 56 20 32 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 31 39 00 00
Address 0x20: 53 2f 4e 20 43 41 41 58 35 37 34 31 00 1b 03 07
Address 0x30: dd ff ff ff ad 01 08 00 b0 a8 6e a7 f8 00 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 47 33 35 30 33 00 00 00 00 00 00 00

```

```

PEM 0          REV 03  740-045933  1H072500016  AC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-045933      S/N:          1H072500016
Assembly ID:   0x0475          Assembly Version: 00.03
Date:         12-14-2012      Assembly Flags: 0x00
Version:      REV 03          CLEI Code:    IPUPAJ9KAA
ID: AC Power Entry Module     FRU Model Number: PWR-AMX1100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 75 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 33 00 00
Address 0x20: 31 48 30 37 32 35 30 30 30 31 36 00 00 0e 0c 07
Address 0x30: dc 30 43 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 02 02 00 ff 01 49 50 55 50 41 4a 39 4b 41 41 50
Address 0x50: 57 52 2d 41 4d 58 31 31 30 30 2d 41 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 70 ff ff ff ff ff ff ff ff ff ff ff ff

PEM 1          REV 03  740-045932  1H073050017  DC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-045932      S/N:          1H073050017
Assembly ID:   0x0476          Assembly Version: 00.03
Date:         01-30-2013      Assembly Flags: 0x00
Version:      REV 03          CLEI Code:    IPUPAJ8KAA
ID: DC Power Entry Module     FRU Model Number: PWR-AMX1100-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 76 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 32 00 00
Address 0x20: 31 48 30 37 33 30 35 30 30 31 37 00 00 1e 01 07
Address 0x30: dd 30 44 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 02 02 00 ff 01 49 50 55 50 41 4a 38 4b 41 41 50
Address 0x50: 57 52 2d 41 4d 58 31 31 30 30 2d 44 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 72 ff ff ff ff ff ff ff ff ff ff ff ff

Routing Engine 0 REV 20  750-044228  CAAY7935  RE-MX-104
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          750-044228      S/N:          CAAY7935
Assembly ID:   0x0b81          Assembly Version: 01.20
Date:         03-18-2013      Assembly Flags: 0x00
Version:      REV 20          CLEI Code:    PROTOXCLEI
ID: RE-MX-104          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 08 b0 a8 6e a6 fc 10 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 81 01 14 52 45 56 20 32 30 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 32 38 00 00
Address 0x20: 53 2f 4e 20 43 41 41 59 37 39 33 35 00 12 03 07
Address 0x30: dd ff ff ff ad 01 00 08 b0 a8 6e a6 fc 10 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
da0  7836 MB  ATP IG eUSB SSD  Nand Flash 0
usb0 (addr 1) EHCI root hub 0  Freescale  uhub0
usb0 (addr 2) USB2513Bi 9491  SMSC  uhub1
usb0 (addr 3) ATP IG eUSB SSD 44801 ATP Electronics  umass0
Routing Engine 1 REV 13  750-044228  CAAM6380  RE-MX-104
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          750-044228      S/N:          CAAM6380

```

```

Assembly ID: 0x0b81      Assembly Version: 01.13
Date:          09-17-2012  Assembly Flags: 0x00
Version:       REV 13      CLEI Code:      PROTOXCLEI
ID: RE-MX-104      FRU Model Number:  PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ad 01 00 08 64 87 88 27 08 18 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 81 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 32 38 00 00
Address 0x20: 53 2f 4e 20 43 41 41 4d 36 33 38 30 00 11 09 07
Address 0x30: dc ff ff ff ad 01 00 08 64 87 88 27 08 18 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
da0      7836 MB  ATP IG eUSB SSD      Nand Flash 0
AFEB 0      BUILTIN      BUILTIN      Forwarding Engine
Processor
FPC 0      BUILTIN      BUILTIN      MPC BUILTIN
FPC 1      BUILTIN      BUILTIN      MPC BUILTIN
MIC 0      REV 15      750-036132  CAAF7948      2x0C12/8x0C3 CC-CE
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        750-036132  S/N:        CAAF7948
Assembly ID: 0x0a1a      Assembly Version: 01.15
Date:       07-03-2012  Assembly Flags: 0x00
Version:    REV 15      CLEI Code:   IP9IAM2DAA
ID: 2x0C12/8x0C3 CC-CE  FRU Model Number: MIC-3D-80C3-20C12-ATM

Board Information Record:
Address 0x00: 12 01 05 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 1a 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 36 31 33 32 00 00
Address 0x20: 53 2f 4e 20 43 41 41 46 37 39 34 38 00 03 07 07
Address 0x30: dc ff ff ff 12 01 05 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 39 49 41 4d 32 44 41 41 4d
Address 0x50: 49 43 2d 33 44 2d 38 4f 43 33 2d 32 4f 43 31 32
Address 0x60: 2d 41 54 4d 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff e3 c0 02 a3 9c 00 00 00 00 0a 60 00 00
PIC 0      BUILTIN      BUILTIN      2x0C12/8x0C3 CC-CE
Xcvr 0      REV 01      740-011615  PCQ0U2J      SFP-IR
Xcvr 1      REV 01      740-016068  P3L7A6G      SFP-SR
Xcvr 2      REV 01      740-016068  P3L7A5J      SFP-SR
Xcvr 3      REV 01      740-016065  PJN5HPZ      SFP-SR
Xcvr 4      REV 01      740-029122  PKB38TL      SFP-LR
Xcvr 5      REV 01      740-011787  P6A107G      SFP-LR
Xcvr 6      REV 01      740-029122  PKB38TR      SFP-LR
Xcvr 7      REV 01      740-011787  PBKONK3      SFP-LR
MIC 1
FPC 2      BUILTIN      BUILTIN      MPC BUILTIN
MIC 0      BUILTIN      BUILTIN      4x 10GE(LAN) SFP+
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:        BUILTIN      S/N:        BUILTIN
Assembly ID: 0x0a60      Assembly Version: 00.00
Date:       00-00-0000  Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+

Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 60 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 4d 58 43 00
Address 0x20: 42 55 49 4c 54 49 4e 00 4d 58 43 00 00 00 00 00

```

```

Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 a5 04 7f b0 02 ff 0a 1a 01 0f
PIC 0          BUILTIN          BUILTIN          4x 10GE(LAN) SFP+
  Xcvr 0      REV 01      740-031980      B10F00465      SFP+-10G-SR
  Xcvr 1      REV 01      740-031980      B10F00461      SFP+-10G-SR
  Xcvr 2      REV 01      740-031980      B10G01545      SFP+-10G-SR
  Xcvr 3      REV 01      740-031980      B10G01385      SFP+-10G-SR
Fan Tray 0     REV 02     711-049570     CAAX6538      Fan Tray
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          711-049570      S/N:              CAAX6538
Assembly ID:   0x0b82          Assembly Version:  01.02
Date:          03-01-2013      Assembly Flags:    0x00
Version:       REV 02          CLEI Code:         PROTOXCLEI
ID: Fan Tray          FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 82 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 39 35 37 30 00 00
Address 0x20: 53 2f 4e 20 43 41 41 58 36 35 33 38 00 01 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff

```

### show chassis hardware extensive (PTX10008 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DE487          JNP10008 [PTX10008 -
PILOT BUILD V1.1]
Jedec Code:   0x7fb0          EEPROM Version:  0x02
S/N:          DE487
Assembly ID:  0x0566          Assembly Version: 01.27
Date:         08-08-2016      Assembly Flags:   0x00
CLEI Code:    CMMUM00ARA
ID: JNP10008      FRU Model Number: QFX10008-CHAS
Board Information Record:
Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 66 01 1b 00 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 00 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 44 45 34 38 37 00 00 00 00 00 00 00 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Midplane      REV 27      750-054097      ACPD4307      Midplane 8
Jedec Code:   0x7fb0          EEPROM Version:  0x02
P/N:          750-054097      S/N:              ACPD4307
Assembly ID:  0x0be3          Assembly Version: 01.27
Date:         08-08-2016      Assembly Flags:   0x00
Version:       REV 27          CLEI Code:        CMMUM00ARA
ID: QFX10008 Midplane      FRU Model Number: QFX10008-CHAS
Board Information Record:

```



```

Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e3 01 1b 52 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 33 30 37 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Routing Engine 0          BUILTIN          BUILTIN          RE-PTX-2X00x4
vtbd0 15360 MB          Virtio Block Disk
vtbd1 15360 MB          Virtio Block Disk
ada0 128 MB QEMU          QM00002          Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0          Intel          uhub0
usb1 (addr 0.2) product 0x0020 32          vendor 0x8087          uhub1
Routing Engine 1          BUILTIN          BUILTIN          RE-PTX-2X00x4
vtbd0 15360 MB          Virtio Block Disk
vtbd1 15360 MB          Virtio Block Disk
ada0 128 MB QEMU          QM00002          Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0          Intel          uhub0
usb1 (addr 0.2) product 0x0020 32          vendor 0x8087          uhub1
CB 0          REV 02          750-068820          ACNZ4440          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-068820          S/N: ACNZ4440
Assembly ID: 0x0b9d          Assembly Version: 01.02
Date: 06-13-2016          Assembly Flags: 0x00
Version: REV 02          CLEI Code: CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 84 c1 c1 54 10 be ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 34 34 34 30 00 0d 06 07
Address 0x30: e0 ff ff ff ad 01 00 10 84 c1 c1 54 10 be ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 02          750-068820          ACNZ8284          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-068820          S/N: ACNZ8284
Assembly ID: 0x0b9d          Assembly Version: 01.02
Date: 06-27-2016          Assembly Flags: 0x00
Version: REV 02          CLEI Code: CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 84 c1 c1 e5 b1 46 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 38 32 38 34 00 1b 06 07
Address 0x30: e0 ff ff ff ad 01 00 10 84 c1 c1 e5 b1 46 ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff ff
FPC 0          REV 36          750-051354          ACNP4679          LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0          EEPROM Version: 0x02

```

```

P/N:          750-051354      S/N:          ACNP4679
Assembly ID:  0x0be7         Assembly Version: 01.36
Date:         11-11-2016     Assembly Flags:  0x00
Version:      REV 36         CLEI Code:      CMUIAM9BAA
ID: ULC-36Q-12Q28          FRU Model Number:  QFX10000-36Q

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 34 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 36 37 39 00 0b 0b 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code:  0x7fb0        EEPROM Version:  0x02
P/N:         BUILTIN      S/N:           BUILTIN
Assembly ID: 0xf020        Assembly Version: 02.17
Date:        04-19-2012   Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 e0 3c fa 09 00 70 87
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 e0 3c fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0        EEPROM Version:  0x02
P/N:         BUILTIN      S/N:           BUILTIN
Assembly ID: 0xf050        Assembly Version: 02.17
Date:        04-19-2012   Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 1      REV 01      740-058734      1ECQ113834D      QSFP-100GBASE-SR4
Xcvr 5      REV 01      740-058734      1ECQ1137067      QSFP-100GBASE-SR4
Xcvr 6      REV 01      740-054053      QF3205SD         QSFP+-4X10G-SR
Xcvr 7      REV 01      740-058734      1ECQ11381MP      QSFP-100GBASE-SR4
Xcvr 11     REV 01      740-061405      1ACQ110507K      QSFP-100GBASE-SR4
Xcvr 13     REV 01      740-058734      1ECQ11390ZB      QSFP-100GBASE-SR4
Xcvr 17     REV 01      740-058734      1ECQ11381M1      QSFP-100GBASE-SR4
Xcvr 19     REV 01      740-058734      1ECQ11381JS      QSFP-100GBASE-SR4
Xcvr 23     REV 01      740-058734      1ACQ112000E      QSFP-100GBASE-SR4
Xcvr 25     REV 01      740-058734      1ECQ11381NT      QSFP-100GBASE-SR4
Xcvr 28     REV 01      740-054053      QG1502WV         QSFP+-4X10G-SR
Xcvr 29     REV 01      740-058734      1ACQ112000D      QSFP-100GBASE-SR4

```

```

Xcvr 33      REV 01  740-058734  1ACQ1134065      QSFP-100GBASE-SR4
Xcvr 34      REV 01  740-067442  XV20L4L           QSFP+-40G-SR4
FPC 1        REV 33  750-051354  ACNX8831          LC1102 - 12C / 36Q /
144X
Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         750-051354  S/N:          ACNX8831
Assembly ID: 0x0be7      Assembly Version: 01.33
Date:        06-03-2016  Assembly Flags: 0x00
Version:     REV 33      CLEI Code:     CMUIAM9BAA
ID: ULC-36Q-12Q28        FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 21 52 45 56 20 33 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 34 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 58 38 38 33 31 00 03 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fb ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         BUILTIN     S/N:          BUILTIN
Assembly ID: 0xf020      Assembly Version: 02.17
Date:        04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 20 3e fa 09 00 10 8a
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 20 3e fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         BUILTIN     S/N:          BUILTIN
Assembly ID: 0xf050      Assembly Version: 02.17
Date:        04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 5       NON-JNPR    37700171YY0084    QSFP-100GBASE-LR4
Xcvr 25      NON-JNPR    GDA2017459        QSFP-100GBASE-LR4
Xcvr 29      NON-JNPR    GDF2008750        QSFP-100GBASE-LR4
FPC 2        REV 32  750-051357  ACPB0341          LC1101 - 30C / 30Q / 96X

Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         750-051357  S/N:          ACPB0341

```

```

Assembly ID: 0x0be8      Assembly Version: 01.32
Date:          06-04-2016  Assembly Flags: 0x00
Version:       REV 32      CLEI Code:      CMUIANABAA
ID: ULC-30Q28           FRU Model Number: QFX10000-30C

```

## Board Information Record:

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 02 ff 0b e8 01 20 52 45 56 20 33 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 42 30 33 34 31 00 04 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 30 43 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ef ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:         BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf020     Assembly Version: 02.17
Date:        04-19-2012 Assembly Flags: 0x00

```

## Board Information Record:

```

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 02 ff f0 20 02 11 00 00 67 00 0a 00 b0 8c
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 00 67 00
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      30x100GE/30x40GE/96x10GE

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:         BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf050     Assembly Version: 02.17
Date:        04-19-2012 Assembly Flags: 0x00

```

## Board Information Record:

```

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 de ad be ef de ad be ef de ad be ef
Xcvr 0          NON-JNPR    37700170YZC305    QSFP-100GBASE-LR4
Xcvr 4          NON-JNPR    37700170YZC306    QSFP-100GBASE-LR4
Xcvr 9          REV 01      740-054053    QF36013S    QSFP+-4X10G-SR
Xcvr 12         REV 01      740-067442    XV301AU     QSFP+-40G-SR4
Xcvr 14         REV 01      740-043308    UWE2CG9     QSFP+-40G-LR4
Xcvr 16         REV 01      740-043308    UWH141S     QSFP+-40G-LR4
Xcvr 17         REV 01      740-058734    1ECQ11180VH QSFP-100GBASE-SR4
Xcvr 18         REV 01      740-054050    INF4J0492237 QSFP+-4X10G-LR
Xcvr 26         REV 01      740-058734    1ACQ111803N QSFP-100GBASE-SR4
Xcvr 27         REV 01      740-058734    1ACQ113405S QSFP-100GBASE-SR4
FPC 3          REV 35      750-051357    ACPD2186    LC1101 - 30C / 30Q / 96X

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02

```

```

P/N:          750-051357      S/N:          ACPD2186
Assembly ID:  0x0be8         Assembly Version: 01.35
Date:         09-21-2016     Assembly Flags:  0x00
Version:      REV 35         CLEI Code:      CMUIANABAA
ID: ULC-30Q28               FRU Model Number: QFX10000-30C

```

## Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

## I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b e8 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 32 31 38 36 00 15 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 30 43 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff

```

```
CPU          BUILTIN      BUILTIN      FPC CPU
```

```

Jedec Code:  0x7fb0         EEPROM Version:  0x02
P/N:         BUILTIN        S/N:            BUILTIN
Assembly ID: 0xf020         Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags:  0x00

```

## Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

## I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 20 02 11 00 80 70 fa 09 00 50 8f
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 80 70 fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      30x100GE/30x40GE/96x10GE

```

```

Jedec Code:  0x7fb0         EEPROM Version:  0x02
P/N:         BUILTIN        S/N:            BUILTIN
Assembly ID: 0xf050         Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags:  0x00

```

## Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

## I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

```

```

Xcvr 0      REV 01  740-061409  1GCQA1470A3  QSFP-100GBASE-LR4-T2
Xcvr 1      REV 01  740-061409  1GCQA1470XC  QSFP-100GBASE-LR4-T2
Xcvr 7              NON-JNPR    FG4550500008 QSFP-100G-CWDM4
Xcvr 24     REV 01  740-058734  1ECQ11381LX  QSFP-100GBASE-SR4
Xcvr 29     REV 01  740-043308  UWE0UYS      QSFP+-40G-LR4
FPC 5       REV 08  750-068822  ACPF0057     LC1102 - 12C / 36Q /
144X

```

```

Jedec Code:  0x7fb0         EEPROM Version:  0x02
P/N:         750-068822     S/N:            ACPF0057
Assembly ID: 0x0be7         Assembly Version: 01.08
Date:        09-01-2016     Assembly Flags:  0x00
Version:      REV 08         CLEI Code:      CMUIAM9BAB

```

ID: ULC-36Q-12Q28 FRU Model Number: QFX10000-36Q

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b e7 01 08 52 45 56 20 30 38 00 00

Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 32 00 00

Address 0x20: 53 2f 4e 20 41 43 50 46 30 30 35 37 00 01 09 07

Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 42 51

Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

CPU BUILTIN BUILTIN FPC CPU

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: BUILTIN S/N: BUILTIN

Assembly ID: 0xf020 Assembly Version: 02.17

Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 20 02 11 00 00 3d fa 09 00 90 94

Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 00 3d fa

Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07

Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff

Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00

PIC 0 BUILTIN BUILTIN 12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: BUILTIN S/N: BUILTIN

Assembly ID: 0xf050 Assembly Version: 02.17

Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45

Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20

Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07

Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff

Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

FPC 6 REV 08 750-068822 ACPE9951 LC1102 - 12C / 36Q / 144X

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: 750-068822 S/N: ACPE9951

Assembly ID: 0x0be7 Assembly Version: 01.08

Date: 09-01-2016 Assembly Flags: 0x00

Version: REV 08 CLEI Code: CMUIAM9BAB

ID: ULC-36Q-12Q28 FRU Model Number: QFX10000-36Q

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b e7 01 08 52 45 56 20 30 38 00 00

Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 32 00 00

Address 0x20: 53 2f 4e 20 41 43 50 45 39 39 35 31 00 01 09 07

Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 42 51

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Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         BUILTIN        S/N:         BUILTIN
Assembly ID: 0xf020        Assembly Version: 02.17
Date:        04-19-2012    Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 3e fa 09 00 30 97
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 c0 3e fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         BUILTIN        S/N:         BUILTIN
Assembly ID: 0xf050        Assembly Version: 02.17
Date:        04-19-2012    Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 1      REV 01      740-054053      QF3208LG      QSFP+-4X10G-SR4
Xcvr 7      REV 01      740-067442      XV20LGN      QSFP+-40G-SR4
Xcvr 8      REV 01      740-067442      XV20VMV      QSFP+-40G-SR4
Xcvr 9      REV 01      740-067442      XV20KCN      QSFP+-40G-SR4
Xcvr 10     REV 01      740-067442      XU504QD      QSFP+-40G-SR4
Xcvr 11     REV 01      740-067442      XU504X7      QSFP+-40G-SR4
Xcvr 12     REV 01      740-067442      XU504W8      QSFP+-40G-SR4
Xcvr 16     REV 01      740-032986      QF4301JP      QSFP+-40G-SR4
Xcvr 17     REV 01      740-032986      QF4303AE      QSFP+-40G-SR4
Xcvr 18     REV 01      740-054050      INF4J0492400 QSFP+-4X10G-LR
Xcvr 19     REV 01      740-054050      INF4J0492142 QSFP+-4X10G-LR
Xcvr 24     REV 01      740-032986      QF4301KB      QSFP+-40G-SR4
Xcvr 25     REV 01      740-032986      QF4303YP      QSFP+-40G-SR4
Xcvr 30     REV 01      740-067442      XV300ZX      QSFP+-40G-SR4
Xcvr 31     REV 01      740-043308      UWH2KBW      QSFP+-40G-LR4
Xcvr 34     REV 01      740-054053      QG1501YU      QSFP+-4X10G-SR4
FPD Board   REV 07      711-054687      ACPC7142      Front Panel Display
Jedec Code: 0x7fb0          EEPROM Version: 0x01
P/N:        711-054687      S/N:         ACPC7142
Assembly ID: 0x0bf2        Assembly Version: 01.07
Date:       07-22-2016    Assembly Flags: 0x00
Version:    REV 07
ID: QFX10000 FPD
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

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I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b f2 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 34 36 38 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 43 37 31 34 32 00 16 07 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 0  REV 02  740-049388  1EDL62102N9  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102N9
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 4e 39 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 1  REV 02  740-049388  1EDL60300KX  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL60300KX
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-20-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 30 33 30 30 4b 58 00 00 14 01 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 2  REV 02  740-049388  1EDL60300DL  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL60300DL
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-20-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 30 33 30 30 44 4c 00 00 14 01 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00

```



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Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 3  REV 02  740-049388  1EDL61701BT  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL61701BT
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-01-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 31 37 30 31 42 54 00 00 01 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 4  REV 02  740-049388  1EDL62102P7  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102P7
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 37 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 5  REV 02  740-049388  1EDL62102PP  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102PP
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 50 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
FTC 0  REV 14  750-050108  ACPE4038  Fan Controller 8
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 750-050108  S/N: ACPE4038
Assembly ID: 0x0bee  Assembly Version: 01.14
Date: 09-27-2016  Assembly Flags: 0x00

```

```

Version:      REV 14          CLEI Code:      CMUCAHZCAA
ID: QFX10000 FTC          FRU Model Number: QFX10008-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ee 01 0e 52 45 56 20 31 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 31 30 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 45 34 30 33 38 00 1b 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 5a 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 98 ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1      REV 14      750-050108      ACPE4032      Fan Controller 8
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-050108    S/N:          ACPE4032
Assembly ID:   0x0bee      Assembly Version: 01.14
Date:         09-27-2016    Assembly Flags: 0x00
Version:      REV 14      CLEI Code:    CMUCAHZCAA
ID: QFX10000 FTC          FRU Model Number: QFX10008-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ee 01 0e 52 45 56 20 31 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 31 30 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 45 34 30 33 32 00 1b 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 5a 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 98 ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 0      REV 09      760-054372      ACPD6799      Fan Tray 8
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          760-054372    S/N:          ACPD6799
Assembly ID:   0x0bf0      Assembly Version: 01.09
Date:         09-28-2016    Assembly Flags: 0x00
Version:      REV 09      CLEI Code:    CMUCAHYCAA
ID: QFX10008 FHB          FRU Model Number: QFX10008-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 44 36 37 39 39 00 1c 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1      REV 09      760-054372      ACNZ3584      Fan Tray 8
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          760-054372    S/N:          ACNZ3584
Assembly ID:   0x0bf0      Assembly Version: 01.09
Date:         08-30-2016    Assembly Flags: 0x00
Version:      REV 09      CLEI Code:    CMUCAHYCAA
ID: QFX10008 FHB          FRU Model Number: QFX10008-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00

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Address 0x20: 53 2f 4e 20 41 43 4e 5a 33 35 38 34 00 1e 08 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff
SIB 0          REV 24    750-050058    ACPD4587          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACPD4587
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-19-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 35 38 37 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 1          REV 24    750-050058    ACNZ0635          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACNZ0635
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-06-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 33 35 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 2          REV 24    750-050058    ACPD4908          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACPD4908
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          07-12-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 39 30 38 00 0c 07 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 3          REV 24    750-050058    ACNZ0617          Switch Fabric 8

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNZ0617
Assembly ID: 0x0bec     Assembly Version: 01.24
Date: 06-07-2016       Assembly Flags: 0x00
Version: REV 24        CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB       FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 31 37 00 07 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 4      REV 24      750-050058      ACNZ0527      Switch Fabric 8
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNZ0527
Assembly ID: 0x0bec     Assembly Version: 01.24
Date: 06-06-2016       Assembly Flags: 0x00
Version: REV 24        CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB       FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 35 32 37 00 06 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 5      REV 23      750-050058      ACNX6980      Switch Fabric 8
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNX6980
Assembly ID: 0x0bec     Assembly Version: 01.23
Date: 05-16-2016       Assembly Flags: 0x00
Version: REV 23        CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB       FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 17 52 45 56 20 32 33 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 58 36 39 38 30 00 10 05 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ce 00 00 00 00 00 00 00 00 00 00 00 00

```

### show chassis hardware extensive (PTX10016 Router)

```
user@host> show chassis hardware extensive
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			DH995	JNP10016 [PTX10016]

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
                        S/N: DH995
Assembly ID: 0x0566     Assembly Version: 01.22
Date: 02-16-2017       Assembly Flags: 0x00
                        CLEI Code: CMMUN00ARA
ID: JNP10016           FRU Model Number: QFX10016-CHAS

Board Information Record:
Address 0x00: ad 01 10 00 44 aa 50 ab 1b b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 66 01 16 00 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 00 35 30 2d 30 35 36 35 35 35 00 00
Address 0x20: 44 48 39 39 35 00 00 00 00 00 00 00 00 10 02 07
Address 0x30: e1 ff ff ff ad 01 10 00 44 aa 50 ab 1b b6 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4e 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 32 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 51 44 48 39 39 35 00 00 00 00 00 00 00

Midplane REV 22 750-056555 ACPM7810 Midplane 16
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-056555        S/N: ACPM7810
Assembly ID: 0x0be4     Assembly Version: 01.22
Date: 02-16-2017       Assembly Flags: 0x00
Version: REV 22         CLEI Code: CMMUN00ARA
ID: QFX10016 Midplane   FRU Model Number: QFX10016-CHAS

Board Information Record:
Address 0x00: ad 01 10 00 44 aa 50 ab 1b b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e4 01 16 52 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 36 35 35 35 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 37 38 31 30 00 10 02 07
Address 0x30: e1 ff ff ff ad 01 10 00 44 aa 50 ab 1b b6 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4e 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 32 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 51 44 48 39 39 35 00 00 00 00 00 00 00

Routing Engine 0 BUILTIN BUILTIN RE-PTX-2X00x4
vtbd0 15360 MB Virtio Block Disk
vtbd1 15360 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
Routing Engine 1 BUILTIN BUILTIN RE-PTX-2X00x4
vtbd0 15360 MB Virtio Block Disk
vtbd1 15360 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
CB 0 REV 03 750-068820 ACPL7238 Control Board
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-068820        S/N: ACPL7238
Assembly ID: 0x0b9d     Assembly Version: 01.03
Date: 03-15-2017       Assembly Flags: 0x00
Version: REV 03         CLEI Code: CMUCAH3CTB
ID: Control Board      FRU Model Number: QFX10000-RE

Board Information Record:
Address 0x00: ad 01 00 10 e8 b6 c2 46 aa 29 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 37 32 33 38 00 0f 03 07
Address 0x30: e1 ff ff ff ad 01 00 10 e8 b6 c2 46 aa 29 ff ff

```

```

Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 03    750-068820    ACPL7298          Control Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-068820      S/N:          ACPL7298
Assembly ID:  0x0b9d          Assembly Version: 01.03
Date:         03-15-2017      Assembly Flags:  0x00
Version:      REV 03          CLEI Code:      CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 e8 b6 c2 46 99 b9 ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 37 32 39 38 00 0f 03 07
Address 0x30: e1 ff ff ff ad 01 00 10 e8 b6 c2 46 99 b9 ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff
FPC 1          REV 36    750-077140    ACNP4590          LC1102 - 12C / 36Q /
144X
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-077140      S/N:          ACNP4590
Assembly ID:  0x0be7          Assembly Version: 01.36
Date:         10-17-2016      Assembly Flags:  0x00
Version:      REV 36          CLEI Code:      CMUIAM9BAA
ID: ULC-36Q-12Q28          FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 35 39 30 00 11 0a 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         BUILTIN          S/N:          BUILTIN
Assembly ID:  0xf020          Assembly Version: 02.17
Date:         04-19-2012      Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 40 36 bd 09 40 25 32
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 40 36 bd
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         BUILTIN          S/N:          BUILTIN

```

```

Assembly ID: 0xf050          Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0      REV 01      740-054053      QF3600AV      QSFP+-4X10G-SR
Xcvr 35     REV 01      740-061405      1ACQ110507K     QSFP-100GBASE-SR4
FPC 3       REV 07      750-071975      CAHA2224        LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-071975            S/N: CAHA2224
Assembly ID: 0x0be7         Assembly Version: 01.07
Date: 01-17-2017           Assembly Flags: 0x00
Version: REV 07             CLEI Code: PROTOXCLEI
ID: ULC-36Q-12Q28          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 31 39 37 35 00 00
Address 0x20: 53 2f 4e 20 43 41 48 41 32 32 32 34 00 11 01 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: BUILTIN                S/N: BUILTIN
Assembly ID: 0xf020         Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 60 b6 be 09 c0 cf 38
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 60 b6 be
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: BUILTIN                S/N: BUILTIN
Assembly ID: 0xf050         Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20

```

```

Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0          REV 01    740-054053    QG1505YM          QSFP+-4X10G-SR
Xcvr 11         NON-JNPR    GDA2017459        QSFP-100GBASE-LR4
Xcvr 35         NON-JNPR    GDF2008750        QSFP-100GBASE-LR4
FPC 5           REV 13    750-068822    ACPD6501          LC1102 - 12C / 36Q /
144X
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-068822      S/N:              ACPD6501
Assembly ID:   0x0be7          Assembly Version:  01.13
Date:          06-29-2017      Assembly Flags:    0x00
Version:       REV 13         CLEI Code:        CMUIAM9BAC
ID: ULC-36Q-12Q28            FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 32 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 36 35 30 31 00 1d 06 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 43 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 43 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fd ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:             BUILTIN
Assembly ID:  0xf020          Assembly Version: 02.17
Date:         04-19-2012      Assembly Flags:   0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 c6 bc 09 c0 ca 40
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 c0 c6 bc
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:             BUILTIN
Assembly ID:  0xf050          Assembly Version: 02.17
Date:         04-19-2012      Assembly Flags:   0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55

```



```

Xcvr 1      REV 01  740-058734  1ECQ11381LA  QSF+100GBASE-SR4
Xcvr 2      REV 01  740-043308  UWH141S      QSF+-40G-LR4
Xcvr 3      REV 01  740-043308  UWE2CG9      QSF+-40G-LR4
FPC 6       REV 37  750-077140  ACNS2793     LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        750-077140  S/N:         ACNS2793
Assembly ID: 0x0be7     Assembly Version: 01.37
Date:       03-25-2017  Assembly Flags: 0x00
Version:    REV 37     CLEI Code:    CMUIAM9BAA
ID: ULC-36Q-12Q28      FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 25 52 45 56 20 33 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 53 32 37 39 33 00 19 03 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN    BUILTIN    FPC CPU
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf020     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 a0 e6 d4 09 00 bd 43
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 a0 e6 d4
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN    12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf050     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0      REV 01  740-032986  QH0400VH     QSF+-40G-SR4
Xcvr 1      REV 01  740-032986  QH0400VM     QSF+-40G-SR4
Xcvr 35     REV 01  740-058734  1ECQ11390ZB  QSF+100GBASE-SR4
FPC 8       REV 36  750-077140  ACNP4625     LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0      EEPROM Version: 0x02

```

P/N: 750-077140 S/N: ACNP4625  
 Assembly ID: 0x0be7 Assembly Version: 01.36  
 Date: 10-17-2016 Assembly Flags: 0x00  
 Version: REV 36 CLEI Code: CMUIAM9BAA  
 ID: ULC-36Q-12Q28 FRU Model Number: QFX10000-36Q

## Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

## I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00  
 Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00  
 Address 0x20: 53 2f 4e 20 41 43 4e 50 34 36 32 35 00 11 0a 07  
 Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51  
 Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00  
 Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff  
 Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff

CPU BUILTIN BUILTIN FPC CPU

Jedec Code: 0x7fb0 EEPROM Version: 0x02  
 P/N: BUILTIN S/N: BUILTIN  
 Assembly ID: 0xf020 Assembly Version: 02.17  
 Date: 04-19-2012 Assembly Flags: 0x00

## Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

## I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 e6 d4 09 40 59 4a  
 Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 c0 e6 d4  
 Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07  
 Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff  
 Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00  
 Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff  
 Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00

PIC 0 BUILTIN BUILTIN 12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0 EEPROM Version: 0x02  
 P/N: BUILTIN S/N: BUILTIN  
 Assembly ID: 0xf050 Assembly Version: 02.17  
 Date: 04-19-2012 Assembly Flags: 0x00

## Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

## I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45  
 Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20  
 Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07  
 Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff  
 Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00  
 Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff  
 Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

Xcvr 1 REV 01 740-058732 1AMQA14206D QSFP-100GBASE-LR4  
 Xcvr 10 REV 01 740-032986 QF4301KB QSFP+-40G-SR4  
 Xcvr 24 REV 01 740-054050 INFJA0492244 QSFP+-4X10G-LR  
 FPC 9 REV 35 750-071976 ACPD3055 LC1101 - 30C / 30Q / 96X

Jedec Code: 0x7fb0 EEPROM Version: 0x02  
 P/N: 750-071976 S/N: ACPD3055  
 Assembly ID: 0x0be8 Assembly Version: 01.35  
 Date: 05-26-2016 Assembly Flags: 0x00  
 Version: REV 35 CLEI Code: CMUIANABAA  
 ID: ULC-30Q28 FRU Model Number: JNP10K-LC1101

## Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b e8 01 23 52 45 56 20 33 35 00 00

Address 0x10: 00 00 00 00 37 35 30 2d 30 37 31 39 37 36 00 00

Address 0x20: 53 2f 4e 20 41 43 50 44 33 30 35 35 00 1a 05 07

Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 4a

Address 0x50: 4e 50 31 30 4b 2d 4c 43 31 31 30 31 00 00 00 00

Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff ef ff ff ff ff ff ff ff ff ff ff ff ff

CPU BUILTIN BUILTIN FPC CPU

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: BUILTIN S/N: BUILTIN

Assembly ID: 0xf020 Assembly Version: 02.17

Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 20 02 11 00 20 e7 d4 09 00 a6 4d

Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 20 e7 d4

Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07

Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff

Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00

PIC 0 BUILTIN BUILTIN 30x100GE/30x40GE/96x10GE

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: BUILTIN S/N: BUILTIN

Assembly ID: 0xf050 Assembly Version: 02.17

Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45

Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20

Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07

Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff

Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

Xcvr 0 NON-JNPR INGBT7970007 QSFP-100GBASE-LR4

Xcvr 1 NON-JNPR UWQ24D9 QSFP-100GBASE-LR4

Xcvr 2 NON-JNPR INGBT7970011 QSFP-100GBASE-LR4

Xcvr 3 NON-JNPR UX60AF1 QSFP-100G-CWDM4

Xcvr 4 NON-JNPR UX408JJ QSFP-100GBASE-LR4

Xcvr 11 REV 01 740-058734 1ECQ113835F QSFP-100GBASE-SR4

Xcvr 18 NON-JNPR Q7496 QSFP-100G-CWDM4

Xcvr 29 REV 01 740-058734 1ECQ11380LZ QSFP-100GBASE-SR4

Power Supply 0 REV 02 740-049388 1EDL625039E Power Supply AC

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: 740-049388 S/N: 1EDL625039E

Assembly ID: 0x0483 Assembly Version: 01.02

Date: 06-19-2016 Assembly Flags: 0x00

Version: REV 02 CLEI Code: CMUPADNBAA

ID: QFX10000 AC FRU Model Number: QFX10000-PWR-AC

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 45 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 1  REV 02  740-049388  1EDL62503AD  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62503AD
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 06-19-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 41 44 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 2  REV 02  740-049388  1EDL625039P  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL625039P
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 06-19-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 50 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 3  REV 02  740-049388  1EDL702004E  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL702004E
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-18-2017  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 37 30 32 30 30 34 45 00 00 12 01 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff

```

```

Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 4  REV 02  740-049388  1EDL625039D  Power Supply AC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-049388      S/N: 1EDL625039D
Assembly ID: 0x0483    Assembly Version: 01.02
Date: 06-19-2016      Assembly Flags: 0x00
Version: REV 02      CLEI Code: CMUPADNBAA
ID: QFX10000 AC      FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 44 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 5  REV 02  740-049388  1EDL63706JD  Power Supply AC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-049388      S/N: 1EDL63706JD
Assembly ID: 0x0483    Assembly Version: 01.02
Date: 09-13-2016      Assembly Flags: 0x00
Version: REV 02      CLEI Code: CMUPADNBAA
ID: QFX10000 AC      FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 33 37 30 36 4a 44 00 00 0d 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 6  REV 02  740-049388  1EDL63706JH  Power Supply AC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-049388      S/N: 1EDL63706JH
Assembly ID: 0x0483    Assembly Version: 01.02
Date: 09-13-2016      Assembly Flags: 0x00
Version: REV 02      CLEI Code: CMUPADNBAA
ID: QFX10000 AC      FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 33 37 30 36 4a 48 00 00 0d 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
FTC 0          REV 10  750-050309  ACPM2918  Fan Controller 16
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050309      S/N: ACPM2918
Assembly ID: 0x0b9c    Assembly Version: 01.10
Date: 01-13-2017      Assembly Flags: 0x00
Version: REV 10      CLEI Code: CMUCAH5CAA

```

```

ID: QFX10016 FTC                      FRU Model Number: QFX10016-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 9c 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 33 30 39 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 4d 32 39 31 38 00 0d 01 07
  Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 35 43 41 41 51
  Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 6f ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1          REV 10    750-050309    ACPE8185          Fan Controller 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-050309          S/N: ACPE8185
Assembly ID: 0x0b9c        Assembly Version: 01.10
Date: 12-22-2016          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH5CAA
ID: QFX10016 FTC          FRU Model Number: QFX10016-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 9c 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 33 30 39 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 45 38 31 38 35 00 16 0c 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 35 43 41 41 51
  Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 6f ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 0          REV 10    760-077141    ACPV7288          Fan Tray 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 760-077141          S/N: ACPV7288
Assembly ID: 0x0bf1        Assembly Version: 01.10
Date: 06-07-2017          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH4CAA
ID: QFX10016 FHB          FRU Model Number: JNP10016-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f1 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 37 37 31 34 31 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 56 37 32 38 38 00 07 06 07
  Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 34 43 41 41 4a
  Address 0x50: 4e 50 31 30 30 31 36 2d 46 41 4e 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 0d ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1          REV 10    760-057901    ACPL0546          Fan Tray 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 760-057901          S/N: ACPL0546
Assembly ID: 0x0bf1        Assembly Version: 01.10
Date: 02-14-2017          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH4CAA
ID: QFX10016 FHB          FRU Model Number: QFX10016-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f1 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 37 39 30 31 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 4c 30 35 34 36 00 0e 02 07

```

```

Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 34 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 0d ff ff ff ff ff ff ff ff ff ff ff ff
SIB 0          REV 15    750-058270    ACPM2804          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPM2804
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          12-21-2016      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 30 34 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 1          REV 15    750-058270    ACPM2808          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPM2808
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          12-21-2016      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 30 38 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 2          REV 15    750-058270    ACPL4450          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPL4450
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          02-17-2017      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 34 34 35 30 00 11 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 3          REV 15    750-058270    ACPJ9834          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02

```

```

P/N:          750-058270      S/N:          ACPJ9834
Assembly ID:  0x0bed          Assembly Version: 01.15
Date:         12-17-2016      Assembly Flags:  0x00
Version:      REV 15          CLEI Code:       CMUCAH6CAA
ID: QFX10016 SIB             FRU Model Number:  QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4a 39 38 33 34 00 11 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 4          REV 15      750-058270      ACPM2814      Switch Fabric 16
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          750-058270      S/N:          ACPM2814
Assembly ID:  0x0bed          Assembly Version: 01.15
Date:         12-21-2016      Assembly Flags:  0x00
Version:      REV 15          CLEI Code:       CMUCAH6CAA
ID: QFX10016 SIB             FRU Model Number:  QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 31 34 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 5          REV 15      750-058270      ACPL4277      Switch Fabric 16
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          750-058270      S/N:          ACPL4277
Assembly ID:  0x0bed          Assembly Version: 01.15
Date:         02-17-2017      Assembly Flags:  0x00
Version:      REV 15          CLEI Code:       CMUCAH6CAA
ID: QFX10016 SIB             FRU Model Number:  QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 34 32 37 37 00 11 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
FPD Board      REV 07      711-054687      ACPL1407      Front Panel Display
Jedec Code:    0x7fb0      EEPROM Version:  0x01
P/N:          711-054687      S/N:          ACPL1407
Assembly ID:  0x0bf2          Assembly Version: 01.07
Date:         02-12-2017      Assembly Flags:  0x00
Version:      REV 07
ID: QFX10000 FPD
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```



## I2C Hex Data:

```

Address 0x00: 7f b0 01 ff 0b f2 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 34 36 38 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 31 34 30 37 00 0c 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

## show chassis hardware models (MX104 Router)

```
user@host> show chassis hardware models
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 20	750-044219	CAAS5849	PROTO-ASSEMBLY
PEM 0	REV 01	740-045932	1H072400065	
Routing Engine 0	REV 16	750-044228	CAAR5915	PROTO-ASSEMBLY
AFEB 0		BUILTIN	BUILTIN	
FPC 0		BUILTIN	BUILTIN	
FPC 1		BUILTIN	BUILTIN	
MIC 0	REV 01	750-046905	CAAK7103	MIC-3D-20GE-SFP-EH
FPC 2		BUILTIN	BUILTIN	
Fan Tray	REV 02	711-049570	CAAX6538	PROTO-ASSEMBLY

## show chassis hardware models (PTX10008 Router)

```
user@host> show chassis hardware models
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 27	750-054097	ACPD4307	QFX10008-CHAS
CB 0	REV 02	750-068820	ACNZ4440	QFX10000-RE
CB 1	REV 02	750-068820	ACNZ8284	QFX10000-RE
FPC 0	REV 36	750-051354	ACNP4679	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 1	REV 33	750-051354	ACNX8831	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 2	REV 32	750-051357	ACPB0341	QFX10000-30C
PIC 0		BUILTIN	BUILTIN	
FPC 3	REV 35	750-051357	ACPD2186	QFX10000-30C
PIC 0		BUILTIN	BUILTIN	
FPC 5	REV 08	750-068822	ACPF0057	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 6	REV 08	750-068822	ACPE9951	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPD Board	REV 07	711-054687	ACPC7142	
Power Supply 0	REV 02	740-049388	1EDL62102N9	QFX10000-PWR-AC
Power Supply 1	REV 02	740-049388	1EDL60300KX	QFX10000-PWR-AC
Power Supply 2	REV 02	740-049388	1EDL60300DL	QFX10000-PWR-AC
Power Supply 3	REV 02	740-049388	1EDL61701BT	QFX10000-PWR-AC
Power Supply 4	REV 02	740-049388	1EDL62102P7	QFX10000-PWR-AC
Power Supply 5	REV 02	740-049388	1EDL62102PP	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	ACPE4038	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	ACPE4032	QFX10008-FAN-CTRL
Fan Tray 0	REV 09	760-054372	ACPD6799	QFX10008-FAN
Fan Tray 1	REV 09	760-054372	ACNZ3584	QFX10008-FAN
SIB 0	REV 24	750-050058	ACPD4587	QFX10008-SF
SIB 1	REV 24	750-050058	ACNZ0635	QFX10008-SF
SIB 2	REV 24	750-050058	ACPD4908	QFX10008-SF
SIB 3	REV 24	750-050058	ACNZ0617	QFX10008-SF

SIB 4	REV 24	750-050058	ACNZ0527	QFX10008-SF
SIB 5	REV 23	750-050058	ACNX6980	QFX10008-SF

**show chassis hardware models (PTX10016 Router)**

```

user@host> show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 24	750-077138	ACPR5157	JNP10016
CB 0	REV 04	711-065897	CAHA9983	PROTO-ASSEMBLY
CB 1	REV 05	711-065897	CAJD3802	PROTO-ASSEMBLY
FPC 2				
PIC 0		BUILTIN	BUILTIN	
FPC 4	REV 35	750-071976	ACPD2168	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 5	REV 13	750-068822	ACPA0336	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 6	REV 41	750-071976	ACPF0695	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 7	REV 35	750-071976	ACPD2139	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 8	REV 35	750-071976	ACPD2142	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 9	REV 41	750-071976	ACPM5461	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 10	REV 35	750-071976	ACNS6795	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 11	REV 35	750-071976	ACPD1831	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 13	REV 41	750-071976	ACPS2075	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 15	REV 37	750-071976	ACPL7163	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
Power Supply 0	REV 01	740-073147	1EDM6171155	JNP10K-PWR-DC
Power Supply 1	REV 01	740-073147	1EDM6281575	JNP10K-PWR-DC
Power Supply 2	REV 01	740-073147	1EDM6171044	JNP10K-PWR-DC
Power Supply 3	REV 01	740-073147	1EDM6281244	JNP10K-PWR-DC
Power Supply 4	REV 01	740-073147	1EDM6282093	JNP10K-PWR-DC
Power Supply 5	REV 01	740-073147	1EDM6281413	JNP10K-PWR-DC
Power Supply 6	REV 01	740-073147	1EDM6171071	JNP10K-PWR-DC
Power Supply 7	REV 01	740-073147	1EDM6170709	JNP10K-PWR-DC
Power Supply 8	REV 01	740-073147	1EDM6171169	JNP10K-PWR-DC
Power Supply 9	REV 01	740-073147	1EDM6170754	JNP10K-PWR-DC
Fan Tray 0				QFX5100-FAN-AFO
Fan Tray 1				QFX5100-FAN-AFO
SIB 0	REV 15	750-077140	ACPV3933	JNP10016-SF
SIB 1	REV 15	750-077140	ACPV3938	JNP10016-SF
SIB 2	REV 15	750-077140	ACPV3974	JNP10016-SF
SIB 3	REV 15	750-077140	ACPV3879	JNP10016-SF
SIB 4	REV 15	750-077140	ACPV3964	JNP10016-SF
SIB 5	REV 15	750-077140	ACPV3981	JNP10016-SF
FPD Board	REV 07	711-054687	ACPS8855	

**show chassis hardware clei-models (MX104 Router)**

```

user@host> show chassis hardware clei-models
Hardware inventory:

```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 20	750-044219	PROTOXCLEI	PROTO-ASSEMBLY
PEM 0	REV 01	740-045932		

Routing Engine 0	REV 16	750-044228	PROTOXCLEI	PROTO-ASSEMBLY
AFEB 0		BUILTIN		
FPC 0		BUILTIN		
FPC 1		BUILTIN		
MIC 0	REV 01	750-046905	PROTOXCLEI	MIC-3D-20GE-SFP-EH
FPC 2		BUILTIN		
Fan Tray	REV 02	711-049570	CAAX6538	PROTO-ASSEMBLY

### show chassis hardware (MX240 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7EAFC	MX240
Midplane	REV 01	710-021041	TR1502	MX240 Backplane
FPM Board	REV 01	710-017254	KD4017	Front Panel Display
PEM 0	Rev 02	740-017330	000332	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	000226	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 06	740-013063	1000703522	RE-S-2000
Routing Engine 1	REV 06	740-015113	1000687625	RE-S-1300
CB 0	REV 07	710-013385	KC9057	MX SCB
CB 1	REV 05	710-013385	JY4760	MX SCB
FPC 1	REV 01	750-021679	KC7340	DPCE 40x 1GE R
CPU	REV 06	710-013713	KD4078	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18ME	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
FPC 2	REV 04	710-016669	JS4529	DPCE 40x 1GE R EQ
CPU	REV 06	710-013713	KB3969	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y79	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XU8	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YG6	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3XUG	SFP-SX
Xcvr 4	REV 01	740-011613	PBG3XTJ	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3ZUM	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3Y5H	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3UZT	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3US1	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3YG7	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XZ9	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3XTY	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3UZG	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y8W	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3YVX	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YB3	SFP-SX
Xcvr 3	REV 01	740-011613	PBG43VQ	SFP-SX
Fan Tray 0	REV 01	710-021113	JS4642	MX240 Fan Tray

### show chassis hardware detail (MX 240 Router with Routing Engine Displaying DIMM Information)

```
user@host> show chassis hardware detail
```

Item	Version	Part number	Serial number	Description
Chassis			JN11279B4AFC	MX240 Backplane
Midplane	REV 07	760-021404	TS2474	MX240 Backplane
FPM Board	REV 03	760-021392	XC2643	Front Panel Display
PEM 0	Rev 03	740-017343	QCS0908A068	DC Power Entry Module
Routing Engine 0	REV 01	740-031117	AARCH00	RE-S-1800x4
ad0 3764 MB	STEC M2+	CF 9.0.2	STIM2Q3209239145303	Removable Compact Flash
ad1 28626 MB	WDC SSD-F0030S-5000		C933Z036237215548S00	Compact Flash
usb0 (addr 1)	EHCI root hub 0		Intel	uhub0
usb0 (addr 2)	product 0x0020 32		vendor 0x8087	uhub1
DIMM 0	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 1	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 2	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 3	SL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
CB 0	REV 03	710-021523	XD7225	MX SCB
Fan Tray 0	REV 01	710-021113	WZ4986	MX240 Fan Tray

### show chassis hardware (MX240 Router with Enhanced MX SCB)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7EAFC	MX240
Midplane	REV 01	710-021041	TR1502	MX240 Backplane
FPM Board	REV 01	710-017254	KD4017	Front Panel Display
PEM 0	Rev 02	740-017330	000332	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	000226	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 06	740-013063	1000703522	RE-S-2000
Routing Engine 1	REV 06	740-015113	1000687625	RE-S-1300
CB 0	REV 02	710-031391	YE8494	Enhanced MX SCB
CB 1	REV 05	710-031391	YOP5764	Enhanced MX SCB
FPC 1	REV 01	750-021679	KC7340	DPCE 40x 1GE R
CPU	REV 06	710-013713	KD4078	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18ME	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
FPC 2	REV 04	710-016669	JS4529	DPCE 40x 1GE R EQ
CPU	REV 06	710-013713	KB3969	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y79	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XU8	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YG6	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3XUG	SFP-SX
Xcvr 4	REV 01	740-011613	PBG3XTJ	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3ZUM	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3Y5H	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3UZT	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3US1	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3YG7	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XZ9	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3XTY	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3UZG	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ

Xcvr 0	REV 01	740-011613	PBG3Y8W	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3YVX	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YB3	SFP-SX
Xcvr 3	REV 01	740-011613	PBG43VQ	SFP-SX
Fan Tray 0	REV 01	710-021113	JS4642	MX240 Fan Tray

#### show chassis hardware (MX480 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7FAFB	MX480
Midplane	REV 04	710-017414	TR2071	MX480 Midplane
FPM Board	REV 02	710-017254	KB8459	Front Panel Display
PEM 0	Rev 02	740-017330	QCS07519029	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	QCS07519041	PS 1.2-1.7kW; 100-240V
AC in				
PEM 2	Rev 02	740-017330	QCS07519097	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 07	740-013063	1000733381	RE-S-2000
Routing Engine 1	REV 07	740-013063	1000733540	RE-S-2000
CB 0	REV 07	710-013385	KA8022	MX SCB
CB 1	REV 07	710-013385	KA8303	MX SCB
FPC 0	REV 09	750-020452	KA8660	DPCE 40x 1GE X EQ
CPU	REV 06	710-013713	KA8185	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Fan Tray				Left Fan Tray

#### show chassis hardware (MX480 Router with Enhanced MX SCB)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7FAFB	MX480
Midplane	REV 04	710-017414	TR2071	MX480 Midplane
FPM Board	REV 02	710-017254	KB8459	Front Panel Display
PEM 0	Rev 02	740-017330	QCS07519029	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	QCS07519041	PS 1.2-1.7kW; 100-240V
AC in				
PEM 2	Rev 02	740-017330	QCS07519097	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 07	740-013063	1000733381	RE-S-2000
Routing Engine 1	REV 07	740-013063	1000733540	RE-S-2000
CB 0	REV 07	710-013385	KA8022	Enhanced MX SCB
CB 1	REV 07	710-013385	KA8303	Enhanced MX SCB
FPC 0	REV 09	750-020452	KA8660	DPCE 40x 1GE X EQ
CPU	REV 06	710-013713	KA8185	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Fan Tray				Left Fan Tray

## show chassis hardware (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               JN11C0338AFB  MX480
Midplane         REV 05   710-017414   ABAB8430      MX480 Midplane
FPM Board        REV 02   710-017254   ZS8005        Front Panel Display
PEM 0            Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
PEM 1            Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
PEM 2            Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Routing Engine 0 REV 05   740-031116   9009092471    RE-S-1800x4
Routing Engine 1 REV 05   740-031116   9009097958    RE-S-1800x4
CB 0             REV 16   750-031391   CAAX0789      Enhanced MX SCB
CB 1             REV 16   750-031391   CAAX0856      Enhanced MX SCB
FPC 0            REV 32   750-028467   ABBP1782      MPC 3D 16x 10GE
CPU              REV 10   711-029089   ABBP5410      AMPC PMB
PIC 0            BUILTIN BUILTIN      4x 10GE(LAN) SFP+
  Xcvr 0         REV 01   740-021308   983152A00038  SFP+-10G-SR
  Xcvr 1         REV 01   740-031980   B11F00211     SFP+-10G-SR
  Xcvr 2         REV 01   740-031980   AQ72LPB       SFP+-10G-SR
  Xcvr 3         REV 01   740-031980   AHNOWR5       SFP+-10G-SR
PIC 1            BUILTIN BUILTIN      4x 10GE(LAN) SFP+
  Xcvr 0         REV 01   740-031980   B11J03627     SFP+-10G-SR
  Xcvr 1         REV 01   740-031980   B11F00300     SFP+-10G-SR
  Xcvr 2         REV 01   740-021308   AQ42WSS       SFP+-10G-SR
  Xcvr 3         REV 01   740-021308   AQ43HGC       SFP+-10G-SR
PIC 2            BUILTIN BUILTIN      4x 10GE(LAN) SFP+
  Xcvr 0         REV 01   740-021308   ANAONDO       SFP+-10G-SR
  Xcvr 1         REV 01   740-021308   ANAONGF       SFP+-10G-SR
  Xcvr 2         REV 01   740-021308   ANAONG9       SFP+-10G-SR
  Xcvr 3         REV 01   740-021308   ANAOMP9       SFP+-10G-SR
PIC 3            BUILTIN BUILTIN      4x 10GE(LAN) SFP+
  Xcvr 0         REV 01   740-021308   AQA06CG       SFP+-10G-SR
  Xcvr 1         REV 01   740-021308   19T511100493  SFP+-10G-SR
  Xcvr 2         REV 01   740-031980   APR040J       SFP+-10G-SR
FPC 1            REV 26   750-046005   CACN1894      MPC5E 3D Q 2CGE+4XGE
CPU              REV 09   711-045719   CACN8698      RMPC PMB
PIC 0            BUILTIN BUILTIN      2X10GE SFPP OTN
  Xcvr 0         REV 01   740-031980   163363A03046  SFP+-10G-SR
  Xcvr 1         REV 01   740-031980   AJ40JS8       SFP+-10G-SR
PIC 1            BUILTIN BUILTIN      1X100GE CFP2 OTN
PIC 2            BUILTIN BUILTIN      2X10GE SFPP OTN
  Xcvr 0         REV 01   740-031980   153363A00593  SFP+-10G-SR
  Xcvr 1         REV 01   740-031980   AJ40JUJ       SFP+-10G-SR
PIC 3            BUILTIN BUILTIN      1X100GE CFP2 OTN
  Xcvr 0         NON-JNPR UQCOB53       CFP2-100G-LR4-D
FPC 2            REV 26   750-046005   CACN1891      MPC5E 3D Q 2CGE+4XGE
CPU              REV 09   711-045719   CACN8694      RMPC PMB
PIC 0            BUILTIN BUILTIN      2X10GE SFPP OTN
  Xcvr 0         NON-JNPR URA012A       SFP+-10G-LR
PIC 1            BUILTIN BUILTIN      1X100GE CFP2 OTN
  Xcvr 0         NON-JNPR J13F47042   CFP2-100G-LR4-D
PIC 2            BUILTIN BUILTIN      2X10GE SFPP OTN
  Xcvr 0         REV 01   740-031980   AJC0BM3       SFP+-10G-SR
  Xcvr 1         REV 01   740-021308   11T511100917  SFP+-10G-SR
PIC 3            BUILTIN BUILTIN      1X100GE CFP2 OTN
  Xcvr 0         NON-JNPR UQK07SU       CFP2-100G-LR4-D

```

FPC 3	REV 03	750-045372	CAAD9425	MPCE Type 3 3D
CPU	REV 08	711-035209	CAAD9094	HMPC PMB 2G
MIC 0	REV 14	750-033196	CAAW9204	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC034	CFP2-100G-SR10
MIC 1	REV 19	750-033199	CAAJ1814	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 4	REV 21.0.11	750-045715	CAAY3568	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7430	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AP406NG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AR41NLP	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11D05630	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFP
WAN MEZZ	REV 12	750-049136	CACM6678	MPC5E 24XGE OTN Mezz
FPC 5	REV 11	750-045372	CABK7539	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ2466	HMPC PMB 2G
MIC 0	REV 19	750-033199	CAAJ9719	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	UP1020P	CFP-100G-SR10
MIC 1	REV 07	750-033196	YZ0797	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XC42FC022	CFP2-100G-SR10
Fan Tray				Enhanced Left Fan Tray

#### show chassis hardware detail (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 05   710-017414   ABAB8430      MX480 Midplane
FPM Board     REV 02   710-017254   ZS8005        Front Panel Display
PEM 0         Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
PEM 1         Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
PEM 2         Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Routing Engine 0 REV 05   740-031116   9009092471     RE-S-1800x4
  ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6862 Compact Flash
  ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-478612-001127 Disk 1
  usb0 (addr 1) EHCI root hub 0 Intel uhub0
  usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
  DIMM 0 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 1 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 2 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 3 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 05   740-031116   9009097958     RE-S-1800x4
  ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6145 Compact Flash
  ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000273 Disk 1
CB 0          REV 16   750-031391   CAAX0789      Enhanced MX SCB
CB 1          REV 16   750-031391   CAAX0856      Enhanced MX SCB
FPC 0         REV 32   750-028467   ABBP1782      MPC 3D 16x 10GE
CPU           REV 10   711-029089   ABBP5410      AMPC PMB
PIC 0         BUILTIN BUILTIN      4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   983152A00038 SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   B11F00211     SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   AQ72LPB       SFP+-10G-SR

```

Xcvr 3	REV 01	740-031980	AHNRW5	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11J03627	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11F00300	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ42WSS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HGC	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	ANAOND0	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANAONGF	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	ANAONG9	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	ANAOMP9	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQA06CG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	19T511100493	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	APR040J	SFP+-10G-SR
FPC 1	REV 26	750-046005	CACN1894	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACN8698	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	163363A03046	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ40JS8	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	153363A00593	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ40JUJ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQC0B53	CFP2-100G-LR4-D
FPC 2	REV 26	750-046005	CACN1891	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACN8694	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0		NON-JNPR	URA012A	SFP+-10G-LR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	J13F47042	CFP2-100G-LR4-D
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AJC0BM3	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	11T511100917	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQK07SU	CFP2-100G-LR4-D
FPC 3	REV 03	750-045372	CAAD9425	MPCE Type 3 3D
CPU	REV 08	711-035209	CAAD9094	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9204	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC034	CFP2-100G-SR10
MIC 1	REV 19	750-033199	CAAJ1814	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 4	REV 21.0.11	750-045715	CAAY3568	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7430	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AP406NG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AR41NLP	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11D05630	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 12	750-049136	CACM6678	MPC5E 24XGE OTN Mezz
FPC 5	REV 11	750-045372	CABK7539	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ2466	HMPD PMB 2G
MIC 0	REV 19	750-033199	CAAJ9719	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	UP1020P	CFP-100G-SR10
MIC 1	REV 07	750-033196	YZ0797	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP



show chassis hardware extensive (MX480 Routers with MPC5E and Built-In OTN PIC)

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```

Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PEM 0          Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1024U089
Assembly ID:   0x0432          Assembly Version: 01.05
Date:          06-17-2010      Assembly Flags: 0x00
Version:       Rev 05
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 05 52 65 76 20 30 35 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 30 32 34 55 30 38 39 00 00 11 06 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 1          Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1314U0FJ
Assembly ID:   0x0432          Assembly Version: 01.10
Date:          04-04-2013      Assembly Flags: 0x00
Version:       Rev 10
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 0a 52 65 76 20 31 30 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 33 31 34 55 30 46 4a 00 00 04 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 2          Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1121U076
Assembly ID:   0x0432          Assembly Version: 01.07
Date:          05-23-2011      Assembly Flags: 0x00
Version:       Rev 07
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 07 52 65 76 20 30 37 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 31 32 31 55 30 37 36 00 00 17 05 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 05   740-031116   9009092471   RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-031116      S/N:           9009092471

```

```

Assembly ID: 0x09c0      Assembly Version: 01.05
Date: 11-01-2011        Assembly Flags: 0x00
Version: REV 05          CLEI Code: COUCALDBAA
ID: RE-S-1800x4          FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 43 41 2d 34 32 46 42 23 23 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 30 39 32 34 37 31 00 00 00 01 0b 07
Address 0x30: db ff ff ff 54 32 30 32 37 43 41 2d 34 32 46 42
Address 0x40: 23 23 23 00 01 43 4f 55 43 41 4c 44 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4b ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6862 Compact Flash
ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-478612-001127 Disk 1
usb0 (addr 1) EHCI root hub 0 Intel uhub0
usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 1 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 2 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 3 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 05 740-031116 9009097958 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009097958
Assembly ID: 0x09c0      Assembly Version: 01.05
Date: 02-06-2012        Assembly Flags: 0x00
Version: REV 05          CLEI Code: COUCALDBAA
ID: RE-S-1800x4          FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 43 41 2d 34 32 46 42 23 23 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 30 39 37 39 35 38 00 00 00 06 02 07
Address 0x30: dc ff ff ff 54 32 30 32 37 43 41 2d 34 32 46 42
Address 0x40: 23 23 23 00 01 43 4f 55 43 41 4c 44 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4b ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6145 Compact Flash
ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000273 Disk 1

```

...

### show chassis hardware (MX960 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 01    710-013698   AA6082         MX960 Midplane
PIM           Rev 01    740-013110   000008         Power Inlet Module
PEM 2
PEM 3         Rev 01    740-013682   000038         PS 1.7kW; 200-240VAC in
Routing Engine 0 REV 00    740-015113   1000617944     RE-S-1300
CB 0          REV 05    710-013725   JK6947         MX960 Test SCB
FPC 4         REV 01    710-013305   JM7617         MX960 Test DPC
CPU
PIC 0
              BUILTIN    BUILTIN        1x 10GE(LAN/WAN)

```

PIC 1		BUILTIN	BUILTIN	10x 1GE
FPC 7	REV 01	710-013305	JL9634	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
Xcvr 0		NON-JNPR	MYBG65I82C	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	10x 1GE
Xcvr 1	REV 01	740-011782	P7N0368	SFP-SX
Xcvr 4	REV 01	740-011782	P8J1W27	SFP-SX
Xcvr 6	REV 01	740-011782	P8J1VSD	SFP-SX
Xcvr 9	REV 01	740-011782	P8J1W25	SFP-SX
Fan Tray 0				
Fan Tray 1				

### show chassis hardware (MX960 Router with Bidirectional Optics)

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10BA5B9AFA	MX960
Midplane	REV 03	710-013698	TR0234	MX960 Backplane
FPM Board	REV 03	710-014974	JA0878	Front Panel Display
PDM	Rev 03	740-013110	QCS11135028	Power Distribution Module
PEM 0	Rev 03	740-013682	QCS11154036	PS 1.7kW; 200-240VAC in
PEM 1	Rev 03	740-013682	QCS11154010	PS 1.7kW; 200-240VAC in
PEM 2	Rev 03	740-013682	QCS11154022	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 06	740-013063	1000691458	RE-S-2000
CB 0	REV 07	710-013385	KA2190	MX SCB
CB 1	REV 07	710-013385	KA0837	MX SCB
FPC 3	REV 02	750-018122	KB3890	DPCE 40x 1GE R
CPU				
FPC 4	REV 01	750-018122	KB3889	DPCE 40x 1GE R
CPU	REV 06	710-013713	KB3976	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 1	REV 01	740-020426	4910549	SFP-1000BASE-BX40-D
Xcvr 2	REV 01	740-020426	4910551	SFP-1000BASE-BX40-D
Xcvr 5	REV 01	740-021340	77E245N00006	SFP-1000BASE-BX10-U
Xcvr 6	REV 01	740-020425	4882821	SFP-1000BASE-BX40-U
Xcvr 8	REV 01	740-020425	4882820	SFP-1000BASE-BX40-U
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-020465	77E555N00894	SFP-1000BASE-BX10-D
Xcvr 1	REV 01	740-020465	75E467X00818	SFP-1000BASE-BX10-D
Xcvr 2	REV 01	740-020465	75E467X00573	SFP-1000BASE-BX10-D
Xcvr 3	REV 01	740-020465	4888227	SFP-1000BASE-BX10-D
Xcvr 4	REV 01	740-020465	4888241	SFP-1000BASE-BX10-D
Xcvr 5	REV 01	740-021340	77E245N00005	SFP-1000BASE-BX10-U
Xcvr 6	REV 01	740-021340	76E245X00487	SFP-1000BASE-BX10-U
Xcvr 7	REV 01	740-021341	5255889	SFP-1000BASE-BX10-U
Xcvr 8	REV 01	740-021341	5255887	SFP-1000BASE-BX10-U
Xcvr 9	REV 01	740-021340	77E245N00004	SFP-1000BASE-BX10-U
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-020424	5007582	SFP-1000BASE-BX10-D
Xcvr 1	REV 01	740-020424	4888187	SFP-1000BASE-BX10-D
Xcvr 2	REV 01	740-020424	4656500	SFP-1000BASE-BX10-D
Xcvr 5	REV 01	740-021341	5255886	SFP-1000BASE-BX10-U
Xcvr 7	REV 01	740-021340	77E245N00003	SFP-1000BASE-BX10-U
Xcvr 8	REV 01	740-021341	5255888	SFP-1000BASE-BX10-U
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-017726	74S184H30341	SFP-EX
Xcvr 1	REV 01	740-017726	4814061	SFP-EX
Xcvr 5	REV 01	740-017726	6ZS184H31108	SFP-EX
Xcvr 9	REV 01	740-021340	76E245X00486	SFP-1000BASE-BX10-U

```

Fan Tray 0
Fan Tray 1      REV 03   740-014971   TP0850      Fan Tray

```

### show chassis hardware (MX960 Router with Enhanced MX SCB)

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1096805AFA	MX960
Midplane	REV 03	710-013698	TR0183	MX960 Backplane
Fan Extender	REV 02	710-018051	JY5227	Extended Cable Manager
FPM Board	REV 03	710-014974	JZ6876	Front Panel Display
PDM	Rev 03	740-013110	QCS11035023	Power Distribution Module
PEM 1	Rev 03	740-013682	QCS1109400L	PS 1.7kW; 200-240VAC in
PEM 2	Rev 03	740-013682	QCS11094015	PS 1.7kW; 200-240VAC in
PEM 3	Rev 03	740-013682	QCS11094012	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 06	740-013063	1000687969	RE-S-2000
Routing Engine 1	REV 06	740-013063	1000687955	RE-S-2000
CB 0	REV 11	750-031391	YZ6072	Enhanced MX SCB
CB 1	REV 11	750-031391	YZ6068	Enhanced MX SCB
CB 2	REV 11	750-031391	YZ6081	Enhanced MX SCB
FPC 0	REV 01	750-018122	KA5576	DPCE 40x 1GE R
CPU	REV 06	710-013713	KB3961	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18GF	SFP-SX
Xcvr 2	REV 01	740-011782	P9M0TL9	SFP-SX
Xcvr 7	REV 01	740-011782	P9POXXH	SFP-SX
Xcvr 9	REV 01	740-011782	P9M0TN1	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	PAJ4UHC	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	PFF2CD0	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3ZUT	SFP-SX
Xcvr 2	REV 01	740-011613	PFF2DDV	SFP-SX
Xcvr 5	REV 01	740-011613	P8E2SST	SFP-SX
Xcvr 9	REV 01	740-011782	PB8329N	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-026192	1U0201084503342	SFP-100BASE-BX10-U
Xcvr 1	REV 01	740-026193	1U1201084503313	SFP-100BASE-BX10-D
Xcvr 2	REV 01	740-011613	PAJ4Y5B	SFP-SX
Xcvr 6	REV 01	740-011782	P9MOU3M	SFP-SX
Xcvr 7	REV 01	740-011782	P9M0TLA	SFP-SX
FPC 1	REV 16	750-031089	YL0719	MPC Type 2 3D
CPU	REV 06	711-030884	YL1463	MPC PMB 2G
MIC 0	REV 07	750-028387	JR6500	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 01	740-014279	733019A00154	XFP-10G-LR
Xcvr 1	REV 02	740-014289	T09F55034	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 01	740-014279	913019B00791	XFP-10G-LR
Xcvr 1	REV 01	740-014289	98S803A90384	XFP-10G-SR
MIC 1	REV 24	750-028387	YJ3950	3D 4x 10GE XFP
PIC 2		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 02	740-014279	T10B36134	XFP-10G-LR
Xcvr 1	REV 01	740-014289	T07M86354	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	2x 10GE XFP
FPC 2	REV 08	710-014219	JY9654	DPCE 4x 10GE R
CPU	REV 06	710-013713	JZ6549	DPC PMB
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
PIC 1		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
PIC 2		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)

Xcvr 0	REV 03	740-011571	C931BK028	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
FPC 3	REV 10	750-024199	XJ6692	MX FPC Type 3
CPU	REV 03	710-022351	XF5182	DPC PMB
PIC 0	REV 17	750-009553	RJ2945	4x OC-48 SONET
Xcvr 1	REV 01	740-011785	PCP3YLL	SFP-SR
Xcvr 3	REV 01	740-011785	PDSOMRY	SFP-SR
PIC 1	REV 32	750-003700	DP2113	1x OC-192 12xMM VSR
FPC 5	REV 25	750-028467	YM8256	MPC 3D 16x 10GE
CPU	REV 10	711-029089	YL3029	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 1	REV 01	740-031980	AHNOX1Z	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
FPC 7	REV 02	750-031092	JR6658	MPC Type 1 3D Q
CPU	REV 01	711-030884	JZ9038	MPC PMB 2G
MIC 0	REV 08	750-028392	JZ8737	3D 20x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011782	PBE2C6Y	SFP-SX
Xcvr 2		NON-JNPR	U8105N8	SFP-SX
Xcvr 4	REV 01	740-011613	PFM18EF	SFP-SX
Xcvr 7	REV 01	740-011613	PFF2AM8	SFP-SX
Xcvr 8	REV 01	740-011613	PFF2CT6	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011782	PB82VHH	SFP-SX
Xcvr 1	REV 01	740-011613	PFF2CSW	SFP-SX
Xcvr 9	REV 01	740-011613	PFF2BY0	SFP-SX
QXM 0	REV 04	711-028408	JR6372	MPC QXM
FPC 8	REV 05	750-024387	JW9754	MX FPC Type 2
CPU	REV 03	710-022351	KF1651	DPC PMB
PIC 0	REV 08	750-014730	DM3664	4x OC-3 1x OC-12 SFP
Xcvr 0	REV 01	740-016065	81S290N00077	SFP-SR
Xcvr 1		NON-JNPR	2191844	SFP-SR
Xcvr 2	REV 01	740-011618	PD81EE5	SFP-IR
PIC 1	REV 08	750-014637	DM3671	4x OC-12-3 SFP
Xcvr 0	REV 01	740-011785	PCK3UNK	SFP-SR
Xcvr 3	REV 01	740-011785	PDSOMPZ	SFP-SR
FPC 10	REV 04	710-013699	JY4654	DPCE 40x 1GE R
CPU	REV 05	710-013713	JS9717	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 5	REV 01	740-011782	PAR1L72	SFP-SX
Xcvr 6	REV 01	740-011782	P8N1YQ4	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011782	P8Q2AVL	SFP-SX
Xcvr 5	REV 01	740-011782	PAR1L7B	SFP-SX
Xcvr 6	REV 01	740-011782	PAR1L2J	SFP-SX
Xcvr 8	REV 01	740-011782	P8N1YMY	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Fan Tray 0	REV 03	740-014971	TP0567	Fan Tray
Fan Tray 1	REV 03	740-014971	TP0702	Fan Tray

### show chassis hardware models (MX960 Router with Enhanced MX SCB)

```
user@host> show chassis hardware models
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 03	710-013698	TR0183	CHAS-BP-MX960-S
Fan Extender	REV 02	710-018051	JY5227	ECM-MX960
FPM Board	REV 03	710-014974	JZ6876	CRAFT-MX960-S

Routing Engine 0	REV 06	740-013063	1000687969	RE-S-2000-4096-S
Routing Engine 1	REV 06	740-013063	1000687955	RE-S-2000-4096-S
CB 0	REV 11	750-031391	YZ6072	SCBE-MX-S
CB 1	REV 11	750-031391	YZ6068	SCBE-MX-S
CB 2	REV 11	750-031391	YZ6081	SCBE-MX-S
FPC 0	REV 01	750-018122	KA5576	DPCE-R-40GE-SFP
FPC 1	REV 16	750-031089	YL0719	MX-MPC2-3D
MIC 0	REV 07	750-028387	JR6500	MIC-3D-4XGE-XFP
MIC 1	REV 24	750-028387	YJ3950	MIC-3D-4XGE-XFP
FPC 2	REV 08	710-014219	JY9654	DPC-R-4XGE-XFP
FPC 3	REV 10	750-024199	XJ6692	MX-FPC3
PIC 0	REV 17	750-009553	RJ2945	PC-40C48-SON-SFP
PIC 1	REV 32	750-003700	DP2113	PC-10C192-SON-VSR
FPC 5	REV 25	750-028467	YM8256	MPC-3D-16XGE-SFPP
FPC 7	REV 02	750-031092	JR6658	MX-MPC1-3D-Q
MIC 0	REV 08	750-028392	JZ8737	MIC-3D-20GE-SFP
FPC 8	REV 05	750-024387	JW9754	MX-FPC2
PIC 0	REV 08	750-014730	DM3664	PB-40C3-10C12-SON2-SFP
PIC 1	REV 08	750-014637	DM3671	PB-40C3-40C12-SON-SFP
FPC 10	REV 04	710-013699	JY4654	DPC-R-40GE-SFP
Fan Tray 0	REV 03	740-014971	TP0567	FFANTRAY-MX960-S
Fan Tray 1	REV 03	740-014971	TP0702	FFANTRAY-MX960-S

#### show chassis hardware (MX960 Router with MPC5EQ)

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1214852AFA	MX960
Midplane	REV 01	710-030012	ACAX3674	MX960 Backplane
FPM Board	REV 03	710-014974	CAAZ9326	Front Panel Display
PDM	Rev 03	740-013110	QCS17025017	Power Distribution Module
PEM 0	Rev 10	740-027760	QCS1702N062	PS 4.1kW; 200-240V AC
in				
PEM 1	Rev 04	740-027760	QCS1422N02C	PS 4.1kW; 200-240V AC
in				
PEM 2	Rev 09	740-027760	QCS1614N01X	PS 4.1kW; 200-240V AC
in				
Routing Engine 0	REV 08	740-031116	9009131803	RE-S-1800x4
Routing Engine 1	REV 08	740-031116	9009124913	RE-S-1800x4
CB 0	REV 18	750-031391	CABF0579	Enhanced MX SCB
CB 1	REV 16	750-031391	CAAZ2471	Enhanced MX SCB
CB 2	REV 16	750-031391	CAAW9595	Enhanced MX SCB
FPC 0	REV 18	750-046005	CACE6574	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8908	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA0DYT	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMS7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03Z	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	ANAONAJ	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRQ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-049775	J13K72993	CFP2-100G-LR4
FPC 1	REV 11	750-045372	CABK8154	MPCE Type 3 3D
CPU	REV 08	711-035209	CABE7370	HMPC PMB 2G
MIC 0	REV 07	750-033307	CABD5255	10X10GE SFPP
PIC 0		BUILTIN	BUILTIN	10X10GE SFPP
Xcvr 0	REV 01	740-021308	AQ50319	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ5035V	SFP+-10G-SR

Xcvr 2	REV 01	740-021308	AQ502XJ	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HHR	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQ502YA	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ502EU	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ502HR	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ502A6	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ43H8M	SFP+-10G-SR
MIC 1	REV 14	750-033196	CAAP1398	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC064	CFP-100G-SR10
FPC 3	REV 35	750-028467	CAAT9156	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAV4645	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HZ1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43HZC	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HD2	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502HN	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HGF	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501RZ	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5029V	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ501X9	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ502ZN	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43H86	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502ZY	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502PZ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ503E6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502XN	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11F00213	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ50336	SFP+-10G-SR
FPC 4	REV 18	750-046005	CACE6568	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8900	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA095A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOM1E	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000F	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLYC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLYB	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE00Z	CFP2-100G-SR10
FPC 5	REV 18	750-046005	CACE6577	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8902	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOMXE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLVY	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03T	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLW1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLW3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000J	CFP2-100G-SR10
FPC 7	REV 09	750-037355	CAAF0937	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAD8004	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	ANAOMM3	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP



Xcvr 0	REV 01	740-035329	X000C163	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQGOMS6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRX	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOM6Y	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQGOLZM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00499	CFP-100G-SR10
FPC 8	REV 39	750-045715	CACD1903	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1815	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QC480289	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QC480274	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130190	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130197	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130180	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130199	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0415	MPC5E 24XGE OTN Mezz
FPC 9	REV 05	750-044444	CAAY9801	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3673	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1071	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T12L92342	XFP-10G-SR
Xcvr 1		NON-JNPR	T12L92303	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	CC07BK02X	XFP-10G-SR
QXM 0	REV 06	711-028408	CAAW4883	MPC QXM
QXM 1	REV 06	711-028408	CAAW4603	MPC QXM
FPC 10	REV 21.0.11	750-045715	CAAY3541	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7426	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-031980	AHK01AP	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502ZU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP41BLS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQA08YA	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQA0K26	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA06S3	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQA06AS	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQA053N	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0E97	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA0GS4	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA0JVA	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-021308	AQA057A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANA0MLS	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQA093A	SFP+-10G-SR
Xcvr 3	REV 01	740-021309	943153A00075	SFP+-10G-LR
Xcvr 4	REV 01	740-021308	AQA077B	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQA0JSC	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA0735	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ5028N	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AP40VN5	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0K0J	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA07AP	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA08YB	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 07	750-045717	CAAX3123	MPC5E 24XGE Mezz

FPC 11	REV 17	750-037355	CAAT3986	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAR3972	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQA0DSE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501Y3	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ501XU	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ5036Y	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00247	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	ALQ1DKF	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ403YA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP40TY0	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14G0	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00095	CFP-100G-SR10
Fan Tray 0	REV 08	740-031521	ACAF4219	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACAF4225	Enhanced Fan Tray

#### show chassis hardware detail (MX960 Router)

```
user@host> show chassis hardware detail
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX960
Midplane	REV 01	710-013698	AA6082	MX960 Midplane
PIM	Rev 01	740-013110	000008	Power Inlet Module
PEM 2				
PEM 3	Rev 01	740-013682	000038	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 00	740-015113	1000617944	RE-S-1300
ad0 245 MB	SanDisk	SDCFB-256	111419E1805T1141	Compact Flash
ad2 38154 MB	FUJITSU	MHT2040BH	NROWT5925N77	Hard Disk
CB 0	REV 05	710-013725	JK6947	MX960 Test SCB
FPC 4	REV 01	710-013305	JM7617	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
PIC 1		BUILTIN	BUILTIN	10x 1GE
FPC 7	REV 01	710-013305	JL9634	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
Xcvr 0		NON-JNPR	MYBG65I82C	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	10x 1GE
Xcvr 1	REV 01	740-011782	P7N0368	SFP-SX
Xcvr 4	REV 01	740-011782	P8J1W27	SFP-SX
Xcvr 6	REV 01	740-011782	P8J1VSD	SFP-SX
Xcvr 9	REV 01	740-011782	P8J1W25	SFP-SX
Fan Tray 0				
Fan Tray 1				

#### show chassis hardware detail (MX960 Router with MPC5EQ)

```
user@host> show chassis hardware detail
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1214852AFA	MX960
Midplane	REV 01	710-030012	ACAX3674	MX960 Backplane
FPM Board	REV 03	710-014974	CAAZ9326	Front Panel Display
PDM	Rev 03	740-013110	QCS17025017	Power Distribution Module
PEM 0	Rev 10	740-027760	QCS1702N062	PS 4.1kW; 200-240V AC in

PEM 1	Rev 04	740-027760	QCS1422N02C	PS 4.1kW; 200-240V AC
in				
PEM 2	Rev 09	740-027760	QCS1614N01X	PS 4.1kW; 200-240V AC
in				
Routing Engine 0	REV 08	740-031116	9009131803	RE-S-1800x4
ad0 3831 MB	UGB30SFA4000T1		SFA4000T1 000016CD	Compact Flash
ad1 30533 MB	UGB94BPH32H0S1-KCI		11000061346	Disk 1
usb0 (addr 1)	EHCI root hub 0		Intel	uhub0
usb0 (addr 2)	product 0x0020 32		vendor 0x8087	uhub1
DIMM 0	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
DIMM 1	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
DIMM 2	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
DIMM 3	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
Routing Engine 1	REV 08	740-031116	9009124913	RE-S-1800x4
ad0 3831 MB	UGB30SFA4000T1		SFA4000T1 0000106D	Compact Flash
ad1 30533 MB	UGB94BPH32H0S1-KCI		11000052402	Disk 1
CB 0	REV 18	750-031391	CABF0579	Enhanced MX SCB
CB 1	REV 16	750-031391	CAAZ2471	Enhanced MX SCB
CB 2	REV 16	750-031391	CAAW9595	Enhanced MX SCB
FPC 0	REV 18	750-046005	CACE6574	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8908	RMPD PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA0DYT	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMS7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03Z	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	ANAONAJ	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRQ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-049775	J13K72993	CFP2-100G-LR4
FPC 1	REV 11	750-045372	CABK8154	MPCE Type 3 3D
CPU	REV 08	711-035209	CABE7370	HMPD PMB 2G
MIC 0	REV 07	750-033307	CABD5255	10X10GE SFPP
PIC 0		BUILTIN	BUILTIN	10X10GE SFPP
Xcvr 0	REV 01	740-021308	AQ50319	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ5035V	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502XJ	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HHR	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQ502YA	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ502EU	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ502HR	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ502A6	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ43H8M	SFP+-10G-SR
MIC 1	REV 14	750-033196	CAAP1398	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC064	CFP2-100G-SR10
FPC 3	REV 35	750-028467	CAAT9156	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAV4645	AMPD PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HZ1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43HZC	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HD2	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502HN	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HGF	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501RZ	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5029V	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ501X9	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ502ZN	SFP+-10G-SR

Xcvr 1	REV 01	740-021308	AQ43H86	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502ZY	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502PZ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ503E6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502XN	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11F00213	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ50336	SFP+-10G-SR
FPC 4	REV 18	750-046005	CACE6568	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8900	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA095A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOM1E	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000F	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLYC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLYB	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE00Z	CFP2-100G-SR10
FPC 5	REV 18	750-046005	CACE6577	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8902	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOMXE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLVY	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03T	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLW1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLW3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000J	CFP2-100G-SR10
FPC 7	REV 09	750-037355	CAAF0937	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAD8004	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	ANAOMM3	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X000C163	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQGOMS6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRX	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOM6Y	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQGOLZM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00499	CFP-100G-SR10
FPC 8	REV 39	750-045715	CACD1903	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1815	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QC480289	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QC480274	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130190	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130197	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130180	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130199	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0415	MPC5E 24XGE OTN Mezz
FPC 9	REV 05	750-044444	CAAY9801	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3673	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1071	3D 4x 10GE XFP

PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T12L92342	XFP-10G-SR
Xcvr 1		NON-JNPR	T12L92303	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	CC07BK02X	XFP-10G-SR
QXM 0	REV 06	711-028408	CAAW4883	MPC QXM
QXM 1	REV 06	711-028408	CAAW4603	MPC QXM
FPC 10	REV 21.0.11	750-045715	CAAY3541	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7426	RMPM PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-031980	AHK01AP	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502ZU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP41BLS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQA08YA	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQA0K26	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA06S3	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQA06AS	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQA053N	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0E97	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA0GS4	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA0JVA	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-021308	AQA057A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANA0MLS	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQA093A	SFP+-10G-SR
Xcvr 3	REV 01	740-021309	943153A00075	SFP+-10G-LR
Xcvr 4	REV 01	740-021308	AQA077B	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQA0JSC	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA0735	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ5028N	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AP40VN5	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0K0J	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA07AP	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA08YB	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 07	750-045717	CAAX3123	MPC5E 24XGE Mezz
FPC 11	REV 17	750-037355	CAAT3986	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAR3972	HMPM PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQA0DSE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501Y3	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ501XU	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ5036Y	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00247	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	ALQ1DKF	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ403YA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP40TY0	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14G0	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00095	CFP-100G-SR10
Fan Tray 0	REV 08	740-031521	ACAF4219	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACAF4225	Enhanced Fan Tray

### show chassis hardware extensive (MX960 Router with MPC5EQ)

```
user@host> show chassis hardware extensive
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
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```

Chassis                               JN1214852AFA      MX960
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
                                           S/N:           JN1214852AFA
Assembly ID: 0x0512                    Assembly Version: 00.00
Date: 00-00-0000                       Assembly Flags: 0x00
ID: MX960
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 05 12 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x20: 4a 4e 31 32 31 34 38 35 32 41 46 41 00 00 00 00
  Address 0x30: 00 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane                               REV 01      710-030012      ACAX3674      MX960 Backplane
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
P/N: 710-030012                      S/N:           ACAX3674
Assembly ID: 0x01df                    Assembly Version: 01.01
Date: 01-19-2013                      Assembly Flags: 0x00
Version: REV 01                       CLEI Code:     COM8T00CRB
ID: MX960 Backplane                  FRU Model Number: CHAS-BP-MX960-S
Board Information Record:
  Address 0x00: ad 01 08 00 54 e0 32 bc 68 00 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 01 df 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 33 30 30 31 32 00 00
  Address 0x20: 53 2f 4e 20 41 43 41 58 33 36 37 34 00 13 01 07
  Address 0x30: dd ff ff ff ad 01 08 00 54 e0 32 bc 68 00 ff ff
  Address 0x40: ff ff ff ff 01 43 4f 4d 38 54 30 30 43 52 42 43
  Address 0x50: 48 41 53 2d 42 50 2d 4d 58 39 36 30 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff aa ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board                             REV 03      710-014974      CAAZ9326      Front Panel Display
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 710-014974                      S/N:           CAAZ9326
Assembly ID: 0x01e6                    Assembly Version: 01.03
Date: 12-31-2012                      Assembly Flags: 0x00
Version: REV 03
ID: Front Panel Display                FRU Model Number: CRAFT-MX960-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 01 e6 01 03 52 45 56 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 31 34 39 37 34 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 5a 39 33 32 36 00 1f 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
  Address 0x50: 52 41 46 54 2d 4d 58 39 36 30 2d 53 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PDM                                   Rev 03      740-013110      QCS17025017      Power Distribution Module
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 740-013110                      S/N:           QCS17025017
Assembly ID: 0x0416                    Assembly Version: 01.03
Date: 01-10-2013                      Assembly Flags: 0x00
Version: Rev 03
ID: Power Distribution Module
Board Information Record:

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Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 16 01 03 52 65 76 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 31 33 31 31 30 00 00
Address 0x20: 51 43 53 31 37 30 32 35 30 31 37 00 00 0a 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 0          Rev 10   740-027760   QCS1702N062   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-027760      S/N:           QCS1702N062
Assembly ID:   0x0430          Assembly Version: 01.10
Date:          01-15-2013      Assembly Flags: 0x00
Version:       Rev 10
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 0a 52 65 76 20 31 30 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 37 30 32 4e 30 36 32 00 00 0f 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 1          Rev 04   740-027760   QCS1422N02C   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-027760      S/N:           QCS1422N02C
Assembly ID:   0x0430          Assembly Version: 01.04
Date:          06-04-2010      Assembly Flags: 0x00
Version:       Rev 04
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 04 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 34 32 32 4e 30 32 43 00 00 04 06 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 2          Rev 09   740-027760   QCS1614N01X   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-027760      S/N:           QCS1614N01X
Assembly ID:   0x0430          Assembly Version: 01.09
Date:          04-07-2012      Assembly Flags: 0x00
Version:       Rev 09
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 09 52 65 76 20 30 39 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00

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Address 0x20: 51 43 53 31 36 31 34 4e 30 31 58 00 00 07 04 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 08 740-031116 9009131803 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009131803
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 03-04-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 33 31 38 30 33 00 00 00 04 03 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 000016CD Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000061346 Disk 1
usb0 (addr 1) EHCI root hub 0 Intel uhub0
usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 1 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 2 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 3 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
Routing Engine 1 REV 08 740-031116 9009124913 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009124913
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 01-09-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 32 34 39 31 33 00 00 00 09 01 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 0000106D Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000052402 Disk 1
CB 0 REV 18 750-031391 CABF0579 Enhanced MX SCB
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-031391 S/N: CABF0579
Assembly ID: 0x09b0 Assembly Version: 01.18
Date: 04-15-2013 Assembly Flags: 0x00
Version: REV 18 CLEI Code: COUCASRBAA
ID: Enhanced MX SCB FRU Model Number: SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```



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I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 42 46 30 35 37 39 00 0f 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 53 52 42 41 41 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 43 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 7d ff ff ff ff ff ff ff ff ff ff ff ff

CB 1          REV 16    750-031391    CAAZ2471          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:             CAAZ2471
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         03-09-2013      Assembly Flags:   0x00
Version:      REV 16          CLEI Code:        COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number: SCBE-MX-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 5a 32 34 37 31 00 09 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff ff

CB 2          REV 16    750-031391    CAAW9595          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:             CAAW9595
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         02-01-2013      Assembly Flags:   0x00
Version:      REV 16          CLEI Code:        COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number: SCBE-MX-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 57 39 35 39 35 00 01 02 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff ff

FPC 0         REV 18    750-046005    CACE6574          MPC5E 3D Q 2CGE+4XGE
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-046005      S/N:             CACE6574
Assembly ID:  0x0b8c          Assembly Version: 01.18
Date:         11-20-2013      Assembly Flags:   0x00
Version:      REV 18          CLEI Code:        PROTOXCLEI
ID: MPC5E 3D Q 2CGE+4XGE      FRU Model Number: PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 8c 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 36 30 30 35 00 00
Address 0x20: 53 2f 4e 20 43 41 43 45 36 35 37 34 00 14 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00

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Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 09   711-045719   CACG8908           RMPC PMB
Jedec Code:  0x7fb0           EEPROM Version:  0x02
P/N:         711-045719       S/N:           CACG8908
Assembly ID: 0x0b85           Assembly Version: 01.09
Date:        11-13-2013       Assembly Flags: 0x00
Version:     REV 09
ID: RMPC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 85 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 35 37 31 39 00 00
Address 0x20: 53 2f 4e 20 43 41 43 47 38 39 30 38 00 0d 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN          2X10GE SFPP OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:           BUILTIN
Assembly ID: 0x0a90           Assembly Version: 00.00
Date:        00-00-0000       Assembly Flags: 0x00
ID: 2X10GE SFPP OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ae dc 00 00 00 00 0a 6e 00
Xcvr 0        REV 01   740-021308   AQA0DYT           SFP+-10G-SR
Xcvr 1        REV 01   740-021308   AQGOMS7           SFP+-10G-SR
PIC 1          BUILTIN      BUILTIN          1X100GE CFP2 OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:           BUILTIN
Assembly ID: 0x0a6e           Assembly Version: 00.00
Date:        00-00-0000       Assembly Flags: 0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 03 f3 8c 31 5c e7 80 00 00 00
Xcvr 0        REV 01   740-046563   XD16FC03Z         CFP2-100G-SR10
PIC 2          BUILTIN      BUILTIN          2X10GE SFPP OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:           BUILTIN
Assembly ID: 0x0a90           Assembly Version: 00.00

```

```

Date:          00-00-0000      Assembly Flags:    0x00
ID: 2X10GE SFPP OTN
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 03 f5 6c 31 5c db 40 00 00 00 02
    Xcvr 0      REV 01    740-021308    ANA0NAJ      SFP+-10G-SR
    Xcvr 1      REV 01    740-021308    AQGOMRQ      SFP+-10G-SR
    PIC 3              BUILTIN    BUILTIN    1X100GE CFP2 OTN
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:          BUILTIN    S/N:          BUILTIN
Assembly ID: 0x0a6e      Assembly Version: 00.00
Date:          00-00-0000      Assembly Flags:    0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 03 ed ec 31 5c e2 e8 00 00 00 02
    Xcvr 0      REV 01    740-049775    J13K72993    CFP2-100G-LR4
    FPC 1      REV 11    750-045372    CABK8154    MPCE Type 3 3D
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:          750-045372    S/N:          CABK8154
Assembly ID: 0x09db      Assembly Version: 04.11
Date:          05-18-2013    Assembly Flags: 0x00
Version:      REV 11      CLEI Code:    COUIBBNBAA
ID: MPCE Type 3 3D      FRU Model Number: MX-MPC3E-3D
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 09 db 04 0b 52 45 56 20 31 31 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 35 33 37 32 00 00
  Address 0x20: 53 2f 4e 20 43 41 42 4b 38 31 35 34 00 12 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4e 42 41 41 4d
  Address 0x50: 58 2d 4d 50 43 33 45 2d 33 44 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 44 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff cf ff ff ff ff ff ff ff ff ff ff ff ff
    CPU          REV 08    711-035209    CABE7370    HMPC PMB 2G
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N:          711-035209    S/N:          CABE7370
Assembly ID: 0x0b04      Assembly Version: 01.08
Date:          05-08-2013    Assembly Flags: 0x00
Version:      REV 08
ID: HMPC PMB 2G
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 01 ff 0b 04 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 35 32 30 39 00 00
Address 0x20: 53 2f 4e 20 43 41 42 45 37 33 37 30 00 08 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
MIC 0          REV 07    750-033307    CABD5255          10X10GE SFPP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033307      S/N:           CABD5255
Assembly ID:   0x0a2a          Assembly Version: 02.07
Date:          04-25-2013      Assembly Flags: 0x00
Version:       REV 07          CLEI Code:     COUIBBJBAA
ID: 10X10GE SFPP              FRU Model Number: MIC3-3D-10XGE-SFPP
Board Information Record:
Address 0x00: 34 01 03 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 2a 02 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 33 30 37 00 00
Address 0x20: 53 2f 4e 20 43 41 42 44 35 32 35 35 00 19 04 07
Address 0x30: dd ff ff ff 34 01 03 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4a 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 30 58 47 45 2d 53 46 50
Address 0x60: 50 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 82 c0 03 f0 bc 57 79 83 80 00 00 00 02
PIC 0          BUILTIN      BUILTIN          10X10GE SFPP
Xcvr 0          REV 01    740-021308    AQ50319          SFP+-10G-SR
Xcvr 1          REV 01    740-021308    AQ5035V          SFP+-10G-SR
Xcvr 2          REV 01    740-021308    AQ502XJ          SFP+-10G-SR
Xcvr 3          REV 01    740-021308    AQ43HHR          SFP+-10G-SR
Xcvr 4          REV 01    740-021308    AQ502YA          SFP+-10G-SR
Xcvr 5          REV 01    740-021308    AQ502EU          SFP+-10G-SR
Xcvr 6          REV 01    740-021308    AQ502HR          SFP+-10G-SR
Xcvr 7          REV 01    740-021308    AQ502A6          SFP+-10G-SR
Xcvr 8          REV 01    740-021308    AQ43H8M          SFP+-10G-SR
MIC 1          REV 14    750-033196    CAAP1398          1X100GE CXP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033196      S/N:           CAAP1398
Assembly ID:   0x0a29          Assembly Version: 03.14
Date:          10-27-2012      Assembly Flags: 0x00
Version:       REV 14          CLEI Code:     COUIBBKBAA
ID: 1X100GE CXP              FRU Model Number: MIC3-3D-1X100GE-CXP
Board Information Record:
Address 0x00: 34 01 07 07 08 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 29 03 0e 52 45 56 20 31 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 31 39 36 00 00
Address 0x20: 53 2f 4e 20 43 41 41 50 31 33 39 38 00 1b 0a 07
Address 0x30: dc ff ff ff 34 01 07 07 08 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4b 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 58 31 30 30 47 45 2d 43
Address 0x60: 58 50 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 96 c0 03 ef cc 57 79 85 08 00 00 00 02
PIC 2          BUILTIN      BUILTIN          1X100GE CXP
Xcvr 0          REV 01    740-046563    XD16FC064        CFP2-100G-SR10
FPC 3          REV 35    750-028467    CAAT9156          MPC 3D 16x 10GE
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:           750-028467      S/N:           CAAT9156
Assembly ID:   0x0997          Assembly Version: 01.35
Date:          12-17-2012      Assembly Flags: 0x00

```

```

Version:          REV 35
ID: MPC 3D 16x 10GE          FRU Model Number: MPC-3D-16XGE-SFPP
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 09 97 01 23 52 45 56 20 33 35 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 32 38 34 36 37 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 54 39 31 35 36 00 11 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 4d
  Address 0x50: 50 43 2d 33 44 2d 31 36 58 47 45 2d 53 46 50 50
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 11    711-029089    CAAV4645          AMPC PMB
Jedec Code:  0x7fb0          EEPROM Version:  0x01
P/N:         711-029089      S/N:          CAAV4645
Assembly ID: 0x0998          Assembly Version: 01.11
Date:        12-13-2012      Assembly Flags: 0x00
Version:     REV 11
ID: AMPC PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 09 98 01 0b 52 45 56 20 31 31 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 32 39 30 38 39 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 56 34 36 34 35 00 0d 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN          4x 10GE(LAN) SFP+
Jedec Code:  0x0000          EEPROM Version:  0x00
P/N:         BUILTIN        S/N:          BUILTIN
Assembly ID: 0x02fe          Assembly Version: 00.00
Date:        00-00-0000      Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 02 fe 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 02 6b 94 00 00 00 00 02 fe 00 00
  Xcvr 0      REV 01    740-021308    AQ43HZ1          SFP+-10G-SR
  Xcvr 1      REV 01    740-021308    AQ43HZC          SFP+-10G-SR
  Xcvr 2      REV 01    740-021308    AQ43HD2          SFP+-10G-SR
  Xcvr 3      REV 01    740-021308    AQ502HN          SFP+-10G-SR
PIC 1          BUILTIN    BUILTIN          4x 10GE(LAN) SFP+
Jedec Code:  0x0000          EEPROM Version:  0x00
P/N:         BUILTIN        S/N:          BUILTIN
Assembly ID: 0x02fe          Assembly Version: 00.00
Date:        00-00-0000      Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:

```

```

Address 0x00: 00 00 00 00 02 fe 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ac 0c 00 00 00 00 02 fe 00 00
  Xcvr 0      REV 01  740-021308  AQ43HGF      SFP+-10G-SR
  Xcvr 1      REV 01  740-021308  AQ501RZ      SFP+-10G-SR
  Xcvr 2      REV 01  740-021308  AQ5029V      SFP+-10G-SR
  Xcvr 3      REV 01  740-021308  AQ501X9      SFP+-10G-SR
  PIC 2              BUILTIN      BUILTIN      4x 10GE(LAN) SFP+
Jedec Code:  0x0000      EEPROM Version:  0x00
P/N:         BUILTIN      S/N:         BUILTIN
Assembly ID: 0x02fe      Assembly Version: 00.00
Date:        00-00-0000   Assembly Flags: 0x00
.....

```

### show chassis hardware models (MX960 Router with MPC5EQ)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 01  710-030012  ACAX3674      CHAS-BP-MX960-S
FPM Board     REV 03  710-014974  CAAZ9326      CRAFT-MX960-S
PEM 0         Rev 10  740-027760  QCS1702N062   PWR-MX960-4100-AC-S
PEM 1         Rev 04  740-027760  QCS1422N02C   PWR-MX960-4100-AC-S
PEM 2         Rev 09  740-027760  QCS1614N01X   PWR-MX960-4100-AC-S
Routing Engine 0 REV 08  740-031116  9009131803    RE-S-1800X4-16G-S
Routing Engine 1 REV 08  740-031116  9009124913    RE-S-1800X4-16G-S
CB 0          REV 18  750-031391  CABF0579      SCBE-MX-S
CB 1          REV 16  750-031391  CAAZ2471      SCBE-MX-S
CB 2          REV 16  750-031391  CAAW9595      SCBE-MX-S
FPC 0         REV 18  750-046005  CACE6574      PROTO-ASSEMBLY
FPC 1         REV 11  750-045372  CABK8154      MX-MPC3E-3D
  MIC 0       REV 07  750-033307  CABD5255      MIC3-3D-10XGE-SFP
  MIC 1       REV 14  750-033196  CAAP1398      MIC3-3D-1X100GE-CXP
FPC 3         REV 35  750-028467  CAAT9156      MPC-3D-16XGE-SFP
FPC 4         REV 18  750-046005  CACE6568      PROTO-ASSEMBLY
FPC 5         REV 18  750-046005  CACE6577      PROTO-ASSEMBLY
FPC 7         REV 09  750-037355  CAAF0937      MPC4E-2CGE-8XGE
FPC 8         REV 39  750-045715  CACD1903      PROTO-ASSEMBLY
FPC 9         REV 05  750-044444  CAAY9801      MX-MPC2E-3D-P
  MIC 0       REV 28  750-028387  CAAX1071      MIC-3D-4XGE-XFP
FPC 10        REV 21.0.11 750-045715  CAAY3541      PROTO-ASSEMBLY
FPC 11        REV 17  750-037355  CAAT3986      MPC4E-3D-2CGE-8XGE
Fan Tray 0    REV 08  740-031521  ACAF4219      FFANTRAY-MX960-HC-S
Fan Tray 1    REV 08  740-031521  ACAF4225      FFANTRAY-MX960-HC-S

```

### show chassis hardware clei-models (MX960 Router with MPC5EQ)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Midplane      REV 01  710-030012  COM8T00CRB     CHAS-BP-MX960-S
FPM Board     REV 03  710-014974  CAAZ9326      CRAFT-MX960-S
PEM 0         Rev 10  740-027760  QCS1702N062   PWR-MX960-4100-AC-S
PEM 1         Rev 04  740-027760  QCS1422N02C   PWR-MX960-4100-AC-S
PEM 2         Rev 09  740-027760  QCS1614N01X   PWR-MX960-4100-AC-S

```

Routing Engine 0	REV 08	740-031116	COUCASKBAA	RE-S-1800X4-16G-S
Routing Engine 1	REV 08	740-031116	COUCASKBAA	RE-S-1800X4-16G-S
CB 0	REV 18	750-031391	COUCASRBAA	SCBE-MX-S
CB 1	REV 16	750-031391	COUCARCBAB	SCBE-MX-S
CB 2	REV 16	750-031391	COUCARCBAB	SCBE-MX-S
FPC 0	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	COUIBBNBAA	MX-MPC3E-3D
MIC 0	REV 07	750-033307	COUIBBJBAA	MIC3-3D-10XGE-SFPP
MIC 1	REV 14	750-033196	COUIBBKBAA	MIC3-3D-1X100GE-CXP
FPC 3	REV 35	750-028467		MPC-3D-16XGE-SFPP
FPC 4	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 5	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 7	REV 09	750-037355	PROTOXCLEI	MPC4E-2CGE-8XGE
FPC 8	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 9	REV 05	750-044444	COUIBBGBAA	MX-MPC2E-3D-P
MIC 0	REV 28	750-028387	COUIA16BAA	MIC-3D-4XGE-XFP
FPC 10	REV 21.0.11	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 11	REV 17	750-037355	IPU3A4DHAA	MPC4E-3D-2CGE-8XGE
Fan Tray 0	REV 08	740-031521		FFANTRAY-MX960-HC-S
Fan Tray 1	REV 08	740-031521		FFANTRAY-MX960-HC-S

### show chassis hardware (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

user@host> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN123F6D9AFA	MX960
Midplane	REV 04	750-047849	ACRC8764	Enhanced MX960 Backplane
FPM Board	REV 03	710-014974	CACS4395	Front Panel Display
PDM	Rev 03	740-013110	QCS1809500Z	Power Distribution Module
PEM 0	Rev 08	740-029344	QCS1817V0LK	DC 4.1kW Power Entry
Module				
PEM 1	Rev 08	740-029344	QCS1814V01F	DC 4.1kW Power Entry
Module				
PEM 2	Rev 08	740-029344	QCS1810V1EW	DC 4.1kW Power Entry
Module				
PEM 3	Rev 08	740-029344	QCS1810V1K5	DC 4.1kW Power Entry
Module				
Routing Engine 0	REV 11	740-031116	9013103483	RE-S-1800x4
Routing Engine 1	REV 10	740-031116	9009198513	RE-S-1800x4
CB 0	REV 23	750-031391	CADW3218	Enhanced MX SCB
CB 1	REV 14	750-031391	ABBK5220	Enhanced MX SCB
FPC 1	REV 14	750-045372	CADK0464	MPCE Type 3 3D
CPU	REV 10	711-035209	CADM9839	HMPC PMB 2G
MIC 0	REV 19	750-033199	CAAE5870	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	UTH0H0W	CFP-100G-LR4
FPC 2	REV 14	750-045372	CADN3262	MPCE Type 3 3D
CPU	REV 10	711-035209	CADN8129	HMPC PMB 2G
FPC 3	REV 14	750-045372	CADH0146	MPCE Type 3 3D
CPU	REV 10	711-035209	CADT2458	HMPC PMB 2G
MIC 0	REV 03	750-057666	CADP1386	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	SMD5136.1	OTN-100G-LH
FPC 4	REV 18	750-045372	CAEV5668	MPCE Type 3 3D
CPU	REV 10	711-035209	CAET7827	HMPC PMB 2G
FPC 7	REV 14	750-045372	CADJ1947	MPCE Type 3 3D
CPU	REV 10	711-035209	CADJ1561	HMPC PMB 2G
MIC 0	REV 05	750-057666	CAEB5763	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	1DJBZ052002	OTN-100G-LH

FPC 8	REV 14	750-045372	CADK0485	MPCE Type 3 3D
CPU	REV 10	711-035209	CADM9828	HMPCE PMB 2G
MIC 0	REV 03	750-057666	CADP1390	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
FPC 9	REV 14	750-045372	CADJ1936	MPCE Type 3 3D
CPU	REV 10	711-035209	CADJ1566	HMPCE PMB 2G
MIC 0	REV 14	750-057666	CAFF7544	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	1DJBZ05100K	OTN-100G-LH
FPC 10	REV 14	750-054901	CADJ3846	MPC3E NG HQoS
CPU	REV 11	711-045719	CADN5471	RMPC PMB
MIC 0	REV 05	750-057666	CAEB5760	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	SMD5091.1	CFP-Loopback
Fan Tray 0	REV 08	740-031521	ACDB4083	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACDB3995	Enhanced Fan Tray

### show chassis hardware clei-models(MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	750-047849	CMMJA10BRA	CHAS-BP3-MX960-S
FPM Board	REV 03	710-014974		CRAFT-MX960-S
PEM 0	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 1	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 2	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 3	Rev 08	740-029344		PWR-MX960-4100-DC-S
Routing Engine 0	REV 11	740-031116	COUCASYBAB	RE-S-1800X4-16G-S
Routing Engine 1	REV 10	740-031116	COUCASYBAA	RE-S-1800X4-16G-S
CB 0	REV 23	750-031391	COUCATXBAA	SCBE-MX-S
CB 1	REV 14	750-031391	COUCARCBAA	SCBE-MX-S
FPC 1	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 19	750-033199	COUIBA8BAA	MIC3-3D-1X100GE-CFP
FPC 2	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
FPC 3	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 03	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 4	REV 18	750-045372	COUIBBNBAC	MX-MPC3E-3D
FPC 7	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 05	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 8	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 03	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 9	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 14	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 10	REV 14	750-054901	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 05	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
Fan Tray 0	REV 08	740-031521		FFANTRAY-MX960-HC-S
Fan Tray 1	REV 08	740-031521		FFANTRAY-MX960-HC-S

### show chassis hardware (MX10008 Router)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			BLANK	JNP10008-MX
Midplane	REV 03	750-054097	ACAM1747	JNP10008 Midplane
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x10
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x10
CB 0	REV 17	750-052688	ACAM7468	Control Board
CB 1	REV 18	750-052688	ACAM7709	Control Board



```

FPC 0          REV 33  750-054576  CAFC8443      MPCAE 3D
CPU            BUILTIN  BUILTIN      MPC CPU
PIC 0          BUILTIN  BUILTIN      MRATE-8xQSFP-XGE-XLGE
  Xcvr 0       REV 01  740-032986  QD472831      QSFP+-40G-SR4
  Xcvr 1       REV 01  740-032986  QD472839      QSFP+-40G-SR4
  Xcvr 2       REV 01  740-032986  QB421310      QSFP+-40G-SR4
  Xcvr 3       REV 01  740-032986  QD472831      QSFP+-40G-SR4
.
.
.

PIC 5          BUILTIN  BUILTIN
MRATE-16xQSFP-XGE-XLGE-CGE
  Xcvr 0       REV 01  740-054053  QE419464      QSFP+-4X10G-SR
  Xcvr 1       REV 01  740-046565  QE413929      QSFP+-40G-SR4
  Xcvr 2       REV 01  740-058734  1ACQ1042028   QSFP28-100GBASE-SR4
  Xcvr 3       REV 01  740-046565  QE414116      QSFP+-40G-SR4
FPC 1          REV 33  750-054576  CAFC8443      MPCCE 3D
CPU            BUILTIN  BUILTIN      MPC CPU
PIC 0          BUILTIN  BUILTIN      MRATE-8xQSFP-XGE-XLGE
  Xcvr 0       REV 01  740-032986  QD472831      QSFP+-40G-SR4
  Xcvr 2       REV 01  740-032986  QB421310      QSFP+-40G-SR4
  Xcvr 4       REV 01  740-032986  QA480242      QSFP+-40G-SR4
  Xcvr 5       REV 01  740-032986  QE112585      QSFP+-40G-SR4
FPD Board      REV 01  740-XXXXXX  XXXXXXXX      Front Panel Display
Power Supply 0 REV 02  740-049388  1EDL534003N   AC 2850W Power Supply
Power Supply 1 REV 01  740-049388  1EDL44300CF   AC 2850W Power Supply
Power Supply 2 REV 02  740-049388  1EDL534004F   AC 2850W Power Supply
Power Supply 3 REV 02  740-049388  1EDL5340049   AC 2850W Power Supply
FTC 0          REV 08  750-050108  ACAM7310      Fan Tray Controller
FTC 1          REV 08  750-050108  ACAM7316      Fan Tray Controller
Fan Tray 0     REV 01  750-050108  ACAM1683      Top Fan Tray
Fan Tray 1     REV 01  760-054372  ACAM1657      Vertical Fan Tray
SFB 0          REV 13  750-050058  ACAM8990      Switch Fabric Board
SFB 1          REV 13  750-050058  ACAM8978      Switch Fabric Board
SFB 2          REV 10  750-050058  ACAM8350      Switch Fabric Board
SFB 3          REV 10  750-050058  ACAM8365      Switch Fabric Board
SFB 4          REV 13  750-050058  ACAM8941      Switch Fabric Board
SFB 5          REV 13  750-050058  ACAM8925      Switch Fabric Board

```

### show chassis hardware (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN123AC42AJC  PTX3000
Midplane      REV 22   750-044645  ACLP6640      Backplane
FPM           REV 07   760-044663  ACMX2146      Front Panel Display
PSM 1         REV 02   740-044980  1EDD3080169   DC 12V Power Supply
PSM 2         REV 06   740-044981  1EDK5040563   AC 12V Power Supply
PSM 3         REV 06   740-044981  1EDK5040313   AC 12V Power Supply
PSM 4         REV 04   740-044980  1EDJ3330088   DC 12V Power Supply
Routing Engine 0 REV 12   740-026942  P737A-006029  RE-DUO-2600
CB 0          REV 18   750-044656  ACMZ3179      Control Board
FPC 2         REV 06   750-057064  ACAM6098      FPC3-SFF-PTX-1X
CPU           BUILTIN  BUILTIN      SMPC PMB
PIC 0         REV 17   750-059747  ACNW3510      5X100GE DWDM CFP2-ACO
  Xcvr 0       REV 01   740-062357  1DJBZ040003   OTN-100G-LH
  Xcvr 2       REV 01   740-062357  1DJBZ044004   OTN-100G-LH
  Xcvr 3       REV 01   740-062357  1DJBZ03500P   OTN-100G-LH

```

Xcvr 4	REV 01	740-062357	1DJBZ03700C	OTN-100G-LH
FPC 4	REV 12	750-057064	ACAM7153	FPC3-SFF-PTX-1X
CPU		BUILTIN	BUILTIN	SMPD PMB
PIC 0	REV 17	750-059747	ACNW3511	5X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-061663	47	OTN-100G-LH
Xcvr 1	REV 01	740-061663	39	OTN-100G-LH
Xcvr 2	REV 01	740-062357	1DJBZ044002	OTN-100G-LH
Xcvr 3	REV 01	740-062357	1DJBZ03700G	OTN-100G-LH
Xcvr 4	REV 01	740-062357	1DJBZ041001	OTN-100G-LH
FPC 8	REV 11	750-057064	ACAM6808	FPC3-SFF-PTX-1X
CPU		BUILTIN	BUILTIN	SMPD PMB
PIC 0	REV 17	750-059747	ACNW3508	5X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-061663	194	OTN-100G-LH
Xcvr 1	REV 01	740-061663	168	OTN-100G-LH
Xcvr 2	REV 01	740-061663	52	OTN-100G-LH
Xcvr 3	REV 01	740-061663	85	OTN-100G-LH
Xcvr 4	REV 01	740-061663	218	OTN-100G-LH
SIB 0	REV 03	750-057067	ACAM8513	SIB3-SFF-PTX
SIB 1	REV 01	750-057067	ACAM5918	SIB3-SFF-PTX
SIB 2	REV 01	711-057066	ACAM4325	SIB3-SFF-PTX
SIB 3	REV 01	711-057066	ACAM4328	SIB3-SFF-PTX
SIB 4	REV 01	711-057066	ACAM4349	SIB3-SFF-PTX
SIB 5	REV 01	711-057066	ACAM4323	SIB3-SFF-PTX
SIB 6	REV 01	711-057066	ACAM4344	SIB3-SFF-PTX
SIB 7	REV 01	750-057067	ACAM4346	SIB3-SFF-PTX
SIB 8	REV 01	750-057067	ACAM5911	SIB3-SFF-PTX
Fan Tray 0	REV 13	760-044659	ACMP6395	Fan Tray (Exhaust)
Fan Tray 1	REV 13	760-044659	ACMZ6957	Fan Tray (Exhaust)

#### show chassis hardware clei-models (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 22	750-044645	IPMVN10FRA	CHAS-MP-PTX3000-S
FPM	REV 07	760-044663	IPUCBE5CAA	FPD-SFF-PTX-S
PSM 1	REV 02	740-044980	PROTOPWRDC	PSM-SFF-PTX-DC-2200-S
PSM 2	REV 06	740-044981	IPUPAKOKAB	PSM-SFF-PTX-AC-S
PSM 3	REV 06	740-044981	IPUPAKOKAB	PSM-SFF-PTX-AC-S
PSM 4	REV 04	740-044980	IPUPAK1KAA	PSM-SFF-PTX-DC-S
Routing Engine 0	REV 12	740-026942		RE-DUO-C2600-16G-S
CB 0	REV 18	750-044656	IPUCBE6CAB	CB-SFF-PTX-S
FPC 2	REV 06	750-057064	PROTOXCLEI	PROTO-ASSEMBLY
PIC 0	REV 17	750-059747	IPU3BC5HAA	PTX-5-100G-WDM
FPC 4	REV 12	750-057064		
PIC 0	REV 17	750-059747	IPU3BC5HAA	PTX-5-100G-WDM
FPC 8	REV 11	750-057064		
PIC 0	REV 17	750-059747	IPU3BC5HAA	PTX-5-100G-WDM
SIB 0	REV 03	750-057067	PROTOXCLEI	PROTO-ASSEMBLY
SIB 1	REV 01	750-057067	PROTOXCLEI	PROTO-ASSEMBLY
SIB 2	REV 01	711-057066	PROTOXCLEI	PROTO-ASSEMBLY
SIB 3	REV 01	711-057066	PROTOXCLEI	PROTO-ASSEMBLY
SIB 4	REV 01	711-057066	PROTOXCLEI	PROTO-ASSEMBLY
SIB 5	REV 01	711-057066	PROTOXCLEI	PROTO-ASSEMBLY
SIB 6	REV 01	711-057066	PROTOXCLEI	PROTO-ASSEMBLY
SIB 7	REV 01	750-057067	PROTOXCLEI	PROTO-ASSEMBLY
SIB 8	REV 01	750-057067	PROTOXCLEI	PROTO-ASSEMBLY
Fan Tray 0	REV 13	760-044659	IPUCBE8CAA	FAN-SFF-PTX-S
Fan Tray 1	REV 13	760-044659	IPUCBE8CAA	FAN-SFF-PTX-S

## show chassis hardware (MX2010 Router)

```

user@host > show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               JN11E3217AFK  MX2010
Midplane          REV 01   750-044636   ABAB8506      Lower Backplane
Midplane 1        REV 01   711-044557   ZY8296        Upper Backplane
PMP               REV 03   711-032426   ACAJ1388      Power Midplane
FPM Board         REV 06   711-032349   ZX8744        Front Panel Display
PSM 4             REV 0C   740-033727   VK00254       DC 52V Power Supply
Module
PSM 5             REV 0B   740-033727   VG00015       DC 52V Power Supply
Module
PSM 6             REV 0B   740-033727   VH00097       DC 52V Power Supply
Module
PSM 7             REV 0C   740-033727   VJ00151       DC 52V Power Supply
Module
PSM 8             REV 0C   740-033727   VJ00149       DC 52V Power Supply
Module
PDM 0             REV 0B   740-038109   WA00008       DC Power Dist Module
PDM 1             REV 0B   740-038109   WA00014       DC Power Dist Module
Routing Engine 0  REV 02   740-041821   9009094134    RE-S-1800x4
Routing Engine 1 REV 02   740-041821   9009094141    RE-S-1800x4
CB 0              REV 08   750-040257   CAAB3491      Control Board
CB 1              REV 08   750-040257   CAAB3489      Control Board
SPMB 0            REV 02   711-041855   CAAA6135      PMB Board
SPMB 1            REV 02   711-041855   CAAA6137      PMB Board
SFB 0             REV 06   711-032385   ZV1828        Switch Fabric Board
SFB 1             REV 07   711-032385   ZZ2568        Switch Fabric Board
SFB 2             REV 07   711-032385   ZZ2563        Switch Fabric Board
SFB 3             REV 07   711-032385   ZZ2564        Switch Fabric Board
SFB 4             REV 07   711-032385   ZZ2580        Switch Fabric Board
SFB 5             REV 07   711-032385   ZZ2579        Switch Fabric Board
SFB 6             REV 07   711-032385   CAAB4882      Switch Fabric Board
SFB 7             REV 07   711-032385   CAAB4898      Switch Fabric Board
FPC 0             REV 33   750-028467   CAAB1919      MPC 3D 16x 10GE
CPU               REV 11   711-029089   CAAB7174      AMPC PMB
PIC 0             BUILTIN BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01   740-021308   AMH02RE       SFP+-10G-SR
  Xcvr 1          REV 01   740-021308   AMH038C       SFP+-10G-SR
  Xcvr 2          REV 01   740-021308   AMH0390       SFP+-10G-SR
  Xcvr 3          REV 01   740-021308   AMG0SUA       SFP+-10G-SR
PIC 1             BUILTIN BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01   740-021308   AMH0579       SFP+-10G-SR
  Xcvr 1          REV 01   740-021308   AMG0SGP       SFP+-10G-SR
  Xcvr 2          REV 01   740-021308   AMH04SV       SFP+-10G-SR
  Xcvr 3          REV 01   740-021308   AMH04X3       SFP+-10G-SR
PIC 2             BUILTIN BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01   740-021308   AMH0135       SFP+-10G-SR
  Xcvr 1          REV 01   740-021308   AMH02NC       SFP+-10G-SR
  Xcvr 2          REV 01   740-021308   AMH02XB       SFP+-10G-SR
  Xcvr 3          REV 01   740-021308   AMH02PN       SFP+-10G-SR
PIC 3             BUILTIN BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01   740-021308   AMH057Y       SFP+-10G-SR
  Xcvr 1          REV 01   740-021308   AMG0JHE       SFP+-10G-SR
  Xcvr 2          REV 01   740-021308   AMH02HT       SFP+-10G-SR
  Xcvr 3          REV 01   740-021308   AMH04V4       SFP+-10G-SR
FPC 1             REV 21   750-033205   ZG5027        MPC Type 3
CPU               REV 04   711-035209   YT4780        HMPC PMB 2G
MIC 0             REV 03   750-033307   ZV6299        10X10GE SFPP

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PIC 0		BUILTIN	BUILTIN	10X10GE SFP
Xcvr 0	REV 01	740-031980	083363A00410	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	083363A00334	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	113363A00125	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	083363A00953	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AHR013D	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJ40JUR	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJ40JKL	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AJ30ECK	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	19T511100864	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	19T511100868	SFP+-10G-SR
MIC 1	REV 03	750-033307	ZV6268	10X10GE SFP
PIC 2		BUILTIN	BUILTIN	10X10GE SFP
Xcvr 0	REV 01	740-031980	AJC0JML	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ403PC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJ10N25	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJ40JF4	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJ40JSJ	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJ403V7	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJ40JN3	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AJ40JSU	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	19T511100468	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	19T511101363	SFP+-10G-SR
FPC 8	REV 22	750-031089	ZT9746	MPC Type 2 3D
CPU	REV 06	711-030884	ZS1271	MPC PMB 2G
MIC 0	REV 26	750-028392	ABBS1150	3D 20x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031851	PLG023C	SFP-SX
Xcvr 1	REV 01	740-031851	PLG09C6	SFP-SX
Xcvr 2	REV 02	740-011613	AM0950SF9L7	SFP-SX
Xcvr 3	REV 02	740-011613	AM1001SFN1H	SFP-SX
Xcvr 4	REV 02	740-011613	AM1001SFM9D	SFP-SX
Xcvr 5	REV 02	740-011613	AM1001SFLTJ	SFP-SX
Xcvr 6	REV 01	740-031851	AC1108S03L9	SFP-SX
Xcvr 7	REV 01	740-031851	AC1102S00NC	SFP-SX
Xcvr 8	REV 01	740-031851	AC1102S00MX	SFP-SX
Xcvr 9	REV 01	740-031851	AC1102S0085	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031851	AC1102S00KU	SFP-SX
Xcvr 1	REV 01	740-031851	AC1102S00NG	SFP-SX
Xcvr 2	REV 01	740-031851	AC1102S00K3	SFP-SX
Xcvr 3	REV 01	740-031851	AC1102S008R	SFP-SX
Xcvr 4	REV 01	740-031851	AM1107SUFVJ	SFP-SX
Xcvr 5	REV 01	740-031851	AC1108S03LG	SFP-SX
MIC 1	REV 26	750-028387	ABBR9582	3D 4x 10GE XFP
PIC 2		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T10A91703	XFP-10G-SR
Xcvr 1		NON-JNPR	T09L42604	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	2x 10GE XFP
FPC 9	REV 11	750-036284	ZL3591	MPC 3D 16x 10GE EM
CPU	REV 10	711-029089	ZL0513	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101825	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101821	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101682	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ13R6	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101828	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101716	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101732	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALPOTR1	SFP+-10G-SR

PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101741	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101829	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101669	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14E3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101826	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101817	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101735	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ159A	SFP+-10G-SR
ADC 0	REV 05	750-043596	CAAC2073	Adapter Card
ADC 1	REV 01	750-043596	ZV4117	Adapter Card
ADC 8	REV 01	750-043596	ZV4107	Adapter Card
ADC 9	REV 02	750-043596	ZW1555	Adapter Card
Fan Tray 0	REV 2A	760-046960	ACAY0015	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0019	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0020	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0021	172mm FanTray - 6 Fans

### show chassis hardware detail (MX2010 Router)

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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11E233DAFK  MX2010
Midplane      REV 26   750-044636   ABAB9357      Lower Backplane
Midplane 1    REV 01   711-044557   ABAB8643      Upper Backplane
PMP            REV 04   711-032426   ACAJ1677      Power Midplane
FPM Board      REV 08   760-044634   ABBV9726      Front Panel Display
PSM 0          REV 01   740-045050   1E02224000P   DC 52V Power Supply
Module
PSM 1          REV 01   740-045050   1E02224000M   DC 52V Power Supply
Module
PSM 2          REV 01   740-045050   1E022240010   DC 52V Power Supply
Module
PSM 3          REV 01   740-045050   1E02224000G   DC 52V Power Supply
Module
PSM 4          REV 01   740-045050   1E022240013   DC 52V Power Supply
Module
PSM 5          REV 01   740-045050   1E022240007   DC 52V Power Supply
Module
PSM 6          REV 01   740-045050   1E02224001C   DC 52V Power Supply
Module
PSM 7          REV 01   740-045050   1E02224001D   DC 52V Power Supply
Module
PSM 8          REV 01   740-045050   1E02224001B   DC 52V Power Supply
Module
PDM 0          REV 01   740-045234   1E262250067   DC Power Dist Module
Routing Engine 0 REV 02   740-041821   9009099704    RE-S-1800x4
  ad0    3831 MB  UGB30SFA4000T1  SFA4000T1 00000651 Compact Flash
  ad1    30533 MB UGB94BPH32H0S1-KCI 11000019592 Disk 1
  usb0 (addr 1) EHCI root hub 0 Intel uhub0
  usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 1        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 2        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 3        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 02   740-041821   9009099706    RE-S-1800x4
  ad0    3998 MB  Virtium - TuffDrive VCF P1T0200262860208 114 Compact Flash
  ad1    30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000404 Disk 1
CB 0          REV 13   750-040257   CAAF8436      Control Board

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CB 1	REV 13	750-040257	CAAF8434	Control Board
SPMB 0	REV 02	711-041855	ABBV3825	PMB Board
SPMB 1	REV 02	711-041855	ABBV3833	PMB Board
SFB 0	REV 05	711-044466	ABBX5682	Switch Fabric Board
SFB 1	REV 05	711-044466	ABBX5676	Switch Fabric Board
SFB 2	REV 05	711-044466	ABBX5665	Switch Fabric Board
SFB 3	REV 05	711-044466	ABBX5699	Switch Fabric Board
SFB 4	REV 05	711-044466	ABBX5603	Switch Fabric Board
SFB 5	REV 05	711-044466	ABBX5587	Switch Fabric Board
SFB 6	REV 05	711-044466	ABBX5607	Switch Fabric Board
SFB 7	REV 05	711-044466	ABBX5669	Switch Fabric Board
FPC 0	REV 09	750-037355	CAAF0924	MPC Type 4-2
CPU	REV 08	711-035209	CAAB9842	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	19T511101656	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AMA04RU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00558	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B10M00202	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00328	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	AMA088W	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10L04211	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	19T511101602	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B10L04151	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00332	CFP-100G-SR10
FPC 1	REV 18	750-033205	ZE0128	MPC Type 3
CPU	REV 06	711-035209	ZG5431	HMPC PMB 2G
MIC 0	REV 15	750-033199	ZP6435	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	J11E46118	CFP-100G-LR4
MIC 1	REV 15	750-033199	ZP6442	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	UMN03T4	CFP-100G-LR4
FPC 2	REV 16	750-037358	CAAL1001	MPC Type 4-1
CPU	REV 08	711-035209	CAAK7927	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	193363A00589	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00028	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00376	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00016	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00499	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	973152A00039	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11E01239	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	973152A00058	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	B10M00075	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00014	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AMA0638	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00063	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AMA0629	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	973152A00053	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00344	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	973152A00046	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA062M	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00080	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00580	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00064	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	093363A01494	SFP+-10G-SR

Xcvr 5	REV 01	740-021308	973152A00020	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	123363A00047	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	973152A00072	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-021308	03DZ06A01033	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00022	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	03DZ06A01026	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00013	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	03DZ06A01028	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	973152A00079	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	03DZ06A01018	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	973152A00025	SFP+-10G-SR
FPC 3	REV 33	750-028467	CAAF5400	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAH7626	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00066	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00021	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00062	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00027	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00065	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00069	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00026	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00003	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00035	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00004	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00049	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00055	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00010	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00001	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00073	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00012	SFP+-10G-SR
FPC 4	REV 21	750-033205	ZG5028	MPC Type 3
CPU	REV 05	711-035209	YX3911	HMPC PMB 2G
MIC 0	REV 03	750-036233	ZL2036	2X40GE QSFP
PIC 0		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB220708	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB220735	QSFP+-40G-SR4
MIC 1	REV 03	750-036233	ZL2028	2X40GE QSFP
PIC 2		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB220727	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB220715	QSFP+-40G-SR4
FPC 5	REV 11	750-037358	CAAE2196	MPC Type 4-1
CPU	REV 08	711-035209	CAAD9074	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA062S	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AMA062P	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AMA052R	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA0632	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00564	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A00229	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00363	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00278	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA04CC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AD0927A001W	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AMA04N2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA062U	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00491	SFP+-10G-SR

Xcvr 5	REV 01	740-031980	183363A01511	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00565	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00405	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA07QX	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AMA06MS	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00318	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	193363A00402	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00174	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A00388	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00377	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00234	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA062T	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A00550	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00364	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA0630	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00509	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A00459	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	113363A00191	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00352	SFP+-10G-SR
FPC 6	REV 33	750-028467	CAAF5552	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAH7601	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AD0927A0036	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AD0927A003M	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AD0927A003G	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AD0927A0031	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	193363A00331	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A00325	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00417	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A02509	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	T09K75140	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11A04356	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01952	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01914	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	T09K75157	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	T09K75194	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01926	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01936	SFP+-10G-SR
FPC 7	REV 16	750-037358	CAAL1012	MPC Type 4-1
CPU	REV 08	711-035209	CAAJ3851	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA04NK	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11F00260	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11E02192	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA04CP	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJ40JJK	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11F00238	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B10M00275	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00211	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	B11D05577	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11G00586	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AMA08B7	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA04Q0	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11D05840	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11E00467	SFP+-10G-SR



Xcvr 6	REV 01	740-031980	B11E00029	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	19T511101712	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	193363A00568	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10M00166	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B10M00212	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11D05823	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	03DZ06A01005	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	03DZ06A01003	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	03DZ06A01009	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	03DZ06A01004	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-021308	03DZ06A01017	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	03DZ06A01016	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	03DZ06A01024	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	03DZ06A01008	SFP+-10G-SR
Xcvr 4	REV 01	740-030658	AD0946A02UH	SFP+-10G-USR
Xcvr 5	REV 01	740-021308	T09J67913	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AD0837ES09G	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	03DZ06A01015	SFP+-10G-SR
FPC 8	REV 03	750-045372	CAAD3111	MPC Type 3
CPU	REV 08	711-035209	CAAD8033	HMPC PMB 2G
MIC 0	REV 03	750-036233	ZL2032	2X40GE QSFP
PIC 0		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB230273	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB230254	QSFP+-40G-SR4
MIC 1	REV 03	750-036233	ZL2021	2X40GE QSFP
PIC 2		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB390962	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB390960	QSFP+-40G-SR4
FPC 9	REV 09	750-037355	CAAF1531	MPC Type 4-2
CPU	REV 08	711-035209	CAAB9927	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	193363A00525	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A00504	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00368	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJ40JSS	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	123363A00042	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10M00023	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJ802EM	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11E02348	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
ADC 0	REV 13	750-043596	ABBX5532	Adapter Card
ADC 1	REV 13	750-043596	ABBX5550	Adapter Card
ADC 2	REV 13	750-043596	ABBX5571	Adapter Card
ADC 3	REV 13	750-043596	ABBX5568	Adapter Card
ADC 4	REV 13	750-043596	ABBX5556	Adapter Card
ADC 5	REV 13	750-043596	ABBX5553	Adapter Card
ADC 6	REV 13	750-043596	ABBX5541	Adapter Card
ADC 7	REV 13	750-043596	ABBX5578	Adapter Card
ADC 8	REV 13	750-043596	ABBX5560	Adapter Card
ADC 9	REV 07	750-043596	ABBV7188	Adapter Card
Fan Tray 0	REV 03	760-046960	ACAY0127	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0068	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0072	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0070	172mm FanTray - 6 Fans

## show chassis hardware extensive (MX2010 Router)

```

user@host > show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN11E233DAFK
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2010
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 45 32 33 33 44 41 46 4b 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 26   750-044636  ABAB9357      Lower Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:         750-044636      S/N:          ABAB9357
Assembly ID:  0x0b66          Assembly Version: 01.26
Date:         08-28-2012      Assembly Flags: 0x00
Version:      REV 26         CLEI Code:    PROTOXCLEI
ID: Lower Backplane          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 08 00 2c 21 72 70 a0 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 1a 52 45 56 20 32 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 33 35 37 00 1c 08 07
Address 0x30: dc ff ff ff ad 01 08 00 2c 21 72 70 a0 00 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1    REV 01   711-044557  ABAB8643      Upper Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:         711-044557      S/N:          ABAB8643
Assembly ID:  0x0b65          Assembly Version: 01.01
Date:         07-27-2012      Assembly Flags: 0x00
Version:      REV 01
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 65 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 38 36 34 33 00 1b 07 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP           REV 04   711-032426  ACAJ1677      Power Midplane
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:         711-032426      S/N:          ACAJ1677

```

```

Assembly ID: 0x045d          Assembly Version: 01.04
Date:          07-20-2012    Assembly Flags: 0x00
Version:       REV 04
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 31 36 37 37 00 14 07 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board          REV 08    760-044634    ABBV9726          Front Panel Display
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N:          760-044634    S/N:          ABBV9726
Assembly ID: 0x0b64          Assembly Version: 01.08
Date:          09-10-2012    Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     IPMYA4EJRA
ID: Front Panel Display    FRU Model Number: MX2010-CRAFT-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 64 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 34 34 36 33 34 00 00
Address 0x20: 53 2f 4e 20 41 42 42 56 39 37 32 36 00 0a 09 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 59 41 34 45 4a 52 41 4d
Address 0x50: 58 32 30 31 30 2d 43 52 41 46 54 2d 53 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0              REV 01    740-045050    1E02224000P      DC 52V Power Supply
Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N:          740-045050    S/N:          1E02224000P
Assembly ID: 0x0478          Assembly Version: 01.01
Date:          12-06-2012    Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     XXXXXXXXXX
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-HC-DC-S-A
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 30 35 30 00 00
Address 0x20: 31 45 30 32 32 32 34 30 30 30 50 00 00 06 0c 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 58 58 58 58 58 58 58 58 58 58 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 48 43 2d 44 43 2d
Address 0x60: 53 2d 41 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1              REV 01    740-045050    1E02224000M      DC 52V Power Supply
Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N:          740-045050    S/N:          1E02224000M
Assembly ID: 0x0478          Assembly Version: 01.01
Date:          12-06-2012    Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     XXXXXXXXXX
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-HC-DC-S-A
Board Information Record:

```

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 30 35 30 00 00
Address 0x20: 31 45 30 32 32 32 34 30 30 30 4d 00 00 06 0c 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 58 58 58 58 58 58 58 58 58 58 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 48 43 2d 44 43 2d
Address 0x60: 53 2d 41 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4a 00 00 00 00 00 00 00 00 00 00 00 00
...
PDM 0          REV 01   740-045234   1E262250067       DC Power Dist Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-045234      S/N:             1E262250067
Assembly ID:   0x047b         Assembly Version: 01.01
Date:          06-28-2012     Assembly Flags:   0x00
Version:       REV 01         CLEI Code:        IPUPAJSKAA
ID: DC Power Dist Module     FRU Model Number: MX2000-PDM-DC-S-A
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 7b 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 32 33 34 00 00
Address 0x20: 31 45 32 36 32 32 35 30 30 36 37 00 00 1c 06 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4a 53 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 44 4d 2d 44 43 2d 53 2d 41
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 89 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 02   740-041821   9009099704       RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-041821      S/N:             9009099704
Assembly ID:   0x09c0         Assembly Version: 01.02
Date:          03-15-2012     Assembly Flags:   0x00
Version:       REV 02
ID: RE-S-1800x4              FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 41 2d 34 34 47 42 23 41 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 31 38 32 31 00 00
Address 0x20: 39 30 30 39 30 39 37 30 34 00 00 00 0f 03 07
Address 0x30: dc ff ff ff 54 32 30 32 37 44 41 2d 34 34 47 42
Address 0x40: 23 41 23 00 01 00 00 00 00 00 00 00 00 00 00 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 8c ff ff ff ff ff ff ff ff ff ff ff ff
ad0   3831 MB   UGB30SFA4000T1          SFA4000T1 00000651 Compact Flash
ad1   30533 MB  UGB94BPH32H0S1-KCI          11000019592      Disk 1
usb0 (addr 1)  EHCI root hub 0          Intel          uhub0
usb0 (addr 2)  product 0x0020 32          vendor 0x8087   uhub1
DIMM 0         SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 1         SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 2         SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 3         SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 02   740-041821   9009099706       RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-041821      S/N:             9009099706
Assembly ID:   0x09c0         Assembly Version: 01.02
Date:          02-23-2012     Assembly Flags:   0x00
Version:       REV 02

```

```

ID: RE-S-1800x4                      FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
  Address 0x00: 54 32 30 32 37 44 41 2d 34 34 47 42 23 41 23 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 09 c0 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 34 31 38 32 31 00 00
  Address 0x20: 39 30 30 39 30 39 39 37 30 36 00 00 00 17 02 07
  Address 0x30: dc ff ff ff 54 32 30 32 37 44 41 2d 34 34 47 42
  Address 0x40: 23 41 23 00 01 00 00 00 00 00 00 00 00 00 00 52
  Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 8c ff ff ff ff ff ff ff ff ff ff ff ff
ad0  3998 MB Virtium - TuffDrive VCF P1T0200262860208 114 Compact Flash
ad1  30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000404 Disk 1
CB 0          REV 13  750-040257  CAAF8436          Control Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-040257      S/N:            CAAF8436
Assembly ID:  0x0b26          Assembly Version: 01.13
Date:         08-29-2012      Assembly Flags: 0x00
Version:      REV 13          CLEI Code:      PROTOXCLEI
ID: Control Board              FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 26 01 0d 52 45 56 20 31 33 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 30 32 35 37 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 46 38 34 33 36 00 1d 08 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
...
SPMB 0          REV 02  711-041855  ABBV3825          PMB Board
Jedec Code:   0x7fb0          EEPROM Version:   0x01
P/N:          711-041855      S/N:            ABBV3825
Assembly ID:  0x0b29          Assembly Version: 01.02
Date:         08-14-2012      Assembly Flags: 0x00
Version:      REV 02
ID: PMB Board
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0b 29 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 34 31 38 35 35 00 00
  Address 0x20: 53 2f 4e 20 41 42 42 56 33 38 32 35 00 0e 08 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
...
SFB 0          REV 05  711-044466  ABBX5682          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          711-044466      S/N:            ABBX5682
Assembly ID:  0x0b25          Assembly Version: 01.05
Date:         09-07-2012      Assembly Flags: 0x00
Version:      REV 05          CLEI Code:      PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

## I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b 25 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 34 36 36 00 00
Address 0x20: 53 2f 4e 20 41 42 42 58 35 36 38 32 00 07 09 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 01 00 00 00 00 00 00 48 00

```

...

FPC 0 REV 09 750-037355 CAAF0924 MPC Type 4-2

```

Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-037355 S/N: CAAF0924
Assembly ID: 0x0b4e Assembly Version: 01.09
Date: 05-21-2012 Assembly Flags: 0x00
Version: REV 09 CLEI Code: PROTOXCLEI
ID: MPC Type 4-2 FRU Model Number: MPC4E-2CGE-8XGE

```

## Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

## I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b 4e 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 33 35 35 00 00
Address 0x20: 53 2f 4e 20 43 41 41 46 30 39 32 34 00 15 05 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 4d
Address 0x50: 50 43 34 45 2d 32 43 47 45 2d 38 58 47 45 00 00
Address 0x60: 00 00 00 00 00 00 30 39 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c6 ff ff ff ff ff ff ff ff ff ff ff ff

```

CPU REV 08 711-035209 CAAB9842 HMPC PMB 2G

```

Jedec Code: 0x7fb0 EEPROM Version: 0x01
P/N: 711-035209 S/N: CAAB9842
Assembly ID: 0x0b04 Assembly Version: 01.08
Date: 05-17-2012 Assembly Flags: 0x00
Version: REV 08
ID: HMPC PMB 2G

```

## Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

## I2C Hex Data:

```

Address 0x00: 7f b0 01 ff 0b 04 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 35 32 30 39 00 00
Address 0x20: 53 2f 4e 20 43 41 41 42 39 38 34 32 00 11 05 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

```

PIC 0 BUILTIN BUILTIN 4x10GE SFPP

```

Jedec Code: 0x0000 EEPROM Version: 0x00
P/N: BUILTIN S/N: BUILTIN
Assembly ID: 0x0a53 Assembly Version: 00.00
Date: 00-00-0000 Assembly Flags: 0x00
ID: 4x10GE SFPP

```

## Board Information Record:

```
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

## I2C Hex Data:

```

Address 0x00: 00 00 00 00 0a 53 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 4d 58 43 00
Address 0x20: 42 55 49 4c 54 49 4e 00 4d 58 43 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```

```

Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ae 64 00 00 00 00 0a 52 00 00
Xcvr 0      REV 01  740-021308  19T511101656  SFP+-10G-SR
Xcvr 1      REV 01  740-031980  AMA04RU      SFP+-10G-SR
Xcvr 2      REV 01  740-031980  193363A00558 SFP+-10G-SR
Xcvr 3      REV 01  740-031980  B10M00202    SFP+-10G-SR
...
ADC 0       REV 13  750-043596  ABBX5532      Adapter Card
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        750-043596   S/N:          ABBX5532
Assembly ID: 0x0b3d     Assembly Version: 01.13
Date:       09-12-2012   Assembly Flags: 0x00
Version:    REV 13      CLEI Code:    IPUCBA8CAA
ID: Adapter Card      FRU Model Number: MX2000-LC-ADAPTER
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 3d 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 33 35 39 36 00 00
Address 0x20: 53 2f 4e 20 41 42 42 58 35 35 33 32 00 0c 09 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 41 38 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 4c 43 2d 41 44 41 50 54 45 52
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 3a 00 00 00 00 00 00 00 00 00 00 00 00
...

```

### show chassis hardware models (MX2010 Router)

```

user@host > show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	Serial number	FRU model number
FPM Board	REV 06	711-032349	ZX8744	711-032349
PSM 4	REV 0C	740-033727	VK00254	000000000000000000000000
PSM 5	REV 0B	740-033727	VG00015	000000000000000000000000
PSM 6	REV 0B	740-033727	VH00097	000000000000000000000000
PSM 7	REV 0C	740-033727	VJ00151	000000000000000000000000
PSM 8	REV 0C	740-033727	VJ00149	000000000000000000000000
PDM 0	REV 0B	740-038109	WA00008	
PDM 1	REV 0B	740-038109	WA00014	
Routing Engine 0	REV 02	740-041821	9009094134	RE-S-1800X4-16G-S
Routing Engine 1	REV 02	740-041821	9009094141	RE-S-1800X4-16G-S
CB 0	REV 08	750-040257	CAAB3491	750-040257
CB 1	REV 08	750-040257	CAAB3489	750-040257
SFB 0	REV 06	711-032385	ZV1828	711-032385
SFB 1	REV 07	711-032385	ZZ2568	711-032385
SFB 2	REV 07	711-032385	ZZ2563	711-032385
SFB 3	REV 07	711-032385	ZZ2564	711-032385
SFB 4	REV 07	711-032385	ZZ2580	711-032385
SFB 5	REV 07	711-032385	ZZ2579	711-0323856
SFB 6	REV 07	711-032385	CAAB4882	711-044170
SFB 7	REV 07	711-032385	CAAB4898	711-044170
FPC 0	REV 33	750-028467	CAAB1919	MPC-3D-16XGE-SFPP
FPC 1	REV 21	750-033205	ZG5027	MX-MPC3-3D
MIC 0	REV 03	750-033307	ZV6299	MIC3-3D-10XGE-SFPP
MIC 1	REV 03	750-033307	ZV6268	MIC3-3D-10XGE-SFPP
FPC 8	REV 22	750-031089	ZT9746	MX-MPC2-3D
MIC 0	REV 26	750-028392	ABBS1150	MIC-3D-20GE-SFP
MIC 1	REV 26	750-028387	ABBR9582	MIC-3D-4XGE-XFP
FPC 9	REV 11	750-036284	ZL3591	MPCE-3D-16XGE-SFPP
ADC 0	REV 05	750-043596	CAAC2073	750-043596

ADC 1	REV 01	750-043596	ZV4117	750-043596
ADC 8	REV 01	750-043596	ZV4107	750-043596
ADC 9	REV 02	750-043596	ZW1555	750-043596
Fan Tray 0	REV 2A	760-046960	ACAY0015	
Fan Tray 1	REV 2A	760-046960	ACAY0019	
Fan Tray 2	REV 2A	760-046960	ACAY0020	
Fan Tray 3	REV 2A	760-046960	ACAY0021	

### show chassis hardware clei-models (MX2010 Routers)

```

user@host > show chassis hardware clei-models
Hardware inventory:
Item                Version  Part number  CLEI code  FRU model number
FPM Board           REV 06  711-032349  PROTOXCLEI 711-032349
PSM 4               REV 0C  740-033727  0000000000 000000000000000000000000
PSM 5               REV 0B  740-033727  0000000000 000000000000000000000000
PSM 6               REV 0B  740-033727  0000000000 000000000000000000000000
PSM 7               REV 0C  740-033727  0000000000 000000000000000000000000
PSM 8               REV 0C  740-033727  0000000000 000000000000000000000000
PDM 0               REV 0B  740-038109  740-038109
PDM 1               REV 0B  740-038109
Routing Engine 0    REV 02  740-041821  RE-S-1800X4-16G-S
Routing Engine 1    REV 02  740-041821  RE-S-1800X4-16G-S
CB 0                REV 08  750-040257  PROTOXCLEI 750-040257
CB 1                REV 08  750-040257  PROTOXCLEI 750-040257
SFB 0               REV 06  711-032385  PROTOXCLEI 711-032385
SFB 1               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 2               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 3               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 4               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 5               REV 07  711-032385  PROTOXCLEI 711-0323856
SFB 6               REV 07  711-032385  PROTOXCLEI 711-044170
SFB 7               REV 07  711-032385  PROTOXCLEI 711-044170
FPC 0               REV 33  750-028467  MPC-3D-16XGE-SFPP
FPC 1               REV 21  750-033205  MX-MPC3-3D
MIC 0               REV 03  750-033307  PROTOXCLEI MIC3-3D-10XGE-SFPP
MIC 1               REV 03  750-033307  PROTOXCLEI MIC3-3D-10XGE-SFPP
FPC 8               REV 22  750-031089  COUIBAYBAA MX-MPC2-3D
MIC 0               REV 26  750-028392  COUIA15BAA MIC-3D-20GE-SFP
MIC 1               REV 26  750-028387  COUIA16BAA MIC-3D-4XGE-XFP
FPC 9               REV 11  750-036284  CMUIACGBAA MPCE-3D-16XGE-SFPP
ADC 0               REV 05  750-043596  PROTOXCLEI 750-043596
ADC 1               REV 01  750-043596  PROTOXCLEI 750-043596
ADC 8               REV 01  750-043596  PROTOXCLEI 750-043596
ADC 9               REV 02  750-043596  PROTOXCLEI 750-043596
Fan Tray 0          REV 2A  760-046960
Fan Tray 1          REV 2A  760-046960
Fan Tray 2          REV 2A  760-046960
Fan Tray 3          REV 2A  760-046960

```

### show chassis hardware (MX2010 Routers with MPC6E and OTN MIC)

```

user@host> show chassis hardware
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis             REV 35  750-044636  JN11C9AFEAFK  MX2010
Midplane            REV 02  711-044557  ABAB9188      Lower Backplane
Midplane 1          REV 02  711-044557  ABAB8729      Upper Backplane
PMP                 REV 04  711-032426  ACAJ2432      Power Midplane
FPM Board           REV 09  760-044634  ABCA4314      Front Panel Display

```



PSM 0 Module	REV 01	740-050037	1EDB321015C	DC 52V Power Supply
PSM 1 Module	REV 01	740-050037	1EDB321015J	DC 52V Power Supply
PSM 2 Module	REV 01	740-050037	1EDB32000K8	DC 52V Power Supply
PSM 3 Module	REV 01	740-050037	1EDB32101JW	DC 52V Power Supply
PSM 4 Module	REV 01	740-050037	1EDB321015G	DC 52V Power Supply
PSM 5 Module	REV 01	740-050037	1EDB32101HH	DC 52V Power Supply
PSM 6 Module	REV 01	740-050037	1EDB32101HD	DC 52V Power Supply
PSM 7 Module	REV 01	740-050037	1EDB321015F	DC 52V Power Supply
PSM 8 Module	REV 01	740-050037	1EDB321015B	DC 52V Power Supply
PDM 0	REV 03	740-045234	1EFA3220433	DC Power Dist Module
PDM 1	REV 03	740-045234	1EFA3220425	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009115685	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009099711	RE-S-1800x4
CB 0	REV 23	750-040257	CABE8395	Control Board
CB 1	REV 12	750-040257	CAAD9499	Control Board
SPMB 0	REV 02	711-041855	ABCG8426	PMB Board
SPMB 1	REV 02	711-041855	ABBS1481	PMB Board
SFB 0	REV 06	711-044466	ABCD5013	Switch Fabric Board
SFB 1	REV 06	711-044466	ABCD5160	Switch Fabric Board
SFB 2	REV 06	711-044466	ABCD5175	Switch Fabric Board
SFB 3	REV 06	711-044466	ABCD4938	Switch Fabric Board
SFB 4	REV 06	711-044466	ABCD4944	Switch Fabric Board
SFB 5	REV 06	711-044466	ABCD4968	Switch Fabric Board
SFB 6	REV 06	711-044466	ABCD5267	Switch Fabric Board
SFB 7	REV 06	711-044466	ABCD4997	Switch Fabric Board
FPC 0	REV 59	750-044130	ABCT7676	MPC6E 3D
CPU	REV 10	711-045719	ABCK8527	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7810	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7811	MPC6E XL
FPC 2	REV 27	750-033205	ZL6014	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9068	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9214	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XC49FC030	CFP2-100G-SR10
MIC 1	REV 18	750-033199	CAAC3231	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 3	REV 59	750-044130	ABCT7682	MPC6E 3D
CPU	REV 10	711-045719	ABCK8531	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7818	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7819	MPC6E XL
FPC 4	REV 33	750-044130	ABBY9278	MPC6E 3D
CPU	REV 09	711-045719	ABBY8677	RMPD PMB
XLM 0	REV 06.2.00	711-046638	ABBY8844	MPC6E XL
XLM 1	REV 06.2.00	711-046638	ABBY8830	MPC6E XL
FPC 5	REV 59	750-044130	ABCT7675	MPC6E 3D
CPU	REV 10	711-045719	ABCK8526	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7808	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7809	MPC6E XL
FPC 6	REV 30	750-028467	ZM4986	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6541	AMPD PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43GAC	SFP+-10G-SR

PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	ALM0A6D	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AQFORB3	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	153363A00333	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AN10KYE	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	APK04YM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AQFOH44	SFP+-10G-SR
FPC 8	REV 38	750-031090	CABF7313	MPC Type 2 3D EQ
CPU	REV 08	711-030884	CABE6727	MPC PMB 2G
MIC 0	REV 18	750-028380	YK8253	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 03	740-014289	AD1148M00TP	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
QXM 0	REV 06	711-028408	CABC5614	MPC QXM
QXM 1	REV 06	711-028408	CABC5550	MPC QXM
FPC 9	REV 39	750-044130	ABCK1652	MPC6E 3D
CPU	REV 09	711-045719	ABCK1655	RMPC PMB
MIC 0	REV 09	750-049457	ABCP1230	2X100GE CFP2 OTN
PIC 0		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0		NON-JNPR	37300222WP0002	CFP2-100G-LR4-D
Xcvr 1		NON-JNPR	FD46F001Y	CFP2-100G-SR10
MIC 1	REV 07	750-049457	ABCV6662	2X100GE CFP2 OTN
PIC 1		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQD0014	CFP2-100G-LR4-D
Xcvr 1		NON-JNPR	J13J68335	CFP2-100G-LR4-D
XLM 0	REV 07.2.00	711-046638	ABCK5491	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5475	MPC6E XL
ADC 1	REV 17	750-043596	ABCG9023	Adapter Card
ADC 2	REV 01	750-043596	ZV4079	Adapter Card
ADC 6	REV 17	750-043596	ABCG8866	Adapter Card
ADC 8	REV 17	750-043596	ABCA8993	Adapter Card
Fan Tray 0	REV 06	760-046960	ACAY0354	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0831	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0892	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0839	172mm FanTray - 6 Fans

### show chassis hardware detail (MX2010 Routers with MPC6E and OTN MIC)

```
user@host> show chassis hardware detail
```

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			JN11C9AFEAFK	MX2010
Midplane	REV 35	750-044636	ABAB9188	Lower Backplane
Midplane 1	REV 02	711-044557	ABAB8729	Upper Backplane
PMP	REV 04	711-032426	ACAJ2432	Power Midplane
FPM Board	REV 09	760-044634	ABCA4314	Front Panel Display
PSM 0	REV 01	740-050037	1EDB321015C	DC 52V Power Supply
Module				
PSM 1	REV 01	740-050037	1EDB321015J	DC 52V Power Supply
Module				
PSM 2	REV 01	740-050037	1EDB32000K8	DC 52V Power Supply
Module				
PSM 3	REV 01	740-050037	1EDB32101JW	DC 52V Power Supply
Module				
PSM 4	REV 01	740-050037	1EDB321015G	DC 52V Power Supply
Module				
PSM 5	REV 01	740-050037	1EDB32101HH	DC 52V Power Supply
Module				
PSM 6	REV 01	740-050037	1EDB32101HD	DC 52V Power Supply

Module				
PSM 7	REV 01	740-050037	1EDB321015F	DC 52V Power Supply
Module				
PSM 8	REV 01	740-050037	1EDB321015B	DC 52V Power Supply
Module				
PDM 0	REV 03	740-045234	1EFA3220433	DC Power Dist Module
PDM 1	REV 03	740-045234	1EFA3220425	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009115685	RE-S-1800x4
ad0 3998 MB		Virtium - TuffDrive	VCF P1T0200274310822	191 Compact Flash
ad1 30533 MB		UGB94BPH32H0S1-KCI	11000043190	Disk 1
usb0 (addr 1)		EHCI root hub 0	Intel	uhub0
usb0 (addr 2)		product 0x0020 32	vendor 0x8087	uhub1
DIMM 0		VL31B5263F-F8SD DIE	REV-0 PCB REV-0	MFR ID-ce80
DIMM 1		VL31B5263F-F8SD DIE	REV-0 PCB REV-0	MFR ID-ce80
DIMM 2		VL31B5263F-F8SD DIE	REV-0 PCB REV-0	MFR ID-ce80
DIMM 3		VL31B5263F-F8SD DIE	REV-0 PCB REV-0	MFR ID-ce80
Routing Engine 1	REV 02	740-041821	9009099711	RE-S-1800x4
ad0 3998 MB		Virtium - TuffDrive	VCF P1T0200262860208	30 Compact Flash
ad1 30533 MB		UGB94ARF32H0S3-KC	UNIGEN-499551-000146	Disk 1
CB 0	REV 23	750-040257	CABE8395	Control Board
CB 1	REV 12	750-040257	CAAD9499	Control Board
SPMB 0	REV 02	711-041855	ABCG8426	PMB Board
SPMB 1	REV 02	711-041855	ABBS1481	PMB Board
SFB 0	REV 06	711-044466	ABCD5013	Switch Fabric Board
SFB 1	REV 06	711-044466	ABCD5160	Switch Fabric Board
SFB 2	REV 06	711-044466	ABCD5175	Switch Fabric Board
SFB 3	REV 06	711-044466	ABCD4938	Switch Fabric Board
SFB 4	REV 06	711-044466	ABCD4944	Switch Fabric Board
SFB 5	REV 06	711-044466	ABCD4968	Switch Fabric Board
SFB 6	REV 06	711-044466	ABCD5267	Switch Fabric Board
SFB 7	REV 06	711-044466	ABCD4997	Switch Fabric Board
FPC 0	REV 59	750-044130	ABCT7676	MPC6E 3D
CPU	REV 10	711-045719	ABCK8527	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7810	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7811	MPC6E XL
FPC 2	REV 27	750-033205	ZL6014	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9068	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9214	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XC49FC030	CFP2-100G-SR10
MIC 1	REV 18	750-033199	CAAC3231	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 3	REV 59	750-044130	ABCT7682	MPC6E 3D
CPU	REV 10	711-045719	ABCK8531	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7818	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7819	MPC6E XL
FPC 4	REV 33	750-044130	ABBY9278	MPC6E 3D
CPU	REV 09	711-045719	ABBY8677	RMPD PMB
XLM 0	REV 06.2.00	711-046638	ABBY8844	MPC6E XL
XLM 1	REV 06.2.00	711-046638	ABBY8830	MPC6E XL
FPC 5	REV 59	750-044130	ABCT7675	MPC6E 3D
CPU	REV 10	711-045719	ABCK8526	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7808	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7809	MPC6E XL
FPC 6	REV 30	750-028467	ZM4986	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6541	AMPD PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43GAC	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	ALMOA6D	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AQFORB3	SFP+-10G-SR

Xcvr 2	REV 01	740-031980	153363A00333	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AN10KYE	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	APK04YM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AQFOH44	SFP+-10G-SR
FPC 8	REV 38	750-031090	CABF7313	MPC Type 2 3D EQ
CPU	REV 08	711-030884	CABE6727	MPC PMB 2G
MIC 0	REV 18	750-028380	YK8253	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 03	740-014289	AD1148M00TP	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
QXM 0	REV 06	711-028408	CABC5614	MPC QXM
QXM 1	REV 06	711-028408	CABC5550	MPC QXM
FPC 9	REV 39	750-044130	ABCK1652	MPC6E 3D
CPU	REV 09	711-045719	ABCK1655	RMPC PMB
MIC 0	REV 09	750-049457	ABCP1230	2X100GE CFP2 OTN
PIC 0		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0		NON-JNPR	37300222WP0002	CFP2-100G-LR4-D
Xcvr 1		NON-JNPR	FD46F001Y	CFP2-100G-SR10
MIC 1	REV 07	750-049457	ABCV6662	2X100GE CFP2 OTN
PIC 1		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQD0014	CFP2-100G-LR4-D
Xcvr 1		NON-JNPR	J13J68335	CFP2-100G-LR4-D
XLM 0	REV 07.2.00	711-046638	ABCK5491	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5475	MPC6E XL
ADC 1	REV 17	750-043596	ABCG9023	Adapter Card
ADC 2	REV 01	750-043596	ZV4079	Adapter Card
ADC 6	REV 17	750-043596	ABCG8866	Adapter Card
ADC 8	REV 17	750-043596	ABCA8993	Adapter Card
Fan Tray 0	REV 06	760-046960	ACAY0354	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0831	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0892	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0839	172mm FanTray - 6 Fans

### show chassis hardware extensive (MX2010 Routers with MPC6E and OTN MIC)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN11C9AFEAFK
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2010
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 43 39 41 46 45 41 46 4b 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 35      750-044636  ABAB9188      Lower Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:          750-044636      S/N:          ABAB9188
Assembly ID:  0x0b66          Assembly Version: 01.35

```

```

Date:          06-21-2013      Assembly Flags:    0x00
Version:       REV 35          CLEI Code:        IPMU810ARA
ID: Lower Backplane            FRU Model Number: CHAS-BP-MX2010-S
Board Information Record:
Address 0x00: ad 01 08 00 3c 8a b0 38 68 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 31 38 38 00 15 06 07
Address 0x30: dd ff ff ff ad 01 08 00 3c 8a b0 38 68 00 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 38 31 30 41 52 41 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 31 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 30 36 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f8 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1      REV 02      711-044557      ABAB8729      Upper Backplane
Jedec Code:    0x7fb0      EEPROM Version:    0x01
P/N:           711-044557      S/N:             ABAB8729
Assembly ID:   0x0b65      Assembly Version: 01.02
Date:          03-21-2013      Assembly Flags:   0x00
Version:       REV 02
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 65 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 38 37 32 39 00 15 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP             REV 04      711-032426      ACAJ2432      Power Midplane
Jedec Code:    0x7fb0      EEPROM Version:    0x01
P/N:           711-032426      S/N:             ACAJ2432
Assembly ID:   0x045d      Assembly Version: 01.04
Date:          03-28-2013      Assembly Flags:   0x00
Version:       REV 04
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 34 33 32 00 1c 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board      REV 09      760-044634      ABCA4314      Front Panel Display
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:           760-044634      S/N:             ABCA4314
Assembly ID:   0x0b64      Assembly Version: 01.09
Date:          03-28-2013      Assembly Flags:   0x00
Version:       REV 09      CLEI Code:        IPMYA4EJRA
ID: Front Panel Display      FRU Model Number: MX2010-CRAFT-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 64 01 09 52 45 56 20 30 39 00 00

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Address 0x10: 00 00 00 00 37 36 30 2d 30 34 34 36 33 34 00 00
Address 0x20: 53 2f 4e 20 41 42 43 41 34 33 31 34 00 1c 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 59 41 34 45 4a 52 41 4d
Address 0x50: 58 32 30 31 30 2d 43 52 41 46 54 2d 53 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0          REV 01   740-050037   1EDB321015C   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB321015C
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-28-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 43 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1          REV 01   740-050037   1EDB321015J   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB321015J
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-28-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 4a 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 2          REV 01   740-050037   1EDB32000K8   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB32000K8
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-23-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 30 30 30 4b 38 00 00 17 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d

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Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 01    740-050037    1EDB32101JW    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB32101JW
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-30-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 4a 57 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 01    740-050037    1EDB321015G    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB321015G
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-28-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 47 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 01    740-050037    1EDB32101HH    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB32101HH
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-30-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 48 48 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 01    740-050037    1EDB32101HD    DC 52V Power Supply

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Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 740-050037          S/N: 1EDB32101HD
Assembly ID: 0x0478        Assembly Version: 01.01
Date: 05-30-2013          Assembly Flags: 0x00
Version: REV 01           CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 48 44 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 01 740-050037 1EDB321015F DC 52V Power Supply
Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 740-050037          S/N: 1EDB321015F
Assembly ID: 0x0478        Assembly Version: 01.01
Date: 05-28-2013          Assembly Flags: 0x00
Version: REV 01           CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 46 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 8          REV 01 740-050037 1EDB321015B DC 52V Power Supply
Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 740-050037          S/N: 1EDB321015B
Assembly ID: 0x0478        Assembly Version: 01.01
Date: 05-28-2013          Assembly Flags: 0x00
Version: REV 01           CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 42 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PDM 0          REV 03 740-045234 1EFA3220433 DC Power Dist Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 740-045234          S/N: 1EFA3220433
Assembly ID: 0x047b        Assembly Version: 01.03
Date: 05-30-2013          Assembly Flags: 0x00

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Version:      REV 03          CLEI Code:      IPUPAJSKAA
ID: DC Power Dist Module     FRU Model Number: MX2000-PDM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 7b 01 03 52 45 56 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 32 33 34 00 00
  Address 0x20: 31 45 46 41 33 32 32 30 34 33 33 00 00 1e 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4a 53 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 44 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 33 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 1d 00 00 00 00 00 00 00 00 00 00 00 00
PDM 1          REV 03      740-045234      1EFA3220425      DC Power Dist Module
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:           740-045234    S/N:           1EFA3220425
Assembly ID:   0x047b      Assembly Version: 01.03
Date:          05-30-2013   Assembly Flags: 0x00
Version:       REV 03      CLEI Code:      IPUPAJSKAA
ID: DC Power Dist Module     FRU Model Number: MX2000-PDM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
..

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#### show chassis hardware (MX2020 Router)

```

user@host > show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11E2227AFJ  MX2020
Midplane      REV 27   750-040240   ABAB9384      Lower Power Midplane
Midplane 1    REV 04   711-032386   ABAB9386      Upper Backplane
PMP 1         REV 05   711-032428   ACAJ1579      Upper Power Midplane
PMP 0         REV 04   711-032426   ACAJ1524      Lower Power Midplane
FPM Board     REV 06   760-040242   ABBT8837      Front Panel Display
PSM 0         REV 01   740-045050   1E022240056   DC 52V Power Supply
Module
PSM 1         REV 01   740-045050   1E022240054   DC 52V Power Supply
Module
PSM 2         REV 01   740-045050   1E02224005H   DC 52V Power Supply
Module
PSM 3         REV 01   740-045050   1E022240053   DC 52V Power Supply
Module
PSM 4         REV 01   740-045050   1E02224004K   DC 52V Power Supply
Module
PSM 7         REV 01   740-045050   1E02224006W   DC 52V Power Supply
Module
PSM 8         REV 01   740-045050   1E022240062   DC 52V Power Supply
Module
PSM 9         REV 01   740-045050   1E02224005B   DC 52V Power Supply
Module
PSM 10        REV 01   740-045050   1E02224005A   DC 52V Power Supply
Module
PSM 11        REV 01   740-045050   1E022240052   DC 52V Power Supply
Module
PSM 12        REV 01   740-045050   1E022240051   DC 52V Power Supply
Module
PSM 13        REV 01   740-045050   1E022240058   DC 52V Power Supply
Module
PSM 14        REV 01   740-045050   1E02224004L   DC 52V Power Supply
Module

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PSM 15 Module	REV 01	740-045050	1E02224005M	DC 52V Power Supply
PSM 16 Module	REV 01	740-045050	1E02224006S	DC 52V Power Supply
PSM 17 Module	REV 01	740-045050	1E02224005Z	DC 52V Power Supply
PDM 0	REV 01	740-045234	1E012150033	DC Power Dist Module
PDM 1	REV 01	740-045234	1E012150027	DC Power Dist Module
PDM 2	REV 01	740-045234	1E012150028	DC Power Dist Module
PDM 3	REV 01	740-045234	1E012150045	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009089704	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009094138	RE-S-1800x4
CB 0	REV 14	750-040257	CAAF8430	Control Board
CB 1	REV 08	750-040257	CAAB3482	Control Board
SPMB 0	REV 01	711-041855	ZS2290	PMB Board
SPMB 1	REV 02	711-041855	CAAA6141	PMB Board
SFB 0	REV 03	711-044466	ABBV6789	Switch Fabric Board
SFB 1	REV 05	711-044466	ABBX5666	Switch Fabric Board
SFB 2	REV 05	711-044466	ABBX5678	Switch Fabric Board
SFB 3	REV 05	711-044466	ABBX5687	Switch Fabric Board
SFB 4	REV 05	711-044466	ABBX5609	Switch Fabric Board
SFB 5	REV 05	711-044466	ABBX5675	Switch Fabric Board
SFB 6	REV 03	711-044466	ABBV6805	Switch Fabric Board
SFB 7	REV 05	711-044466	ABBX5701	Switch Fabric Board
FPC 0	REV 30	750-028467	ABBN0284	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0507	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00990	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E04357	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01327	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04375	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02760	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02904	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E03963	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00756	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04418	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01077	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01128	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01253	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E01140	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01626	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01075	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01177	SFP+-10G-USR
FPC 1	REV 30	750-028467	ABBN0208	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ1084	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04745	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01570	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E04388	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01439	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04739	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01869	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01675	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01901	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01346	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01288	SFP+-10G-USR

Xcvr 2	REV 01	740-030658	B11F01824	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04312	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02811	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E03847	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01495	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01265	SFP+-10G-USR
FPC 2	REV 30	750-028467	ZM5111	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6607	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LJA	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MFZ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKL	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KF4	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FBJ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MM2	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LJV	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NXV	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1H	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLS	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FL5	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL9	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG2	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80KDU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80MG1	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80MM0	SFP+-10G-SR
FPC 3	REV 30	750-028467	ABBNO302	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBNO495	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01581	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01176	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01251	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02752	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00786	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01020	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01023	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02819	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02812	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11D04437	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01279	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01333	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00978	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01018	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01784	SFP+-10G-USR
Xcvr 3	REV 01	740-031980	AK80NKP	SFP+-10G-SR
FPC 4	REV 30	750-028467	ABBNO308	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ1095	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04305	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01147	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01195	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01743	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01892	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02880	SFP+-10G-USR

Xcvr 2	REV 01	740-030658	B11E00725	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01057	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02816	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11C04501	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E02764	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00789	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01250	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02847	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00787	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E03803	SFP+-10G-USR
FPC 5	REV 30	750-028467	ABBN0316	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ1082	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00523	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01848	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01865	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00540	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00422	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00428	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K00423	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01855	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K01847	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00526	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K00529	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00525	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00425	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00530	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01851	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00528	SFP+-10G-SR
FPC 6	REV 32	750-028467	ABBN6832	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6534	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MB4	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FQ6	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N1F	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLQ	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80KDR	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FGJ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N5G	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KD8	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LET	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80N1X	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NRF	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL2	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N3D	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MRB	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LEQ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LER	SFP+-10G-SR
FPC 7	REV 32	750-028467	ABBN6811	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7288	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NK8	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80LJG	SFP+-10G-SR

Xcvr 2	REV 01	740-031980	AK80LBU	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N21	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEU	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLM	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NL6	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LES	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEN	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80ME0	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LMG	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80MM1	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MG7	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80KF9	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NRQ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLE	SFP+-10G-SR
FPC 8	REV 23	750-028467	YN2977	MPC 3D 16x 10GE
CPU	REV 10	711-029089	YP1856	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00875	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00851	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00772	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00882	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00735	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00169	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00726	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00077	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00168	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00676	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00732	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00091	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00642	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00871	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00853	SFP+-10G-SR
FPC 9	REV 32	750-028467	ABBN6798	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6556	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	9ZDZ06A00055	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00239	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AD0915E003K	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AD0915E003A	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MRC	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NL5	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKN	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N3U	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1T	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ808DJ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NG4	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80FND	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FKQ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLT	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKR	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LKM	SFP+-10G-SR

FPC 10	REV 32	750-028467	ABBN6813	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6542	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NA3	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLF	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80MRH	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KE4	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00030	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80L9H	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80ME8	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLR	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG1	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MCA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LFC	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LEM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N9X	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80LAC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LF2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N8T	SFP+-10G-SR
FPC 11	REV 30	750-028467	ABBN0281	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0526	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01326	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E03973	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00950	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00674	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00775	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E04461	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01074	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02821	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04501	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00757	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01623	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01022	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04359	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02751	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E02736	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01178	SFP+-10G-USR
FPC 12	REV 32	750-028467	ABBN6796	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7259	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K01856	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01853	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01863	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02863	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02668	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02881	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01671	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02627	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02692	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02730	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03081	SFP+-10G-SR

PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02736	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02568	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02747	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02579	SFP+-10G-SR
FPC 13	REV 30	750-028467	ABBN0270	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ0966	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NL1	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NXW	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KD2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80FMD	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NKQ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MGH	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N38	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL7	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEL	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NKD	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KCY	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LHK	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80M5J	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MBE	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NLC	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LFH	SFP+-10G-SR
FPC 14	REV 32	750-028467	ABBN6790	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6515	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LZM	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MCC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KCM	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KE0	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021310	C10F99155	SFP+-10G-LRM
Xcvr 1	REV 01	740-021310	C10F99049	SFP+-10G-LRM
Xcvr 2	REV 01	740-021310	C10F99128	SFP+-10G-LRM
Xcvr 3	REV 01	740-021310	C10F99169	SFP+-10G-LRM
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LF3	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02597	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A03060	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03057	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEX	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FEU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FNM	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AJQQQ5G	SFP+-10G-SR
FPC 15	REV 32	750-028467	ABBN6791	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7289	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00424	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01849	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01862	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01852	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00427	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00430	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01854	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00426	SFP+-10G-SR

PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00429	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01864	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01850	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00522	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E01144	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00985	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00796	SFP+-10G-USR
Xcvr 3	REV 01	740-031980	B11K01866	SFP+-10G-SR
FPC 16	REV 30	750-028467	ABBM4592	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0465	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01435	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01052	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01328	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01254	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02738	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02881	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01624	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00889	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02883	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00681	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E04306	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02813	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01801	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02753	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01156	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04324	SFP+-10G-USR
FPC 17	REV 32	750-028467	ABBN6810	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7237	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02638	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02082	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01674	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03058	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A03048	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02729	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02566	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02567	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02878	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02739	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01959	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02660	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02731	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02588	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02673	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02654	SFP+-10G-SR
FPC 18	REV 30	750-028467	ABBM4739	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0487	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02569	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02886	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A03082	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	133363A00297	SFP+-10G-SR



PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02726	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A03050	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02884	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03076	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02581	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02873	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02582	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03083	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031981	UL70BU6	SFP+-10G-LR
Xcvr 1	REV 01	740-031981	UL50QC6	SFP+-10G-LR
Xcvr 2	REV 01	740-031981	UL708N6	SFP+-10G-LR
Xcvr 3	REV 01	740-031981	UL603KK	SFP+-10G-LR
FPC 19	REV 32	750-028467	ABBN6827	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6508	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A01688	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A01724	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01773	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02593	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A03061	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A03056	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02669	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03070	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02572	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02697	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02585	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03052	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02591	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02649	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02577	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02698	SFP+-10G-SR
ADC 0	REV 13	750-043596	ABBX5561	Adapter Card
ADC 1	REV 13	750-043596	ABBX5546	Adapter Card
ADC 2	REV 13	750-043596	ABBX5535	Adapter Card
ADC 3	REV 13	750-043596	ABBX5552	Adapter Card
ADC 4	REV 13	750-043596	ABBX5581	Adapter Card
ADC 5	REV 13	750-043596	ABBX5545	Adapter Card
ADC 6	REV 13	750-043596	ABBX5554	Adapter Card
ADC 7	REV 07	750-043596	ABBV7194	Adapter Card
ADC 8	REV 07	750-043596	ABBV7251	Adapter Card
ADC 9	REV 07	750-043596	ABBV7202	Adapter Card
ADC 10	REV 13	750-043596	ABBX5538	Adapter Card
ADC 11	REV 13	750-043596	ABBX5566	Adapter Card
ADC 12	REV 13	750-043596	ABBX5542	Adapter Card
ADC 13	REV 13	750-043596	ABBX5539	Adapter Card
ADC 14	REV 13	750-043596	ABBX5555	Adapter Card
ADC 15	REV 13	750-043596	ABBX5557	Adapter Card
ADC 16	REV 13	750-043596	ABBX5536	Adapter Card
ADC 17	REV 13	750-043596	ABBX5559	Adapter Card
ADC 18	REV 13	750-043596	ABBX5537	Adapter Card
ADC 19	REV 11	750-043596	ABBW5685	Adapter Card
Fan Tray 0	REV 2A	760-046960	ACAY0030	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0039	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0033	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0062	172mm FanTray - 6 Fans

## show chassis hardware detail (MX2020 Router)

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Hardware inventory:

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Item	Version	Part number	Serial number	Description
Chassis			JN11E2227AFJ	MX2020
Midplane	REV 27	750-040240	ABAB9384	Lower Power Midplane
Midplane 1	REV 04	711-032386	ABAB9386	Upper Backplane
PMP 1	REV 05	711-032428	ACAJ1821	Upper Power Midplane
PMP 0	REV 04	711-032426	ACAJ1524	Lower Power Midplane
FPM Board	REV 06	760-040242	ABBT8837	Front Panel Display
PSM 0	REV 01	740-045050	1E02224006G	DC 52V Power Supply
Module				
PSM 1	REV 01	740-045050	1E022240053	DC 52V Power Supply
Module				
PSM 2	REV 01	740-045050	1E02224004K	DC 52V Power Supply
Module				
PSM 3	REV 01	740-045050	1E022240056	DC 52V Power Supply
Module				
PSM 4	REV 01	740-045050	1E022240054	DC 52V Power Supply
Module				
PSM 5	REV 01	740-045050	1E02224005H	DC 52V Power Supply
Module				
PSM 6	REV 01	740-045050	1E02224006S	DC 52V Power Supply
Module				
PSM 7	REV 01	740-045050	1E02224005M	DC 52V Power Supply
Module				
PSM 8	REV 01	740-045050	1E022240062	DC 52V Power Supply
Module				
PSM 9	REV 03	740-045050	1EDB2350095	DC 52V Power Supply
Module				
PSM 10	REV 03	740-045050	1EDB235009L	DC 52V Power Supply
Module				
PSM 11	REV 03	740-045050	1EDB2350092	DC 52V Power Supply
Module				
PSM 12	REV 03	740-045050	1EDB23500AT	DC 52V Power Supply
Module				
PSM 13	REV 03	740-045050	1EDB2350094	DC 52V Power Supply
Module				
PSM 15	REV 03	740-045050	1EDB235008X	DC 52V Power Supply
Module				
PDM 0	REV 01	740-045234	1E012150033	DC Power Dist Module
PDM 1	REV 01	740-045234	1E012150027	DC Power Dist Module
PDM 2	REV 01	740-045234	1E262250072	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009094138	RE-S-1800x4
ad0	3998 MB	Virtium - TuffDisk	VCF3 20110825A021D0000064	Compact Flash
ad1	30533 MB	UGB94ARF32H0S3-KC	UNIGEN-499551-000347	Disk 1
usb0 (addr 1)	EHCI root hub 0	Intel		uhub0
usb0 (addr 2)	product 0x0020 32	vendor 0x8087		uhub1
DIMM 0	SGU04G72H1BD2SA-BB	DIE REV-52 PCB REV-54	MFR ID-ce80	
DIMM 1	SGU04G72H1BD2SA-BB	DIE REV-52 PCB REV-54	MFR ID-ce80	
DIMM 2	SGU04G72H1BD2SA-BB	DIE REV-52 PCB REV-54	MFR ID-ce80	
DIMM 3	SGU04G72H1BD2SA-BB	DIE REV-52 PCB REV-54	MFR ID-ce80	
Routing Engine 1	REV 02	740-041821	9009089709	RE-S-1800x4
ad0	3831 MB	UGB30SFA4000T1	SFA4000T1 00000113	Compact Flash
ad1	30533 MB	UGB94ARF32H0S3-KC	UNIGEN-478612-001044	Disk 1
CB 0	REV 08	750-040257	CAAB3482	Control Board
CB 1	REV 04	750-040257	ZT2864	Control Board
SPMB 0	REV 02	711-041855	CAAA6141	PMB Board
SPMB 1	REV 01	711-041855	ZS2275	PMB Board

SFB 0	REV 05	711-044466	ABBT2161	Switch Fabric Board
SFB 1	REV 05	711-044466	ABBT2159	Switch Fabric Board
SFB 2	REV 05	711-044466	ABBX3718	Switch Fabric Board
SFB 3	REV 05	711-044466	ABBT2152	Switch Fabric Board
SFB 4	REV 05	711-044466	ABBT2160	Switch Fabric Board
SFB 5	REV 05	711-044466	ABBT2145	Switch Fabric Board
SFB 6	REV 05	711-044466	ABBT2150	Switch Fabric Board
SFB 7	REV 05	711-044466	ABBT2163	Switch Fabric Board
FPC 0	REV 30	750-028467	ABBN0284	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0507	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00990	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E04357	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01327	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04375	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02760	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02904	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E03963	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00756	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04418	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01077	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01128	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01253	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E01140	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01626	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01075	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01177	SFP+-10G-USR
FPC 1	REV 30	750-028467	ABBN0308	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ1095	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04305	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01147	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01195	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01743	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01892	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02880	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00725	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01057	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02816	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11C04501	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E02764	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00789	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01250	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02847	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00787	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E03803	SFP+-10G-USR
FPC 2	REV 30	750-028467	ABBN0316	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ1082	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00523	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01848	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01865	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00540	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00422	SFP+-10G-SR

Xcvr 1	REV 01	740-031980	B11K00428	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K00423	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01855	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K01847	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00526	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K00529	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00525	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00425	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00530	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01851	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00528	SFP+-10G-SR
FPC 3	REV 32	750-028467	ABBN6832	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN6534	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MB4	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FQ6	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N1F	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLQ	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80KDR	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FGJ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N5G	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80K08	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LET	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80N1X	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NRF	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL2	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N3D	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MRB	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LEQ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LER	SFP+-10G-SR
FPC 4	REV 32	750-028467	ABBN6811	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7288	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NK8	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80LJG	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LBU	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N21	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEU	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLM	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NL6	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LES	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEN	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80ME0	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LMG	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80MM1	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MG7	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80KF9	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NRQ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLE	SFP+-10G-SR
FPC 5	REV 32	750-028467	ABBN6791	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7289	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00424	SFP+-10G-SR

Xcvr 1	REV 01	740-031980	B11K01849	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01862	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01852	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP
Xcvr 0	REV 01	740-031980	B11K00427	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00430	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01854	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00426	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00429	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01864	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01850	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00522	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E01144	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00985	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00796	SFP+-10G-USR
Xcvr 3	REV 01	740-031980	B11K01866	SFP+-10G-SR
FPC 6	REV 30	750-028467	ABBM4592	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0465	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01435	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01052	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01328	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01254	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02738	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02881	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01624	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00889	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02883	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00681	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E04306	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02813	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01801	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02753	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01156	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04324	SFP+-10G-USR
FPC 7	REV 32	750-028467	ABBN6810	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7237	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A03058	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02082	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01674	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02638	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A03048	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02729	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02566	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02567	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02878	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02739	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01959	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02660	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02731	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02588	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02673	SFP+-10G-SR

Xcvr 3	REV 01	740-031980	163363A02654	SFP+-10G-SR
FPC 8	REV 30	750-028467	ABBM4739	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0487	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02569	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02886	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A03082	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	133363A00297	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02726	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A03050	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02884	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03076	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02581	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02873	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02582	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03083	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031981	UL70BU6	SFP+-10G-LR
Xcvr 1	REV 01	740-031981	UL50QC6	SFP+-10G-LR
Xcvr 2	REV 01	740-031981	UL708N6	SFP+-10G-LR
Xcvr 3	REV 01	740-031981	UL603KK	SFP+-10G-LR
FPC 9	REV 32	750-028467	ABBN6827	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6508	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A01688	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A01724	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01773	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02593	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A03061	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A03056	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02669	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03070	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02572	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02697	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02585	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03052	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02591	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02649	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02577	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02698	SFP+-10G-SR
FPC 10	REV 30	750-028467	ABBN0302	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0495	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01581	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01176	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01251	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02752	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00786	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01020	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01023	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02819	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02812	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11D04437	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01279	SFP+-10G-USR

Xcvr 3	REV 01	740-030658	B11F01333	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00978	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E01018	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01784	SFP+-10G-USR
Xcvr 3	REV 01	740-031980	AK80NKP	SFP+-10G-SR
FPC 11	REV 32	750-028467	ABBN6790	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6515	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LZM	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MCC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KCM	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KE0	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021310	C10F99155	SFP+-10G-LRM
Xcvr 1	REV 01	740-021310	C10F99049	SFP+-10G-LRM
Xcvr 2	REV 01	740-021310	C10F99128	SFP+-10G-LRM
Xcvr 3	REV 01	740-021310	C10F99169	SFP+-10G-LRM
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LF3	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02597	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A03060	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03057	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEX	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FEU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FNM	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AJQ0Q5G	SFP+-10G-SR
FPC 12	REV 30	750-028467	ZM5111	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6607	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LJA	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MFZ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKL	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KF4	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FBJ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MM2	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LJV	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NXV	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1H	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLS	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FL5	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL9	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG2	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80KDU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80MG1	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80MM0	SFP+-10G-SR
FPC 13	REV 30	750-028467	ABBN0208	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABB11084	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04745	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01570	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E04388	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01439	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04739	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01869	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01675	SFP+-10G-USR

Xcvr 3	REV 01	740-030658	B11F01901	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01346	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01288	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01824	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04312	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02811	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E03847	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01495	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01265	SFP+-10G-USR
FPC 14	REV 23	750-028467	YN2977	MPC 3D 16x 10GE
CPU	REV 10	711-029089	YP1856	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00875	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00851	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00772	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00882	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00735	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00169	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00726	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00077	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00168	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00676	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00732	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00091	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00642	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00871	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00853	SFP+-10G-SR
FPC 15	REV 32	750-028467	ABBN6798	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6556	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	9ZDZ06A00055	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00239	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AD0915E003K	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AD0915E003A	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MRC	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NL5	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKN	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N3U	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1T	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ808DJ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NG4	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80FND	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FKQ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLT	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKR	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LKM	SFP+-10G-SR
FPC 16	REV 30	750-028467	ABBN0270	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ0966	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NL1	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NXW	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KD2	SFP+-10G-SR



Xcvr 3	REV 01	740-031980	AK80FMD	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NKQ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MGH	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N38	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL7	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80M5J	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NKD	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KCY	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LHK	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEL	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MBE	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NLG	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LFH	SFP+-10G-SR
FPC 17	REV 32	750-028467	ABBN6796	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7259	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K01856	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01853	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01863	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02863	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02668	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02881	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01671	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02627	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02692	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02730	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03081	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02736	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02568	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02747	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02579	SFP+-10G-SR
FPC 18	REV 30	750-028467	ABBN0281	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0526	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01326	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E03973	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00950	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00674	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00775	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E04461	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01074	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02821	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04501	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00757	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01623	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01022	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04359	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02751	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E02736	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01178	SFP+-10G-USR
FPC 19	REV 32	750-028467	ABBN6813	MPC 3D 16x 10GE

CPU	REV 10	711-029089	ABBK6542	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NA3	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLF	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80MRH	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KE4	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00030	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80L9H	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80ME8	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLR	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG1	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MCA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LFC	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LEM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N9X	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80LAC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LF2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N8T	SFP+-10G-SR
ADC 0	REV 13	750-043596	ABBX5561	Adapter Card
ADC 1	REV 13	750-043596	ABBX5546	Adapter Card
ADC 2	REV 13	750-043596	ABBX5535	Adapter Card
ADC 3	REV 13	750-043596	ABBX5552	Adapter Card
ADC 4	REV 13	750-043596	ABBX5581	Adapter Card
ADC 5	REV 13	750-043596	ABBX5545	Adapter Card
ADC 6	REV 13	750-043596	ABBX5554	Adapter Card
ADC 7	REV 07	750-043596	ABBV7194	Adapter Card
ADC 8	REV 07	750-043596	ABBV7251	Adapter Card
ADC 9	REV 07	750-043596	ABBV7202	Adapter Card
ADC 10	REV 13	750-043596	ABBX5579	Adapter Card
ADC 11	REV 13	750-043596	ABBX5548	Adapter Card
ADC 12	REV 13	750-043596	ABBX5575	Adapter Card
ADC 13	REV 13	750-043596	ABBX5539	Adapter Card
ADC 14	REV 13	750-043596	ABBX5555	Adapter Card
ADC 15	REV 13	750-043596	ABBX5557	Adapter Card
ADC 16	REV 13	750-043596	ABBX5536	Adapter Card
ADC 17	REV 13	750-043596	ABBX5559	Adapter Card
ADC 18	REV 13	750-043596	ABBX5537	Adapter Card
ADC 19	REV 11	750-043596	ABBW5685	Adapter Card
Fan Tray 0	REV 04	760-046960	ACAY0090	172mm FanTray - 6 Fans
Fan Tray 1	REV 04	760-046960	ACAY0088	172mm FanTray - 6 Fans
Fan Tray 2	REV 04	760-046960	ACAY0089	172mm FanTray - 6 Fans
Fan Tray 3	REV 04	760-046960	ACAY0108	172mm FanTray - 6 Fans

### show chassis hardware models (MX2020 Router)

```
user@host > show chassis hardware models
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 27	750-040240	ABAB9384	750-040240
FPM Board	REV 06	760-040242	ABBT8837	760-040242
PSM 0	REV 01	740-045050	1E02224006G	MX2000-PSM-HC-DC-S-A
PSM 1	REV 01	740-045050	1E022240053	MX2000-PSM-HC-DC-S-A
PSM 2	REV 01	740-045050	1E02224004K	MX2000-PSM-HC-DC-S-A
PSM 3	REV 01	740-045050	1E022240056	MX2000-PSM-HC-DC-S-A
PSM 4	REV 01	740-045050	1E022240054	MX2000-PSM-HC-DC-S-A
PSM 5	REV 01	740-045050	1E02224005H	MX2000-PSM-HC-DC-S-A
PSM 6	REV 01	740-045050	1E02224006S	MX2000-PSM-HC-DC-S-A
PSM 7	REV 01	740-045050	1E02224005M	MX2000-PSM-HC-DC-S-A

PSM 8	REV 01	740-045050	1E022240062	MX2000-PSM-HC-DC-S-A
PSM 9	REV 03	740-045050	1EDB2350095	MX2000-PSM-DC-S-A
PSM 10	REV 03	740-045050	1EDB235009L	MX2000-PSM-DC-S-A
PSM 11	REV 03	740-045050	1EDB2350092	MX2000-PSM-DC-S-A
PSM 12	REV 03	740-045050	1EDB23500AT	MX2000-PSM-DC-S-A
PSM 13	REV 03	740-045050	1EDB2350094	MX2000-PSM-DC-S-A
PSM 15	REV 03	740-045050	1EDB235008X	MX2000-PSM-DC-S-A
PDM 0	REV 01	740-045234	1E012150033	
PDM 1	REV 01	740-045234	1E012150027	
PDM 2	REV 01	740-045234	1E262250072	MX2000-PDM-DC-S-A
Routing Engine 0	REV 02	740-041821	9009094138	RE-S-1800X4-16G-S
Routing Engine 1	REV 02	740-041821	9009089709	RE-S-1800X4-16G-S
CB 0	REV 08	750-040257	CAAB3482	750-040257
CB 1	REV 04	750-040257	ZT2864	750-040257
SFB 0	REV 05	711-044466	ABBT2161	MX2000-SFB-S
SFB 1	REV 05	711-044466	ABBT2159	MX2000-SFB-S
SFB 2	REV 05	711-044466	ABBX3718	MX2000-SFB-S
SFB 4	REV 05	711-044466	ABBT2160	MX2000-SFB-S
SFB 5	REV 05	711-044466	ABBT2145	MX2000-SFB-S
SFB 7	REV 05	711-044466	ABBT2163	MX2000-SFB-S
FPC 0	REV 30	750-028467	ABBN0284	MPC-3D-16XGE-SFPP
FPC 1	REV 30	750-028467	ABBN0308	MPC-3D-16XGE-SFPP
FPC 2	REV 30	750-028467	ABBN0316	MPC-3D-16XGE-SFPP
FPC 3	REV 32	750-028467	ABBN6832	MPC-3D-16XGE-SFPP
FPC 4	REV 32	750-028467	ABBN6811	MPC-3D-16XGE-SFPP
FPC 5	REV 32	750-028467	ABBN6791	MPC-3D-16XGE-SFPP
FPC 6	REV 30	750-028467	ABBM4592	MPC-3D-16XGE-SFPP
FPC 7	REV 32	750-028467	ABBN6810	MPC-3D-16XGE-SFPP
FPC 8	REV 30	750-028467	ABBM4739	MPC-3D-16XGE-SFPP
FPC 9	REV 32	750-028467	ABBN6827	MPC-3D-16XGE-SFPP
FPC 10	REV 30	750-028467	ABBN0302	MPC-3D-16XGE-SFPP
FPC 11	REV 32	750-028467	ABBN6790	MPC-3D-16XGE-SFPP
FPC 12	REV 30	750-028467	ZM5111	MPC-3D-16XGE-SFPP
FPC 13	REV 30	750-028467	ABBN0208	MPC-3D-16XGE-SFPP
FPC 14	REV 23	750-028467	YN2977	MPC-3D-16XGE-SFPP
FPC 15	REV 32	750-028467	ABBN6798	MPC-3D-16XGE-SFPP
FPC 16	REV 30	750-028467	ABBN0270	MPC-3D-16XGE-SFPP
FPC 17	REV 32	750-028467	ABBN6796	MPC-3D-16XGE-SFPP
FPC 18	REV 30	750-028467	ABBN0281	MPC-3D-16XGE-SFPP
FPC 19	REV 32	750-028467	ABBN6813	MPC-3D-16XGE-SFPP
ADC 0	REV 13	750-043596	ABBX5561	PROTO-ASSEMBLY
ADC 1	REV 13	750-043596	ABBX5546	PROTO-ASSEMBLY
ADC 2	REV 13	750-043596	ABBX5535	MX2000-LC-ADAPTER
ADC 3	REV 13	750-043596	ABBX5552	MX2000-LC-ADAPTER
ADC 4	REV 13	750-043596	ABBX5581	MX2000-LC-ADAPTER
ADC 5	REV 13	750-043596	ABBX5545	PROTO-ASSEMBLY
ADC 6	REV 13	750-043596	ABBX5554	PROTO-ASSEMBLY
ADC 7	REV 07	750-043596	ABBV7194	MX2000-LC-ADAPTER
ADC 8	REV 07	750-043596	ABBV7251	MX2000-LC-ADAPTER
ADC 9	REV 07	750-043596	ABBV7202	MX2000-LC-ADAPTER
ADC 10	REV 13	750-043596	ABBX5579	MX2000-LC-ADAPTER
ADC 12	REV 13	750-043596	ABBX5575	MX2000-LC-ADAPTER
ADC 13	REV 13	750-043596	ABBX5539	PROTO-ASSEMBLY
ADC 14	REV 13	750-043596	ABBX5555	PROTO-ASSEMBLY
ADC 15	REV 13	750-043596	ABBX5557	MX2000-LC-ADAPTER
ADC 16	REV 13	750-043596	ABBX5536	PROTO-ASSEMBLY
ADC 17	REV 13	750-043596	ABBX5559	PROTO-ASSEMBLY
ADC 18	REV 13	750-043596	ABBX5537	PROTO-ASSEMBLY
ADC 19	REV 11	750-043596	ABBW5685	PROTO-ASSEMBLY
Fan Tray 0	REV 04	760-046960	ACAY0090	
Fan Tray 1	REV 04	760-046960	ACAY0088	

```

Fan Tray 2      REV 04  760-046960  ACAY0089
Fan Tray 3      REV 04  760-046960  ACAY0108

```

### show chassis hardware clei-models (MX2020 Router)

```
user@ host > show chassis hardware clei-models
```

```
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 27	750-040240	PROTOXCLEI	750-040240
FPM Board	REV 06	760-040242	PROTOXCLEI	760-040242
PSM 0	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 1	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 2	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 3	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 4	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 5	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 6	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 7	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 8	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 9	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 10	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 11	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 12	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 13	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 15	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PDM 0	REV 01	740-045234		
PDM 1	REV 01	740-045234		
PDM 2	REV 01	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S-A
Routing Engine 0	REV 02	740-041821		RE-S-1800X4-16G-S
Routing Engine 1	REV 02	740-041821		RE-S-1800X4-16G-S
CB 0	REV 08	750-040257	PROTOXCLEI	750-040257
CB 1	REV 04	750-040257	PROTOXCLEI	750-040257
SFB 0	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 1	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 2	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 4	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 5	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 7	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
FPC 0	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 1	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 2	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 3	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 4	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 5	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 6	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 7	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 8	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 9	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 10	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 11	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 12	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 13	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 14	REV 23	750-028467		MPC-3D-16XGE-SFPP
FPC 15	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 16	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 17	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 18	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 19	REV 32	750-028467		MPC-3D-16XGE-SFPP
ADC 0	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 1	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 2	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER

ADC 3	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 4	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 5	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 6	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 7	REV 07	750-043596	PROTOXCLEI	MX2000-LC-ADAPTER
ADC 8	REV 07	750-043596	PROTOXCLEI	MX2000-LC-ADAPTER
ADC 9	REV 07	750-043596	PROTOXCLEI	MX2000-LC-ADAPTER
ADC 10	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 12	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 13	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 14	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 15	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 16	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 17	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 18	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 19	REV 11	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
Fan Tray 0	REV 04	760-046960		
Fan Tray 1	REV 04	760-046960		
Fan Tray 2	REV 04	760-046960		
Fan Tray 3	REV 04	760-046960		

### show chassis hardware (MX2020 Router with MPC5EQ and MPC6E)

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN120BADBAFJ	MX2020
Midplane				Lower Backplane
Midplane 1	REV 04	711-032386	ABAB9399	Upper Backplane
PMP 1	REV 05	711-032428	ACAJ2541	Upper Power Midplane
PMP 0	REV 04	711-032426	ACAJ2194	Lower Power Midplane
FPM Board	REV 13	760-040242	ABCA8835	Front Panel Display
PSM 0	REV 01	740-050037	1EDB32403L5	DC 52V Power Supply
Module				
PSM 1	REV 01	740-050037	1EDB32403L3	DC 52V Power Supply
Module				
PSM 2	REV 01	740-050037	1EDB32403KM	DC 52V Power Supply
Module				
PSM 3	REV 01	740-050037	1EDB3130079	DC 52V Power Supply
Module				
PSM 4	REV 01	740-050037	1EDB3130077	DC 52V Power Supply
Module				
PSM 5	REV 01	740-050037	1EDB3130020	DC 52V Power Supply
Module				
PSM 6	REV 01	740-050037	1EDB313009S	DC 52V Power Supply
Module				
PSM 7	REV 01	740-050037	1EDB313008E	DC 52V Power Supply
Module				
PSM 8	REV 01	740-050037	1EDB3130063	DC 52V Power Supply
Module				
PSM 12	REV 01	740-050037	1EDB3130026	DC 52V Power Supply
Module				
PSM 13	REV 01	740-050037	1EDB3130074	DC 52V Power Supply
Module				
PSM 14	REV 01	740-050037	1EDB313009D	DC 52V Power Supply
Module				
PSM 15	REV 01	740-050037	1EDB3130024	DC 52V Power Supply
Module				
PSM 16	REV 01	740-050037	1EDB3130054	DC 52V Power Supply
Module				
PSM 17	REV 01	740-050037	1EDB3130080	DC 52V Power Supply

Module				
PDM 0	REV 03	740-045234	1EGA3170144	DC Power Dist Module
PDM 1	REV 03	740-045234	1EGA3170158	DC Power Dist Module
PDM 2	REV 03	740-045234	1EGA3170182	DC Power Dist Module
PDM 3	REV 03	740-045234	1EGA3170207	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009112112	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009112087	RE-S-1800x4
CB 0	REV 23	750-040257	CABA2295	Control Board
CB 1	REV 23	750-040257	CABE8379	Control Board
SPMB 0	REV 02	711-041855	ABCE8851	PMB Board
SPMB 1	REV 02	711-041855	ABCE8839	PMB Board
SFB 0	REV 06	711-044466	ABCD5001	Switch Fabric Board
SFB 1	REV 06	711-044466	ABCD5034	Switch Fabric Board
SFB 2	REV 06	711-044466	ABCH3899	Switch Fabric Board
SFB 3	REV 06	711-044466	ABCD5020	Switch Fabric Board
SFB 4	REV 06	711-044466	ABCD4975	Switch Fabric Board
SFB 5	REV 06	711-044466	ABCH3881	Switch Fabric Board
SFB 6	REV 06	711-044466	ABCD5026	Switch Fabric Board
SFB 7	REV 06	711-044466	ABCD5032	Switch Fabric Board
FPC 0	REV 39	750-045715	CACD1902	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACB1933	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	B11F00361	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	19T511101854	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	19T511100377	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	ANT0878	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	19T511100398	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ4363J	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	19T511101377	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	ANT072M	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AG90C7N	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AM30M09	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B10E01016	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	B10L04151	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	19T511101379	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5036J	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AG90C4M	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	19T511101104	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ502ZM	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AN10KY2	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ43G41	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ41F04	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AMS16N3	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AMH04Y3	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	ANA093E	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 09	750-049136	CABN0410	MPC5E 24XGE OTN Mezz
FPC 1	REV 11	750-045372	CABK8112	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ6621	HMPD PMB 2G
MIC 0	REV 07	750-033307	CAAZ2897	10X10GE SFPP
PIC 0		BUILTIN	BUILTIN	10X10GE SFPP
Xcvr 0	REV 01	740-021308	AQ501VK	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501YC	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HJF	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43H8D	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	19T511100370	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	153363A00763	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	APH2LXB	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AMCOLVV	SFP+-10G-SR

Xcvr 8	REV 01	740-031980	B11F00230	SFP+-10G-SR
MIC 1	REV 14	750-033196	CAAP1390	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-032166	XB11F000M	CFP2-100G-SR10
FPC 2	REV 17	750-037355	CAAS5826	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAR3986	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	T09F43722	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	ALP0KXF	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502FG	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502T7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00571	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	AJ71KEH	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11E01355	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11F00249	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
FPC 3	REV 05	750-044444	CAAY9920	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3639	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1083	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	CC07BK05B	XFP-10G-SR
Xcvr 1	REV 01	740-011571	C728XJ00U	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T12L92339	XFP-10G-SR
QXM 0	REV 06	711-028408	CAAW4915	MPC QXM
QXM 1	REV 06	711-028408	CAAW4894	MPC QXM
FPC 4	REV 18	750-046005	CACH5661	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACF2880	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03Y	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-049775	J13K72997	CFP2-100G-LR4-D
FPC 5	REV 35	750-028467	CAAR2623	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAR0491	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ5027T	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502J0	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5027S	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ501Y7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ501YB	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ503EB	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HJH	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43J0Y	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ50352	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501X6	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502NV	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502ZJ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ502H4	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43HJK	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJ30CU7	SFP+-10G-SR
FPC 9	REV 30	750-044130	ABCF5773	MPC6E 3D
CPU	REV 09	711-045719	ABCF1270	RMPC PMB
MIC 0	REV 05	750-049457	ABCD7829	2X100GE CFP2 OTN
PIC 0		BUILTIN	BUILTIN	2X100GE CFP2 OTN

Xcvr 0		NON-JNPR	FE13F000K	CFP2-100G-SR10
Xcvr 1	REV 01	740-048813	XD32FE017	CFP2-100G-LR-D
MIC 1	REV 07	750-049457	ABCK2812	2X100GE CFP2 OTN
PIC 1		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE018	CFP2-100G-SR10
Xcvr 1		NON-JNPR	FE13F000E	CFP2-100G-LR4-D
XLM 0	REV 05.2.00	711-046638	ABCF5915	MPC6E XL
XLM 1	REV 05.2.00	711-046638	ABCF5916	MPC6E XL
FPC 10	REV 36	750-044130	ABCS8602	MPC6E 3D
CPU	REV 09	711-045719	ABCS8779	RMPD PMB
MIC 0	REV 06	750-049979	ABCK2656	24X10GE SFPP OTN
PIC 0		BUILTIN	BUILTIN	24X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQ43J08	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQE1Y2E	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQE1UW4	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQE1MQF	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQGOMN1	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQE1L9M	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQGOMPD	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQE1Y2B	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQGOLT5	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQD2ET4	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQGOMPC	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQGOM63	SFP+-10G-SR
Xcvr 12	REV 01	740-021308	AQGOLT1	SFP+-10G-SR
Xcvr 13	REV 01	740-021308	AQGOM4L	SFP+-10G-SR
Xcvr 14	REV 01	740-021308	AQGOLS7	SFP+-10G-SR
Xcvr 15	REV 01	740-021308	AQE1MQB	SFP+-10G-SR
Xcvr 16	REV 01	740-021308	AQGOLZP	SFP+-10G-SR
Xcvr 17	REV 01	740-021308	AQE1LU9	SFP+-10G-SR
Xcvr 18	REV 01	740-021308	AQGOMRZ	SFP+-10G-SR
Xcvr 19	REV 01	740-021308	AQE1MQ9	SFP+-10G-SR
Xcvr 20	REV 01	740-021308	AQGOLRX	SFP+-10G-SR
Xcvr 21	REV 01	740-021308	AQE1UWD	SFP+-10G-SR
Xcvr 22	REV 01	740-021308	AQGOLT4	SFP+-10G-SR
Xcvr 23	REV 01	740-021308	AQE1MQL	SFP+-10G-SR
MIC 1	REV 12	750-050008	ABCK5372	4X100GE CXP
PIC 1		BUILTIN	BUILTIN	4X100GE CXP
Xcvr 3	REV 01	740-046563	XD16FC02Z	CFP2-100G-SR10
XLM 0	REV 07.2.00	711-046638	ABCK3481	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK4725	MPC6E XL
FPC 17	REV 28	750-044130	ABBZ3873	MPC6E 3D
CPU	REV 08	711-045719	ABBZ3770	RMPD PMB
MIC 0	REV 11	750-046535	ABCC7731	24X10GE SFPP
PIC 0		BUILTIN	BUILTIN	24X10GE SFPP
Xcvr 1	REV 01	740-021308	APK0543	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B10G01119	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502SX	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQ43H84	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ501TB	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ502JZ	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ502SC	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ502JW	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQ502RM	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AHK013B	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQGOMRT	SFP+-10G-SR
Xcvr 13	REV 01	740-031980	AMC0JTC	SFP+-10G-SR
Xcvr 14	REV 01	740-021308	ANAOMQ0	SFP+-10G-SR
Xcvr 15	REV 01	740-021308	AQ502GS	SFP+-10G-SR
Xcvr 16	REV 01	740-021308	AQGOM0J	SFP+-10G-SR
Xcvr 17	REV 01	740-021308	AQGOMUR	SFP+-10G-SR



Xcvr 18	REV 01	740-021308	AQGOMRR	SFP+-10G-SR
Xcvr 19	REV 01	740-021308	AQGOM0F	SFP+-10G-SR
Xcvr 20	REV 01	740-021308	AQ50312	SFP+-10G-SR
Xcvr 21	REV 01	740-021308	AQ5032U	SFP+-10G-SR
Xcvr 22	REV 01	740-021308	APE17B5	SFP+-10G-SR
Xcvr 23	REV 01	740-021309	91D104A00011	SFP+-10G-LR
MIC 1	REV 03	750-050008	ABCC4522	4X100GE CXP
PIC 1		BUILTIN	BUILTIN	4X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC02U	CFP2-100G-SR10
Xcvr 1	REV 01	740-046563	XC42FC03K	CFP2-100G-SR10
Xcvr 2	REV 01	740-046563	XC42FC01Z	CFP2-100G-SR10
Xcvr 3	REV 01	740-046563	XC42FC02U	CFP2-100G-SR10
XLM 0	REV 04.2.00	711-046638	ABBZ3779	MPC6E XL
XLM 1	REV 04.2.00	711-046638	ABBZ3780	MPC6E XL
FPC 18	REV 39	750-045715	CACD1910	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1817	RMP C PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130194	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130193	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130196	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130191	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130198	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130192	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0411	MPC5E 24XGE OTN Mezz
FPC 19	REV 39	750-045715	CACD1908	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1820	RMP C PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA0EXJ	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOM6D	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOLW7	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQA0JKB	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQGOMTM	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQA07NE	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQGOM41	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQGOMU7	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQGOMUG	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQGOMMX	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQGOM5K	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQGOLVZ	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130242	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130245	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130613	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0418	MPC5E 24XGE OTN Mezz
ADC 0	REV 17	750-043596	ABCD5378	Adapter Card
ADC 1	REV 17	750-043596	ABCD5465	Adapter Card
ADC 2	REV 17	750-043596	ABCD5431	Adapter Card
ADC 3	REV 17	750-043596	ABCD5356	Adapter Card
ADC 4	REV 02	750-043596	ZW1545	Adapter Card
ADC 5	REV 17	750-043596	ABCD5517	Adapter Card
ADC 18	REV 17	750-043596	ABCD5535	Adapter Card
ADC 19	REV 01	750-043596	ZV4127	Adapter Card
Fan Tray 0	REV 06	760-046960	ACAY0791	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0788	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0755	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0441	172mm FanTray - 6 Fans

## show chassis hardware detail (MX2020 Router with MPC5EQ and MPC6E)

```

user@host>show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN120BADBAFJ  MX2020
Midplane      REV 51   750-040240   ABAB9243      Lower Backplane
Midplane 1    REV 04   711-032386   ABAB9399      Upper Backplane
PMP 1         REV 05   711-032428   ACAJ2541      Upper Power Midplane
PMP 0         REV 04   711-032426   ACAJ2194      Lower Power Midplane
FPM Board     REV 13   760-040242   ABCA8835      Front Panel Display
PSM 0         REV 01   740-050037   1EDB32403L5   DC 52V Power Supply
Module
PSM 1         REV 01   740-050037   1EDB32403L3   DC 52V Power Supply
Module
PSM 2         REV 01   740-050037   1EDB32403KM   DC 52V Power Supply
Module
PSM 3         REV 01   740-050037   1EDB3130079   DC 52V Power Supply
Module
PSM 4         REV 01   740-050037   1EDB3130077   DC 52V Power Supply
Module
PSM 5         REV 01   740-050037   1EDB3130020   DC 52V Power Supply
Module
PSM 6         REV 01   740-050037   1EDB313009S   DC 52V Power Supply
Module
PSM 7         REV 01   740-050037   1EDB313008E   DC 52V Power Supply
Module
PSM 8         REV 01   740-050037   1EDB3130063   DC 52V Power Supply
Module
PSM 12        REV 01   740-050037   1EDB3130026   DC 52V Power Supply
Module
PSM 13        REV 01   740-050037   1EDB3130074   DC 52V Power Supply
Module
PSM 14        REV 01   740-050037   1EDB313009D   DC 52V Power Supply
Module
PSM 15        REV 01   740-050037   1EDB3130024   DC 52V Power Supply
Module
PSM 16        REV 01   740-050037   1EDB3130054   DC 52V Power Supply
Module
PSM 17        REV 01   740-050037   1EDB3130080   DC 52V Power Supply
Module
PDM 0         REV 03   740-045234   1EGA3170144   DC Power Dist Module
PDM 1         REV 03   740-045234   1EGA3170158   DC Power Dist Module
PDM 2         REV 03   740-045234   1EGA3170182   DC Power Dist Module
PDM 3         REV 03   740-045234   1EGA3170207   DC Power Dist Module
Routing Engine 0 REV 02   740-041821   9009112112    RE-S-1800x4
  ad0  3998 MB  Virtium - TuffDrive VCF P1T0200274310822 113 Compact Flash
  ad1  30533 MB UGB94BPH32H0S1-KCI 11000031656      Disk 1
  usb0 (addr 1) EHCI root hub 0      Intel          uhub0
  usb0 (addr 2) product 0x0020 32   vendor 0x8087   uhub1
  DIMM 0      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 1      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 2      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 3      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 02   740-041821   9009112087    RE-S-1800x4
  ad0  3998 MB  Virtium - TuffDrive VCF P1T0200274310822 366 Compact Flash
  ad1  30533 MB UGB94BPH32H0S1-KCI 11000039979      Disk 1
CB 0         REV 23   750-040257   CABA2295      Control Board
CB 1         REV 23   750-040257   CABE8379      Control Board
SPMB 0

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SPMB 1				
FPC 0	REV 39	750-045715	CACD1902	MPC5E 3D Q 24XGE+6XLGE
CPU				
FPC 1	REV 11	750-045372	CABK8112	MPCE Type 3 3D
CPU				
FPC 2	REV 17	750-037355	CAAS5826	MPC4E 3D 2CGE+8XGE
CPU				
FPC 3	REV 05	750-044444	CAAY9920	MPCE Type 2 3D P
CPU				
FPC 4	REV 18	750-046005	CACH5661	MPC5E 3D Q 2CGE+4XGE
CPU				
FPC 5	REV 35	750-028467	CAAR2623	MPC 3D 16x 10GE
CPU				
FPC 9	REV 30	750-044130	ABCF5773	MPC6E 3D
CPU				
FPC 10	REV 36	750-044130	ABCS8602	MPC6E 3D
CPU				
FPC 17	REV 28	750-044130	ABBZ3873	MPC6E 3D
CPU				
FPC 18	REV 39	750-045715	CACD1910	MPC5E 3D Q 24XGE+6XLGE
CPU				
FPC 19	REV 39	750-045715	CACD1908	MPC5E 3D Q 24XGE+6XLGE
CPU				
Fan Tray 0	REV 06	760-046960	ACAY0791	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0788	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0755	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0441	172mm FanTray - 6 Fans

#### show chassis hardware extensive (MX2020 Router with MPC5EQ and MPC6E)

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user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN120BADBAFJ
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2020
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 32 30 42 41 44 42 41 46 4a 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 51    750-040240  ABAB9243      Lower Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:          750-040240      S/N:          ABAB9243
Assembly ID:  0x0b22          Assembly Version: 01.51
Date:         05-30-2013      Assembly Flags: 0x00
Version:      REV 51          CLEI Code:    IPMU710ARA
ID: Lower Backplane          FRU Model Number: CHAS-BP-MX2020-S
Board Information Record:
Address 0x00: ad 01 10 00 4c 96 14 72 30 08 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 22 01 33 52 45 56 20 35 31 00 00

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Address 0x10: 00 00 00 00 37 35 30 2d 30 34 30 32 34 30 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 32 34 33 00 1e 05 07
Address 0x30: dd ff ff ff ad 01 10 00 4c 96 14 72 30 08 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 37 31 30 41 52 41 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 32 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1      REV 04      711-032386      ABAB9399      Upper Backplane
Jedec Code:    0x7fb0      EEPROM Version: 0x01
P/N:          711-032386      S/N:          ABAB9399
Assembly ID:  0x0b23      Assembly Version: 01.04
Date:         10-22-2012      Assembly Flags: 0x00
Version:      REV 04
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 fe 0b 23 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 33 38 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 33 39 39 00 16 0a 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP 1          REV 05      711-032428      ACAJ2541      Upper Power Midplane
Jedec Code:    0x7fb0      EEPROM Version: 0x01
P/N:          711-032428      S/N:          ACAJ2541
Assembly ID:  0x045c      Assembly Version: 01.05
Date:         04-26-2013      Assembly Flags: 0x00
Version:      REV 05
ID: Upper Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5c 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 38 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 35 34 31 00 1a 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP 0          REV 04      711-032426      ACAJ2194      Lower Power Midplane
Jedec Code:    0x7fb0      EEPROM Version: 0x01
P/N:          711-032426      S/N:          ACAJ2194
Assembly ID:  0x045d      Assembly Version: 01.04
Date:         01-29-2013      Assembly Flags: 0x00
Version:      REV 04
ID: Lower Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 31 39 34 00 1d 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

```

FPM Board          REV 13    760-040242    ABCA8835          Front Panel Display
Jedec Code:        0x7fb0          EEPROM Version:    0x02
P/N:               760-040242      S/N:              ABCA8835
Assembly ID:       0x0b24          Assembly Version:  01.13
Date:              04-13-2013      Assembly Flags:    0x00
Version:           REV 13          CLEI Code:         IPMYAE5JRA
ID: Front Panel Display      FRU Model Number:  MX2020-CRAFT-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 24 01 0d 52 45 56 20 31 33 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 34 30 32 34 32 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 41 38 38 33 35 00 0d 04 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 4d 59 41 45 35 4a 52 41 4d
  Address 0x50: 58 32 30 32 30 2d 43 52 41 46 54 2d 53 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 95 ff ff ff ff ff ff ff ff ff ff ff ff

PSM 0              REV 01    740-050037    1EDB32403L5      DC 52V Power Supply
Module
Jedec Code:        0x7fb0          EEPROM Version:    0x02
P/N:               740-050037      S/N:              1EDB32403L5
Assembly ID:       0x0478          Assembly Version:  01.01
Date:              06-21-2013      Assembly Flags:    0x00
Version:           REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 32 34 30 33 4c 35 00 00 15 06 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00

PSM 1              REV 01    740-050037    1EDB32403L3      DC 52V Power Supply
Module
Jedec Code:        0x7fb0          EEPROM Version:    0x02
P/N:               740-050037      S/N:              1EDB32403L3
Assembly ID:       0x0478          Assembly Version:  01.01
Date:              06-21-2013      Assembly Flags:    0x00
Version:           REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 32 34 30 33 4c 33 00 00 15 06 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00

PSM 2              REV 01    740-050037    1EDB32403KM      DC 52V Power Supply
Module
Jedec Code:        0x7fb0          EEPROM Version:    0x02
P/N:               740-050037      S/N:              1EDB32403KM
Assembly ID:       0x0478          Assembly Version:  01.01

```

```
Date:          06-21-2013      Assembly Flags:  0x00
Version:       REV 01         CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 34 30 33 4b 4d 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 01    740-050037    1EDB3130079    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:           740-050037  S/N:            1EDB3130079
Assembly ID:   0x0478      Assembly Version: 01.01
Date:          05-16-2013  Assembly Flags:  0x00
Version:       REV 01     CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 39 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 01    740-050037    1EDB3130077    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:           740-050037  S/N:            1EDB3130077
Assembly ID:   0x0478      Assembly Version: 01.01
Date:          05-17-2013  Assembly Flags:  0x00
Version:       REV 01     CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 37 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 01    740-050037    1EDB3130020    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:           740-050037  S/N:            1EDB3130020
Assembly ID:   0x0478      Assembly Version: 01.01
Date:          05-16-2013  Assembly Flags:  0x00
Version:       REV 01     CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
```

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 32 30 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 01   740-050037   1EDB313009S   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB313009S
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 39 53 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 01   740-050037   1EDB313008E   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB313008E
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 38 45 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 8          REV 01   740-050037   1EDB3130063   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB3130063
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00

```

```
Address 0x20: 31 45 44 42 33 31 33 30 30 36 33 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 12          REV 01   740-050037   1EDB3130026   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB3130026
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-16-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 32 36 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 13          REV 01   740-050037   1EDB3130074   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB3130074
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 34 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 14          REV 01   740-050037   1EDB313009D   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB313009D
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 39 44 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
```



```

Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00
PSM 15          REV 01   740-050037   1EDB3130024       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB3130024
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-16-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
...

```

### show chassis hardware models (MX2020 Routers with MPC5EQ and MPC6E)

```

user@host> show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 51	750-040240	ABAB9243	CHAS-BP-MX2020-S
FPM Board	REV 13	760-040242	ABCA8835	MX2020-CRAFT-S
PSM 0	REV 01	740-050037	1EDB32403L5	MX2000-PSM-DC-S
PSM 1	REV 01	740-050037	1EDB32403L3	MX2000-PSM-DC-S
PSM 2	REV 01	740-050037	1EDB32403KM	MX2000-PSM-DC-S
PSM 3	REV 01	740-050037	1EDB3130079	MX2000-PSM-DC-S
PSM 4	REV 01	740-050037	1EDB3130077	MX2000-PSM-DC-S
PSM 5	REV 01	740-050037	1EDB3130020	MX2000-PSM-DC-S
PSM 6	REV 01	740-050037	1EDB313009S	MX2000-PSM-DC-S
PSM 7	REV 01	740-050037	1EDB313008E	MX2000-PSM-DC-S
PSM 8	REV 01	740-050037	1EDB3130063	MX2000-PSM-DC-S
PSM 12	REV 01	740-050037	1EDB3130026	MX2000-PSM-DC-S
PSM 13	REV 01	740-050037	1EDB3130074	MX2000-PSM-DC-S
PSM 14	REV 01	740-050037	1EDB313009D	MX2000-PSM-DC-S
PSM 15	REV 01	740-050037	1EDB3130024	MX2000-PSM-DC-S
PSM 16	REV 01	740-050037	1EDB3130054	MX2000-PSM-DC-S
PSM 17	REV 01	740-050037	1EDB3130080	MX2000-PSM-DC-S
PDM 0	REV 03	740-045234	1EGA3170144	MX2000-PDM-DC-S
PDM 1	REV 03	740-045234	1EGA3170158	MX2000-PDM-DC-S
PDM 2	REV 03	740-045234	1EGA3170182	MX2000-PDM-DC-S
PDM 3	REV 03	740-045234	1EGA3170207	MX2000-PDM-DC-S
Routing Engine 0	REV 02	740-041821	9009112112	RE-MX2000-1800X4-S
Routing Engine 1	REV 02	740-041821	9009112087	RE-MX2000-1800X4-S
CB 0	REV 23	750-040257	CABA2295	RE-MX2000-1800X4-S
CB 1	REV 23	750-040257	CABE8379	RE-MX2000-1800X4-S
SFB 0	REV 06	711-044466	ABCD5001	MX2000-SFB-S
SFB 1	REV 06	711-044466	ABCD5034	MX2000-SFB-S
SFB 2	REV 06	711-044466	ABCH3899	MX2000-SFB-S
SFB 3	REV 06	711-044466	ABCD5020	MX2000-SFB-S
SFB 4	REV 06	711-044466	ABCD4975	MX2000-SFB-S
SFB 5	REV 06	711-044466	ABCH3881	MX2000-SFB-S
SFB 6	REV 06	711-044466	ABCD5026	MX2000-SFB-S
SFB 7	REV 06	711-044466	ABCD5032	MX2000-SFB-S
FPC 0	REV 39	750-045715	CACD1902	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	CABK8112	MX-MPC3E-3D
FPC 2	REV 17	750-037355	CAAS5826	MPC4E-3D-2CGE-8XGE
FPC 3	REV 05	750-044444	CAAY9920	MX-MPC2E-3D-P
FPC 4	REV 18	750-046005	CACH5661	PROTO-ASSEMBLY
FPC 5	REV 35	750-028467	CAAR2623	MPC-3D-16XGE-SFPP
FPC 9	REV 30	750-044130	ABCF5773	PROTO-ASSEMBLY

FPC 10	REV 36	750-044130	ABCS8602	PROTO-ASSEMBLY
FPC 17	REV 28	750-044130	ABBZ3873	PROTO-ASSEMBLY
FPC 18	REV 39	750-045715	CACD1910	PROTO-ASSEMBLY
FPC 19	REV 39	750-045715	CACD1908	PROTO-ASSEMBLY
ADC 0	REV 17	750-043596	ABCD5378	MX2000-LC-ADAPTER
ADC 1	REV 17	750-043596	ABCD5465	MX2000-LC-ADAPTER
ADC 2	REV 17	750-043596	ABCD5431	MX2000-LC-ADAPTER
ADC 3	REV 17	750-043596	ABCD5356	MX2000-LC-ADAPTER
ADC 4	REV 02	750-043596	ZW1545	750-043596
ADC 5	REV 17	750-043596	ABCD5517	MX2000-LC-ADAPTER
ADC 18	REV 17	750-043596	ABCD5535	MX2000-LC-ADAPTER
ADC 19	REV 01	750-043596	ZV4127	750-043596
Fan Tray 0	REV 06	760-046960	ACAY0791	MX2000-FANTRAY-S
Fan Tray 1	REV 06	760-046960	ACAY0788	MX2000-FANTRAY-S
Fan Tray 2	REV 06	760-046960	ACAY0755	MX2000-FANTRAY-S
Fan Tray 3	REV 06	760-046960	ACAY0441	MX2000-FANTRAY-S

### show chassis hardware clei-models (MX2020 Router with MPC5EQ and MPC6E)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 51	750-040240	IPMU710ARA	CHAS-BP-MX2020-S
FPM Board	REV 13	760-040242	IPMYAE5JRA	MX2020-CRAFT-S
PSM 0	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 1	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 2	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 3	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 4	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 5	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 6	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 7	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 8	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 12	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 13	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 14	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 15	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 16	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 17	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PDM 0	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 1	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 2	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 3	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
CB 0	REV 23	750-040257	IPUCBA7CTA	RE-MX2000-1800X4-S
CB 1	REV 23	750-040257	IPUCBA7CTA	RE-MX2000-1800X4-S
SFB 0	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 1	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 2	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 3	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 4	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 5	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 6	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 7	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
FPC 0	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	COUIBBNBAA	MX-MPC3E-3D
FPC 2	REV 17	750-037355	IPU3A4DHAA	MPC4E-3D-2CGE-8XGE
FPC 3	REV 05	750-044444	COUIBBGBAA	MX-MPC2E-3D-P
MIC 0	REV 28	750-028387	COUIA16BAA	MIC-3D-4XGE-XFP
FPC 4	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 5	REV 35	750-028467		MPC-3D-16XGE-SFPP
FPC 9	REV 30	750-044130	PROTOXCLEI	PROTO-ASSEMBLY

MIC 0	REV 05	750-049457	PROTOXCLEI	PROTO-ASSEMBLY
FPC 10	REV 36	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 06	750-049979	PROTOXCLEI	PROTO-ASSEMBLY
MIC 1	REV 12	750-050008	PROTOXCLEI	PROTO-ASSEMBLY
FPC 17	REV 28	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 1	REV 03	750-050008	PROTOXCLEI	PROTO-ASSEMBLY
FPC 18	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 19	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
ADC 0	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 1	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 2	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 3	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 4	REV 02	750-043596	PROTOXCLEI	750-043596
ADC 5	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 18	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 19	REV 01	750-043596	PROTOXCLEI	750-043596
Fan Tray 0	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 1	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 2	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 3	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S

#### show chassis hardware (MX Series routers with ATM MIC)

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN115736EAF	MX240
Midplane	REV 07	760-021404	ABAA5038	MX240 Backplane
FPM Board	REV 03	760-021392	ABBA2758	Front Panel Display
PEM 0	Rev 01	740-022697	QCS0937C07K	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 01	740-022697	QCS0939C04X	PS 1.2-1.7kW; 100-240V
AC in				
PEM 2	Rev 01	740-022697	QCS0937C06B	PS 1.2-1.7kW; 100-240V
AC in				
PEM 3	Rev 01	740-022697	QCS0937C07U	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 12	740-013063	9009042291	RE-S-2000
Routing Engine 1	REV 12	740-013063	9009042266	RE-S-2000
CB 0	REV 06	710-021523	ABBC1435	MX SCB
CB 1	REV 06	710-021523	ABBC1497	MX SCB
FPC 2	REV 14	750-031088	YH8446	MPC Type 2 3D Q
CPU	REV 06	711-030884	YH9612	MPC PMB 2G
MIC 0				
MIC 1	REV 10	750-036132	ZP7062	2xOC12/8xOC3 CC-CE
PIC 2		BUILTIN	BUILTIN	2xOC12/8xOC3 CC-CE
Xcvr 0		NON-JNPR	23393-00492	UNKNOWN
Xcvr 1		NON-JNPR	23393-00500	UNKNOWN
Xcvr 2		NON-JNPR	23393-00912	UNKNOWN
Xcvr 3	REV 01	740-015638	22216-00575	Load SFP
Xcvr 4	REV 01	740-015638	24145-00110	Load SFP
Xcvr 5	REV 01	740-015638	24145-00016	Load SFP
Xcvr 6	REV 01	740-015638	24145-00175	Load SFP
Xcvr 7		NON-JNPR	23393-00627	UNKNOWN
QXM 0	REV 05	711-028408	YF4681	MPC QXM
QXM 1	REV 05	711-028408	YF4817	MPC QXM
Fan Tray 0	REV 01	710-021113	XL3645	MX240 Fan Tray

**show chassis hardware (MX240, MX480, MX960 routers with Application Services Modular Line Card)**

```

user@host>show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               JN11D969BAFA  MX960
Midplane         REV 03   710-013698   ACAA2362      MX960 Backplane
FPM Board        REV 03   710-014974   ZR0639        Front Panel Display
PDM              Rev 03   740-013110   QCS152250SX   Power Distribution Module
PEM 0            Rev 10   740-013683   QCS1512718W   DC Power Entry Module
PEM 1            Rev 10   740-013683   QCS1512702Y   DC Power Entry Module
Routing Engine 0 REV 15   740-013063   9012024667    RE-S-2000
Routing Engine 1 REV 15   740-013063   9012024649    RE-S-2000
CB 0             REV 14   750-031391   ZJ7749        Enhanced MX SCB
CB 1             REV 14   750-031391   ZJ7750        Enhanced MX SCB
CB 2             REV 14   750-031391   ZY9233        Enhanced MX SCB
FPC 0            REV 17   750-031089   YR7434        MPC Type 2 3D
  CPU
FPC 1            REV 11   750-037207   ZW9727        AS-MCC
  CPU            REV 04   711-038173   ZW4817        AS-MCC-PMB
    MIC 0        REV 01   750-037214   ZH3764        AS-MSC
      PIC 0              BUILTIN      BUILTIN      AS-MSC
    MIC 1        REV 01   711-028408   JZ9200        AS-MXC
      PIC 2              BUILTIN      BUILTIN      AS-MXC
FPC 4            REV 30   750-028467   ABBN0232      MPC 3D 16x 10GE
  CPU
FPC 5            REV 04   750-037207   ZK9074        AS-MCC
  CPU
Fan Tray 0       REV 05   740-014971   VT5683        Fan Tray
Fan Tray 1       REV 05   740-014971   VT5684        Fan Tray

```

**show chassis hardware extensive (MX240, MX480, MX960 Routers with Application Services Modular Line Card)**

```

user@host> show chassis hardware extensive

ID: AS-MCC                      FRU Model Number: 750-037207
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 37 01 0b 52 45 56 20 31 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 30 37 00 00
Address 0x20: 53 2f 4e 20 5a 57 39 37 32 37 00 00 00 11 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 35 30 2d 30 33 37 32 30 37 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 31 31 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 5e ff ff ff ff ff ff ff ff ff ff ff ff
CPU              REV 04   711-038173   ZW4817        AS-MCC-PMB
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 711-038173        S/N: ZW4817
Assembly ID: 0x0b38     Assembly Version: 01.04
Date: 12-30-2011       Assembly Flags: 0x00
Version: REV 04
ID: AS-MCC-PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 38 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 38 31 37 33 00 00

```

```

Address 0x20: 53 2f 4e 20 5a 57 34 38 31 37 00 00 00 1e 0c 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 31 31 2d 30 33 38 31 37 33 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 30 34 00 ff ff ff ff ff ff
Address 0x70: ff ff ff 60 00 00 00 00 00 00 00 00 00 00 00
MIC 0          REV 01    750-037214    ZH3764          AS-MS
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-037214      S/N:              ZH3764
Assembly ID:   0x0a44          Assembly Version:  01.01
Date:          07-04-2011      Assembly Flags:    0x00
Version:       REV 01
ID: AS-MS
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 44 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 31 34 00 00
Address 0x20: 53 2f 4e 20 5a 48 33 37 36 34 00 00 00 04 07 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f6 c0 03 e1 bc 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN          AS-MS
FPC 4          REV 30    750-028467    ABBN0232        MPC 3D 16x 10GE
Jedec Code:    0x7fb0          EEPROM Version:    0x01

```

### show chassis hardware (MX480 Router with MPC4E)

```

user@host> show chassis hardware
Hardware inventory:

```

Item	Version	Part number	Serial number	Description
Chassis			JN10FF57BAFB	MX480
Midplane	REV 05	750-047849	Good	MX480 Midplane
FPM Board	REV 02	710-017254	KG2066	Front Panel Display
PEM 0	Rev 03	740-017330	QCS081590BJ	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 03	740-017330	QCS0815908Z	PS 1.2-1.7kW; 100-240V
AC in				
PEM 2	Rev 03	740-029970	QCS1001U001	PS 1.4-2.52kW; 90-264V
AC in				
Routing Engine 0	REV 05	740-031116	9009089502	RE-S-1800x4
Routing Engine 1	REV 05	740-031116	9009089624	RE-S-1800x4
CB 0	REV 02	750-031391	YE8506	Enhanced MX SCB
CB 1	REV 14	750-031391	ZK8265	Enhanced MX SCB
FPC 2	REV 05	750-037358	ZT0638	MPC4E 3D 32XGE
CPU	REV 07	711-035209	ZK3187	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
FPC 3	REV 06	750-037355	CAAB1144	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAB1278	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	B11E01439	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11D05809	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	D5418	UNKNOWN
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00362	CFP-100G-SR10

FPC 4	REV 12.3.10 750-033205 YR9445	MPCE Type 3 3D
CPU		
Fan Tray		Enhanced Left Fan Tray

**show chassis hardware (MX2020 Router with MPC4E)**

user@host&gt; show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11E188CAFJ	MX2020
Midplane	REV 04	711-032387	ABAC7474	Lower Backplane
Midplane 1	REV 04	711-032386	ABAC7408	Upper Backplane
PMP 1	REV 03	711-032428	ACAJ1137	Upper Power Midplane
PMP 0	REV 03	711-032426	ACAJ1016	Lower Power Midplane
FPM Board	REV 06	760-040242	ABBT8832	Front Panel Display
PSM 3	REV 0C	740-033727	VK00255	DC 52V Power Supply
Module				
PSM 4	REV 0C	740-033727	VJ00148	DC 52V Power Supply
Module				
PSM 5	REV 0C	740-033727	VK00207	DC 52V Power Supply
Module				
PSM 6	REV 0C	740-033727	VK00319	DC 52V Power Supply
Module				
PSM 7	REV 0C	740-033727	VK00264	DC 52V Power Supply
Module				
PSM 8	REV 0B	740-033727	VG00025	DC 52V Power Supply
Module				
PSM 13	REV 0C	740-033727	VK00274	DC 52V Power Supply
Module				
PSM 14	REV 0C	740-033727	VJ00167	DC 52V Power Supply
Module				
PSM 15	REV 0C	740-033727	VK00299	DC 52V Power Supply
Module				
PSM 16	REV 0C	740-033727	VK00213	DC 52V Power Supply
Module				
PSM 17	REV 0C	740-033727	VK00253	DC 52V Power Supply
Module				
PDM 0	REV 0B	740-038109	VJ00040	DC Power Dist Module
PDM 2	REV 0B	740-038109	VJ00025	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009089735	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009089731	RE-S-1800x4
CB 0	REV 04	750-040257	ZT2846	Control Board
CB 1	REV 04	750-040257	ZT2877	Control Board
SPMB 0	REV 01	711-041855	ZS2282	PMB Board
SPMB 1	REV 01	711-041855	ZS2261	PMB Board
SFB 0	REV 07	711-032385	ZZ2582	Switch Fabric Board
SFB 1	REV 04	711-032385	ZV4229	Switch Fabric Board
SFB 2	REV 07	711-032385	CAAB4902	Switch Fabric Board
SFB 3	REV 07	711-032385	CAAB4891	Switch Fabric Board
SFB 4	REV 07	711-032385	CAAB4883	Switch Fabric Board
SFB 5	REV 07	711-032385	CAAB4889	Switch Fabric Board
SFB 6	REV 06	711-032385	ZV1818	Switch Fabric Board
SFB 7	REV 07	711-032385	CAAB4897	Switch Fabric Board
FPC 0	REV 34	750-031090	ZT9799	MPC Type 2 3D EQ
CPU	REV 06	711-030884	ZS1122	MPC PMB 2G
MIC 0	REV 11	750-033535	CAAD7674	MIC-3D-10C192-XFP
PIC 0		BUILTIN	BUILTIN	MIC-3D-10C192-XFP
Xcvr 0	REV 01	740-014279	753019A00404	XFP-0C192-SR
MIC 1	REV 14	750-031967	ZM6103	MIC-3D-80C30C12-40C48
PIC 2		BUILTIN	BUILTIN	MIC-3D-80C30C12-40C48
Xcvr 0	REV 01	740-011615	PEF1AZP	SFP-IR

Xcvr 1	REV 01	740-011615	PEF1AZN	SFP-IR
Xcvr 2	REV 01	740-021308	ANA0N8S	SFP+-10G-SR
QXM 0	REV 06	711-028408	ZT9339	MPC QXM
QXM 1	REV 06	711-028408	ZT9237	MPC QXM
FPC 9	REV 34	750-031090	ZT9770	MPC Type 2 3D EQ
CPU	REV 06	711-030884	ZS1302	MPC PMB 2G
MIC 0	REV 24	750-028387	YJ3950	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T09M52516	XFP-10G-SR
Xcvr 1		NON-JNPR	CA49BK095	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 02	740-014289	C834XU01T	XFP-10G-SR
Xcvr 1		NON-JNPR	T09M52515	XFP-10G-SR
MIC 1	REV 11	750-033535	CAAD7681	MIC-3D-10C192-XFP
PIC 2		BUILTIN	BUILTIN	MIC-3D-10C192-XFP
Xcvr 0	REV 01	740-014279	KBQ02BE	XFP-OC192-SR
QXM 0	REV 06	711-028408	ZT9151	MPC QXM
QXM 1	REV 06	711-028408	ZT9116	MPC QXM
FPC 10	REV 27	750-033205	ZL6215	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9038	HMPC PMB 2G
MIC 0	REV 18	750-028380	YG6885	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	C706XU0AG	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	T08L84366	XFP-10G-SR
FPC 14	REV 09	750-037355	CAAF1534	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAB9879	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	21T511100436	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AHPOGPM	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	123363A00032	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	19T511100477	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00260	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	21T511104086	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	21T511104627	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	21T511104644	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
FPC 19	REV 32	750-028467	ZR2008	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZT6933	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	19T511100291	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AMH02VE	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	23T511102128	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AMS15PP	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	123363A00716	SFP+-10G-SR
ADC 0	REV 05	750-043596	CAAC2072	Adapter Card
ADC 9	REV 01	750-043596	ZV4111	Adapter Card
ADC 10	REV 05	750-043596	CAAC2058	Adapter Card
ADC 14	REV 02	750-043596	ZW1561	Adapter Card
ADC 19	REV 01	750-043596	ZV4127	Adapter Card
Fan Tray 0	REV 03	760-046960	ACAY0124	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0022	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0023	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0025	172mm FanTray - 6 Fans

### show chassis hardware (MX5, MX10, MX40, MX80, MX240, MX480, and MX960 Routers with Enhanced 20-Port Gigabit Ethernet MIC)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               F3434         MX80-P
Midplane                               ZK2681       MX80-P
PEM 0         Rev 04   740-028288  VE05267       AC Power Entry Module
PEM 1         Rev 04   740-028288  VE05270       AC Power Entry Module
Routing Engine                               BUILTIN      BUILTIN       Routing Engine
TFEB 0                               BUILTIN      BUILTIN       Forwarding Engine
Processor
  QXM 0         REV 05   711-028408  ZK0952        MPC QXM
  FPC 0                               BUILTIN      BUILTIN       MPC BUILTIN
    MIC 0                               BUILTIN      BUILTIN       4x 10GE XFP
      PIC 0                               BUILTIN      BUILTIN       4x 10GE XFP
  FPC 1                               BUILTIN      BUILTIN       MPC BUILTIN
    MIC 0         REV 02   750-049846  CAAV2153      3D 20x 1GE(LAN)-E,SFP
      PIC 0                               BUILTIN      BUILTIN       10x 1GE(LAN) -E SFP
        Xcvr 0       REV 01   740-011613  AM0816S9B81   SFP-SX
        Xcvr 1       REV 02   740-011613  AM0925SBLK7   SFP-SX
        Xcvr 2       REV 01   740-011613  UAQ0005       SFP-SX
        Xcvr 3       REV 01   740-011613  UAQ000C       SFP-SX
        Xcvr 4       REV 01   740-011613  P9F195E       SFP-SX
        Xcvr 5       REV 01   740-011613  UAQ0003       SFP-SX
        Xcvr 6       REV 01   740-031851  AM1041SU1LD   SFP-SX
        Xcvr 8       REV 02   740-013111  B101501       SFP-T
      PIC 1                               BUILTIN      BUILTIN       10x 1GE(LAN) -E SFP
        Xcvr 0       REV 01   740-011613  PFM1ML7       SFP-SX
        Xcvr 4       REV 01   740-011613  PE729P6       SFP-SX
        Xcvr 6       REV 02   740-011613  AM1014SGC84   SFP-SX
        Xcvr 9       REV 01   740-011613  AM0812S8UK3   SFP-SX
    MIC 1         REV 26   750-028392  ZY0187        3D 20x 1GE(LAN) SFP
      PIC 2                               BUILTIN      BUILTIN       10x 1GE(LAN) SFP
        Xcvr 0       REV 01   740-011613  P9F1AN9       SFP-SX
        Xcvr 5       REV 02   740-011613  AM1003SFUF4   SFP-SX
        Xcvr 9       REV 01   740-031851  AM1041SU1LM   SFP-SX
      PIC 3                               BUILTIN      BUILTIN       10x 1GE(LAN) SFP
        Xcvr 4       REV 01   740-011613  PAJ4MYT       SFP-SX
        Xcvr 7         +       NON-JNPR     XG32A024      SFP-SX
        Xcvr 8         +       NON-JNPR     PFROV6J       SFP-SX
        Xcvr 9       REV 01   740-031851  AM1041SU02U   SFP-SX
Fan Tray

```

### show chassis hardware models (MX5, MX10, MX40, MX80, MX240, MX480, and MX960 Routers with Enhanced 20-Port Gigabit Ethernet MIC)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
PEM 0         Rev 04   740-028288  VE05267       PWR-MX80-AC-S
PEM 1         Rev 04   740-028288  VE05270       PWR-MX80-AC-S
Routing Engine                               BUILTIN      BUILTIN
TFEB 0                               BUILTIN      BUILTIN
FPC 0                               BUILTIN      BUILTIN
FPC 1                               BUILTIN      BUILTIN
  MIC 0         REV 02   750-049846  CAAV2153      MIC-3D-20GE-SFP-E
  MIC 1         REV 26   750-028392  ZY0187        MIC-3D-20GE-SFP
Fan Tray                               FANTRAY-MX80-S

```



## show chassis hardware (MX2008 Router)

```
user@host>show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1259E1CAFL	MX2008
Midplane	REV 47	750-044636	ABAD1739	Lower Backplane
PMP	REV 01	711-051406	ACVD0738	Power Midplane
FPM Board	REV 02	760-068193	ABDG7408	Front Panel Display
PSM 1	REV 06	740-050037	1EDB61200R8	DC 52V Power Supply
Module				
PSM 2	REV 06	740-050037	1EDB61200WA	DC 52V Power Supply
Module				
PSM 3	REV 06	740-050037	1EDB61200NY	DC 52V Power Supply
Module				
PSM 4	REV 06	740-050037	1EDB61200N2	DC 52V Power Supply
Module				
PSM 5	REV 06	740-050037	1EDB61200RN	DC 52V Power Supply
Module				
PSM 6	REV 06	740-050037	1EDB61200RF	DC 52V Power Supply
Module				
PSM 7	REV 06	740-050037	1EDB61200R7	DC 52V Power Supply
Module				
PDM 0	REV 01	740-060189	1EFF5250143	DC PDM Optimized
PDM 1	REV 01	740-060189	1EFF5250074	DC PDM Optimized
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x8
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x8
CB 0	REV 01	750-067373	ABDJ0047	Control Board
CB 1	REV 03	750-067373	ABDH3016	Control Board
SFB 0	REV 08	750-067371	ABDK7180	Switch Fabric Board
SFB 1	REV 08	750-067371	ABDK7024	Switch Fabric Board
SFB 2	REV 08	750-067371	ABDK7188	Switch Fabric Board
SFB 3	REV 08	750-067371	ABDK7143	Switch Fabric Board
SFB 4	REV 08	750-067371	ABDK7030	Switch Fabric Board
SFB 5	REV 08	750-067371	ABDK7146	Switch Fabric Board
SFB 6	REV 08	750-067371	ABDK7203	Switch Fabric Board
SFB 7	REV 08	750-067371	ABDK7238	Switch Fabric Board
FPC 0	REV 36	750-044130	ABCS8607	MPC6E 3D
CPU	REV 09	711-045719	ABCS8776	RMPC PMB
MIC 0	REV 21	750-050008	ABCT5920	4X100GE CXP
PIC 0		BUILTIN	BUILTIN	4X100GE CXP
XLM 0	REV 07.2.00	711-046638	ABCK3488	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5482	MPC6E XL
FPC 1	REV 22	750-063414	CAFJ3026	MPC9E 3D
CPU	REV 16	750-057177	CAFF9332	SMPC PMB
FPC 7	REV 08	750-038492	ZX4080	MPCE Type 2 3D EQ
CPU	REV 03	711-038484	ZX3665	MPCE PMB 2G
MIC 0	REV 05	750-037128	ZR4031	1xCOC12/4xCOC3 CH-CE
PIC 0		BUILTIN	BUILTIN	1xCOC12/4xCOC3 CH-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3
PIC 2		BUILTIN	BUILTIN	MIC-3D-8DS3-E3
QXM 0	REV 06	711-028408	ZW8299	MPC QXM
QXM 1	REV 06	711-028408	ZY0609	MPC QXM
ADC 7	REV 17	750-043596	ABCA0990	Adapter Card
Fan Tray 0	REV 01	760-052467	ACAY6190	172mm FanTray - 6 Fans
Fan Tray 1	REV 01	760-052467	ACAY6414	172mm FanTray - 6 Fans

## show chassis hardware detail (MX2008 Router)

```
user@host>show chassis hardware detail
```

## Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1259E1CAFL	MX2008
Midplane	REV 47	750-044636	ABAD1739	Lower Backplane
PMP	REV 01	711-051406	ACVD0738	Power Midplane
FPM Board	REV 02	760-068193	ABDG7408	Front Panel Display
PSM 1	REV 06	740-050037	1EDB61200R8	DC 52V Power Supply
Module				
PSM 2	REV 06	740-050037	1EDB61200WA	DC 52V Power Supply
Module				
PSM 3	REV 06	740-050037	1EDB61200NY	DC 52V Power Supply
Module				
PSM 4	REV 06	740-050037	1EDB61200N2	DC 52V Power Supply
Module				
PSM 5	REV 06	740-050037	1EDB61200RN	DC 52V Power Supply
Module				
PSM 6	REV 06	740-050037	1EDB61200RF	DC 52V Power Supply
Module				
PSM 7	REV 06	740-050037	1EDB61200R7	DC 52V Power Supply
Module				
PDM 0	REV 01	740-060189	1EFF5250143	DC PDM Optimized
PDM 1	REV 01	740-060189	1EFF5250074	DC PDM Optimized
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x8
vtbd0 15361 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 511 MB	QEMU HARDDISK		QM00002	Emulated IDE Disk
usb0 (addr 1)	XHCI root HUB 0		0x8086	uhub0
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x8
vtbd0 15361 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 511 MB	QEMU HARDDISK		QM00002	Emulated IDE Disk
usb0 (addr 1)	XHCI root HUB 0		0x8086	uhub0
CB 0	REV 01	750-067373	ABDJ0047	Control Board
CB 1	REV 03	750-067373	ABDH3016	Control Board
SFB 0	REV 08	750-067371	ABDK7180	Switch Fabric Board
SFB 1	REV 08	750-067371	ABDK7024	Switch Fabric Board
SFB 2	REV 08	750-067371	ABDK7188	Switch Fabric Board
SFB 3	REV 08	750-067371	ABDK7143	Switch Fabric Board
SFB 4	REV 08	750-067371	ABDK7030	Switch Fabric Board
SFB 5	REV 08	750-067371	ABDK7146	Switch Fabric Board
SFB 6	REV 08	750-067371	ABDK7203	Switch Fabric Board
SFB 7	REV 08	750-067371	ABDK7238	Switch Fabric Board
FPC 0	REV 36	750-044130	ABCS8607	MPC6E 3D
CPU	REV 09	711-045719	ABCS8776	RMPCE PMB
MIC 0	REV 21	750-050008	ABCT5920	4X100GE CXP
PIC 0		BUILTIN	BUILTIN	4X100GE CXP
XLM 0	REV 07.2.00	711-046638	ABCK3488	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5482	MPC6E XL
FPC 1	REV 22	750-063414	CAFJ3026	MPC9E 3D
CPU	REV 16	750-057177	CAFF9332	SMPC PMB
FPC 7	REV 08	750-038492	ZX4080	MPCE Type 2 3D EQ
CPU	REV 03	711-038484	ZX3665	MPCE PMB 2G
MIC 0	REV 05	750-037128	ZR4031	1xCOC12/4xCOC3 CH-CE
PIC 0		BUILTIN	BUILTIN	1xCOC12/4xCOC3 CH-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3
PIC 2		BUILTIN	BUILTIN	MIC-3D-8DS3-E3
QXM 0	REV 06	711-028408	ZW8299	MPC QXM
QXM 1	REV 06	711-028408	ZY0609	MPC QXM
ADC 7	REV 17	750-043596	ABCA0990	Adapter Card
Fan Tray 0	REV 01	760-052467	ACAY6190	172mm FanTray - 6 Fans
Fan Tray 1	REV 01	760-052467	ACAY6414	172mm FanTray - 6 Fans

## show chassis hardware extensive (MX2008 Router)

```

user@host>show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN1259E1CAFL
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2008
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 32 35 39 45 31 43 41 46 4c 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 47    750-044636  ABAD1739      Lower Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:          750-044636      S/N:          ABAD1739
Assembly ID:  0x0b66          Assembly Version: 01.47
Date:         06-08-2016      Assembly Flags: 0x00
Version:      REV 47          CLEI Code:    IPMU810ARB
ID: Lower Backplane          FRU Model Number: CHAS-BP-MX2010-S
Board Information Record:
Address 0x00: ad 01 08 00 f4 cc 55 3e 35 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 2f 52 45 56 20 34 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 44 31 37 33 39 00 08 06 07
Address 0x30: e0 ff ff ff ad 01 08 00 f4 cc 55 3e 35 00 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 38 31 30 41 52 42 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 31 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 42 43 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 18 ff ff ff ff ff ff ff ff ff ff ff ff
PMP           REV 01    711-051406  ACVD0738      Power Midplane
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:          711-051406      S/N:          ACVD0738
Assembly ID:  0x045d          Assembly Version: 01.01
Date:         06-06-2016      Assembly Flags: 0x00
Version:      REV 01
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 31 34 30 36 00 00
Address 0x20: 53 2f 4e 20 41 43 56 44 30 37 33 38 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board     REV 02    760-068193  ABDG7408      Front Panel Display
Jedec Code:   0x7fb0          EEPROM Version: 0x02

```

```

P/N:          760-068193      S/N:          ABDG7408
Assembly ID:  0x0cac          Assembly Version: 01.02
Date:         06-06-2016     Assembly Flags:  0x00
Version:      REV 02         CLEI Code:       PROTOXCLEI
ID: Front Panel Display      FRU Model Number:  PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c ac 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 36 38 31 39 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 47 37 34 30 38 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff

PSM 1          REV 06    740-050037    1EDB61200R8    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB61200R8
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016      Assembly Flags:  0x00
Version:      REV 06          CLEI Code:       IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 38 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00

PSM 2          REV 06    740-050037    1EDB61200WA    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB61200WA
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016      Assembly Flags:  0x00
Version:      REV 06          CLEI Code:       IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 57 41 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00

PSM 3          REV 06    740-050037    1EDB61200NY    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB61200NY
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016      Assembly Flags:  0x00
Version:      REV 06          CLEI Code:       IPUPAPDKAA

```

```

ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 4e 59 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 06   740-050037   1EDB61200N2   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200N2
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 4e 32 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 06   740-050037   1EDB61200RN   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200RN
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 52 4e 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 06   740-050037   1EDB61200RF   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200RF
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 46 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 06   740-050037   1EDB61200R7       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200R7
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 37 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00
PDM 0          REV 01   740-060189   1EFF5250143       DC PDM Optimized
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-060189      S/N:              1EFF5250143
Assembly ID:   0x0495          Assembly Version:  01.01
Date:          07-21-2015      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAN1KAA
ID: DC PDM Optimized          FRU Model Number:  MX2K-PDM-OP-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 95 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 36 30 31 38 39 00 00
Address 0x20: 31 45 46 46 35 32 35 30 31 34 33 00 00 15 07 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4e 31 4b 41 41 4d
Address 0x50: 58 32 4b 2d 50 44 4d 2d 4f 50 2d 44 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 84 00 00 00 00 00 00 00 00 00 00 00
PDM 1          REV 01   740-060189   1EFF5250074       DC PDM Optimized
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-060189      S/N:              1EFF5250074
Assembly ID:   0x0495          Assembly Version:  01.01
Date:          07-21-2015      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAN1KAA
ID: DC PDM Optimized          FRU Model Number:  MX2K-PDM-OP-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 95 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 36 30 31 38 39 00 00
Address 0x20: 31 45 46 46 35 32 35 30 30 37 34 00 00 15 07 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4e 31 4b 41 41 4d
Address 0x50: 58 32 4b 2d 50 44 4d 2d 4f 50 2d 44 43 2d 53 00

```

```

Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 84 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID: 0x0c10          Assembly Version: 00.00
Date:          00-00-0000          Assembly Flags: 0x00
ID: RE-S-2X00x8
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00
Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtbd0 15361 MB          Virtio Block Disk
vtbd1 15360 MB          Virtio Block Disk
ada0 511 MB QEMU HARDDISK QM00002 Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0 0x8086 uhub0
Routing Engine 1          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID: 0x0c10          Assembly Version: 00.00
Date:          00-00-0000          Assembly Flags: 0x00
ID: RE-S-2X00x8
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00
Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtbd0 15361 MB          Virtio Block Disk
vtbd1 15360 MB          Virtio Block Disk
ada0 511 MB QEMU HARDDISK QM00002 Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0 0x8086 uhub0
CB 0          REV 01 750-067373 ABDJ0047          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N:          750-067373          S/N:          ABDJ0047
Assembly ID: 0x0c96          Assembly Version: 01.01
Date:          06-21-2016          Assembly Flags: 0x00
Version:          REV 01          CLEI Code:          PROTOXCLEI
ID: Control Board          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 20 28 8a 1c 6d c4 7e ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 96 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4a 30 30 34 37 00 15 06 07
Address 0x30: e0 ff ff ff ad 01 00 20 28 8a 1c 6d c4 7e ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff

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Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 03  750-067373  ABDH3016          Control Board
Jedec Code:   0x7fb0          EEPROM Version:  0x02
P/N:         750-067373      S/N:          ABDH3016
Assembly ID: 0x0c96          Assembly Version: 01.03
Date:        05-07-2016      Assembly Flags:  0x00
Version:     REV 03          CLEI Code:      PROTOXCLEI
ID: Control Board          FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 20 f4 cc 55 35 71 a0 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 96 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 48 33 30 31 36 00 07 05 07
Address 0x30: e0 ff ff ff ad 01 00 20 f4 cc 55 35 71 a0 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff

SFB 0          REV 08  750-067371  ABDK7180          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:  0x02
P/N:         750-067371      S/N:          ABDK7180
Assembly ID: 0x0c97          Assembly Version: 01.08
Date:        09-27-2016      Assembly Flags:  0x00
Version:     REV 08          CLEI Code:      PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 38 30 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 00 00 48 00

SFB 1          REV 08  750-067371  ABDK7024          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:  0x02
P/N:         750-067371      S/N:          ABDK7024
Assembly ID: 0x0c97          Assembly Version: 01.08
Date:        09-27-2016      Assembly Flags:  0x00
Version:     REV 08          CLEI Code:      PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 30 32 34 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 01 00 48 00

SFB 2          REV 08  750-067371  ABDK7188          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:  0x02
P/N:         750-067371      S/N:          ABDK7188
Assembly ID: 0x0c97          Assembly Version: 01.08
Date:        09-28-2016      Assembly Flags:  0x00
Version:     REV 08          CLEI Code:      PROTOXCLEI

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ID: Switch Fabric Board          FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 38 38 00 1c 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 02 00 48 00
SFB 3          REV 08    750-067371  ABDK7143          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:          ABDK7143
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 33 00 1b 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 03 00 48 00
SFB 4          REV 08    750-067371  ABDK7030          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:          ABDK7030
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-24-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 30 33 30 00 18 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 04 00 48 00
SFB 5          REV 08    750-067371  ABDK7146          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:          ABDK7146
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 36 00 1b 09 07

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Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 05 00 48 00
SFB 6          REV 08    750-067371    ABDK7203          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:              ABDK7203
Assembly ID:   0x0c97          Assembly Version:  01.08
Date:          09-28-2016      Assembly Flags:    0x00
Version:       REV 08          CLEI Code:         PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 32 30 33 00 1c 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 06 00 48 00
SFB 7          REV 08    750-067371    ABDK7238          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:              ABDK7238
Assembly ID:   0x0c97          Assembly Version:  01.08
Date:          09-27-2016      Assembly Flags:    0x00
Version:       REV 08          CLEI Code:         PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 32 33 38 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 07 00 48 00
FPC 0          REV 36    750-044130    ABCS8607          MPC6E 3D
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-044130      S/N:              ABCS8607
Assembly ID:   0x0b86          Assembly Version:  01.36
Date:          10-29-2013      Assembly Flags:    0x00
Version:       REV 36          CLEI Code:         PROTOXCLEI
ID: MPC6E 3D      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 86 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 31 33 30 00 00
Address 0x20: 53 2f 4e 20 41 42 43 53 38 36 30 37 00 1d 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 09    711-045719    ABCS8776          RMPC PMB
Jedec Code:    0x7fb0          EEPROM Version:    0x02

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P/N:          711-045719      S/N:          ABCS8776
Assembly ID:  0x0b85         Assembly Version: 01.09
Date:         10-24-2013     Assembly Flags:  0x00
Version:      REV 09
ID: RMPC PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 85 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 34 35 37 31 39 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 53 38 37 37 36 00 18 0a 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 00 00 00 00 16 47 1f b0 00 00 00 00
MIC 0          REV 21      750-050008      ABCT5920          4X100GE CXP
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-050008   S/N:          ABCT5920
Assembly ID:   0x0a83      Assembly Version: 01.21
Date:         09-29-2014   Assembly Flags:  0x00
Version:      REV 21      CLEI Code:     IP9IATYDAA
ID: 4X100GE CXP          FRU Model Number: MIC6-100G-CXP
Board Information Record:
  Address 0x00: 12 01 07 02 03 ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0a 83 01 15 52 45 56 20 32 31 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 30 38 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 54 35 39 32 30 00 1d 09 07
  Address 0x30: de ff ff ff 12 01 07 02 03 ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 39 49 41 54 59 44 41 41 4d
  Address 0x50: 49 43 36 2d 31 30 30 47 2d 43 58 50 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 74 00 00 00 00 10 09 73 3c c0 02 70 3c
PIC 0          BUILTIN      BUILTIN          4X100GE CXP
XLM 0          REV 07.2.00  711-046638      ABCK3488          MPC6E XL
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          711-046638   S/N:          ABCK3488
Assembly ID:   0x0b88      Assembly Version: 01.07
Date:         11-11-2013   Assembly Flags:  0x00
Version:      REV 07.2.00
ID: MPC6E XL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 88 01 07 52 45 56 20 30 37 2e 32
  Address 0x10: 2e 30 30 00 37 31 31 2d 30 34 36 36 33 38 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 4b 33 34 38 38 00 0b 0b 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
XLM 1          REV 07.2.00  711-046638      ABCK5482          MPC6E XL
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          711-046638   S/N:          ABCK5482
Assembly ID:   0x0b88      Assembly Version: 01.07
Date:         10-21-2013   Assembly Flags:  0x00
Version:      REV 07.2.00
ID: MPC6E XL
Board Information Record:

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Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 88 01 07 52 45 56 20 30 37 2e 32
Address 0x10: 2e 30 30 00 37 31 31 2d 30 34 36 36 33 38 00 00
Address 0x20: 53 2f 4e 20 41 42 43 4b 35 34 38 32 00 15 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
FPC 1          REV 22    750-063414    CAFJ3026          MPC9E 3D
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-063414      S/N:           CAFJ3026
Assembly ID:   0x0c43          Assembly Version: 01.22
Date:          03-28-2016      Assembly Flags: 0x00
Version:       REV 22          CLEI Code:     IPUCBMUCAA
ID: MPC9E 3D          FRU Model Number: MX2K-MPC9E
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0c 43 01 16 52 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 33 34 31 34 00 00
Address 0x20: 53 2f 4e 20 43 41 46 4a 33 30 32 36 00 1c 03 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 4d 55 43 41 41 4d
Address 0x50: 58 32 4b 2d 4d 50 43 39 45 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 16    750-057177    CAFF9332          SMPC PMB
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:           750-057177      S/N:           CAFF9332
Assembly ID:   0x0c22          Assembly Version: 01.16
Date:          03-20-2016      Assembly Flags: 0x00
Version:       REV 16
ID: SMPC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0c 22 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 37 31 37 37 00 00
Address 0x20: 53 2f 4e 20 43 41 46 46 39 33 33 32 00 14 03 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 38 f9 0d e0 4f d1 4b 08
FPC 7          REV 08    750-038492    ZX4080          MPCE Type 2 3D EQ
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-038492      S/N:           ZX4080
Assembly ID:   0x0b35          Assembly Version: 01.08
Date:          02-03-2012      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     COUIBA5BAA
ID: MPCE Type 2 3D EQ          FRU Model Number: MX-MPC2E-3D-EQ
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 35 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 38 34 39 32 00 00
Address 0x20: 53 2f 4e 20 5a 58 34 30 38 30 00 00 00 03 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 41 35 42 41 41 4d

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Address 0x50: 58 2d 4d 50 43 32 45 2d 33 44 2d 45 51 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 74 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 03    711-038484    ZX3665          MPCE PMB 2G
Jedec Code:  0x7fb0          EEPROM Version:  0x01
P/N:         711-038484      S/N:           ZX3665
Assembly ID: 0x0b36          Assembly Version: 01.03
Date:        02-01-2012      Assembly Flags: 0x00
Version:     REV 03
ID: MPCE PMB 2G
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 36 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 38 34 38 34 00 00
Address 0x20: 53 2f 4e 20 5a 58 33 36 36 35 00 00 00 01 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 02 00 00 0c 00 42 5f c0 a4
MIC 0          REV 05    750-037128    ZR4031          1xCOC12/4xCOC3 CH-CE
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-037128      S/N:           ZR4031
Assembly ID: 0x0a1b          Assembly Version: 01.05
Date:        12-04-2011      Assembly Flags: 0x00
Version:     REV 05          CLEI Code:      PROTOXCLEI
ID: 1xCOC12/4xCOC3 CH-CE    FRU Model Number: MIC-3D-4CHOC3-10C12-CE
Board Information Record:
Address 0x00: 12 01 05 03 05 ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 1b 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 31 32 38 00 00
Address 0x20: 53 2f 4e 20 5a 52 34 30 33 31 00 00 00 04 0c 07
Address 0x30: db ff ff ff 12 01 05 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 4d
Address 0x50: 49 43 2d 33 44 2d 34 43 48 4f 43 33 2d 31 4f 43
Address 0x60: 31 32 2d 43 45 00 30 32 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 98 c0 02 61 bc 7f b0 02 ff 0a 11 01 17
PIC 0          BUILTIN    BUILTIN          1xCOC12/4xCOC3 CH-CE
MIC 1          REV 23    750-032479    CADE8614        MIC-3D-8DS3-E3
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-032479      S/N:           CADE8614
Assembly ID: 0x0a11          Assembly Version: 01.23
Date:        07-24-2014      Assembly Flags: 0x00
Version:     REV 23          CLEI Code:      COUIA8DBAA
ID: MIC-3D-8DS3-E3          FRU Model Number: MIC-3D-8DS3-E3
Board Information Record:
Address 0x00: 56 01 ff ff 03 ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 11 01 17 52 45 56 20 32 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 32 34 37 39 00 00
Address 0x20: 53 2f 4e 20 43 41 44 45 38 36 31 34 00 18 07 07
Address 0x30: de ff ff ff 56 01 ff ff 03 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 41 38 44 42 41 41 4d
Address 0x50: 49 43 2d 33 44 2d 38 44 53 33 2d 45 33 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 7b c0 03 e5 7c 4f 8a 9e 10 00 00 00 02
PIC 2          BUILTIN    BUILTIN          MIC-3D-8DS3-E3
QXM 0          REV 06    711-028408    ZW8299          MPC QXM
Jedec Code:  0x7fb0          EEPROM Version:  0x01

```

P/N: 711-028408 S/N: ZW8299  
 Assembly ID: 0x097a Assembly Version: 02.06  
 Date: 01-19-2012 Assembly Flags: 0x00  
 Version: REV 06  
 ID: MPC QXM

## Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

## I2C Hex Data:

Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00  
 Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00  
 Address 0x20: 53 2f 4e 20 5a 57 38 32 39 39 00 00 00 13 01 07  
 Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

QXM 1 REV 06 711-028408 ZY0609 MPC QXM

Jedec Code: 0x7fb0 EEPROM Version: 0x01  
 P/N: 711-028408 S/N: ZY0609  
 Assembly ID: 0x097a Assembly Version: 02.06  
 Date: 01-19-2012 Assembly Flags: 0x00  
 Version: REV 06  
 ID: MPC QXM

## Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

## I2C Hex Data:

Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00  
 Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00  
 Address 0x20: 53 2f 4e 20 5a 59 30 36 30 39 00 00 00 13 01 07  
 Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

ADC 7 REV 17 750-043596 ABCA0990 Adapter Card

Jedec Code: 0x7fb0 EEPROM Version: 0x02  
 P/N: 750-043596 S/N: ABCA0990  
 Assembly ID: 0x0b3d Assembly Version: 01.17  
 Date: 03-07-2013 Assembly Flags: 0x00  
 Version: REV 17 CLEI Code: IPUCBA8CAA  
 ID: Adapter Card FRU Model Number: MX2000-LC-ADAPTER

## Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

## I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b 3d 01 11 52 45 56 20 31 37 00 00  
 Address 0x10: 00 00 00 00 37 35 30 2d 30 34 33 35 39 36 00 00  
 Address 0x20: 53 2f 4e 20 41 42 43 41 30 39 39 30 00 07 03 07  
 Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  
 Address 0x40: ff ff ff ff 01 49 50 55 43 42 41 38 43 41 41 4d  
 Address 0x50: 58 32 30 30 30 2d 4c 43 2d 41 44 41 50 54 45 52  
 Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff  
 Address 0x70: ff ff ff 3a 00 00 00 00 00 00 00 00 00 00 00 00

Fan Tray 0 REV 01 760-052467 ACAY6190 172mm FanTray - 6 Fans

Jedec Code: 0x7fb0 EEPROM Version: 0x02  
 P/N: 760-052467 S/N: ACAY6190  
 Assembly ID: 0x0b96 Assembly Version: 02.10  
 Date: 09-18-2015 Assembly Flags: 0x00  
 Version: REV 01 CLEI Code: IPUCBENCAA  
 ID: 172mm FanTray - 6 Fans FRU Model Number: MX2000-FANTRAY-S

## Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 96 02 0a 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 32 34 36 37 00 00
Address 0x20: 53 2f 4e 20 41 43 41 59 36 31 39 30 00 12 09 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 45 4e 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 46 41 4e 54 52 41 59 2d 53 00
Address 0x60: 00 00 00 00 00 00 31 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 1a ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1      REV 01    760-052467    ACAY6414      172mm FanTray - 6 Fans
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:           760-052467    S/N:          ACAY6414
Assembly ID:   0x0b96      Assembly Version: 02.10
Date:          10-28-2015    Assembly Flags: 0x00
Version:       REV 01      CLEI Code:     IPUCBENCAA
ID: 172mm FanTray - 6 Fans    FRU Model Number: MX2000-FANTRAY-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 96 02 0a 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 32 34 36 37 00 00
Address 0x20: 53 2f 4e 20 41 43 41 59 36 34 31 34 00 1c 0a 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 45 4e 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 46 41 4e 54 52 41 59 2d 53 00
Address 0x60: 00 00 00 00 00 00 31 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 1a ff ff ff ff ff ff ff ff ff ff ff

```

### show chassis hardware models (MX2008 Router)

```

user@host>show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 47	750-044636	ABAD1739	CHAS-BP-MX2010-S
PMP	REV 01	711-051406	ACVD0738	
FPM Board	REV 02	760-068193	ABDG7408	PROTO-ASSEMBLY
PSM 1	REV 06	740-050037	1EDB61200R8	MX2000-PSM-DC-S
PSM 2	REV 06	740-050037	1EDB61200WA	MX2000-PSM-DC-S
PSM 3	REV 06	740-050037	1EDB61200NY	MX2000-PSM-DC-S
PSM 4	REV 06	740-050037	1EDB61200N2	MX2000-PSM-DC-S
PSM 5	REV 06	740-050037	1EDB61200RN	MX2000-PSM-DC-S
PSM 6	REV 06	740-050037	1EDB61200RF	MX2000-PSM-DC-S
PSM 7	REV 06	740-050037	1EDB61200R7	MX2000-PSM-DC-S
PDM 0	REV 01	740-060189	1EFF5250143	MX2K-PDM-OP-DC-S
PDM 1	REV 01	740-060189	1EFF5250074	MX2K-PDM-OP-DC-S
CB 0	REV 01	750-067373	ABDJ0047	PROTO-ASSEMBLY
CB 1	REV 03	750-067373	ABDH3016	PROTO-ASSEMBLY
SFB 0	REV 08	750-067371	ABDK7180	PROTO-ASSEMBLY
SFB 1	REV 08	750-067371	ABDK7024	PROTO-ASSEMBLY
SFB 2	REV 08	750-067371	ABDK7188	PROTO-ASSEMBLY
SFB 3	REV 08	750-067371	ABDK7143	PROTO-ASSEMBLY
SFB 4	REV 08	750-067371	ABDK7030	PROTO-ASSEMBLY
SFB 5	REV 08	750-067371	ABDK7146	PROTO-ASSEMBLY
SFB 6	REV 08	750-067371	ABDK7203	PROTO-ASSEMBLY
SFB 7	REV 08	750-067371	ABDK7238	PROTO-ASSEMBLY
FPC 0	REV 36	750-044130	ABCS8607	PROTO-ASSEMBLY
MIC 0	REV 21	750-050008	ABCT5920	MIC6-100G-CXP
FPC 1	REV 22	750-063414	CAFJ3026	MX2K-MPC9E
FPC 7	REV 08	750-038492	ZX4080	MX-MPC2E-3D-EQ
MIC 0	REV 05	750-037128	ZR4031	MIC-3D-4CHOC3-10C12-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3

ADC 7	REV 17	750-043596	ABCA0990	MX2000-LC-ADAPTER
Fan Tray 0	REV 01	760-052467	ACAY6190	MX2000-FANTRAY-S
Fan Tray 1	REV 01	760-052467	ACAY6414	MX2000-FANTRAY-S

### show chassis hardware clei-models (MX2008 Router)

user@host>show chassis hardware clei-models

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 47	750-044636	IPMU810ARB	CHAS-BP-MX2010-S
PMP	REV 01	711-051406		
FPM Board	REV 02	760-068193	PROTOXCLEI	PROTO-ASSEMBLY
PSM 1	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 2	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 3	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 4	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 5	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 6	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 7	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PDM 0	REV 01	740-060189	IPUPAN1KAA	MX2K-PDM-OP-DC-S
PDM 1	REV 01	740-060189	IPUPAN1KAA	MX2K-PDM-OP-DC-S
CB 0	REV 01	750-067373	PROTOXCLEI	PROTO-ASSEMBLY
CB 1	REV 03	750-067373	PROTOXCLEI	PROTO-ASSEMBLY
SFB 0	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 1	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 2	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 3	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 4	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 5	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 6	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 7	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
FPC 0	REV 36	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 21	750-050008	IP9IATYDAA	MIC6-100G-CXP
FPC 1	REV 22	750-063414	IPUCBMUCAA	MX2K-MPC9E
FPC 7	REV 08	750-038492	COUIBA5BAA	MX-MPC2E-3D-EQ
MIC 0	REV 05	750-037128	PROTOXCLEI	MIC-3D-4CHOC3-10C12-CE
MIC 1	REV 23	750-032479	COUIA8DBAA	MIC-3D-8DS3-E3
ADC 7	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
Fan Tray 0	REV 01	760-052467	IPUCBENCAA	MX2000-FANTRAY-S
Fan Tray 1	REV 01	760-052467	IPUCBENCAA	MX2000-FANTRAY-S

### show chassis hardware (MX10003 Router)

user@host> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			BLANK	JNP10003 [MX10003]
Midplane	REV 01	750-066883	CAGM0759	Midplane 2
Routing Engine 0		BUILTIN	BUILTIN	Routing Engine
Routing Engine 1		BUILTIN	BUILTIN	Routing Engine
CB 0	REV 07	750-067071	CAGX4354	SPM
Mezz	REV 10	711-066896	CAHS7200	SPM Mezz Board
CB 1	REV 07	750-067071	CAGX4363	SPM
Mezz	REV 10	711-066896	CAHS7193	SPM Mezz Board
FPC 0	REV 05	750-066879	CAGV0273	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0				
PIC 1				
FPC 1	REV 05	750-066879	CAGV0278	LC2103



CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
PIC 1				
PEM 0	REV 01	740-066937	1HS16320003	JNP-PWR1600-AC
PEM 1	REV 01	740-066937	1HS16320002	JNP-PWR1600-AC
Fan Tray 0	REV 02	760-069329	CAGS7731	JNP FAN 3RU
Fan Tray 1	REV 02	760-069329	CAGS7776	JNP FAN 3RU
Fan Tray 2	REV 02	760-069329	CAGS7659	JNP FAN 3RU
Fan Tray 3	REV 02	760-069329	CAGS7669	JNP FAN 3RU

### show chassis hardware (MX204 Router)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			BB768	JNP204 [MX204]
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 11	750-069579	CAJD3113	JNP204 [MX204]
FPC 0		BUILTIN	BUILTIN	MPC
PIC 0		BUILTIN	BUILTIN	4XQSFP28 PIC
Xcvr 0	REV 01	740-061405	1ACQ110409R	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-054053	QF027546	QSFP+-4X10G-SR
Xcvr 2	REV 01	740-058732	1AMQA142092	QSFP-100GBASE-LR4
Xcvr 3	REV 01	740-058732	1AMQA14203J	QSFP-100GBASE-LR4
PIC 1		BUILTIN	BUILTIN	8XSFP PIC
PEM 1	REV 04	740-043886	1GA46361256	JPSU-650W-DC-AFO
Fan Tray 0				Fan Tray, Front to Back
Airflow - AFO				
Fan Tray 1				Fan Tray, Front to Back
Airflow - AFO				
Fan Tray 2				Fan Tray, Front to Back
Airflow - AFO				

### show chassis hardware (vMX running in lite mode)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			VM54599D128A	VMX
Midplane				
Routing Engine 0				RE-VMX
CB 0				VMX SCB
CB 1				VMX SCB
FPC 0				Virtual FPC
CPU	Rev. 1.0	RIOT-LITE	BUILTIN	
MIC 0				Virtual
PIC 0		BUILTIN	BUILTIN	Virtual

### show chassis hardware (vMX running in performance mode)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			VM54599D128A	VMX
Midplane				
Routing Engine 0				RE-VMX
CB 0				VMX SCB
CB 1				VMX SCB
FPC 0				Virtual FPC

CPU	Rev. 1.0	RIOT-PERF	BUILTIN	
MIC 0				Virtual
PIC 0		BUILTIN	BUILTIN	Virtual

## show chassis hardware (T320 Router)

user@host&gt; show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			19093	T320
Midplane	REV 04	710-004339	BC1436	T320 Backplane
FPM GBUS	REV 03	710-004461	BC1407	T320 FPM Board
FPM Display	REV 04	710-002897	BE0763	FPM Display
CIP	REV 05	710-002895	BB2311	T Series CIP
PEM 0	Rev 01	740-004359	NB12546	Power Entry Module
SCG 0	REV 06	710-004455	AY4522	T320 Sonet
Clock Gen.				
Routing Engine 0				unknown
CB 0	REV 13	710-002728	BC1577	T Series
Control Board				
CB 1	REV 13	710-002728	BC1595	T Series
Control Board				
FPC 1	REV 09	710-007531	HS1572	FPC Type 2
CPU	REV 15	710-001726	HR8763	FPC CPU
PIC 0	REV 01	750-010618	CB5579	4x G/E SFP,
1000 BASE				
SFP 0	REV 01	740-007326	P5809Z1	SFP-SX
SFP 1	REV 01	740-007326	P4Q10XU	SFP-SX
SFP 2		NON-JNPR	RA45020031	SFP-SX
SFP 3		NON-JNPR	RA45020032	SFP-SX
PIC 1	REV 01	750-010618	CD9587	4x G/E SFP,
1000 BASE				
SFP 0		NON-JNPR	P5A08QZ	SFP-T
SFP 1	REV 01	740-007326	P4Q133K	SFP-SX
SFP 2	REV 01	740-007326	P5809YY	SFP-SX
SFP 3	REV 01	740-007327	4C81704	SFP-LX
MMB 1	REV 03	710-005555	HR9401	MMB-288mbit
PPB 0	REV 04	710-003758	HR2886	PPB Type 2
FPC 2	REV 07	710-005860	HP2392	FPC Type 1
CPU	REV 14	710-001726	HP7797	FPC CPU
PIC 0	REV 02	750-007643	HM0853	1x G/E QPP,
1000 BASE				
SFP 0	REV 01	740-007326	P11E9JJ	SFP-SX
MMB 1	REV 02	710-005555	HN2379	MMB-288mbit
PPB 0	REV 04	710-003758	HP8092	PPB Type 2
FPC 3	REV 07	710-005860	HP2393	FPC Type 1
CPU	REV 14	710-001726	HP0968	FPC CPU
PIC 0	REV 01	750-010240	CB5363	1x G/E SFP,
1000 BASE				
SFP 0	REV 01	740-007326	P4R0PNH	SFP-SX
PIC 1	REV 03	750-003034	HD2832	4x OC-3 SONET,
SMIR				
MMB 1	REV 02	710-005555	HN6307	MMB-288mbit
PPB 0	REV 04	710-003758	HP5051	PPB Type 2
FPC 4	REV 01	710-010845	JD3872	FPC Type 4
CPU	REV 02	710-011481	JB6042	FPC CPU
5	REV 01	710-005802	BC1566	FPC Type 2
CPU	REV 09	710-001726	AY4922	FPC CPU
PIC 0	REV 02	750-008155	BE2114	2x G/E QPP,
1000 BASE				
SFP 0	REV 01	740-007326	P4R0PMQ	SFP-SX

SFP 1	REV 01	740-007326	P4R0PN9	SFP-SX
PIC 1	REV 01	750-008155	BE2116	2x G/E QPP,
1000 BASE				
SFP 0	REV 01	740-007326	P4R0PNZ	SFP-SX
SFP 1		NON-JNPR	2908	SFP-T
MMB 1	REV 01	710-005555	AZ2246	MMB-288mbit
PPB 0	REV 03	710-003758	AY4839	PPB Type 2
FPC 7	REV 01	710-005803	AZ2123	FPC Type 3
...				

### show chassis hardware (T640 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			19182	T640
Midplane	REV 04	710-002726	AX5608	T640 Backplane
FPM GBUS	REV 02	710-002901	HE3064	T640 FPM Board
FPM Display	REV 02	710-002897	HE7864	FPM Display
CIP	REV 05	710-002895	HA5024	T Series CIP
PEM 0	Rev 02	740-029522	VH26235	AC PEM 10kW US
PEM 1	Rev 02	740-029522	VH26230	AC PEM 10kW US
SCG 0	REV 03	710-003423	HA4508	T640 Sonet Clock Gen.
Routing Engine 0	REV 02	740-005022	210865700483	RE-3.0 (RE-600)
CB 0	REV 01	710-002728	HD3044	T Series Control Board
FPC 2	REV 04	710-001721	HD5572	FPC Type 3
CPU	REV 06	710-001726	HA4712	FPC CPU
PIC 1	REV 03	750-009567	HV2331	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-009898	USC202R103	XENPAK-SR
PIC 2	REV 03	750-009567	HV2332	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-011268	USC202R112	XENPAK-ZR
PIC 3	REV 03	750-009567	HX4416	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-012056	434TC004	XENPAK-CX4
PIC 4	REV 03	750-009567	HX4420	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-012058	434TC124	XENPAK-LX4
FPC 5	REV 01	710-013553	JE4839	E2-FPC Type 1
CPU	REV 01	710-013569	JW9163	FPC CPU
PIC 0	REV 01	750-009567	HX4419	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-009898	USC202RT05	XENPAK-LR
PIC 1	REV 03	750-009567	HN7426	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-009550	03L90051	XENPAK-ER
PIC 2	REV 03	750-009467	HT7423	1x 10GE(LAN),XENPAK
SFP 0		NON-JNPR		UNKNOWN
PIC 3	REV 04	750-005100	AY4850	1x 10GE(LAN),DWDM
FPC 4	REV 01	710-010845	JD3872	FPC Type 4
CPU	REV 02	710-011481	JB6042	FPC CPU
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

### show chassis hardware models (T640 Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	710-002726		CHAS-BP-T640-S
FPM Display	REV 02	710-002897		CRAFT-T640-S
CIP	REV 05	710-002895		CIP-L-T640-S
PEM 0	Rev 01	740-002595		PWR-T-DC-S
SCG 0	REV 04	710-003423		SCG-T-S

SCG 1	REV 04	710-003423	SCG-T-S
Routing Engine 0	REV 01	740-005022	RE-600-2048-S
Routing Engine 1	REV 07	740-005022	RE-600-2048-S
CB 0	REV 06	710-002726	CHAS-BP-T640-S
CB 1	REV 06	710-002728	CB-L-T-S
FPC 5	REV 05	710-007527	T640-FPC2
PIC 0	REV 05	750-002510	PB-2GE-SX
PIC 1	REV 05	750-001901	PB-40C12-SON-SMIR
FPC 6	REV 03	710-001721	T640-FPC3
PIC 1	REV 01	750-009553	PC-40C48-SON-SFP
SIB 4	REV 02	750-005486	SIB-I-T640-S
Fan Tray 0			FANTRAY-T-S
Fan Tray 1			FANTRAY-T-S
Fan Tray 2			FAN-REAR-TX-T640-S

### show chassis hardware extensive (T640 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N: ..... S/N: .....
Assembly ID: 0x0507      Assembly Version: 00.00
Date: 00-00-0000      Assembly Flags: 0x00
Version: .....
ID: Gibson LCC Chassis
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 05 07 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane            REV 04  710-002726  AX5633
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N: 710-002726. S/N: AX5633.
Assembly ID: 0x0127      Assembly Version: 01.04
Date: 06-27-2001      Assembly Flags: 0x00
Version: REV 04.....
ID: Gibson Backplane
Board Information Record:
Address 0x00: ad 01 08 00 00 90 69 0e f8 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 01 27 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 30 32 37 32 36 00 00
Address 0x20: 53 2f 4e 20 41 58 35 36 33 33 00 00 00 1b 06 07
Address 0x30: d1 ff ff ff ad 01 08 00 00 90 69 0e f8 00 ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM GBUS            REV 02  710-002901  HE3245
...
FPM Display         REV 02  710-002897  HA4873
...
CIP                  REV 05  710-002895  HA4729
...
PEM 1                RevX02  740-002595  MD21815      Power Entry Module
...
SCG 0                REV 04  710-003423  HF6023
...
SCG 1                REV 04  710-003423  HF6061

```

```

...
Routing Engine 0 REV 01 740-005022 210865700292 RE-3.0
...
CB 0 REV 06 710-002728 HE3614
...
FPC 1 REV 01 710-002385 HE3009 FPC Type 1
...
REV 06 710-001726 HC0010

```

### show chassis hardware (T4000 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1172F25AHA  T4000
Midplane      REV 01   710-027486   RC8355         T-series Backplane
FPM GBUS      REV 13   710-002901   BBAE0927       T640 FPM Board
FPM Display   REV 01   710-021387   EF6764         T1600 FPM Display
CIP           REV 06   710-002895   BBAD9210       T-series CIP
PEM 0        REV 01   740-036442   VA00016        Power Entry Module 6x60
SCG 0        REV 18   710-003423   BBAD7248       T640 Sonet Clock Gen.
SCG 1        REV 18   710-003423   BBAE3874       T640 Sonet Clock Gen.
Routing Engine 0 REV 05   740-026941   P737F-002248   RE-DUO-1800
Routing Engine 1 REV 06   740-026941   P737F-002653   RE-DUO-1800
CB 0         REV 09   710-022597   ED0295         LCC Control Board
CB 1         REV 09   710-022597   EA6050         LCC Control Board
FPC 0        REV 26   750-032819   EK1173         FPC Type 5-3D
CPU          REV 12   711-030686   EJ8584         SNG PMB
PIC 0        REV 07   750-034624   EF6837         12x10GE (LAN/WAN) SFPP
  Xcvr 0     REV 01   740-031980   123363A01145   SFP+-10G-SR
  Xcvr 1     REV 01   740-031980   123363A01147   SFP+-10G-SR
  Xcvr 2     REV 01   740-031980   AJJ01P3        SFP+-10G-SR
  Xcvr 3     REV 01   740-031980   B10M03256      SFP+-10G-SR
  Xcvr 4     REV 01   740-031980   AJJ01M2        SFP+-10G-SR
  Xcvr 5     REV 01   740-031980   123363A01137   SFP+-10G-SR
  Xcvr 6     REV 01   740-031980   AJJ01PN        SFP+-10G-SR
  Xcvr 7     REV 01   740-031980   AJJ01NW        SFP+-10G-SR
  Xcvr 8     REV 01   740-031980   123363A01139   SFP+-10G-SR
  Xcvr 9     REV 01   740-031980   AJJ01KE        SFP+-10G-SR
  Xcvr 10    REV 01   740-031980   123363A01336   SFP+-10G-SR
  Xcvr 11    REV 01   740-031980   B10M01325      SFP+-10G-SR
PIC 1        REV 07   750-034624   EF6800         12x10GE (LAN/WAN) SFPP
  Xcvr 0     REV 01   740-031980   AJJ01SA        SFP+-10G-SR
  Xcvr 1     REV 01   740-031980   AJJ01QZ        SFP+-10G-SR
  Xcvr 2     REV 01   740-031980   AJH0217        SFP+-10G-SR
  Xcvr 3     REV 01   740-031980   AJJ01TE        SFP+-10G-SR
  Xcvr 4     REV 01   740-031980   AJJ01KV        SFP+-10G-SR
  Xcvr 5     REV 01   740-031980   AJJ01MU        SFP+-10G-SR
  Xcvr 6     REV 01   740-031980   AJJ01R0        SFP+-10G-SR
  Xcvr 7     REV 01   740-031980   AJJ01TC        SFP+-10G-SR
  Xcvr 8     REV 01   740-031980   AJJ0364        SFP+-10G-SR
  Xcvr 9     REV 01   740-031980   AJD0GV3        SFP+-10G-SR
  Xcvr 10    REV 01   740-031980   B10M03343      SFP+-10G-SR
  Xcvr 11    REV 01   740-031980   AJJ01QJ        SFP+-10G-SR
LMB 0        REV 05   711-034381   EJ8490         Type-0 LMB
LMB 1        REV 04   711-035774   EJ8517         Type-1 LMB
LMB 2        REV 05   711-034381   EJ8489         Type-0 LMB
FPC 3        REV 07   750-032819   EG3637         FPC Type 5-3D
CPU          REV 09   711-030686   EG0150         SNG PMB
PIC 0        REV 08   750-035293   EF3657         1x100GE
  Xcvr 0     REV 01   740-032210   C22CQNJ        CFP-100G-LR4
PIC 1        REV 10   750-034624   BBAN4098       12x10GE (LAN/WAN) SFPP

```

Xcvr 0	REV 01	740-031980	B11J04902	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11J04891	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01MX	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11J04183	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11J04894	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J04184	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11J04897	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11J04899	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AJJ01TV	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	B11J04057	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJJ01M4	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B11J04905	SFP+-10G-SR
LMB 0	REV 04	711-034381	EG1524	Type-0 LMB
LMB 1	REV 03	711-035774	EG0345	Type-1 LMB
LMB 2	REV 04	711-034381	EG1522	Type-0 LMB
FPC 5	REV 03	710-033871	BBAJ0768	FPC Type 4-ES
CPU	REV 11	710-016744	BBAH9342	ST-PMB2
PIC 0	REV 09	750-029262	EE6789	100GE
PIC 1	REV 03	750-034781	EE6655	100GE CFP
Xcvr 0	REV 01	740-032210	J11A22334	CFP-100G-LR4
BRIDGE 0	REV 03	711-029995	EE6572	100GE Bridge Board
MMB 0	REV 07	710-025563	BBAJ4657	ST-MMB2
MMB 1	REV 07	710-025563	BBAJ3073	ST-MMB2
FPC 6	REV 05	750-010153	EF4936	FPC Type 5-3D
CPU	REV 06	711-030686	EF4189	SNG PMB
PIC 0	REV 10	750-034624	BBAN4109	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	B11J04895	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11J04898	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11J04021	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11J04903	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11J04311	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J04059	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11J04016	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11J04017	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B11J04887	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	B11J04297	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B11J04893	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B11J04022	SFP+-10G-SR
PIC 1	REV 02	750-034624	EE3711	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	AJH033X	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJJ01N0	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01SV	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJJ032L	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B10M01593	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJD0FF1	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJJ01NU	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	123363A01305	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B10M00361	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJJ01M7	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJJ032X	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AJJ01PG	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3838	Type-0 LMB
LMB 1	REV 03	711-035774	EF3821	Type-1 LMB
LMB 2	REV 04	711-034381	EF3834	Type-0 LMB
SPMB 0	REV 05	710-023321	ED1990	LCC Switch CPU
SPMB 1	REV 05	710-023321	EA2768	LCC Switch CPU
SIB 0	REV 02	711-036340	EF8802	SIB-HC-3D
SIB 1	REV 07	711-036340	EG2286	SIB-HC-3D
SIB 2	REV 07	711-036340	EG2252	SIB-HC-3D
SIB 3	REV 02	711-036340	EF1358	SIB-HC-3D
SIB 4	REV 02	711-036340	EF8806	SIB-HC-3D

Fan Tray 0	Front Top Fan Tray
Fan Tray 1	Front Bottom Fan Tray
-- Rev 2	
Fan Tray 2	Rear Fan Tray -- Rev 3

### show chassis hardware (T4000 Router with 16-GB Line Card Chassis (LCC) Routing Engine)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN11BDF2CAHA	T1600
Midplane	REV 01	710-027486	ACAJ0774	T640 Backplane
FPM GBUS	REV 13	710-002901	BBAL6812	T640 FPM Board
FPM Display	REV 04	710-021387	BBAP2679	T1600 FPM Display
CIP	REV 06	710-002895	BBAP4758	T-series CIP
PEM 0	Rev 03	740-026384	XF86421	Power Entry Module 3x80
PEM 1	Rev 03	740-026384	XF86429	Power Entry Module 3x80
SCG 0	REV 18	710-003423	BBAP1896	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAN8659	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-042243	737F-002238	RE-DUO-1800-16G
Routing Engine 1	REV 01	740-042243	737F-002403	RE-DUO-1800-16G
CB 1	REV 11	710-022597	EK4526	LCC Control Board
CB 1	REV 11	710-022597	EK4527	LCC Control Board
FPC 0	REV 05	710-033871	EK5644	FPC Type 4-ES
CPU	REV 11	710-016744	EK3428	ST-PMB2
PIC 0	REV 20	750-017405	EJ3041	4x 10GE (LAN/WAN) XFP
PIC 1	REV 17	750-026962	EH7536	10x10GE (LAN/WAN) SFPP
MMB 0	REV 07	710-025563	EK6039	ST-MMB2
MMB 1	REV 07	710-025563	EK6086	ST-MMB2
FPC 1	REV 05	710-033871	EK6583	FPC Type 4-ES
CPU	REV 11	710-016744	EK3401	ST-PMB2
PIC 0	REV 17	750-026962	EJ8948	10x10GE (LAN/WAN) SFPP
MMB 0	REV 07	710-025563	EK6202	ST-MMB2
MMB 1	REV 07	710-025563	EK6112	ST-MMB2
SPMB 1	REV 05	710-023321	EK4900	LCC Switch CPU
SIB 0	REV 11	710-013074	EK5958	SIB-I8-SF
SIB 1	REV 11	710-013074	EK4606	SIB-I8-SF
SIB 2	REV 11	710-013074	EK5971	SIB-I8-SF
SIB 3	REV 11	710-013074	EK4609	SIB-I8-SF
SIB 4	REV 11	710-013074	EK4602	SIB-I8-SF
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 2

### show chassis hardware (T4000 Router with LSR FPC)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1173A24AHA	T4000
FPC 3	REV	750-048373	AN7797	FPC Type 5-LSR
CPU	REV 10	711-030686	AN6649	SNG PMB
PIC 0	REV 07	750-034624	EF6830	12x10GE (LAN/WAN) SFPP

### show chassis hardware clei-models (T4000 Router)

```
user@host> show chassis hardware clei-models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-027486	IPMJ700DRD	CHAS-BP-T1600-S

FPM Display	REV 01	710-021387		CRAFT-T1600-S
CIP	REV 06	710-002895		CIP-L-T640-S
PEM 0	REV 01	740-036442	IPUPAG6KAA	PWR-T-6-60-DC
SCG 0	REV 18	710-003423		SCG-T-S
SCG 1	REV 18	710-003423		SCG-T-S
Routing Engine 0	REV 05	740-026941		RE-DUO-C1800-8G-S
Routing Engine 1	REV 06	740-026941		RE-DUO-C1800-8G-S
CB 0	REV 09	710-022597		CB-LCC-S
CB 1	REV 09	710-022597		CB-LCC-S
FPC 3				
PIC 0	REV 08	750-035293	XXXXXXXXBB	PF-1CGE-CFP
PIC 1	REV 10	750-034624	XXXXXXXXCC	PF-12XGE-SFPP
FPC 5	REV 03	710-033871	IPUCAMBCTD	T1600-FPC4-ES
PIC 1	REV 03	750-034781	IPUIBKLMMA	PD-1CE-CFP-FPC4
FPC 6				
PIC 0	REV 10	750-034624	XXXXXXXXCC	PF-12XGE-SFPP
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T4000-S
Fan Tray 2				FANTRAY-TXP-R-S

### show chassis hardware detail (T4000 Router)

```
user@host> show chassis hardware detail
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1172F25AHA	T4000
Midplane	REV 01	710-027486	RC8355	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAE0927	T640 FPM Board
FPM Display	REV 01	710-021387	EF6764	T1600 FPM Display
CIP	REV 06	710-002895	BBAD9210	T-series CIP
PEM 0	REV 01	740-036442	VA00016	Power Entry Module 6x60
SCG 0	REV 18	710-003423	BBAD7248	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAE3874	T640 Sonet Clock Gen.
Routing Engine 0	REV 05	740-026941	P737F-002248	RE-DUO-1800
ad0	3823 MB	SMART CF	2009121602A661576157	Compact Flash
ad1	59690 MB	STEC MACH-8 SSD	STM000103FDB	Disk 1
Routing Engine 1	REV 06	740-026941	P737F-002653	RE-DUO-1800
ad0	3823 MB	SMART CF	201011150153F52CF52C	Compact Flash
ad1	62720 MB	SMART Lite SATA Drive	2010110900150A880A88	Disk 1
CB 0	REV 09	710-022597	ED0295	LCC Control Board
CB 1	REV 09	710-022597	EA6050	LCC Control Board
FPC 0	REV 26	750-032819	EK1173	FPC Type 5-3D
CPU	REV 12	711-030686	EJ8584	SNG PMB
PIC 0	REV 07	750-034624	EF6837	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	123363A01145	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	123363A01147	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01P3	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B10M03256	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJJ01M2	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	123363A01137	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJJ01PN	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AJJ01NW	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	123363A01139	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJJ01KE	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	123363A01336	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B10M01325	SFP+-10G-SR
PIC 1	REV 07	750-034624	EF6800	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	AJJ01SA	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJJ01QZ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJH0217	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJJ01TE	SFP+-10G-SR



Xcvr 4	REV 01	740-031980	AJJ01KV	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJJ01MU	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJJ01R0	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AJJ01TC	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AJJ0364	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJD0GV3	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B10M03343	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AJJ01QJ	SFP+-10G-SR
LMB 0	REV 05	711-034381	EJ8490	Type-0 LMB
LMB 1	REV 04	711-035774	EJ8517	Type-1 LMB
LMB 2	REV 05	711-034381	EJ8489	Type-0 LMB
FPC 3	REV 07	750-032819	EG3637	FPC Type 5-3D
CPU	REV 09	711-030686	EG0150	SNG PMB
PIC 0	REV 08	750-035293	EF3657	1x100GE
Xcvr 0	REV 01	740-032210	C22CQNJ	CFP-100G-LR4
PIC 1	REV 10	750-034624	BBAN4098	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	B11J04902	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11J04891	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01MX	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11J04183	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11J04894	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J04184	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11J04897	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11J04899	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AJJ01TV	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	B11J04057	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJJ01M4	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B11J04905	SFP+-10G-SR
LMB 0	REV 04	711-034381	EG1524	Type-0 LMB
LMB 1	REV 03	711-035774	EG0345	Type-1 LMB
LMB 2	REV 04	711-034381	EG1522	Type-0 LMB
FPC 5	REV 03	710-033871	BBAJ0768	FPC Type 4-ES
CPU	REV 11	710-016744	BBAH9342	ST-PMB2
PIC 0	REV 09	750-029262	EE6789	100GE
PIC 1	REV 03	750-034781	EE6655	100GE CFP
Xcvr 0	REV 01	740-032210	J11A22334	CFP-100G-LR4
BRIDGE 0	REV 03	711-029995	EE6572	100GE Bridge Board
MMB 0	REV 07	710-025563	BBAJ4657	ST-MMB2
MMB 1	REV 07	710-025563	BBAJ3073	ST-MMB2
FPC 6	REV 05	750-010153	EF4936	FPC Type 5-3D
CPU	REV 06	711-030686	EF4189	SNG PMB
PIC 0	REV 10	750-034624	BBAN4109	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	B11J04895	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11J04898	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11J04021	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11J04903	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11J04311	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J04059	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11J04016	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11J04017	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B11J04887	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	B11J04297	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B11J04893	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B11J04022	SFP+-10G-SR
PIC 1	REV 02	750-034624	EE3711	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	AJH033X	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJJ01N0	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01SV	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJJ032L	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B10M01593	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJD0FF1	SFP+-10G-SR

Xcvr 6	REV 01	740-031980	AJJ01NU	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	123363A01305	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B10M00361	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJJ01M7	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJJ032X	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AJJ01PG	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3838	Type-0 LMB
LMB 1	REV 03	711-035774	EF3821	Type-1 LMB
LMB 2	REV 04	711-034381	EF3834	Type-0 LMB
SPMB 0	REV 05	710-023321	ED1990	LCC Switch CPU
SPMB 1	REV 05	710-023321	EA2768	LCC Switch CPU
SIB 0	REV 02	711-036340	EF8802	SIB-HC-3D
SIB 1	REV 07	711-036340	EG2286	SIB-HC-3D
SIB 2	REV 07	711-036340	EG2252	SIB-HC-3D
SIB 3	REV 02	711-036340	EF1358	SIB-HC-3D
SIB 4	REV 02	711-036340	EF8806	SIB-HC-3D
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
-- Rev 2				
Fan Tray 2				Rear Fan Tray -- Rev 3

### show chassis hardware models (T4000 Router)

```
user@host> show chassis hardware models
```

Hardware inventory:				
Item	Version	Part number	Serial number	FRU model number
Midplane	REV 01	710-027486	RC8355	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387	EF6764	CRAFT-T1600-S
CIP	REV 06	710-002895	BBAD9210	CIP-L-T640-S
PEM 0	REV 01	740-036442	VA00016	PWR-T-6-60-DC
SCG 0	REV 18	710-003423	BBAD7248	SCG-T-S
SCG 1	REV 18	710-003423	BBAE3874	SCG-T-S
Routing Engine 0	REV 05	740-026941	P737F-002248	RE-DUO-C1800-8G-S
Routing Engine 1	REV 06	740-026941	P737F-002653	RE-DUO-C1800-8G-S
CB 0	REV 09	710-022597	ED0295	CB-LCC-S
CB 1	REV 09	710-022597	EA6050	CB-LCC-S
FPC 3				
PIC 0	REV 08	750-035293	EF3657	PF-1CGE-CFP
PIC 1	REV 10	750-034624	BBAN4098	PF-12XGE-SFPP
FPC 5	REV 03	710-033871	BBAJ0768	T1600-FPC4-ES
PIC 1	REV 03	750-034781	EE6655	PD-1CE-CFP-FPC4
FPC 6				
PIC 0	REV 10	750-034624	BBAN4109	PF-12XGE-SFPP
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T4000-S
Fan Tray 2				FAN-REAR-TXP-LCC

### show chassis hardware lcc (TX Matrix Router)

```
user@host> show chassis hardware lcc 0
lcc0-re0:
```

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			65751	T640
Midplane	REV 03	710-005608	RA1408	T640 Backplane
FPM GBUS	REV 09	710-002901	RA2784	T640 FPM Board
FPM Display	REV 05	710-002897	RA2825	FPM Display
CIP	REV 06	710-002895	HT0684	T Series CIP

PEM 0	Rev 11	740-002595	PM18483	Power Entry Module
PEM 1	Rev 11	740-002595	qb13984	Power Entry Module
SCG 0	REV 11	710-003423	HT0022	T640 Sonet Clock Gen.
Routing Engine 0	REV 13	740-005022	210865700363	RE-3.0 (RE-600)
CB 0	REV 03	710-007655	HW1195	Control Board (CB-T)
FPC 1	REV 05	710-007527	HM3245	FPC Type 2
CPU	REV 14	710-001726	HM1084	FPC CPU
PIC 0	REV 02	750-007218	AZ1112	2x OC-12 ATM2 IQ, SMIR
PIC 1	REV 02	750-007745	HG3462	4x OC-3 SONET, SMIR
PIC 2	REV 14	750-001901	BA5390	4x OC-12 SONET, SMIR
PIC 3	REV 09	750-008155	HS3012	2x G/E IQ, 1000 BASE
SFP 0		NON-JNPR	P1186TY	SFP-S
SFP 1	REV 01	740-007326	P11WLTF	SFP-SX
MMB 1	REV 02	710-005555	HL7514	MMB-288mbit
PPB 0	REV 04	710-003758	HM4405	PPB Type 2
PPB 1	REV 04	710-003758	AV1960	PPB Type 2
FPC 2	REV 08	710-010154	HZ3578	E-FPC Type 3
CPU	REV 05	710-010169	HZ3219	FPC CPU-Enhanced
PIC 0	REV 02	750-009567	HX2882	1x 10GE(LAN), XENPAK
SFP 0	REV 01	740-009898	USC202U709	XENPAK-LR
PIC 1	REV 03	750-003336	HJ9954	4x OC-48 SONET, SMSR
PIC 2	REV 01	750-004535	HC0235	1x OC-192 SM SR1
PIC 3	REV 07	750-007141	HX1699	10x 1GE(LAN), 1000 BASE
SFP 0	REV 01	740-007326	2441042	SFP-SX
SFP 1	REV 01	740-007326	2441027	SFP-SX
MMB 0	REV 03	710-010171	HV2365	MMB-5M3-288mbit
MMB 1	REV 03	710-010171	HZ3888	MMB-5M3-288mbit
SPMB 0	REV 09	710-003229	HW5245	T Series Switch CPU
SIB 3	REV 07	710-005781	HR5927	SIB-L8-F16
B Board	REV 06	710-005782	HR5971	SIB-L8-F16 (B)
SIB 4	REV 07	710-005781	HR5903	SIB-L8-F16
B Board	REV 06	710-005782	HZ5275	SIB-L8-F16 (B)

#### show chassis hardware scc (TX Matrix Router)

```

user@host> show chassis hardware scc
scc-re0:
-----
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               TX Matrix
Midplane      REV 04   710-004396   RB0014         SCC Midplane
FPM GBUS      REV 04   710-004617   HW9141         SCC FPM Board
FPM Display   REV 04   710-004619   HS5950         SCC FPM
CIP 0         REV 01   710-010218   HV9151         SCC CIP
CIP 1         REV 01   710-010218   HV9152         SCC CIP
PEM 1         Rev 11   740-002595   QB13977        Power Entry Module
Routing Engine 0 REV 05   740-008883   P11123900153  RE-4.0 (RE-1600)
CB 0          REV 01   710-011709   HR5964         Control Board (CB-TX)
SPMB 0        REV 09   710-003229   HW5293         T Series Switch CPU
SIB 3
SIB 4         REV 01   710-005839   HW1177         SIB-S8-F16
B Board       REV 01   710-005840   HW1202         SIB-S8-F16 (B)

```

#### show chassis hardware (TI600 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description

```

Chassis			B2703	T1600
Midplane	REV 03	710-005608	RC4137	T640 Backplane
FPM GBUS	REV 10	710-002901	DT7062	T640 FPM Board
FPM Display	REV 05	710-002897	DS3067	FPM Display
CIP	REV 06	710-002895	DT3386	T-series CIP
PEM 0	Rev 07	740-017906	UA26344	Power Entry Module 3x80
PEM 1	Rev 18	740-002595	UF38441	Power Entry Module
SCG 0	REV 15	710-003423	DV0941	T640 Sonet Clock Gen.
Routing Engine 0	REV 08	740-014082	9009014502	RE-A-2000
Routing Engine 1	REV 07	740-014082	9009009591	RE-A-2000
CB 0	REV 05	710-007655	JA9360	Control Board (CB-T)
CB 1	REV 03	710-017707	DT3251	Control Board (CB-T)
FPC 0	REV 07	710-013558	DR4253	E2-FPC Type 2
CPU	REV 05	710-013563	DS3902	FPC CPU-Enhanced
PIC 0	REV 01	750-010618	CB5446	4x G/E SFP, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F11CW	SFP-SX
Xcvr 1	REV 01	740-011613	P9F15C2	SFP-SX
Xcvr 2	REV 01	740-011782	PB94K0L	SFP-SX
PIC 1	REV 06	750-001900	HB6399	1x OC-48 SONET, SMSR
PIC 2	REV 14	750-001901	AP1092	4x OC-12 SONET, SMIR
PIC 3	REV 07	750-001900	AR8275	1x OC-48 SONET, SMSR
MMB 1	REV 07	710-010171	DS1524	MMB-5M3-288mbit
FPC 1	REV 06	710-013553	DL9067	E2-FPC Type 1
CPU	REV 04	710-013563	DM1685	FPC CPU-Enhanced
PIC 0	REV 08	750-001072	AB1688	1x G/E, 1000 BASE-SX
PIC 1	REV 10	750-012266	JX5519	4x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011613	AM0812S8UK6	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8UK1	SFP-SX
Xcvr 3	REV 01	740-011782	P8N1YHG	SFP-SX
PIC 2	REV 22	750-005634	DP0083	1x CHOC12 IQ SONET, SMIR
MMB 1	REV 07	710-008923	DN1862	MMB 3M 288-bit
FPC 2	REV 01	710-005548	HJ9899	FPC Type 3
CPU	REV 06	710-001726	HC0586	FPC CPU
PIC 0	REV 16	750-007141	NC9660	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011613	AM0812S8XAR	SFP-SX
Xcvr 1	REV 01	740-011782	P920E7B	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8XAU	SFP-SX
Xcvr 4	REV 01	740-011613	AM0812S8XAK	SFP-SX
Xcvr 5	REV 01	740-011613	AM0812S8XAA	SFP-SX
Xcvr 6	REV 01	740-011613	PAJ4NKY	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8UJW	SFP-SX
Xcvr 8	REV 01	740-011782	PB81X89	SFP-SX
Xcvr 9	REV 01	740-011613	AM0812S8UJX	SFP-SX
PIC 1	REV 06	750-015217	DK3280	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8P0A3T	SFP-SX
Xcvr 1	REV 01	740-013111	5090002	SFP-T
Xcvr 2	REV 01	740-011613	AM0814S93BQ	SFP-SX
Xcvr 4		NON-JNPR	PDE0FAN	SFP-SX
Xcvr 5	REV 01	740-011782	P8Q20XY	SFP-SX
Xcvr 6	REV 01	740-011613	AM0812S8UJV	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8UP7	SFP-SX
PIC 2	REV 05	750-004695	HT4383	1x Tunnel
PIC 3	REV 17	750-009553	RL0204	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	PDS3T23	SFP-SR
Xcvr 1	REV 01	740-011785	P6Q0F3E	SFP-SR
MMB 0	REV 03	710-004047	HD5843	MMB-288mbit
MMB 1	REV 03	710-004047	HE3208	MMB-288mbit
PPB 0	REV 02	710-002845	HA4524	PPB Type 3
PPB 1	REV 02	710-002845	HA4766	PPB Type 3

FPC 3	REV 01	710-010154	HR0863	E-FPC Type 3
CPU	REV 01	710-010169	HN3422	FPC CPU-Enhanced
PIC 0	REV 07	750-012793	WF5096	1x 10GE(LAN/WAN) IQ2
Xcvr 0		NON-JNPR	M64294TP	XFP-10G-LR
PIC 1	REV 25	750-007141	DV2127	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011613	PFA6LTJ	SFP-SX
Xcvr 1	REV 01	740-011782	P9POXV4	SFP-SX
Xcvr 2	REV 01	740-011782	P9M0TNX	SFP-SX
Xcvr 4	REV 01	740-011782	P9B0TTP	SFP-SX
Xcvr 5		NON-JNPR	PBS4LED	SFP-SX
PIC 2	REV 17	750-009553	RL0212	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	PDS3T8G	SFP-SR
PIC 3	REV 32	750-003700	DL1279	1x OC-192 12xMM VSR
MMB 0	REV 01	710-010171	HR0821	MMB-288mbit
MMB 1	REV 01	710-010171	HR0818	MMB-288mbit
FPC 4	REV 16	710-013037	EB4919	FPC Type 4-ES
CPU	REV 09	710-016744	BBAA4382	ST-PMB2
PIC 0	REV 03	711-029996	EB1569	100GE
PIC 1	REV 05	711-029999	EB9983	100GE CFP
Xcvr 0	REV 0	740-032210	J10G80746	CFP-100G-LR4
BRIDGE 0	REV 02	711-029995	EB2235	100GE Bridge Board
MMB 0	REV 04	710-025563	BBAA7112	ST-MMB2
MMB 1	REV 04	710-025563	BBAA7149	ST-MMB2
FPC 5	REV 02	710-013037	DE3407	FPC Type 4-ES
CPU	REV 04	710-016744	DA2124	ST-PMB2
PIC 0	REV 16	750-012518	DF2554	4x OC-192 SONET XFP
Xcvr 0	REV 01	740-014279	AA0745N1FX8	XFP-OC192-SR
Xcvr 1	REV 01	740-014279	AA0748N1HN5	XFP-OC192-SR
Xcvr 2	REV 01	740-014279	AA0748N1HT6	XFP-OC192-SR
Xcvr 3	REV 01	740-014279	AA0744N1EC9	XFP-OC192-SR
PIC 1	REV 01	750-010850	JA0329	1x OC-768 SONET SR
MMB 0	REV 04	710-016036	DE9577	ST-MMB2
MMB 1	REV 04	710-016036	DK4060	ST-MMB2
FPC 6	REV 14	710-013037	DV1431	FPC Type 4-ES
CPU	REV 09	710-016744	DT9020	ST-PMB2
PIC 0	REV 11	750-017405	DM6261	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 01	740-014289	C701XU05Q	XFP-10G-SR
Xcvr 1	REV 01	740-014279	AA0748N1HPT	XFP-10G-LR
Xcvr 2	REV 01	740-014289	T08E19189	XFP-10G-SR
Xcvr 3	REV 01	740-014289	C715XU058	XFP-10G-SR
PIC 1	REV 13	750-017405	DP8772	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 02	740-011571	C850XJ037	XFP-10G-SR
Xcvr 1	REV 02	740-014289	C839XU0L9	XFP-10G-SR
Xcvr 2	REV 02	740-014289	C834XU05A	XFP-10G-SR
Xcvr 3	REV 02	740-014289	C810XU0CE	XFP-10G-SR
MMB 0	REV 01	710-025563	DT8454	ST-MMB2
MMB 1	REV 01	710-025563	DT8366	ST-MMB2
FPC 7	REV 09	710-007529	HZ7624	FPC Type 3
CPU	REV 15	710-001726	HZ1413	FPC CPU
PIC 0	REV 10	750-012793	DM5627	1x 10GE(LAN/WAN) IQ2
Xcvr 0	REV 02	740-011571	C831XJ062	XFP-10G-SR
PIC 1	REV 01	750-015217	JT6762	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8Q25JU	SFP-SX
Xcvr 1	REV 01	740-011782	P9B0U0K	SFP-SX
PIC 2	REV 01	750-015217	JS4268	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	AM0812S8XBZ	SFP-SX
Xcvr 1	REV 01	740-011613	AM0812S8XAP	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8XBY	SFP-SX
Xcvr 3	REV 01	740-011613	AM0812S8XBX	SFP-SX
Xcvr 4	REV 01	740-011613	P9F1652	SFP-SX

Xcvr 5	REV 01	740-011782	P8Q21YC	SFP-SX
Xcvr 6	REV 01	740-011782	P8Q27HQ	SFP-SX
Xcvr 7	REV 01	740-011613	P8E2SSU	SFP-SX
PIC 3	REV 15	750-009450	NB6790	1x OC-192 SM SR2
MMB 0	REV 03	710-005555	HZ3450	MMB-288mbit
MMB 1	REV 03	710-005555	HZ3415	MMB-288mbit
PPB 0	REV 04	710-002845	HP0887	PPB Type 3
PPB 1	REV 04	710-002845	HW5255	PPB Type 3
SPMB 0	REV 10	710-003229	HX3699	T-series Switch CPU
SPMB 1	REV 12	710-003229	DT3091	T-series Switch CPU
SIB 0	REV 07	710-013074	DS4747	SIB-I8-SF
SIB 1	REV 07	710-013074	DS4942	SIB-I8-SF
SIB 2	REV 07	710-013074	DS4965	SIB-I8-SF
SIB 3	REV 07	710-013074	DS4990	SIB-I8-SF
SIB 4	REV 07	710-013074	DS4944	SIB-I8-SF
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 2

## show chassis hardware (TX Matrix Plus Router)

```
user@host> show chassis hardware
sfc0-re0:
```

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN113186EAHB	TXP
Midplane	REV 05	710-022574	TS3822	SFC Midplane
FPM Display	REV 03	710-024027	DW4701	TXP FPM Display
CIP 0	REV 05	710-023792	DW7998	TXP CIP
CIP 1	REV 05	710-023792	DW7999	TXP CIP
PEM 0	Rev 04	740-027463	UM26367	Power Entry Module
PEM 1	Rev 04	740-027463	UM26346	Power Entry Module
Routing Engine 0	REV 06	740-026942	737A-1081	RE-DUO-2600
Routing Engine 1	REV 06	740-026942	737A-1043	RE-DUO-2600
CB 0	REV 05	710-022606	DW4435	SFC Control Board
CB 1	REV 09	710-022606	DW6100	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 04	750-024564	DW5764	F13 SIB
B Board	REV 03	710-023431	DW9053	F13 SIB Mezz
SIB F13 3	REV 04	750-024564	DW5785	F13 SIB
B Board	REV 03	710-023431	DW9030	F13 SIB Mezz
SIB F13 6				
SIB F13 8	REV 04	750-024564	DW5752	F13 SIB
B Board	REV 03	710-023431	DW9051	F13 SIB Mezz
SIB F13 11	REV 04	750-024564	DW5782	F13 SIB
B Board	REV 03	710-023431	DW9058	F13 SIB Mezz
SIB F13 12	REV 03	750-024564	DT9466	F13 SIB
B Board	REV 02	710-023431	DT6556	F13 SIB Mezz
SIB F2S 0/0	REV 05	710-022603	DW7898	F2S SIB
B Board	REV 05	710-023787	DW7625	F2S SIB Mezz
SIB F2S 0/2	REV 05	710-022603	DW7811	F2S SIB
B Board	REV 05	710-023787	DW7550	F2S SIB Mezz
SIB F2S 0/4	REV 04	710-022603	DW4873	F2S SIB
B Board	REV 05	710-023787	DW8509	F2S SIB Mezz
SIB F2S 0/6	REV 04	710-022603	DW4867	F2S SIB
B Board	REV 05	710-023787	DW8472	F2S SIB Mezz
SIB F2S 1/0	REV 04	710-022603	DW4871	F2S SIB
B Board	REV 05	710-023787	DW8497	F2S SIB Mezz
SIB F2S 1/2	REV 05	710-022603	DW7868	F2S SIB

B Board	REV 05	710-023787	DW7551	F2S SIB Mezz
SIB F2S 1/4	REV 04	710-022603	DW4854	F2S SIB
B Board	REV 05	710-023787	DW8496	F2S SIB Mezz
SIB F2S 1/6	REV 05	710-022603	DW7889	F2S SIB
B Board	REV 05	710-023787	DW7496	F2S SIB Mezz
SIB F2S 2/0	REV 04	710-022603	DW4852	F2S SIB
B Board	REV 05	710-023787	DW8498	F2S SIB Mezz
SIB F2S 2/2	REV 04	710-022603	DW4845	F2S SIB
B Board	REV 05	710-023787	DW8457	F2S SIB Mezz
SIB F2S 2/4	REV 05	710-022603	DW7802	F2S SIB
B Board	REV 05	710-023787	DW7562	F2S SIB Mezz
SIB F2S 2/6	REV 04	710-022603	DW4822	F2S SIB
B Board	REV 05	710-023787	DW8467	F2S SIB Mezz
SIB F2S 3/0	REV 05	710-022603	DW7815	F2S SIB
B Board	REV 05	710-023787	DW7518	F2S SIB Mezz
SIB F2S 3/2	REV 03	710-022603	DV0068	F2S SIB
B Board	REV 03	710-023787	DT9974	F2S SIB Mezz
SIB F2S 3/4	REV 05	710-022603	DW7874	F2S SIB
B Board	REV 05	710-023787	DW7601	F2S SIB Mezz
SIB F2S 3/6	REV 03	710-022603	DV0033	F2S SIB
B Board	REV 03	710-023787	DT9969	F2S SIB Mezz
SIB F2S 4/0	REV 03	710-022603	DV0043	F2S SIB
B Board	REV 03	710-023787	DT9948	F2S SIB Mezz
SIB F2S 4/2	REV 05	710-022603	DW5446	F2S SIB
B Board	REV 05	710-023787	DW7611	F2S SIB Mezz
SIB F2S 4/4	REV 04	710-022603	DW4826	F2S SIB
B Board	REV 05	710-023787	DW8458	F2S SIB Mezz
SIB F2S 4/6	REV 03	710-022603	DV0026	F2S SIB
B Board	REV 03	710-023787	DT9963	F2S SIB Mezz
Fan Tray 0	REV 02	760-024497	DR8290	Front Fan Tray
Fan Tray 1	REV 02	760-024497	DR8293	Front Fan Tray
Fan Tray 2	REV 05	760-024502	DR8280	Rear Fan Tray
Fan Tray 3				
Fan Tray 4	REV 05	760-024502	DR8276	Rear Fan Tray
Fan Tray 5	REV 02	760-024502	DP5643	Rear Fan Tray

lcc0-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11036F8AHA	T1600
Midplane	REV 03	710-017247	RC3799	T-series Backplane
FPM GBUS	REV 10	710-002901	DP7009	T640 FPM Board
FPM Display	REV 01	710-021387	DN7026	T1600 FPM Display
CIP	REV 06	710-002895	DP6024	T-series CIP
PEM 1	Rev 02	740-023211	WA50019	Power Entry Module 4x60A
SCG 0	REV 15	710-003423	DR6757	T640 Sonet Clock Gen.
SCG 1	REV 15	710-003423	DS2225	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-026941	737F-1040	RE-DUO-1800
Routing Engine 1	REV 01	740-026941	737F-1016	RE-DUO-1800
CB 0	REV 06	710-022597	DX4011	LCC Control Board
CB 1	REV 06	710-022597	DX4017	LCC Control Board
FPC 1	REV 07	710-013035	DN5847	FPC Type 3-ES
CPU	REV 08	710-016744	DP2570	ST-PMB2
PIC 0	REV 05	750-015217	DB0418	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8Q27ZG	SFP-SX
Xcvr 1		NON-JNPR	PDA1U0D	SFP-SX
Xcvr 2	REV 01	740-011613	P9F1ALW	SFP-SX
Xcvr 3	REV 01	740-011782	PBA403V	SFP-SX
Xcvr 4		NON-JNPR	PDE09DP	SFP-SX
Xcvr 5	REV 01	740-011782	PCH2P4K	SFP-SX

Xcvr 6	REV 01	740-011782	PB94K0F	SFP-SX
Xcvr 7	REV 01	740-011782	PBA2R2A	SFP-SX
PIC 1	REV 03	750-004424	HJ4020	1x 10GE(LAN), DWDM
PIC 2	REV 01	750-003336	HG6073	4x OC-48 SONET, SMSR
MMB 0	REV 04	710-016036	DP3401	ST-MMB2
FPC 3	REV 12	710-013037	DR1169	FPC Type 4-ES
CPU	REV 08	710-016744	DP9429	ST-PMB2
PIC 0	REV 02	750-010850	JA0332	1x OC-768 SONET SR
MMB 0	REV 04	710-016036	DR0628	ST-MMB2
MMB 1	REV 04	710-016036	DR0592	ST-MMB2
FPC 4	REV 05	710-021534	DR7350	FPC Type 1-ES
CPU	REV 08	710-016744	DP8096	ST-PMB2
PIC 0	REV 04	750-014627	DP9171	4x OC-3 1x OC-12 SFP
Xcvr 0	REV 02	740-011615	PDE2RVR	SFP-SR
PIC 1	REV 22	750-005634	DS5815	1x CHOC12 IQ SONET, SMIR
PIC 2	REV 09	750-002911	CF4539	4x F/E, 100 BASE-TX
PIC 3	REV 08	750-021652	DR2827	1x CHOC12 IQE SONET
Xcvr 0		NON-JNPR	8	UNKNOWN
MMB 0	REV 04	710-016036	DR0809	ST-MMB2
FPC 5	REV 07	710-007529	HS5608	FPC Type 3
CPU	REV 15	710-001726	HX4351	FPC CPU
PIC 0	REV 14	750-009567	WJ8961	1x 10GE(LAN), XENPAK
Xcvr 0	REV 01	740-013170	J05K05961	XENPAK-LR
PIC 1	REV 16	750-007141	JJ8146	10x 1GE(LAN), 1000 BASE
Xcvr 1	REV 01	740-011613	P9F117T	SFP-SX
Xcvr 2	REV 01	740-011782	PBA2VCL	SFP-SX
Xcvr 3	REV 01	740-011782	PB83DRB	SFP-SX
Xcvr 4	REV 01	740-011613	AM0812S8UP8	SFP-SX
PIC 2	REV 12	750-009567	WF3566	1x 10GE(LAN), XENPAK
Xcvr 0	REV 02	740-013170	T07C94489	XENPAK-LR
MMB 0	REV 03	710-005555	HZ1907	MMB-288mbit
MMB 1	REV 03	710-005555	HW5283	MMB-288mbit
PPB 0	REV 04	710-002845	HZ7717	PPB Type 3
PPB 1	REV 04	710-002845	HS0110	PPB Type 3
FPC 6	REV 07	710-013035	DP7486	FPC Type 3-ES
CPU	REV 08	710-016744	DP2545	ST-PMB2
PIC 0	REV 09	750-009567	NE6323	1x 10GE(LAN), XENPAK
Xcvr 0	REV 02	740-013170	T09C71959	XENPAK-LR
PIC 1	REV 06	750-015217	DN4775	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P7E0T6M	SFP-SX
Xcvr 1	REV 01	740-011613	AM0812S8XAY	SFP-SX
Xcvr 2	REV 01	740-011782	P7E0T6J	SFP-SX
Xcvr 3	REV 01	740-011782	PCH2P7D	SFP-SX
Xcvr 4	REV 01	740-011782	P9B0QYT	SFP-SX
Xcvr 5	REV 01	740-011613	AM0812S8WQJ	SFP-SX
Xcvr 6	REV 02	740-013111	9301220	SFP-T
Xcvr 7	REV 01	740-011782	P9B0TZ5	SFP-SX
PIC 2	REV 06	750-015217	DM6747	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	PAP0ZB2	SFP-SX
Xcvr 1	REV 01	740-013111	70191002	SFP-T
Xcvr 6	REV 01	740-011782	PBA29H8	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8WQG	SFP-SX
MMB 0	REV 04	710-016036	DP3238	ST-MMB2
FPC 7	REV 03	710-021540	DV3154	FPC Type 2-ES
CPU	REV 09	710-016744	DT9053	ST-PMB2
PIC 0	REV 13	750-001901	HB4225	4x OC-12 SONET, SMIR
PIC 1	REV 05	750-001900	AD3644	1x OC-48 SONET, SMSR
PIC 2	REV 10	750-008155	HV0335	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011782	PCH2UKF	SFP-SX



Xcvr 1	REV 01	740-011782	PCH2V19	SFP-SX
PIC 3	REV 03	750-014638	JS9493	1x OC-48-12-3 SFP
Xcvr 0	REV 01	740-011785	P6Q0ENK	SFP-SR
MMB 0	REV 05	710-016036	DP3323	ST-MMB2
SPMB 0	REV 04	710-023321	DX3004	LCC Switch CPU
SPMB 1	REV 04	710-023321	DX3009	LCC Switch CPU
SIB 0	REV 07	710-022594	DW4195	LCC SIB
B Board	REV 07	710-023185	DW3930	LCC SIB Mezz
SIB 1	REV 07	710-022594	DW4179	LCC SIB
B Board	REV 07	710-023185	DW3919	LCC SIB Mezz
SIB 2				
SIB 3	REV 06	710-022594	DT8251	LCC SIB
B Board	REV 06	710-023185	DT5792	LCC SIB Mezz
SIB 4	REV 08	710-022594	DW8014	LCC SIB
B Board	REV 07	710-023185	DW3917	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 3

lcc1-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1102270AHA	T1600
Midplane	REV 04	710-017247	RC5358	T-series Backplane
FPM GBUS	REV 10	710-002901	DS3443	T640 FPM Board
FPM Display	REV 01	710-021387	DS6411	T1600 FPM Display
CIP	REV 06	710-002895	DS4235	T-series CIP
PEM 0	Rev 02	740-023211	VM82438	Power Entry Module 4x60A
SCG 0	REV 15	710-003423	DS6649	T640 Sonet Clock Gen.
SCG 1	REV 15	710-003423	DR6775	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-026941	737F-1083	RE-DUO-1800
Routing Engine 1	REV 01	740-026941	737F-1104	RE-DUO-1800
CB 0	REV 06	710-022597	DW8542	LCC Control Board
CB 1	REV 06	710-022597	DW8530	LCC Control Board
FPC 0	REV 02	710-010845	JE2392	FPC Type 4
CPU	REV 02	710-011481	JF6820	FPC CPU-Enhanced
PIC 0	REV 11	750-017405	DP7259	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 01	740-014279	AA0741N1C8T	XFP-10G-LR
Xcvr 1	REV 01	740-014279	AA0746N1GAM	XFP-10G-LR
Xcvr 2	REV 01	740-014279	AA0747N1H0B	XFP-10G-LR
Xcvr 3	REV 01	740-014279	AA0748N1HZ5	XFP-10G-LR
MMB 0	REV 03	710-010842	HY7601	ST-MMB
FPC 1	REV 16	710-013037	BBAA7398	FPC Type 4-ES
CPU	REV 09	710-016744	BBAA2329	ST-PMB2
PIC 0	REV 03	711-029996	EB1575	100GE
PIC 1	REV 06	750-034781	EB9980	100GE CFP
MMB 0	REV 04	710-025563	BBAA5325	ST-MMB2
MMB 1	REV 04	710-025563	BBAA5444	ST-MMB2
FPC 2	REV 16	710-013037	BBAA7185	FPC Type 4-ES
CPU	REV 09	710-016744	BBAA3522	ST-PMB2
PIC 0	REV 03	711-029996	EB1557	100GE
PIC 1	REV 05	750-034781	EB4660	100GE CFP
Xcvr 0	REV 0	740-032210	J10F73666	CFP-100G-LR4
BRIDGE 0	REV 02	711-029995	EB2237	100GE Bridge Board
MMB 0	REV 04	710-025563	BBAA5347	ST-MMB2
MMB 1	REV 04	710-025563	BBAA5401	ST-MMB2
FPC 3	REV 10	710-021534	DZ0941	FPC Type 1-ES
CPU	REV 09	710-016744	DY6364	ST-PMB2
PIC 0	REV 13	750-012266	DK9192	4x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011613	AM0812S8WVD	SFP-SX

Xcvr 1		NON-JNPR	PDD63Q4	SFP-SX
Xcvr 2		NON-JNPR	PDE4G54	SFP-SX
Xcvr 3		NON-JNPR	PD40MAG	SFP-SX
PIC 1	REV 01	750-007641	HJ2003	1x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011613	AM0812S8WVG	SFP-SX
PIC 3	REV 17	750-007444	JB6873	1x CHSTM1 IQ SDH, SMIR
MMB 0	REV 04	710-025563	DZ0281	ST-MMB2
FPC 4	REV 06	710-013035	DK0614	FPC Type 3-ES
CPU	REV 07	710-016744	DK1616	ST-PMB2
PIC 0	REV 22	750-007141	DM1870	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011782	PCL3UKW	SFP-SX
Xcvr 1	REV 01	740-011782	P7E0T73	SFP-SX
Xcvr 2	REV 01	740-007326	P4TOWLR	SFP-SX
Xcvr 3	REV 01	740-011782	PAR1LRL	SFP-SX
Xcvr 4	REV 01	740-011782	P9MOU3Z	SFP-SX
Xcvr 5	REV 01	740-011782	P9MOU0C	SFP-SX
Xcvr 6	REV 01	740-011782	P9M0TLG	SFP-SX
Xcvr 7	REV 01	740-011782	P9MOU0F	SFP-SX
Xcvr 8	REV 01	740-011613	PFA6LAP	SFP-SX
Xcvr 9	REV 01	740-011782	PCH2POU	SFP-SX
PIC 1	REV 16	750-009450	CV2565	1x OC-192 SM SR2
PIC 2	REV 05	750-004424	HH3057	1x 10GE(LAN), 10GBASE-LR
PIC 3	REV 12	750-013423	DP0403	MultiServices 500
MMB 0	REV 04	710-016036	DK1988	ST-MMB2
FPC 5	REV 07	710-013560	DR0004	E2-FPC Type 3
CPU	REV 05	710-013563	DR0089	FPC CPU-Enhanced
PIC 0	REV 11	750-012793	DR6107	1x 10GE(LAN/WAN) IQ2
Xcvr 0	REV 01	740-014289	C743XU074	XFP-10G-SR
PIC 1	REV 01	750-004695	HD5980	1x Tunnel
PIC 2	REV 32	750-003700	DL3770	1x OC-192 12xMM VSR
PIC 3	REV 12	750-009553	WB8901	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	P9D1GTQ	SFP-SR
Xcvr 1	REV 01	740-011785	PDSOMMB	SFP-SR
Xcvr 3	REV 01	740-011785	PDE1KXP	SFP-SR
MMB 0	REV 07	710-010171	DP7374	MMB-5M3-288mbit
MMB 1	REV 07	710-010171	DP7404	MMB-5M3-288mbit
FPC 6	REV 07	710-013035	DM0994	FPC Type 3-ES
CPU	REV 07	710-016744	DM3651	ST-PMB2
PIC 0	REV 07	750-015217	DN4743	8x 1GE(TYPE3), IQ2
Xcvr 3	REV 01	740-011613	AM0812S8XB0	SFP-SX
Xcvr 4	REV 01	740-011782	PB829RB	SFP-SX
Xcvr 5	REV 01	740-011782	P8J1SYX	SFP-SX
PIC 1	REV 03	750-003336	HJ9954	4x OC-48 SONET, SMSR
PIC 3	REV 02	750-012793	JM7665	1x 10GE(LAN/WAN) IQ2
MMB 0	REV 04	710-016036	DN6913	ST-MMB2
FPC 7	REV 08	710-010845	JM3958	FPC Type 4
CPU	REV 04	710-011481	JK3669	FPC CPU-Enhanced
PIC 0	REV 11	750-017405	DP8837	4x 10GE (LAN/WAN) XFP
Xcvr 1	REV 01	740-014279	753019A00277	XFP-10G-LR
Xcvr 2	REV 02	740-011571	C850XJ00P	XFP-10G-SR
Xcvr 3	REV 01	740-014279	AA0813N1RTG	XFP-10G-LR
MMB 0	REV 04	710-010842	JN1971	ST-MMB
SPMB 0	REV 04	710-023321	DW3629	LCC Switch CPU
SPMB 1	REV 04	710-023321	DW3621	LCC Switch CPU
SIB 0	REV 07	710-022594	DW4200	LCC SIB
B Board	REV 07	710-023185	DW3932	LCC SIB Mezz
SIB 1	REV 07	710-022594	DW4193	LCC SIB
B Board	REV 07	710-023185	DW3904	LCC SIB Mezz
SIB 2				

SIB 3	REV 07	710-022594	DW4210	LCC SIB
B Board	REV 06	710-023185	DT5780	LCC SIB Mezz
SIB 4	REV 08	710-022594	DW8019	LCC SIB
B Board	REV 06	710-023185	DT5795	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 3

### show chassis hardware sfc (TX Matrix Plus Router)

```
user@host> show chassis hardware sfc 0
sfc0-re0:
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Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              JN112F007AHB TXP
Midplane             REV 05    710-022574   TS4027         SFC Midplane
FPM Display          REV 03    710-024027   DX0282         TXP FPM Display
CIP 0                REV 04    710-023792   DW4889         TXP CIP
CIP 1                REV 04    710-023792   DW4887         TXP CIP
PEM 0                Rev 07    740-027463   UM26368        Power Entry Module
Routing Engine 0     REV 01    740-026942   737A-1064      SFC RE
Routing Engine 1     REV 01    740-026942   737A-1082      SFC RE
CB 0                 REV 09    710-022606   DW6099         SFC Control Board
CB 1                 REV 09    710-022606   DW6096         SFC Control Board
SPMB 0               BUILTIN                                SFC Switch CPU
SPMB 1               BUILTIN                                SFC Switch CPU
SIB F13 0            REV 04    710-022600   DX0841         F13 SIB
  B Board            REV 03    710-023431   DX0966         F13 SIB Mezz
SIB F13 1            REV 04    750-024564   DW5776         F13 SIB
  B Board            REV 03    710-023431   DW9028         F13 SIB
SIB F13 3            REV 04    750-024564   DW5762         F13 SIB
  B Board            REV 03    710-023431   DW9059         F13 SIB
SIB F13 4            REV 04    750-024564   DW5797         F13 SIB
  B Board            REV 03    710-023431   DW9041         F13 SIB
SIB F13 6            REV 04    750-024564   DW5770         F13 SIB
  B Board            REV 03    710-023431   DW9079         F13 SIB Mezz
SIB F13 7            REV 04    750-024564   DW5758         F13 SIB
  B Board            REV 03    710-023431   DW9047         F13 SIB
SIB F13 8            REV 04    750-024564   DW5761         F13 SIB
  B Board            REV 03    710-023431   DW9043         F13 SIB Mezz
SIB F13 9            REV 04    750-024564   DW5754         F13 SIB
  B Board            REV 03    710-023431   DW9078         F13 SIB Mezz
SIB F13 11           REV 04    710-022600   DX0826         F13 SIB
  B Board            REV 03    710-023431   DX0967         F13 SIB Mezz
SIB F13 12           REV 04    750-024564   DW5794         F13 SIB
  B Board            REV 03    710-023431   DW9044         F13 SIB Mezz
SIB F2S 0/0          REV 05    710-022603   DW7897         F2S SIB
  B Board            REV 05    710-023787   DW7657         NEO PMB
SIB F2S 0/2          REV 05    710-022603   DW7833         F2S SIB
  B Board            REV 05    710-023787   DW7526         NEO PMB
SIB F2S 0/4          REV 05    710-022603   DW7875         F2S SIB
  B Board            REV 05    710-023787   DW7588         NEO PMB
SIB F2S 0/6          REV 05    710-022603   DW7860         F2S SIB
  B Board            REV 05    710-023787   DW7589         NEO PMB
SIB F2S 1/0          REV 04    710-022603   DW4820         F2S SIB
  B Board            REV 05    710-023787   DW8510         NEO PMB
SIB F2S 1/2          REV 05    710-022603   DW7849         F2S SIB
  B Board            REV 05    710-023787   DW7525         NEO PMB
SIB F2S 1/4          REV 05    710-022603   DW7927         F2S SIB
  B Board            REV 05    710-023787   DW7556         F2S SIB Mezz
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SIB F2S 1/6	REV 05	710-022603	DW7866	F2S SIB
B Board	REV 05	710-023787	DW7651	NEO PMB
SIB F2S 2/0	REV 05	710-022603	DW7880	F2S SIB
B Board	REV 05	710-023787	DW7523	NEO PMB
SIB F2S 2/2	REV 05	710-022603	DW7895	F2S SIB
B Board	REV 05	710-023787	DW7591	NEO PMB
SIB F2S 2/4	REV 05	710-022603	DW7907	F2S SIB
B Board	REV 05	710-023787	DW7590	NEO PMB
SIB F2S 2/6	REV 05	710-022603	DW7785	F2S SIB
B Board	REV 05	710-023787	DW7524	NEO PMB
SIB F2S 3/0	REV 05	710-022603	DW7782	F2S SIB
B Board	REV 05	710-023787	DW7634	NEO PMB
SIB F2S 3/2	REV 05	710-022603	DW7793	F2S SIB
B Board	REV 05	710-023787	DW7548	NEO PMB
SIB F2S 3/4	REV 05	710-022603	DW7779	F2S SIB
B Board	REV 05	710-023787	DW7587	NEO PMB
SIB F2S 3/6	REV 05	710-022603	DW7930	F2S SIB
B Board	REV 05	710-023787	DW7505	NEO PMB
SIB F2S 4/0	REV 05	710-022603	DW7867	F2S SIB
B Board	REV 05	710-023787	DW7656	NEO PMB
SIB F2S 4/2	REV 05	710-022603	DW7917	F2S SIB
B Board	REV 05	710-023787	DW7640	NEO PMB
SIB F2S 4/4	REV 05	710-022603	DW7929	F2S SIB
B Board	REV 05	710-023787	DW7643	NEO PMB
SIB F2S 4/6	REV 05	710-022603	DW7870	F2S SIB
B Board	REV 05	710-023787	DW7635	NEO PMB
Fan Tray 0	REV 06	760-024497	DV7831	Front Fan Tray
Fan Tray 1	REV 06	760-024497	DV9614	Front Fan Tray
Fan Tray 2	REV 06	760-024502	DV9618	Rear Fan Tray
Fan Tray 3	REV 06	760-024502	DV9616	Rear Fan Tray
Fan Tray 4	REV 06	760-024502	DV7807	Rear Fan Tray
Fan Tray 5	REV 06	760-024502	DV7828	Rear Fan Tray

### show chassis hardware extensive (TX Matrix Plus Router)

```
user@host> show chassis hardware extensive
sfc0-re0:
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#### Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN112F007AHB	TXP
Jedec Code:	0x7fb0	EEPROM Version:	0x02	
		S/N:	JN112F007AHB	
Assembly ID:	0x052c	Assembly Version:	00.00	
Date:	00-00-0000	Assembly Flags:	0x00	
ID:	TXP			

#### Board Information Record:

Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

#### I2C Hex Data:

Address 0x00: 7f b0 02 ff 05 2c 00 00 00 00 00 00 00 00 00 00

Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x20: 4a 4e 31 31 32 46 30 30 37 41 48 42 00 00 00 00

Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Midplane	REV 05	710-022574	TS4027	SFC Midplane
Jedec Code:	0x7fb0	EEPROM Version:	0x01	
P/N:	710-022574	S/N:	TS4027	
Assembly ID:	0x0962	Assembly Version:	01.05	

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Date:          03-23-2009      Assembly Flags:    0x00
Version:       REV 05
ID: SFC Midplane
Board Information Record:
Address 0x00: ad 01 ff ff 00 1d b5 14 00 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 62 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 32 32 35 37 34 00 00
Address 0x20: 53 2f 4e 20 54 53 34 30 32 37 00 00 00 17 03 07
Address 0x30: d9 ff ff ff ad 01 ff ff 00 1d b5 14 00 00 ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Display      REV 03      710-024027      DX0282      TXP FPM Display
Jedec Code:     0x7fb0      EEPROM Version:    0x01
P/N:            710-024027      S/N:              DX0282
Assembly ID:    0x096c      Assembly Version:  01.03
Date:          02-10-2009      Assembly Flags:    0x00
Version:       REV 03
ID: TXP FPM Display      FRU Model Number:  CRAFT-TXP
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 6c 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 32 34 30 32 37 00 00
Address 0x20: 53 2f 4e 20 44 58 30 32 38 32 00 00 00 0a 02 07
Address 0x30: d9 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
Address 0x50: 52 41 46 54 2d 54 58 50 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CIP 0           REV 04      710-023792      DW4889      TXP CIP
Jedec Code:     0x7fb0      EEPROM Version:    0x01
P/N:            710-023792      S/N:              DW4889
Assembly ID:    0x0969      Assembly Version:  01.04
Date:          01-26-2009      Assembly Flags:    0x00
Version:       REV 04
ID: TXP CIP      FRU Model Number:  CIP-TXP
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

### show chassis hardware clei-models (TX Matrix Plus Router)

```

user@host> show chassis hardware clei-models
sfc0-re0:

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Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 05	710-022574		CHAS-BP-TXP-S
FPM Display	REV 03	710-024027		CRAFT-TXP-S
CIP 0	REV 05	710-023792		CIP-TXP-S
CIP 1	REV 05	710-023792		CIP-TXP-S
PEM 0	Rev 04	740-027463	IPUPAFGKTA	PWR-TXP-7-60-DC
PEM 1	Rev 04	740-027463	IPUPAFGKTA	PWR-TXP-7-60-DC
Routing Engine 0	REV 06	740-026942		RE-DUO-C2600-16G-S
Routing Engine 1	REV 06	740-026942		RE-DUO-C2600-16G-S
CB 0	REV 05	710-022606		CB-TXP-S
CB 1	REV 09	710-022606		CB-TXP-S
SIB F13 0	REV 04	750-024564		SIB-TXP-F13
SIB F13 3	REV 04	750-024564		SIB-TXP-F13

SIB F13 8	REV 04	750-024564	SIB-TXP-F13
SIB F13 11	REV 04	750-024564	SIB-TXP-F13
SIB F13 12	REV 03	750-024564	SIB-TXP-F13
SIB F2S 0/0	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 0/2	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 0/4	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 0/6	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 1/0	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 1/2	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 1/4	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 1/6	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 2/0	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 2/2	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 2/4	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 2/6	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 3/0	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 3/2	REV 03	710-022603	SIB-TXP-F2S-S
SIB F2S 3/4	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 3/6	REV 03	710-022603	SIB-TXP-F2S-S
SIB F2S 4/0	REV 03	710-022603	SIB-TXP-F2S-S
SIB F2S 4/2	REV 05	710-022603	SIB-TXP-F2S-S
SIB F2S 4/4	REV 04	710-022603	SIB-TXP-F2S-S
SIB F2S 4/6	REV 03	710-022603	SIB-TXP-F2S-S
Fan Tray 0	REV 02	760-024497	FANTRAY-TXP-H-S
Fan Tray 1	REV 02	760-024497	FANTRAY-TXP-H-S
Fan Tray 2	REV 05	760-024502	FANTRAY-TXP-V-S
Fan Tray 3			
Fan Tray 4	REV 05	760-024502	FANTRAY-TXP-V-S
Fan Tray 5	REV 02	760-024502	FANTRAY-TXP-V-S

lcc0-re0:

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Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 03	710-017247		CHAS-BP-T1600-S
FPM Display	REV 01	710-021387		CRAFT-T1600-S
CIP	REV 06	710-002895		CIP-L-T640-S
PEM 1	Rev 02	740-023211	IPUPAC8KTA	PWR-T1600-4-60-DC-S
SCG 0	REV 15	710-003423		SCG-T-S
SCG 1	REV 15	710-003423		SCG-T-S
Routing Engine 0	REV 01	740-026941		RE-DUO-C1800-8G-S
Routing Engine 1	REV 01	740-026941		RE-DUO-C1800-8G-S
CB 0	REV 06	710-022597		CB-LCC-S
CB 1	REV 06	710-022597		CB-LCC-S
FPC 1	REV 07	710-013035		T640-FPC3-ES
PIC 0	REV 05	750-015217		PC-8GE-TYPE3-SFP-IQ2
PIC 1	REV 03	750-004424		PC-1XGE-LR
PIC 2	REV 01	750-003336		PC-40C48-SON-SMSR
FPC 3	REV 12	710-013037		T1600-FPC4-ES
PIC 0	REV 02	750-010850		PD-10C768-SON-SR
FPC 4	REV 05	710-021534		T640-FPC1-ES
PIC 0	REV 04	750-014627		PB-40C3-10C12-SON-SFP
PIC 1	REV 22	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 09	750-002911		PB-4FE-TX
PIC 3	REV 08	750-021652		PB-1CHOC12-STM4-IQE-SFP
FPC 5	REV 07	710-007529		T640-FPC3
PIC 0	REV 14	750-009567		PC-1XGE-XENPAK
PIC 1	REV 16	750-007141		PC-10GE-SFP
PIC 2	REV 12	750-009567		PC-1XGE-XENPAK
FPC 6	REV 07	710-013035		T640-FPC3-ES
PIC 0	REV 09	750-009567		PC-1XGE-XENPAK

PIC 1	REV 06	750-015217	PC-8GE-TYPE3-SFP-IQ2
PIC 2	REV 06	750-015217	PC-8GE-TYPE3-SFP-IQ2
FPC 7	REV 03	710-021540	T640-FPC2-ES
PIC 0	REV 13	750-001901	PB-40C12-SON-SMIR
PIC 1	REV 05	750-001900	PB-10C48-SON-SMSR
PIC 2	REV 10	750-008155	PB-2GE-SFP-QPP
PIC 3	REV 03	750-014638	PB-10C48-SON-B-SFP
SIB 0	REV 07	710-022594	SIB-TXP-T1600-S
SIB 1	REV 07	710-022594	SIB-TXP-T1600-S
SIB 3	REV 06	710-022594	SIB-TXP-T1600-S
SIB 4	REV 08	710-022594	SIB-TXP-T1600-S
Fan Tray 0			FANTRAY-T-S
Fan Tray 1			FANTRAY-T-S
Fan Tray 2			FANTRAY-TXP-R-S

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lcc1-re0:
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Hardware inventory:
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Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	710-017247		CHAS-BP-T1600-S
FPM Display	REV 01	710-021387		CRAFT-T1600-S
CIP	REV 06	710-002895		CIP-L-T640-S
PEM 0	Rev 02	740-023211	IPUPAC8KTA	PWR-T1600-4-60-DC-S
SCG 0	REV 15	710-003423		SCG-T-S
SCG 1	REV 15	710-003423		SCG-T-S
Routing Engine 0	REV 01	740-026941		RE-DUO-C1800-8G-S
Routing Engine 1	REV 01	740-026941		RE-DUO-C1800-8G-S
CB 0	REV 06	710-022597		CB-LCC-S
CB 1	REV 06	710-022597		CB-LCC-S
FPC 0	REV 02	710-010845		T640-FPC4-ES
PIC 0	REV 11	750-017405		PD-4XGE-XFP
FPC 1	REV 16	710-013037		T1600-FPC4-ES
PIC 1	REV 06	750-034781		PD-1CE-CFP
FPC 2	REV 16	710-013037		T1600-FPC4-ES
PIC 1	REV 05	750-034781		PD-1CE-CFP
FPC 3	REV 10	710-021534		T640-FPC1-ES
PIC 0	REV 13	750-012266		PB-4GE-TYPE1-SFP-IQ2
PIC 1	REV 01	750-007641		PE-1GE-SFP-QPP
PIC 3	REV 17	750-007444		PB-1CHSTM1-SMIR-QPP
FPC 4	REV 06	710-013035		T640-FPC3-ES
PIC 0	REV 22	750-007141		PC-10GE-SFP
PIC 1	REV 16	750-009450		PC-10C192-SON-SR2
PIC 2	REV 05	750-004424		PC-1XGE-LR
PIC 3	REV 12	750-013423		PC-MS-500-3
FPC 5	REV 07	710-013560		T640-FPC3-E2
PIC 0	REV 11	750-012793		PC-1XGE-TYPE3-XFP-IQ2
PIC 1	REV 01	750-004695		PC-TUNNEL
PIC 2	REV 32	750-003700		PC-10C192-SON-VSR
PIC 3	REV 12	750-009553		PC-40C48-SON-SFP
FPC 6	REV 07	710-013035		T640-FPC3-ES
PIC 0	REV 07	750-015217		PC-8GE-TYPE3-SFP-IQ2
PIC 1	REV 03	750-003336		PC-40C48-SON-SMSR
PIC 3	REV 02	750-012793		PC-1XGE-TYPE3-XFP-IQ2
FPC 7	REV 08	710-010845		T640-FPC4-ES
PIC 0	REV 11	750-017405		PD-4XGE-XFP
SIB 0	REV 07	710-022594		SIB-TXP-T1600-S
SIB 1	REV 07	710-022594		SIB-TXP-T1600-S
SIB 3	REV 07	710-022594		SIB-TXP-T1600-S
SIB 4	REV 08	710-022594		SIB-TXP-T1600-S
Fan Tray 0				FANTRAY-T-S

Fan Tray 1  
Fan Tray 2

FANTRAY-T-S  
FANTRAY-TXP-R-S

### show chassis hardware detail (TX Matrix Plus Router)

```
user@host> show chassis hardware detail
sfc0-re0:
```

```
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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN111B023AHB  TXP
Midplane      REV 01   710-022574   TR7990         SFC Midplane
FPM Display   REV 03   710-024027   DW4699         TXP FPM Display
CIP 0         REV 01   710-023792   DR1437         TXP CIP
CIP 1         REV 02   710-023792   DS4564         TXP CIP
PEM 0         Rev 07   740-027463   UM26360        Power Entry Module
Routing Engine 0 REV 01   740-026942   737A-1024      SFC RE
  ad0 3887 MB SMART CF      200811050193CEB1CEB1 Compact Flash
  ad1 30533 MB SAMSUNG MCBQE32G8MPP-0V SY814A0762 Disk 1
Routing Engine 1 REV 01   740-026942   737A-1024      SFC RE
  ad0 3887 MB SMART CF      20081105004C19A019A0 Compact Flash
  ad1 30533 MB SAMSUNG MCBQE32G8MPP-0V SY814A0794 Disk 1
CB 0          REV 03   710-022606   DR7134         SFC Control Board
CB 1          REV 01   710-022606   DP8890         SFC Control Board
SPMB 0                               BUILTIN        SFC Switch CPU
SPMB 1                               BUILTIN        SFC Switch CPU
SIB F13 0     REV 03   750-024564   DT9478         F13 SIB
  B Board    REV 02   710-023431   DT6554         F13 SIB
SIB F13 1     REV 03   750-024564   DT9454         F13 SIB
  B Board    REV 02   710-023431   DT6551         F13 SIB
SIB F2S 0/0   REV 02   710-022603   DT2838         F2S SIB
  B Board    REV 02   710-023787   DT1725         NEO PMB
SIB F2S 0/2   REV 02   710-022603   DT2824         F2S SIB
  B Board    REV 02   710-023787   DT1706         NEO PMB
SIB F2S 0/4   REV 02   710-022603   DT2822         F2S SIB
  B Board    REV 02   710-023787   DT1696         NEO PMB
SIB F2S 0/6   REV 02   710-022603   DT2823         F2S SIB
  B Board    REV 02   710-023787   DT1717         NEO PMB
SIB F2S 1/0   REV 03   710-022603   DV0059         F2S SIB
  B Board    REV 03   710-023787   DT9942         NEO PMB
SIB F2S 1/2   REV 02   710-022603   DT2826         F2S SIB
  B Board    REV 02   710-023787   DT1713         NEO PMB
SIB F2S 1/4   REV 03   710-022603   DV0092         F2S SIB
  B Board    REV 03   710-023787   DV0000         NEO PMB
SIB F2S 1/6   REV 03   710-022603   DV0079         F2S SIB
  B Board    REV 03   710-023787   DT9972         NEO PMB
SIB F2S 2/0   REV 03   710-022603   DV0100         F2S SIB
  B Board    REV 03   710-023787   DT9925         NEO PMB
SIB F2S 2/2   REV 03   710-022603   DV0050         F2S SIB
  B Board    REV 03   710-023787   DV0005         NEO PMB
SIB F2S 2/4   REV 03   710-022603   DV0097         F2S SIB
  B Board    REV 03   710-023787   DT9936         NEO PMB
Fan Tray 0    REV 02   760-024497   DR8286         Front Fan Tray
Fan Tray 1    REV 06   760-024497   DV9624         Front Fan Tray
Fan Tray 2    REV 02   760-024502   DR8259         Rear Fan Tray
Fan Tray 3    REV 02   760-024502   DR8270         Rear Fan Tray
Fan Tray 4    REV 02   760-024502   DR8284         Rear Fan Tray
Fan Tray 5    REV 06   760-024502   DV7813         Rear Fan Tray
```

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1cc0-re0:
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```



## Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1101F27AHA	T1600
Midplane	REV 04	710-017247	RC5317	T Series Backplane
FPM GBUS	REV 10	710-002901	DS8197	T640 FPM Board
FPM Display	REV 01	710-021387	DS6433	T1600 FPM Display
CIP	REV 06	710-002895	DS1493	T Series CIP
PEM 0	Rev 08	740-017906	UD26601	Power Entry Module 3x80
SCG 0	REV 15	710-003423	DP5847	T640 Sonet Clock Gen.
SCG 1	REV 15	710-003423	DR0924	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-026942	737F-1024	LCC RE
ad0	3887 MB	SMART CF	2008110502B63E513E51	Compact Flash
ad1	30533 MB	SAMSUNG	MCBQE32G8MPP-0V SY814A1208	Disk 1
Routing Engine 1	REV 01	740-026942	737F-1024	LCC RE
ad0	3887 MB	SMART CF	2008110500F9A8A8A8A8	Compact Flash
ad1	30533 MB	SAMSUNG	MCBQE32G8MPP-0V SY814A1076	Disk 1
CB 0	REV 05	710-022597	DV4264	LCC Control Board
CB 1	REV 03	710-022597	DP8558	LCC Control Board
FPC 0	REV 14	710-013037	DS9967	FPC Type 4-ES
CPU	REV 08	710-016744	DS3989	ST-PMB2
PIC 0	REV 12	750-013198	DL7506	1x Tunnel
PIC 1	REV 12	750-013198	DL7505	1x Tunnel
MMB 0	REV 01	710-025563	DS8524	ST-MMB2
MMB 1	REV 01	710-025563	DS8373	ST-MMB2
FPC 1	REV 14	710-013037	DT0027	FPC Type 4-ES
CPU	REV 09	710-016744	DS7684	ST-PMB2
PIC 0	REV 12	750-013198	DL7512	1x Tunnel
PIC 1	REV 12	750-013198	DL7498	1x Tunnel
MMB 0	REV 01	710-025563	DS8494	ST-MMB2
MMB 1	REV 01	710-025563	DS8436	ST-MMB2
SPMB 0	REV 04	710-023321	DV3867	LCC Switch CPU
SPMB 1	REV 02	710-023321	DP0238	LCC Switch CPU
SIB 0	REV 06	710-022594	DT8268	LCC SIB
B Board	REV 06	710-023185	DT5791	LCC SIB Mezz
SIB 1	REV 06	710-022594	DT8261	LCC SIB
B Board	REV 06	710-023185	DT5769	LCC SIB Mezz
SIB 2	REV 04	710-022594	DS2315	LCC SIB
B Board	REV 06	710-023185	DT5788	LCC SIB Mezz
SIB 3	REV 06	710-022594	DT8253	LCC SIB
B Board	REV 06	710-023185	DT5811	LCC SIB Mezz
SIB 4	REV 06	710-022594	DT8248	LCC SIB
B Board	REV 06	710-023185	DT5812	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

## show chassis hardware models (TX Matrix Plus Router)

```
user@host> show chassis hardware models
sfc0-re0:
```

## Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
FPM Display	REV 03	710-024027	DX0282	CRAFT-TXP
CIP 0	REV 04	710-023792	DW4889	CIP-TXP
CIP 1	REV 04	710-023792	DW4887	CIP-TXP
PEM 0	Rev 07	740-027463	UM26368	yyyyyyyyyyyyyyyyyyyy
Routing Engine 0	REV 01	740-026942	737A-1064	RE-TXP-SFC-DU0-2600-16G
Routing Engine 1	REV 01	740-026942	737A-1082	RE-TXP-SFC-DU0-2600-16G
CB 0	REV 09	710-022606	DW6099	CB-TXP
CB 1	REV 09	710-022606	DW6096	CB-TXP

SIB F13 1	REV 04	750-024564	DW5776	SIB-TXP-F13
SIB F13 3	REV 04	750-024564	DW5762	SIB-TXP-F13
SIB F13 4	REV 04	750-024564	DW5797	SIB-TXP-F13
SIB F13 6	REV 04	750-024564	DW5770	SIB-TXP-F13
SIB F13 7	REV 04	750-024564	DW5758	SIB-TXP-F13
SIB F13 8	REV 04	750-024564	DW5761	SIB-TXP-F13
SIB F13 9	REV 04	750-024564	DW5754	SIB-TXP-F13
SIB F13 12	REV 04	750-024564	DW5794	SIB-TXP-F13
SIB F2S 0/0	REV 05	710-022603	DW7897	
SIB F2S 0/2	REV 05	710-022603	DW7833	
SIB F2S 0/4	REV 05	710-022603	DW7875	
SIB F2S 0/6	REV 05	710-022603	DW7860	
SIB F2S 1/0	REV 04	710-022603	DW4820	
SIB F2S 1/2	REV 05	710-022603	DW7849	
SIB F2S 1/4	REV 05	710-022603	DW7927	SIB-TXP-F2S
SIB F2S 1/6	REV 05	710-022603	DW7866	
SIB F2S 2/0	REV 05	710-022603	DW7880	
SIB F2S 2/2	REV 05	710-022603	DW7895	
SIB F2S 2/4	REV 05	710-022603	DW7907	
SIB F2S 2/6	REV 05	710-022603	DW7785	
SIB F2S 3/0	REV 05	710-022603	DW7782	
SIB F2S 3/2	REV 05	710-022603	DW7793	
SIB F2S 3/4	REV 05	710-022603	DW7779	
SIB F2S 3/6	REV 05	710-022603	DW7930	
SIB F2S 4/0	REV 05	710-022603	DW7867	
SIB F2S 4/2	REV 05	710-022603	DW7917	
SIB F2S 4/4	REV 05	710-022603	DW7929	
SIB F2S 4/6	REV 05	710-022603	DW7870	
Fan Tray 0	REV 06	760-024497	DV7831	FANTRAY-TXP-F
Fan Tray 1	REV 06	760-024497	DV9614	FANTRAY-TXP-F
Fan Tray 2	REV 06	760-024502	DV9618	FANTRAY-TXP-R
Fan Tray 3	REV 06	760-024502	DV9616	FANTRAY-TXP-R
Fan Tray 4	REV 06	760-024502	DV7807	FANTRAY-TXP-R
Fan Tray 5	REV 06	760-024502	DV7828	FANTRAY-TXP-R

lcc0-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 03	710-017247	RC3765	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387	DN5441	CRAFT-T1600-S
CIP	REV 06	710-002895	DP6021	CIP-L-T640-S
PEM 0	Rev 07	740-017906	UA26384	PWR-T1600-3-80-DC-S
PEM 1	Rev 07	740-017906	UA26296	PWR-T1600-3-80-DC-S
SCG 0	REV 15	710-003423	DR0875	SCG-T-S
CB 0	REV 06	710-022597	DW8534	CB-LCC
CB 1	REV 06	710-022597	DW8527	CB-LCC
FPC 4	REV 12	710-013037	DJ8717	T1600-FPC4-ES
PIC 0	REV 11	750-017405	DP8795	PD-4XGE-XFP
PIC 1	REV 11	750-017405	DP8794	PD-4XGE-XFP
FPC 6	REV 14	710-013037	DS5335	T1600-FPC4-ES
PIC 0	REV 13	750-017405	DS7634	PD-4XGE-XFP
PIC 1	REV 13	750-017405	DS7637	PD-4XGE-XFP
FPC 7	REV 07	710-013035	DM0990	T1600-FPC3-ES
PIC 0	REV 16	750-007141	JJ8067	PC-10GE-SFP
PIC 1	REV 08	750-015749	WE9598	PC-10C192-SON-XFP
PIC 2	REV 10	750-009450	HX6466	PC-10C192-SON-SR2
SIB 0	REV 08	710-022594	DW8033	SIB-TXP-T1600-S
SIB 1	REV 08	710-022594	DW8044	SIB-TXP-T1600-S
SIB 2	REV 08	710-022594	DW8020	SIB-TXP-T1600-S
SIB 3	REV 08	710-022594	DW8063	SIB-TXP-T1600-S

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SIB 4          REV 08  710-022594  DW8064          SIB-TXP-T1600-S
Fan Tray 0
Fan Tray 1
Fan Tray 2          FANTRAY-T-S
                   FANTRAY-T-S
                   FANTRAY-TXP-R-S

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lcc1-re0:
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Hardware inventory:
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Item	Version	Part number	Serial number	FRU model number
Midplane	REV 04	710-017247	RC5361	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387	DS6430	CRAFT-T1600-S
CIP	REV 06	710-002895	DS4239	CIP-L-T640-S
PEM 0	Rev 08	740-017906	UD26649	PWR-T1600-3-80-DC-S
SCG 0	REV 15	710-003423	DP5820	SCG-T-S
CB 0	REV 06	710-022597	DW8523	CB-LCC
CB 1	REV 06	710-022597	DW8528	CB-LCC
FPC 4	REV 12	710-013037	DP8509	T1600-FPC4-ES
PIC 0	REV 11	750-017405	DP8808	PD-4XGE-XFP
PIC 1	REV 11	750-017405	DP7263	PD-4XGE-XFP
FPC 6	REV 14	710-013037	DS9961	T1600-FPC4-ES
PIC 0	REV 13	750-017405	DS5532	PD-4XGE-XFP
PIC 1	REV 13	750-017405	DS7639	PD-4XGE-XFP
FPC 7	REV 03	710-013035	DF5564	T1600-FPC3-ES
PIC 0	REV 16	750-007141	JJ8063	PC-10GE-SFP
SIB 0	REV 08	710-022594	DW8035	SIB-TXP-T1600-S
SIB 1	REV 10	710-022594	DX7672	SIB-TXP-T1600-S
SIB 2	REV 08	710-022594	DW8060	SIB-TXP-T1600-S
SIB 3	REV 08	710-022594	DW8072	SIB-TXP-T1600-S
SIB 4	REV 08	710-022594	DW8043	SIB-TXP-T1600-S
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T-S
Fan Tray 2				FANTRAY-TXP-R-S

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lcc2-re0:
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Hardware inventory:
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Item	Version	Part number	Serial number	FRU model number
Midplane	REV 03	710-017247	RC3956	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387	DN7030	CRAFT-T1600-S
CIP	REV 06	710-002895	DM3962	CIP-L-T640-S
PEM 0	Rev 08	740-017906	UD26519	PWR-T1600-3-80-DC-S
PEM 1	Rev 07	740-017906	UC26601	PWR-T1600-3-80-DC-S
SCG 0	REV 15	710-003423	DP0277	SCG-T-S
CB 0	REV 06	710-022597	DW8524	CB-LCC
CB 1	REV 06	710-022597	DW8536	CB-LCC
FPC 4	REV 12	710-013037	DR1194	T1600-FPC4-ES
PIC 0	REV 11	750-017405	DP8811	PD-4XGE-XFP
PIC 1	REV 11	750-017405	DP8823	PD-4XGE-XFP
FPC 5	REV 12	710-013037	DR1184	T1600-FPC4-ES
PIC 1	REV 11	750-017405	DP4744	PD-4XGE-XFP
FPC 6	REV 12	710-013037	DN8622	T1600-FPC4-ES
PIC 0	REV 14	750-012518	JY9924	PD-40C192-S0N-XFP
PIC 1	REV 11	750-017405	DP8776	PD-4XGE-XFP
FPC 7	REV 04	710-013560	JR3968	T640-FPC3-E2
PIC 0	REV 16	750-007141	NC9330	PC-10GE-SFP
SIB 0	REV 07	710-022594	DW4217	SIB-TXP-T1600-S
SIB 1	REV 07	710-022594	DW4213	SIB-TXP-T1600-S
SIB 2	REV 07	710-022594	DW4189	SIB-TXP-T1600-S
SIB 3	REV 07	710-022594	DW4173	SIB-TXP-T1600-S
SIB 4	REV 07	710-022594	DW4201	SIB-TXP-T1600-S
Fan Tray 0				FANTRAY-T-S

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Fan Tray 1
Fan Tray 2

FANTRAY-T-S
FANTRAY-TXP-R-S

lcc3-re0:
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Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 04   710-017247   RC5319         CHAS-BP-T1600-S
FPM Display   REV 01   710-021387   DS6402         CRAFT-T1600-S
CIP           REV 06   710-002895   DR9973         CIP-L-T640-S
PEM 0         Rev 07   740-017906   UC26496        PWR-T1600-3-80-DC-S
PEM 1         Rev 07   740-017906   UC26599        PWR-T1600-3-80-DC-S
SCG 0         REV 15   710-003423   DP5831         SCG-T-S
CB 0          REV 06   710-022597   DW8533         CB-LCC
CB 1          REV 06   710-022597   DW8538         CB-LCC
FPC 0         REV 14   710-013037   DS5345         T1600-FPC4-ES
  PIC 0       REV 13   750-017405   DS7641         PD-4XGE-XFP
  PIC 1       REV 13   750-017405   DS5479         PD-4XGE-XFP
FPC 1         REV 14   710-013037   DS7338         T1600-FPC4-ES
  PIC 0       REV 13   750-017405   DS7631         PD-4XGE-XFP
  PIC 1       REV 13   750-017405   DS7632         PD-4XGE-XFP
FPC 2         REV 14   710-013037   DS9962         T1600-FPC4-ES
  PIC 0       REV 13   750-017405   DS7581         PD-4XGE-XFP
  PIC 1       REV 13   750-017405   DS7627         PD-4XGE-XFP
FPC 4         REV 10   710-010845   JZ6573         T640-FPC4-ES
  PIC 0       REV 14   750-012518   JT5124         PD-40C192-SON-XFP
FPC 5         REV 14   710-013037   DT0016         T1600-FPC4-ES
  PIC 0       REV 14   750-012518   JY9918         PD-40C192-SON-XFP
FPC 7         REV 07   710-013035   DM0967         T1600-FPC3-ES
  PIC 0       REV 16   750-007141   JJ8059         PC-10GE-SFP
  PIC 1       REV 13   750-004695   DM5712         PC-TUNNEL
SIB 0         REV 07   710-022594   DW4174         SIB-TXP-T1600-S
SIB 1         REV 07   710-022594   DW4207         SIB-TXP-T1600-S
SIB 2         REV 06   710-022594   DT8231         SIB-TXP-T1600-S
SIB 3         REV 07   710-022594   DW4175         SIB-TXP-T1600-S
SIB 4         REV 07   710-022594   DW4209         SIB-TXP-T1600-S
Fan Tray 0    FANTRAY-T-S
Fan Tray 1    FANTRAY-T-S
Fan Tray 2    FANTRAY-TXP-R-S

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#### show chassis hardware (TX Matrix Plus Router with 3D SIBs)

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user@host> show chassis hardware
sfc0-re0:
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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                          JN11CAAA4AHB  TXP
Midplane      REV 05   710-022574   ABAC4696      SFC Midplane
FPM Display   REV 09   710-024027   EH3138        TXP FPM Display
CIP 0         REV 12   710-023792   EF6349        TXP CIP
CIP 1         REV 12   710-023792   EG5294        TXP CIP
PEM 0         Rev 06   740-027463   XH04595       Power Entry Module
PEM 1         Rev 06   740-027463   XH04592       Power Entry Module
Routing Engine 0 REV 07   740-026942   P737A-002541  RE-DUO-2600
Routing Engine 1 REV 07   740-026942   P737A-002602  RE-DUO-2600
CB 0          REV 15   710-022606   EH4376        SFC Control Board
CB 1          REV 15   710-022606   EH4379        SFC Control Board
SPMB 0        BUILTIN  BUILTIN       SFC Switch CPU
SPMB 1        BUILTIN  BUILTIN       SFC Switch CPU
SIB F13 0     REV 10   750-035002   EM9305        F13 SIB 3D

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B Board	REV 06	711-035082	EM9667	F13 SIB 3D Mezz
P Board	REV 05	711-043544	EM9708	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB34FB00S	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB01H	CXP Module
Xcvr 4	REV 01	740-047547	XB34FB02W	CXP Module
Xcvr 6	REV 01	740-047547	XB34FB01T	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB00W	CXP Module
Xcvr 10	REV 01	740-047547	XB34FB01S	CXP Module
Xcvr 12	REV 01	740-047547	XB34FB03H	CXP Module
Xcvr 14	REV 01	740-047547	XB34FB023	CXP Module
SIB F13 3	REV 01	710-035001	EJ2612	F13 SIB 3D
B Board	REV 01	711-035082	EJ3815	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2678	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB04C	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB00Z	CXP Module
Xcvr 4	REV 01	740-047547	XB47FB036	CXP Module
Xcvr 6	REV 01	740-047547	XB47FB029	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02N	CXP Module
Xcvr 10	REV 01	740-047547	XB42FB0CS	CXP Module
Xcvr 12	REV 01	740-047547	XB47FB01X	CXP Module
Xcvr 14	REV 01	740-047547	XB48FB02F	CXP Module
SIB F13 6	REV 05	750-035002	EK2675	F13 SIB 3D
B Board	REV 03	711-035082	EK2612	F13 SIB 3D Mezz
P Board	REV 04	711-043544	EK1179	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB01T	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB02M	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB031	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB04P	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02T	CXP Module
Xcvr 10	REV 01	740-047547	XB34FB01V	CXP Module
Xcvr 12	REV 01	740-047547	XB48FB02C	CXP Module
Xcvr 14		NON-JNPR		No Module
SIB F13 12	REV 01	710-035001	EJ2631	F13 SIB 3D
B Board	REV 01	711-035082	EJ3808	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2676	F13 SIB 3D Power
SIB F2S 0/0	REV 01	711-034977	EH9829	F2S SIB 3D
B Board	REV 01	711-034979	EH9927	F2S SIB 3D Mezz
SIB F2S 0/2	REV 01	711-034977	EH9791	F2S SIB 3D
B Board	REV 01	711-034979	EH9852	F2S SIB 3D Mezz
SIB F2S 0/4	REV 01	711-034977	EH9803	F2S SIB 3D
B Board	REV 01	711-034979	EH9915	F2S SIB 3D Mezz
SIB F2S 0/6	REV 01	711-034977	EH9763	F2S SIB 3D
B Board	REV 01	711-034979	EH9880	F2S SIB 3D Mezz
SIB F2S 1/0	REV 01	711-034977	EH9757	F2S SIB 3D
B Board	REV 01	711-034979	EH9889	F2S SIB 3D Mezz
SIB F2S 1/2	REV 01	711-034977	EH9815	F2S SIB 3D
B Board	REV 01	711-034979	EH9890	F2S SIB 3D Mezz
SIB F2S 1/4	REV 08	750-034978	EN1954	F2S SIB 3D
B Board	REV 02	711-034979	EN1436	F2S SIB 3D Mezz
SIB F2S 1/6	REV 01	711-034977	EJ7054	F2S SIB 3D
B Board	REV 01	711-034979	EJ8238	F2S SIB 3D Mezz
SIB F2S 2/0	REV 01	711-034977	EH9830	F2S SIB 3D
B Board	REV 01	711-034979	EH9844	F2S SIB 3D Mezz
SIB F2S 2/2	REV 01	711-034977	EH9818	F2S SIB 3D
B Board	REV 01	711-034979	EH9888	F2S SIB 3D Mezz
SIB F2S 2/4	REV 01	711-034977	EH9795	F2S SIB 3D
B Board	REV 01	711-034979	EH9869	F2S SIB 3D Mezz
SIB F2S 2/6	REV 01	711-034977	EJ7026	F2S SIB 3D
B Board	REV 01	711-034979	EJ8273	F2S SIB 3D Mezz
SIB F2S 3/0	REV 01	711-034977	EH9811	F2S SIB 3D
B Board	REV 01	711-034979	EH9892	F2S SIB 3D Mezz

SIB F2S 3/2	REV 01	711-034977	EH9812	F2S SIB 3D
B Board	REV 01	711-034979	EH9877	F2S SIB 3D Mezz
SIB F2S 3/4	REV 08	750-034978	EN1947	F2S SIB 3D
B Board	REV 02	711-034979	EN1471	F2S SIB 3D Mezz
Fan Tray 0	REV 10	760-024497	EH3313	Front Fan Tray
Fan Tray 1	REV 10	760-024497	EH3290	Front Fan Tray
Fan Tray 2	REV 10	760-024502	EH3292	Rear Fan Tray
Fan Tray 3	REV 10	760-024502	EH3287	Rear Fan Tray
Fan Tray 4	REV 10	760-024502	EH3286	Rear Fan Tray
Fan Tray 5	REV 10	760-024502	EH3285	Rear Fan Tray

lcc0-re0:

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11B23FEAHA	T1600
Midplane	REV 01	710-027486	RC9787	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAG5132	T640 FPM Board
FPM Display	REV 04	710-021387	BBAL9612	T1600 FPM Display
CIP	REV 06	710-002895	BBAN0605	T-series CIP
PEM 0	REV 05	740-036442	1G022060143	Power Entry Module 6x60
PEM 1	REV 05	740-036442	1G022060011	Power Entry Module 6x60
SCG 0	REV 18	710-003423	BBAL7318	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAL7255	T640 Sonet Clock Gen.
Routing Engine 0	REV 07	740-026941	P737F-002933	RE-DUO-1800
Routing Engine 1	REV 06	740-026941	P737F-002749	RE-DUO-1800
CB 0	REV 11	710-022597	EH3611	LCC Control Board
CB 1	REV 11	710-022597	EH4798	LCC Control Board
FPC 5	REV 17	710-013037	BBAC5333	FPC Type 4-ES
CPU	REV 10	710-016744	BBAB7619	ST-PMB2
PIC 0	REV 18	750-017405	BBAE3420	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 03	740-014289	T10C90659	XFP-10G-SR
MMB 0	REV 05	710-025563	BBAB9538	ST-MMB2
MMB 1	REV 05	710-025563	BBAB9502	ST-MMB2
FPC 7	REV 01	750-045173	BBAV0032	FPC Type 5-3D
CPU				
SPMB 0	REV 05	710-023321	EG9434	LCC Switch CPU
SPMB 1	REV 05	710-023321	EH3878	LCC Switch CPU
SIB 0	REV 01	750-041657	EH7997	LCC SIB 3D
B Board	REV 01	711-042424	EH7674	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB014	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB05A	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB052	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB01B	CXP Module
SIB 1	REV 01	750-041657	EH8023	LCC SIB 3D
B Board	REV 01	711-042424	EH7659	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB05J	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB01E	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB01J	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB02S	CXP Module
SIB 2	REV 03	750-041657	EJ6554	LCC SIB 3D
B Board	REV 02	711-042424	EJ5756	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB34FB01Z	CXP Module
Xcvr 2	REV 01	740-047547	XB34FB013	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB04Z	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB05N	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 4

lcc2-re0:

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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              REV 01  710-027486  JN11B3975AHA  T1600
Midplane            REV 13  710-002901  RC9826        T-series Backplane
FPM GBUS            REV 03  710-021387  BBAG5124      T640 FPM Board
FPM Display         REV 06  710-002895  BBAL3744      T1600 FPM Display
CIP                  REV 05  740-036442  1G022060081   T-series CIP
PEM 0                REV 05  740-036442  1G022060188   Power Entry Module 6x60
PEM 1                REV 18  710-003423  BBAH8775      Power Entry Module 6x60
SCG 0                REV 18  710-003423  BBAL7272      T640 Sonet Clock Gen.
SCG 1                REV 07  740-026941  P737F-002992  T640 Sonet Clock Gen.
Routing Engine 0     REV 07  740-026941  P737F-002938  RE-DUO-1800
Routing Engine 1     REV 11  710-022597  EH4805        RE-DUO-1800
CB 0                 REV 11  710-022597  EH4786        LCC Control Board
CB 1                 REV 01  710-033873  BBAH0320      LCC Control Board
FPC 1                REV 11  710-016744  BBAF3281      FPC Type 3-ES
CPU                  REV 06  710-025563  BBAF5061      ST-PMB2
MMB 0                REV 04  710-033871  BBAM5070      ST-MMB2
FPC 5                REV 11  710-016744  BBAM6653      FPC Type 4-ES
CPU                  REV 20  750-017405  BBAM1296      ST-PMB2
PIC 1                REV 03  740-014289  T10B42981     4x 10GE (LAN/WAN) XFP
Xcvr 0               REV 07  710-025563  BBAN2631     XFP-10G-SR
MMB 1                REV 07  710-025563  BBAN2538     ST-MMB2
SPMB 0               REV 05  710-023321  EH3903        ST-MMB2
SPMB 1               REV 05  710-023321  EH3902        LCC Switch CPU
SIB 0                REV 01  750-041657  EH8019        LCC SIB 3D
B Board              REV 01  711-042424  EH7680        LCC SIB 3D Mezz
Xcvr 0               REV 01  740-047547  XB48FB04F     CXP Module
Xcvr 2               REV 01  740-047547  XB48FB04S     CXP Module
Xcvr 4               REV 01  740-047547  XB48FB04B     CXP Module
Xcvr 6               REV 01  740-047547  XB48FB043     CXP Module
SIB 1                REV 01  750-041657  EH8012        CXP Module
B Board              REV 01  711-042424  EH7658        LCC SIB 3D Mezz
Xcvr 0               REV 01  740-047547  XB48FB05E     CXP Module
Xcvr 2               REV 01  740-047547  XB48FB01Z     CXP Module
Xcvr 4               REV 01  740-047547  XB48FB018     CXP Module
Xcvr 6               REV 01  740-047547  XB48FB054     CXP Module
SIB 2                REV 01  750-041657  EH7993        LCC SIB 3D
B Board              REV 01  711-042424  EH7678        LCC SIB 3D Mezz
Xcvr 0               REV 01  740-047547  XB48FB05C     CXP Module
Xcvr 2               REV 01  740-047547  XB47FB00N     CXP Module
Xcvr 4               REV 01  740-047547  XB48FB05U     CXP Module
Xcvr 6               REV 01  740-047547  XB48FB05L     CXP Module
Fan Tray 0           Front Top Fan Tray
Fan Tray 1           Front Bottom Fan Tray
Fan Tray 2           Rear Fan Tray -- Rev 4

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#### show chassis hardware clei-models (TX Matrix Plus Router with 3D SIBs)

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user@host> show chassis hardware clei-models
sfc0-re0:
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Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 05  710-022574          CHAS-BP-TXP-S
FPM Display   REV 09  710-024027          CRAFT-TXP-S
CIP 0         REV 12  710-023792          CIP-TXP-S
CIP 1         REV 12  710-023792          CIP-TXP-S
PEM 0         Rev 06  740-027463  IPUPAFGKTA  PWR-TXP-7-60-DC-S

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Routing Engine 0	REV 07	740-026942		RE-DUO-C2600-16G-S
Routing Engine 1	REV 07	740-026942		RE-DUO-C2600-16G-S
CB 0	REV 13	710-022606		CB-TXP-S
CB 1	REV 14	710-022606		CB-TXP-S
SIB F13 0	REV 10	750-035002	PROTOXCLEI	SIB-TXP-3D-F13-S
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 1	REV 10	750-035002	PROTOXCLEI	SIB-TXP-3D-F13-S
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-048813		
Xcvr 10	REV 01	740-048813		
Xcvr 12	REV 01	740-048813		
Xcvr 14	REV 01	740-048813		
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 6	REV 16	750-035002	PROTOXCLEI	SIB-TXP-3D-F13
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		



Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 7	REV 10	750-035002	PROTOXCLEI	SIB-TXP-3D-F13-S
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 9	REV 16	750-035002	PROTOXCLEI	SIB-TXP-3D-F13
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 11	REV 10	750-035002	PROTOXCLEI	750-035002
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 12	REV 16	750-035002	PROTOXCLEI	SIB-TXP-3D-F13
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D

Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F2S 0/0	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/2	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/4	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/0	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/2	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/4	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/6	REV 08	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/0	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/2	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/4	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/0	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/2	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/4	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/0	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/2	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/4	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
Fan Tray 0	REV 10	760-024497		FANTRAY-TXP-H-S
Fan Tray 1	REV 10	760-024497		FANTRAY-TXP-H-S
Fan Tray 2	REV 10	760-024502		FANTRAY-TXP-V-S
Fan Tray 3	REV 10	760-024502		FANTRAY-TXP-V-S
Fan Tray 4	REV 10	760-024502		FANTRAY-TXP-V-S
Fan Tray 5	REV 10	760-024502		FANTRAY-TXP-V-S

lcc0-re0:

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Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-027486	IPMJ700DRD	CHAS-BP-T1600-S
FPM Display	REV 04	710-021387		CRAFT-T1600-S
CIP	REV 06	710-002895		CIP-L-T640-S
PEM 0	REV 05	740-036442	IPUPAG6KAA	PWR-T-6-60-DC-S
PEM 1	REV 05	740-036442	IPUPAG6KAA	PWR-T-6-60-DC-S
SCG 0	REV 18	710-003423		SCG-T-S
SCG 1	REV 18	710-003423		SCG-T-S
Routing Engine 0	REV 10	740-026941		RE-DU0-C1800-8G-S
Routing Engine 1	REV 07	740-026941		RE-DU0-C1800-8G-S
CB 0	REV 11	710-022597		CB-LCC-S
CB 1	REV 11	710-022597		CB-LCC-S
FPC 0	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
FPC 3	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 13	750-033423	XXXXXXXXDD	PF-12-24XGE-SFPP
FPC 4	REV 02	750-045173	IP9IAL4DAC	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
FPC 5	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP

FPC 6	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 10	750-035293	IP9IAL3DAA	PF-1CGE-CFP
SIB 0	REV 06	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
SIB 1	REV 06	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
SIB 2	REV 06	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
SIB 3	REV 07	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
SIB 4	REV 06	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T-S
Fan Tray 2				FANTRAY-TXP3D-LCC-R-S
[Output Truncated]				

### show chassis hardware detail (TX Matrix Plus Router with 3D SIBs)

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user@host> show chassis hardware detail
sfc0-re0:
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Hardware inventory:
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Item	Version	Part number	Serial number	Description
Chassis			JN11CAA4AHB	TXP

Midplane	REV 05	710-022574	ABAC4696	SFC Midplane
FPM Display	REV 09	710-024027	EH3138	TXP FPM Display
CIP 0	REV 12	710-023792	EF6349	TXP CIP
CIP 1	REV 12	710-023792	EG5294	TXP CIP
PEM 0	Rev 06	740-027463	XH04595	Power Entry Module
PEM 1	Rev 06	740-027463	XH04592	Power Entry Module
Routing Engine 0	REV 07	740-026942	P737A-002541	RE-DUO-2600
ad0 3823 MB	SMART CF		2011030400062C132C13	Compact Flash
ad1 62720 MB	SMART Lite SATA Drive		201105100009A452A452	Disk 1
Routing Engine 1	REV 07	740-026942	P737A-002602	RE-DUO-2600
ad0 3823 MB	SMART CF		20110508085EE471E471	Compact Flash
ad1 62720 MB	SMART Lite SATA Drive		201110210089DF39DF39	Disk 1
CB 0	REV 15	710-022606	EH4376	SFC Control Board
CB 1	REV 15	710-022606	EH4379	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 10	750-035002	EM9305	F13 SIB 3D
B Board	REV 06	711-035082	EM9667	F13 SIB 3D Mezz
P Board	REV 05	711-043544	EM9708	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB34FB00S	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB01H	CXP Module
Xcvr 4	REV 01	740-047547	XB34FB02W	CXP Module
Xcvr 6	REV 01	740-047547	XB34FB01T	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB00W	CXP Module
Xcvr 10	REV 01	740-047547	XB34FB01S	CXP Module
Xcvr 12	REV 01	740-047547	XB34FB03H	CXP Module
Xcvr 14	REV 01	740-047547	XB34FB023	CXP Module
SIB F13 3	REV 01	710-035001	EJ2612	F13 SIB 3D
B Board	REV 01	711-035082	EJ3815	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2678	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB04C	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB00Z	CXP Module
Xcvr 4	REV 01	740-047547	XB47FB036	CXP Module
Xcvr 6	REV 01	740-047547	XB47FB029	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02N	CXP Module
Xcvr 10	REV 01	740-047547	XB42FB0CS	CXP Module
Xcvr 12	REV 01	740-047547	XB47FB01X	CXP Module
Xcvr 14	REV 01	740-047547	XB48FB02F	CXP Module
SIB F13 6	REV 05	750-035002	EK2675	F13 SIB 3D
B Board	REV 03	711-035082	EK2612	F13 SIB 3D Mezz
P Board	REV 04	711-043544	EK1179	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB01T	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB02M	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB031	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB04P	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02T	CXP Module
Xcvr 10	REV 01	740-047547	XB34FB01V	CXP Module
Xcvr 12	REV 01	740-047547	XB48FB02C	CXP Module
Xcvr 14		NON-JNPR		No Module
SIB F13 12	REV 01	710-035001	EJ2631	F13 SIB 3D
B Board	REV 01	711-035082	EJ3808	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2676	F13 SIB 3D Power
SIB F2S 0/0	REV 01	711-034977	EH9829	F2S SIB 3D
B Board	REV 01	711-034979	EH9927	F2S SIB 3D Mezz
SIB F2S 0/2	REV 01	711-034977	EH9791	F2S SIB 3D
B Board	REV 01	711-034979	EH9852	F2S SIB 3D Mezz
SIB F2S 0/4	REV 01	711-034977	EH9803	F2S SIB 3D
B Board	REV 01	711-034979	EH9915	F2S SIB 3D Mezz
SIB F2S 0/6	REV 01	711-034977	EH9763	F2S SIB 3D
B Board	REV 01	711-034979	EH9880	F2S SIB 3D Mezz
SIB F2S 1/0	REV 01	711-034977	EH9757	F2S SIB 3D

B Board	REV 01	711-034979	EH9889	F2S SIB 3D Mezz
SIB F2S 1/2	REV 01	711-034977	EH9815	F2S SIB 3D
B Board	REV 01	711-034979	EH9890	F2S SIB 3D Mezz
SIB F2S 1/4	REV 08	750-034978	EN1954	F2S SIB 3D
B Board	REV 02	711-034979	EN1436	F2S SIB 3D Mezz
SIB F2S 1/6	REV 01	711-034977	EJ7054	F2S SIB 3D
B Board	REV 01	711-034979	EJ8238	F2S SIB 3D Mezz
SIB F2S 2/0	REV 01	711-034977	EH9830	F2S SIB 3D
B Board	REV 01	711-034979	EH9844	F2S SIB 3D Mezz
SIB F2S 2/2	REV 01	711-034977	EH9818	F2S SIB 3D
B Board	REV 01	711-034979	EH9888	F2S SIB 3D Mezz
SIB F2S 2/4	REV 01	711-034977	EH9795	F2S SIB 3D
B Board	REV 01	711-034979	EH9869	F2S SIB 3D Mezz
SIB F2S 2/6	REV 01	711-034977	EJ7026	F2S SIB 3D
B Board	REV 01	711-034979	EJ8273	F2S SIB 3D Mezz
SIB F2S 3/0	REV 01	711-034977	EH9811	F2S SIB 3D
B Board	REV 01	711-034979	EH9892	F2S SIB 3D Mezz
SIB F2S 3/2	REV 01	711-034977	EH9812	F2S SIB 3D
B Board	REV 01	711-034979	EH9877	F2S SIB 3D Mezz
SIB F2S 3/4	REV 08	750-034978	EN1947	F2S SIB 3D
B Board	REV 02	711-034979	EN1471	F2S SIB 3D Mezz
Fan Tray 0	REV 10	760-024497	EH3313	Front Fan Tray
Fan Tray 1	REV 10	760-024497	EH3290	Front Fan Tray
Fan Tray 2	REV 10	760-024502	EH3292	Rear Fan Tray
Fan Tray 3	REV 10	760-024502	EH3287	Rear Fan Tray
Fan Tray 4	REV 10	760-024502	EH3286	Rear Fan Tray
Fan Tray 5	REV 10	760-024502	EH3285	Rear Fan Tray

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11B23FEAHA	T1600
Midplane	REV 01	710-027486	RC9787	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAG5132	T640 FPM Board
FPM Display	REV 04	710-021387	BBAL9612	T1600 FPM Display
CIP	REV 06	710-002895	BBAN0605	T-series CIP
PEM 0	REV 05	740-036442	1G022060143	Power Entry Module 6x60
PEM 1	REV 05	740-036442	1G022060011	Power Entry Module 6x60
SCG 0	REV 18	710-003423	BBAL7318	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAL7255	T640 Sonet Clock Gen.
Routing Engine 0	REV 07	740-026941	P737F-002933	RE-DUO-1800
ad0	3823 MB	SMART CF	201103030490604E604E	Compact Flash
ad1	62720 MB	SMART Lite SATA Drive	20110729028B11D411D4	Disk 1
Routing Engine 1	REV 06	740-026941	P737F-002749	RE-DUO-1800
ad0	3823 MB	SMART CF	2011010504EB99649964	Compact Flash
ad1	62720 MB	SMART Lite SATA Drive	201102140058934A934A	Disk 1
CB 0	REV 11	710-022597	EH3611	LCC Control Board
CB 1	REV 11	710-022597	EH4798	LCC Control Board
FPC 5	REV 17	710-013037	BBAC5333	FPC Type 4-ES
CPU	REV 10	710-016744	BBAB7619	ST-PMB2
PIC 0	REV 18	750-017405	BBAE3420	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 03	740-014289	T10C90659	XFP-10G-SR
MMB 0	REV 05	710-025563	BBAB9538	ST-MMB2
MMB 1	REV 05	710-025563	BBAB9502	ST-MMB2
FPC 7	REV 01	750-045173	BBAV0032	FPC Type 5-3D
CPU				
SPMB 0	REV 05	710-023321	EG9434	LCC Switch CPU
SPMB 1	REV 05	710-023321	EH3878	LCC Switch CPU
SIB 0	REV 01	750-041657	EH7997	LCC SIB 3D
B Board	REV 01	711-042424	EH7674	LCC SIB 3D Mezz

Xcvr 0	REV 01	740-047547	XB48FB014	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB05A	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB052	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB01B	CXP Module
SIB 1	REV 01	750-041657	EH8023	LCC SIB 3D
B Board	REV 01	711-042424	EH7659	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB05J	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB01E	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB01J	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB02S	CXP Module
SIB 2	REV 03	750-041657	EJ6554	LCC SIB 3D
B Board	REV 02	711-042424	EJ5756	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB34FB01Z	CXP Module
Xcvr 2	REV 01	740-047547	XB34FB013	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB04Z	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB05N	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 4

lcc2-re0:

-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11B3975AHA	T1600
Midplane	REV 01	710-027486	RC9826	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAG5124	T640 FPM Board
FPM Display	REV 03	710-021387	BBAJ1112	T1600 FPM Display
CIP	REV 06	710-002895	BBAL3744	T-series CIP
PEM 0	REV 05	740-036442	1G022060081	Power Entry Module 6x60
PEM 1	REV 05	740-036442	1G022060188	Power Entry Module 6x60
SCG 0	REV 18	710-003423	BBAH8775	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAL7272	T640 Sonet Clock Gen.
Routing Engine 0	REV 07	740-026941	P737F-002992	RE-DUO-1800
ad0 3823 MB	SMART CF		201103030356329E329E	Compact Flash
ad1 62720 MB	SMART Lite SATA Drive		2011051000488D8B8D8B	Disk 1
Routing Engine 1	REV 07	740-026941	P737F-002938	RE-DUO-1800
ad0 3823 MB	SMART CF		20110304000F02680268	Compact Flash
ad1 62720 MB	SMART Lite SATA Drive		201105300A70F325F325	Disk 1
CB 0	REV 11	710-022597	EH4805	LCC Control Board
CB 1	REV 11	710-022597	EH4786	LCC Control Board
FPC 1	REV 01	710-033873	BBAH0320	FPC Type 3-ES
CPU	REV 11	710-016744	BBAF3281	ST-PMB2
MMB 0	REV 06	710-025563	BBAF5061	ST-MMB2
FPC 5	REV 04	710-033871	BBAM5070	FPC Type 4-ES
CPU	REV 11	710-016744	BBAM6653	ST-PMB2
PIC 1	REV 20	750-017405	BBAM1296	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 03	740-014289	T10B42981	XFP-10G-SR
MMB 0	REV 07	710-025563	BBAN2631	ST-MMB2
MMB 1	REV 07	710-025563	BBAN2538	ST-MMB2
SPMB 0	REV 05	710-023321	EH3903	LCC Switch CPU
SPMB 1	REV 05	710-023321	EH3902	LCC Switch CPU
SIB 0	REV 01	750-041657	EH8019	LCC SIB 3D
B Board	REV 01	711-042424	EH7680	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB04F	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB04S	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB04B	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB043	CXP Module
SIB 1	REV 01	750-041657	EH8012	LCC SIB 3D
B Board	REV 01	711-042424	EH7658	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB05E	CXP Module

Xcvr 2	REV 01	740-047547	XB48FB01Z	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB018	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB054	CXP Module
SIB 2	REV 01	750-041657	EH7993	LCC SIB 3D
B Board	REV 01	711-042424	EH7678	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB05C	CXP Module
Xcvr 2	REV 01	740-047547	XB47FB00N	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB05U	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB05L	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 4

### show chassis hardware lcc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis hardware lcc 0
lcc0-re0:
```

#### Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11B23FEAHA	T1600
Midplane	REV 01	710-027486	RC9787	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAG5132	T640 FPM Board
FPM Display	REV 04	710-021387	BBAL9612	T1600 FPM Display
CIP	REV 06	710-002895	BBAN0605	T-series CIP
PEM 0	REV 05	740-036442	1G022060143	Power Entry Module 6x60
PEM 1	REV 05	740-036442	1G022060011	Power Entry Module 6x60
SCG 0	REV 18	710-003423	BBAL7318	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAL7255	T640 Sonet Clock Gen.
Routing Engine 0	REV 07	740-026941	P737F-002933	RE-DUO-1800
Routing Engine 1	REV 06	740-026941	P737F-002749	RE-DUO-1800
CB 0	REV 11	710-022597	EH3611	LCC Control Board
CB 1	REV 11	710-022597	EH4798	LCC Control Board
FPC 5	REV 17	710-013037	BBAC5333	FPC Type 4-ES
CPU	REV 10	710-016744	BBAB7619	ST-PMB2
PIC 0	REV 18	750-017405	BBAE3420	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 03	740-014289	T10C90659	XFP-10G-SR
MMB 0	REV 05	710-025563	BBAB9538	ST-MMB2
MMB 1	REV 05	710-025563	BBAB9502	ST-MMB2
FPC 7	REV 01	750-045173	BBAV0032	FPC Type 5-3D
CPU				
SPMB 0	REV 05	710-023321	EG9434	LCC Switch CPU
SPMB 1	REV 05	710-023321	EH3878	LCC Switch CPU
SIB 0	REV 01	750-041657	EH7997	LCC SIB 3D
B Board	REV 01	711-042424	EH7674	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB014	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB05A	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB052	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB01B	CXP Module
SIB 1	REV 01	750-041657	EH8023	LCC SIB 3D
B Board	REV 01	711-042424	EH7659	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB05J	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB01E	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB01J	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB02S	CXP Module
SIB 2	REV 03	750-041657	EJ6554	LCC SIB 3D
B Board	REV 02	711-042424	EJ5756	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB34FB01Z	CXP Module
Xcvr 2	REV 01	740-047547	XB34FB013	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB04Z	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB05N	CXP Module

Fan Tray 0  
Fan Tray 1  
Fan Tray 2

Front Top Fan Tray  
Front Bottom Fan Tray  
Rear Fan Tray -- Rev 4

### show chassis hardware sfc (TX Matrix Plus Router with 3D SIBs)

user@host> show chassis hardware sfc 0

sfc0-re0:

-----  
Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11CAAA4AHB	TXP
Midplane	REV 05	710-022574	ABAC4696	SFC Midplane
FPM Display	REV 09	710-024027	EH3138	TXP FPM Display
CIP 0	REV 12	710-023792	EF6349	TXP CIP
CIP 1	REV 12	710-023792	EG5294	TXP CIP
PEM 0	Rev 06	740-027463	XH04595	Power Entry Module
PEM 1	Rev 06	740-027463	XH04592	Power Entry Module
Routing Engine 0	REV 07	740-026942	P737A-002541	RE-DUO-2600
Routing Engine 1	REV 07	740-026942	P737A-002602	RE-DUO-2600
CB 0	REV 15	710-022606	EH4376	SFC Control Board
CB 1	REV 15	710-022606	EH4379	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 10	750-035002	EM9305	F13 SIB 3D
B Board	REV 06	711-035082	EM9667	F13 SIB 3D Mezz
P Board	REV 05	711-043544	EM9708	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB34FB00S	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB01H	CXP Module
Xcvr 4	REV 01	740-047547	XB34FB02W	CXP Module
Xcvr 6	REV 01	740-047547	XB34FB01T	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB00W	CXP Module
Xcvr 10	REV 01	740-047547	XB34FB01S	CXP Module
Xcvr 12	REV 01	740-047547	XB34FB03H	CXP Module
Xcvr 14	REV 01	740-047547	XB34FB023	CXP Module
SIB F13 3	REV 01	710-035001	EJ2612	F13 SIB 3D
B Board	REV 01	711-035082	EJ3815	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2678	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB04C	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB00Z	CXP Module
Xcvr 4	REV 01	740-047547	XB47FB036	CXP Module
Xcvr 6	REV 01	740-047547	XB47FB029	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02N	CXP Module
Xcvr 10	REV 01	740-047547	XB42FB0CS	CXP Module
Xcvr 12	REV 01	740-047547	XB47FB01X	CXP Module
Xcvr 14	REV 01	740-047547	XB48FB02F	CXP Module
SIB F13 6	REV 05	750-035002	EK2675	F13 SIB 3D
B Board	REV 03	711-035082	EK2612	F13 SIB 3D Mezz
P Board	REV 04	711-043544	EK1179	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB01T	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB02M	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB031	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB04P	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02T	CXP Module
Xcvr 10	REV 01	740-047547	XB34FB01V	CXP Module
Xcvr 12	REV 01	740-047547	XB48FB02C	CXP Module
Xcvr 14		NON-JNPR		No Module
SIB F13 12	REV 01	710-035001	EJ2631	F13 SIB 3D
B Board	REV 01	711-035082	EJ3808	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2676	F13 SIB 3D Power
SIB F2S 0/0	REV 01	711-034977	EH9829	F2S SIB 3D



B Board	REV 01	711-034979	EH9927	F2S SIB 3D Mezz
SIB F2S 0/2	REV 01	711-034977	EH9791	F2S SIB 3D
B Board	REV 01	711-034979	EH9852	F2S SIB 3D Mezz
SIB F2S 0/4	REV 01	711-034977	EH9803	F2S SIB 3D
B Board	REV 01	711-034979	EH9915	F2S SIB 3D Mezz
SIB F2S 0/6	REV 01	711-034977	EH9763	F2S SIB 3D
B Board	REV 01	711-034979	EH9880	F2S SIB 3D Mezz
SIB F2S 1/0	REV 01	711-034977	EH9757	F2S SIB 3D
B Board	REV 01	711-034979	EH9889	F2S SIB 3D Mezz
SIB F2S 1/2	REV 01	711-034977	EH9815	F2S SIB 3D
B Board	REV 01	711-034979	EH9890	F2S SIB 3D Mezz
SIB F2S 1/4	REV 08	750-034978	EN1954	F2S SIB 3D
B Board	REV 02	711-034979	EN1436	F2S SIB 3D Mezz
SIB F2S 1/6	REV 01	711-034977	EJ7054	F2S SIB 3D
B Board	REV 01	711-034979	EJ8238	F2S SIB 3D Mezz
SIB F2S 2/0	REV 01	711-034977	EH9830	F2S SIB 3D
B Board	REV 01	711-034979	EH9844	F2S SIB 3D Mezz
SIB F2S 2/2	REV 01	711-034977	EH9818	F2S SIB 3D
B Board	REV 01	711-034979	EH9888	F2S SIB 3D Mezz
SIB F2S 2/4	REV 01	711-034977	EH9795	F2S SIB 3D
B Board	REV 01	711-034979	EH9869	F2S SIB 3D Mezz
SIB F2S 2/6	REV 01	711-034977	EJ7026	F2S SIB 3D
B Board	REV 01	711-034979	EJ8273	F2S SIB 3D Mezz
SIB F2S 3/0	REV 01	711-034977	EH9811	F2S SIB 3D
B Board	REV 01	711-034979	EH9892	F2S SIB 3D Mezz
SIB F2S 3/2	REV 01	711-034977	EH9812	F2S SIB 3D
B Board	REV 01	711-034979	EH9877	F2S SIB 3D Mezz
SIB F2S 3/4	REV 08	750-034978	EN1947	F2S SIB 3D
B Board	REV 02	711-034979	EN1471	F2S SIB 3D Mezz
Fan Tray 0	REV 10	760-024497	EH3313	Front Fan Tray
Fan Tray 1	REV 10	760-024497	EH3290	Front Fan Tray
Fan Tray 2	REV 10	760-024502	EH3292	Rear Fan Tray
Fan Tray 3	REV 10	760-024502	EH3287	Rear Fan Tray
Fan Tray 4	REV 10	760-024502	EH3286	Rear Fan Tray
Fan Tray 5	REV 10	760-024502	EH3285	Rear Fan Tray

### show chassis hardware (16-Port 10-Gigabit Ethernet MPC with SFP+ Optics [MX Series Routers])

```
user@host> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN112D865AFA	MX960
Midplane	REV 03	710-013698	TS3339	MX960 Backplane
FPM Board	REV 03	710-014974	WW6267	Front Panel Display
PDM	Rev 03	740-013110	QCS12485026	Power Distribution
Module				
PEM 0	Rev 04	740-013682	QCS12434086	PS 1.7kw; 200-240VAC
in				
PEM 1	Rev 04	740-013682	QCS1243408Z	PS 1.7kw; 200-240VAC
in				
PEM 2	Rev 04	740-013682	QCS1243407X	PS 1.7kw; 200-240VAC
in				
Routing Engine 0	REV 07	740-015113	9009009677	RE-S-1300
Routing Engine 1	REV 07	740-015113	9009011510	RE-S-1300
CB 0	REV 03	710-021523	XF0394	MX SCB
CB 1	REV 03	710-021523	XF0550	MX SCB
CB 2	REV 03	710-021523	XD7455	MX SCB
FPC 4	REV 02	750-028467	JR6127	MPC M 16x 10GE
CPU	REV 02	711-029089	JX0129	AS PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+

PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Fan Tray 0	REV 05	740-014971	TP9990	Fan Tray
Fan Tray 1	REV 05	740-014971	VS1709	Fan Tray

**show chassis hardware (MPC3E [MX Series Routers])**

user@host&gt; show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1101AFEAFB	MX480
Midplane	REV 05	710-017414	TR4444	MX480 Midplane
FPM Board	REV 02	710-017254	KG6056	Front Panel Display
PEM 0	Rev 03	740-017330	QCS082090FC	PS 1.2-1.7kW; 100-240V
PEM 1	Rev 03	740-017330	QCS082090FD	PS 1.2-1.7kW; 100-240V
Routing Engine 0	REV 07	740-013063	9009004124	RE-S-2000
Routing Engine 1	REV 07	740-013063	9009005569	RE-S-2000
CB 0	REV 07	710-021523	XZ3587	MX SCB
CB 1	REV 03	710-021523	KH8306	MX SCB
FPC 1	REV 04.1.07	750-033205	P1240	MPC Type 3
CPU	REV 01	711-035209	YL0504	HMPC PMB 2G
MIC 1	REV 10	750-033199	YX4495	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	C22CQNE	CFP-100G-LR4
FPC 2	REV 26	750-016670	KH0045	DPCE 40x 1GE R EQ
CPU	REV 07	710-013713	KF5448	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PF21JHU	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 9	REV 01	740-011613	AM0813S8ZL6	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 02	740-011613	PGL2KYF	SFP-SX
Xcvr 2	REV 01	740-011613	AM0806S8N4P	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 5	REV 01	740-011613	AM0815S967N	SFP-SX
Xcvr 7	REV 01	740-011613	AM0806S8N1X	SFP-SX
Xcvr 8	REV 01	740-011613	AM0815S967J	SFP-SX
Xcvr 9	REV 01	740-011613	AM0815S967M	SFP-SX
FPC 3	REV 12.2.09	750-033205	YR9443	MPC Type 3
CPU	REV 03	711-035209	YL6931	HMPC PMB 2G
MIC 0	REV 05	750-033199	YR3269	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	ULH0KG3	CFP-100G-LR4
MIC 1	REV 02	750-033199	YG3245	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	ULH0KGF	CFP-100G-LR4
FPC 4	REV 12.3.09	750-033205	YR9437	MPC Type 3
CPU	REV 03	711-035209	YT5857	HMPC PMB 2G
MIC 0	REV 05	750-033199	YR3295	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12000187	CFP-100G-SR10
MIC 1	REV 10	750-033199	YX4518	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00008	CFP-100G-SR10
FPC 5	REV 06	750-024884	JW9769	MPC Type 2 3D EQ
CPU	REV 02	711-028401	JR6158	MPC PMB 2G Proto
MIC 0	REV 05	750-028387	JR6197	3D 4x 10GE XFP

PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M71112	XFP-10G-SR
Xcvr 1	REV 02	740-014289	T08L85610	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
MIC 1	REV 22	750-028392	YM0053	3D 20x 1GE(LAN) SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011613	AM0703S005B	SFP-SX
Xcvr 1	REV 01	740-011613	E07L01352	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 5	REV 01	740-013111	6500217	SFP-T
Xcvr 9	REV 02	740-013111	8499527	SFP-T
Fan Tray				Left Fan Tray

The PIC number for MIC 1 always starts from 2 (even if the first MIC is a 1X100GE CFP or a legacy MIC).

### show chassis hardware (QFX3500 Switches)

```
user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               QFX3500
Routing Engine 0          BUILTIN    BUILTIN        QFX Routing Engine
FPC 0              REV 04    750-044071    BBAR3902      QFX3500-48S4Q-AFI
CPU                BUILTIN    BUILTIN        FPC CPU
PIC 0              BUILTIN    BUILTIN        48x 10G-SFP+
PIC 1              BUILTIN    BUILTIN        15x 10G-SFP+
MGMT BRD           REV 02    750-044063    BBAR0398      QFX3500-MGMT-SFP-AFO
Xcvr 0             REV 01    740-011614    AC0946S0BD1   SFP-LX10
Xcvr 1             REV 02    740-013111    A281922       SFP-T
Power Supply 0       Rev 04    740-032091    UI00677       JPSU-650W-AC-AFI
Power Supply 1       REV 00    740-041741    VJ00162       JPSU-650W-AC-AFO
Fan Tray 0                               QFX Fan Tray, Back to
Front Airlfow
Fan Tray 1                               QFX Fan Tray, Back to
Front Airlfow
Fan Tray 2                               QFX Fan Tray, Back to
Front Airlfow
```

### show chassis hardware detail (QFX3500 Switches)

```
user@switch> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               QFX3500
Routing Engine 0          BUILTIN    BUILTIN        QFX Routing Engine
FPC 0              REV 05    750-036931    EE0823        QFX3500-48S4Q-AFI

CPU                BUILTIN    BUILTIN        FPC CPU
PIC 0              BUILTIN    BUILTIN        48x 10G-SFP+
Xcvr 0             REV 01    740-030589    S99E270079    SFP+-10G-LPBK
Xcvr 1             REV 01    740-030589    S9AK450099    SFP+-10G-LPBK
Xcvr 2             REV 01    740-030589    S99E270078    SFP+-10G-LPBK
Xcvr 3             REV 01    740-030589    S9AK450098    SFP+-10G-LPBK
Xcvr 4             REV 01    740-030589    S99E270075    SFP+-10G-LPBK
Xcvr 5             REV 01    740-030589    S9AK450093    SFP+-10G-LPBK
Xcvr 6             REV 01    740-030589    S9AK450097    SFP+-10G-LPBK
Xcvr 7             REV 01    740-030589    S9AK450095    SFP+-10G-LPBK
```

Xcvr 8	REV 01	740-030589	S99E270072	SFP+-10G-LPBK
Xcvr 9	REV 01	740-030589	S99E270073	SFP+-10G-LPBK
Xcvr 10	REV 01	740-030589	S99E270080	SFP+-10G-LPBK
Xcvr 11	REV 01	740-030589	S9AK450169	SFP+-10G-LPBK
Xcvr 12	REV 01	740-030589	S99E270076	SFP+-10G-LPBK
Xcvr 13	REV 01	740-030589	S9AK450167	SFP+-10G-LPBK
Xcvr 14	REV 01	740-030589	S9AK450170	SFP+-10G-LPBK
Xcvr 15	REV 01	740-030589	S9AK450166	SFP+-10G-LPBK
Xcvr 16	REV 01	740-030589	S9AK450092	SFP+-10G-LPBK
Xcvr 17	REV 01	740-030589	S9AK450163	SFP+-10G-LPBK
Xcvr 18	REV 01	740-030589	S9AK450094	SFP+-10G-LPBK
Xcvr 19	REV 01	740-030589	S9AK450100	SFP+-10G-LPBK
Xcvr 20	REV 01	740-030589	S9AK450168	SFP+-10G-LPBK
Xcvr 21	REV 01	740-030589	S9AK450165	SFP+-10G-LPBK
Xcvr 22	REV 01	740-030589	S9AK450073	SFP+-10G-LPBK
Xcvr 23	REV 01	740-030589	S9AK450164	SFP+-10G-LPBK
Xcvr 24	REV 01	740-030589	S9AK450074	SFP+-10G-LPBK
Xcvr 25	REV 01	740-030589	SA62270195	SFP+-10G-LPBK
Xcvr 26	REV 01	740-030589	S9AK450078	SFP+-10G-LPBK
Xcvr 27	REV 01	740-030589	S9AK450024	SFP+-10G-LPBK
Xcvr 28	REV 01	740-030589	S9AK450027	SFP+-10G-LPBK
Xcvr 29	REV 01	740-030589	S9AK450080	SFP+-10G-LPBK
Xcvr 30	REV 01	740-030589	S9AK450030	SFP+-10G-LPBK
Xcvr 31	REV 01	740-030589	S9AK450025	SFP+-10G-LPBK
Xcvr 32	REV 01	740-030589	S9AK450023	SFP+-10G-LPBK
Xcvr 33	REV 01	740-030589	S9AK450075	SFP+-10G-LPBK
Xcvr 34	REV 01	740-030589	S9AK450161	SFP+-10G-LPBK
Xcvr 35	REV 01	740-030589	S9AK450071	SFP+-10G-LPBK
Xcvr 36	REV 01	740-030589	S9AK450072	SFP+-10G-LPBK
Xcvr 37	REV 01	740-030589	S9AK450022	SFP+-10G-LPBK
Xcvr 38	REV 01	740-030589	S9AK450021	SFP+-10G-LPBK
Xcvr 39	REV 01	740-030589	S9AK450175	SFP+-10G-LPBK
Xcvr 40	REV 01	740-030589	S9AK450162	SFP+-10G-LPBK
Xcvr 41	REV 01	740-030589	S99E270074	SFP+-10G-LPBK
Xcvr 42	REV 01	740-030589	S9AK450174	SFP+-10G-LPBK
Xcvr 43	REV 01	740-030589	S9AK450077	SFP+-10G-LPBK
Xcvr 44	REV 01	740-030589	S9AK450076	SFP+-10G-LPBK
Xcvr 45	REV 01	740-030589	S9AK450026	SFP+-10G-LPBK
Xcvr 46	REV 01	740-030589	S9AK450079	SFP+-10G-LPBK
Xcvr 47	REV 01	740-030589	S9AK450029	SFP+-10G-LPBK
PIC 1		BUILTIN	BUILTIN	15x 10G-SFP+
Xcvr 1	REV 01	740-032986	QA170087	QSFP+-40G-SR4
Xcvr 4	REV 01	740-032986	QA360442	QSFP+-40G-SR4
Xcvr 8	REV 01	740-032986	QA170091	QSFP+-40G-SR4
Xcvr 12	REV 01	740-032986	QA170042	QSFP+-40G-SR4
MGMT BRD	REV 08	750-036946	EE0731	QFX3500-MB
Power Supply 0	Rev 04	740-032091	UI00690	QFX PS 650W AC
Power Supply 1	Rev 04	740-032091	UI00679	QFX PS 650W AC
Fan Tray 0				QFX Fan Tray
Fan Tray 1				QFX Fan Tray

### show chassis hardware models (QFX3500 Switches)

```

user@switch> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Routing Engine 0
FPC 0         REV 02    711-032234   EC4074
Power Supply 0 PSMI 2C    11-d65800   --

```

**show chassis hardware clei-models (QFX3500 Switches)**

```

user@switch> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Routing Engine 0
FPC 0         REV 02    711-032234
Power Supply 0  PSMI 2C  11-d65800

```

**show chassis hardware clei-models (QFX5100 Switches)**

```

user@switch> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Routing Engine 0
FPC 0         REV 01    611-053010  CMMNV10BRA
PIC 0         BUILTIN
Power Supply 0  REV 03    740-053352  MUPABHBAA      JPSU-850W-AC-AFO
Power Supply 1  REV 03    740-053352  MUPABHBAA      JPSU-850W-AC-AFO
Fan Tray 0
Fan Tray 1
Fan Tray 2
QFX5100-96S-FANAFO
QFX5100-96S-FANAFO
QFX5100-96S-FANAFO

```

**show chassis hardware (QFX10002 Switches)**

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
FPC 0         REV 26    750-059497  ACNL1387      QFX10002-36Q
CPU
PIC 0         BUILTIN
Xcvr 0        REV 01    740-038623  MOC15476230389  QSFP+-40G-CU1M
Xcvr 1        REV 01    740-038623  MOC15476230438  QSFP+-40G-CU1M
Xcvr 2        REV 01    740-038623  MOC15446231917  QSFP+-40G-CU1M
Xcvr 3        REV 01    740-038623  MOC15446232043  QSFP+-40G-CU1M
Xcvr 4        REV      740-038624  APF15470032AVB  QSFP+-40G-CU3M
Xcvr 5        REV      740-038624  APF15470032H15  QSFP+-40G-CU3M
Xcvr 6        REV      740-038624  APF15470032A9J  QSFP+-40G-CU3M
Xcvr 7        REV      740-038624  APF15470032AG7  QSFP+-40G-CU3M
Xcvr 8        REV      740-038624  APF15470032ALD  QSFP+-40G-CU3M
Xcvr 9        REV 01    740-053203  APF15470071V43  QSFP+-40G-ACU7M
Xcvr 10       REV 01    740-053203  APF15470071V15  QSFP+-40G-ACU7M
Xcvr 11       REV 01    740-053203  APF15470071V12  QSFP+-40G-ACU7M
Xcvr 13       REV      740-038624  APF15470032H1N  QSFP+-40G-CU3M
Xcvr 18       REV 01    740-053203  APF154800738HW  QSFP+-40G-ACU7M
Xcvr 19       REV 01    740-038153  MOC12161530041  QSFP+-40G-CU3M
Xcvr 20       REV 01    740-038153  APF15500034A29  QSFP+-40G-CU3M
Xcvr 30       REV 01    740-038623  MOC15476230444  QSFP+-40G-CU1M
Xcvr 31       REV 01    740-032986  QC330038        QSFP+-40G-SR4
Xcvr 32       REV 01    740-032986  QC290540        QSFP+-40G-SR4
Mezz          REV 02    711-059316  ACNG9344        QFX10002 36X40G Mezz
Power Supply 0  REV 03    740-054405  1EDN5389293     AC AFO 1600W PSU
Power Supply 1  REV 03    740-054405  1EDN5346300     AC AFO 1600W PSU
Fan Tray 0
Front to Back Airflow - AFO
Fan Tray 1
QFX10002 Fan Tray 0,
QFX10002 Fan Tray 1,

```

```

Front to Back Airflow - AFO
Fan Tray 2
Front to Back Airflow - AFO
QFX10002 Fan Tray 2,

```

### show chassis hardware detail (QFX10002 Switches)

```

user@switch> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               12345         QFX10002-72Q
Pseudo CB 0
Routing Engine 0      BUILTIN    BUILTIN        RE-QFX10002-72Q
ada0   8193 MB  QEMU                QM000001      Virtio Block Disk
ada1   4096 MB  QEMU                QM000002      Virtio Block Disk
ada2   512 MB   QEMU                QM000003      Virtio Block Disk
ada3   1024 MB  QEMU                QM000004      Virtio Block Disk
usb0 (addr 0.1)  UHCI root HUB 0  Intel          uhub0
usb0 (addr 1.1)  EHCI root HUB 0  Intel          uhub1
usb0 (addr 1.2)  product 0x0020 32 vendor 0x8087  uhub2
usb0 (addr 1.3)  Ultra Fit 21891  SanDisk        umass0
FPC 0          REV 05   750-055415  ACAM4724      QFX10002-72Q
CPU            BUILTIN    BUILTIN        FPC CPU

```

### show chassis hardware (QFX10008 and QFX10016 Switches)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DE994         QFX10008
Midplane      REV 28   750-054097  ACPG3671      QFX10008 Midplane
Routing Engine 0      BUILTIN    BUILTIN        Routing Engine
Routing Engine 1      BUILTIN    BUILTIN        Routing Engine
CB 0          REV 03   750-068820  ACPA3224      Control Board
CB 1          REV 03   750-068820  ACPM9059      Control Board
FPC 0          REV 33   750-051354  ACNP4522      ULC-36Q-12Q28
CPU            BUILTIN    BUILTIN        FPC CPU
PIC 0          BUILTIN    BUILTIN        36X40G
Xcvr 0        REV 01   740-038623  MOC16016230802  QSFP+-40G-CU1M
Xcvr 1        REV 01   740-038623  MOC16016230802  QSFP+-40G-CU1M
Xcvr 2        REV 01   740-038623  MOC16016231080  QSFP+-40G-CU1M
Xcvr 3        REV 01   740-038623  MOC16016231080  QSFP+-40G-CU1M
Xcvr 4        REV     740-038624  APF16220038H15  QSFP+-40G-CU3M
Xcvr 5        REV     740-038624  APF16220038H5M  QSFP+-40G-CU3M
Xcvr 6        REV     740-038624  APF160600308W8  QSFP+-40G-CU3M
Xcvr 8        REV     740-038624  APF16210038FFL  QSFP+-40G-CU3M
Xcvr 9        REV     740-038624  APF16210038F6F  QSFP+-40G-CU3M
Xcvr 10       REV     740-038624  APF1605003032B  QSFP+-40G-CU3M
Xcvr 11       REV     740-038624  APF16070030CDB  QSFP+-40G-CU3M
Xcvr 13       REV     740-038624  APF16210038FEW  QSFP+-40G-CU3M
Xcvr 15       REV 01   740-052307  APF16100071C1L  QSFP+-40G-ACU7M
Xcvr 16       REV     740-038625  APF1623005048E  QSFP+-40G-CU5M
Xcvr 17       REV     740-038625  APF16230050471  QSFP+-40G-CU5M
Xcvr 18       REV     740-038625  APF1623005044D  QSFP+-40G-CU5M
Xcvr 19       REV 01   740-052307  APF16100071C30  QSFP+-40G-ACU7M
Xcvr 20       REV     740-038625  APF16290055004  QSFP+-40G-CU5M
Xcvr 21       REV 01   740-038153  APF1622003970G  QSFP+-40G-CU3M
Xcvr 22       REV     740-038624  APF16190036R90  QSFP+-40G-CU3M
Xcvr 23       REV     740-038624  APF16050030374  QSFP+-40G-CU3M
Xcvr 24       REV 01   740-038153  APF162400318HC  QSFP+-40G-CU3M

```

Xcvr 30	REV	740-038624	APF1606003097A	QSFP+-40G-CU3M
Xcvr 31	REV 01	740-052307	APF160500702R9	QSFP+-40G-ACU7M
Xcvr 32	REV	740-038624	APF16220038GVR	QSFP+-40G-CU3M
FPD Board	REV 07	711-054687	ACPC7158	QFX10000 FPD
Power Supply 0	REV 02	740-049388	1EDL63104D6	QFX10000 AC
Power Supply 1	REV 02	740-049388	1EDL62503XC	QFX10000 AC
Power Supply 2	REV 02	740-049388	1EDL62503XS	QFX10000 AC
Power Supply 3	REV 02	740-049388	1EDL62503T8	QFX10000 AC
Power Supply 4	REV 02	740-049388	1EDL62503TR	QFX10000 AC
Power Supply 5	REV 02	740-049388	1EDL62503T5	QFX10000 AC
FTC 0	REV 15	750-050108	ACPF4227	QFX10000 FTC
FTC 1	REV 15	750-050108	ACPF4228	QFX10000 FTC
Fan Tray 0	REV 09	760-054372	ACNV5506	QFX10008 FHB
Fan Tray 1	REV 09	760-054372	ACNV5365	QFX10008 FHB
SIB 0	REV 27	750-050058	ACPM4212	QFX10008 SIB
SIB 1	REV 27	750-050058	ACPM4253	QFX10008 SIB
SIB 2	REV 27	750-050058	ACPM4174	QFX10008 SIB
SIB 3	REV 27	750-050058	ACPM4191	QFX10008 SIB
SIB 4	REV 27	750-050058	ACPM4216	QFX10008 SIB
SIB 5	REV 27	750-050058	ACPM4286	QFX10008 SIB

#### show chassis hardware detail (QFX10008 and QFX10016 Switches)

```

user@switch> show chassis hardware details
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               12345         QFX10008
Midplane          REV 01    750-054097   ACAM1754       QFX10008 Midplane
Routing Engine 0  BUILTIN  BUILTIN      Routing Engine
ada0  8193 MB  QEMU          QM00001       Virtio Block Disk
ada1  4096 MB  QEMU          QM00002       Virtio Block Disk
ada2  512 MB   QEMU          QM00003       Virtio Block Disk
ada3  1024 MB  QEMU          QM00004       Virtio Block Disk
usb0 (addr 1)    UHCI root HUB 0   Intel        uhub0
usb0 (addr 1)    EHCI root HUB 0   Intel        uhub1
usb0 (addr 2)    product 0x0020 32 vendor 0x8087  uhub2
Routing Engine 1  BUILTIN  BUILTIN      Routing Engine
ada0  8193 MB  QEMU          QM00001       Virtio Block Disk
ada1  4096 MB  QEMU          QM00002       Virtio Block Disk
ada2  512 MB   QEMU          QM00003       Virtio Block Disk
ada3  1024 MB  QEMU          QM00004       Virtio Block Disk
usb0 (addr 0.1)  UHCI root HUB 0   Intel        uhub0
usb0 (addr 1.1)  EHCI root HUB 0   Intel        uhub1
usb0 (addr 1.2)  product 0x0020 32 vendor 0x8087  uhub2
CB 0              REV 16    750-052688   ACAM7936       Control Board
CB 1              REV 18    750-052688   ACAM7708       Control Board
FPC 0              REV 26    750-051351   ACPJ1372       ULC-60S-6Q Main Board
CPU              BUILTIN  BUILTIN      FPC CPU

```

#### show chassis hardware interconnect-device (QFabric Systems)

```

user@switch> show chassis hardware interconnect-device interconnect1
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis           REV 07                               QFX_olive
Midplane          REV 07    750-021261   BH0208188289  QFX Midplane
CB 0              REV 07    750-021261   BH0208188289  QFXIC08-CB4S

```

**show chassis hardware node-device (QFabric Systems)**

```

user@switch> show chassis hardware node-device node1
Routing Engine 0   BUILTIN   BUILTIN   QFX Routing Engine
node1             REV 05   711-032234 ED3694     QFX3500-48S4Q-AFI

CPU
PIC 0
Xcvr 8           REV 01   740-030658 AD0946A028B
FPC CPU
48x 10G-SFP+
SFP+-10G-USR
...

```

**show chassis hardware (PTX5000 Packet Transport Router)**

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1D1FD7AJA    PTX5000
Midplane      REV 03   711-031896   ABAC5589      Midplane-8S
FPM           REV 08   760-030647   EG1679        Front Panel Display
PDU 0         Rev 05   740-032019   ZE00006       DC Power Dist Unit
  PSM 0        Rev 05   740-032022   ZJ00018       DC 12V Power Supply
  PSM 1        Rev 04   740-032022   ZC00052       DC 12V Power Supply
  PSM 2        Rev 04   740-032022   ZD00051       DC 12V Power Supply
  PSM 3        Rev 05   740-032022   ZJ00060       DC 12V Power Supply
CCG 0         REV 04   750-030653   EG3703        Clock Generator
CCG 1         REV 04   750-030653   EG3698        Clock Generator
Routing Engine 0 REV 05   740-026942   P737A-002231  RE-DUO-2600
Routing Engine 1 REV 06   740-026942   P737A-002438  RE-DUO-2600
CB 0          REV 08   750-030625   EG5519        Control Board
CB 1          REV 08   750-030625   EG5516        Control Board
FPC 0         REV 18   750-036844   EJ3080        FPC
  CPU         REV 12   711-030686   EJ3260        SNG PMB
FPC 2         REV 13   750-036844   EG5065        FPC
  CPU         REV 09   711-030686   EG4082        SNG PMB
  PIC 0        REV 14   750-031913   EG5127        24x 10GE(LAN) SFP+
    Xcvr 0      REV 01   740-031980   143363A00240  SFP+-10G-SR
    Xcvr 1      REV 01   740-031981   UK90PZ1       SFP+-10G-LR
    Xcvr 2      REV 01   740-031980   AD1141A04XH   SFP+-10G-SR
    Xcvr 3      REV 01   740-031981   UK90Q46       SFP+-10G-LR
    Xcvr 4      REV 01   740-031980   AD1141A04X4   SFP+-10G-SR
    Xcvr 6      REV 01   740-031980   B11H02560     SFP+-10G-SR
    Xcvr 7      REV 01   740-031980   B11C01589     SFP+-10G-SR
    Xcvr 8      REV 01   740-031980   AD1141A04XF   SFP+-10G-SR
    Xcvr 10     REV 01   740-031980   123363A01094  SFP+-10G-SR
    Xcvr 11     REV 01   740-031980   AK80LKF       SFP+-10G-SR
    Xcvr 12     REV 01   740-031980   183363A01528  SFP+-10G-SR
    Xcvr 14     REV 01   740-031980   193363A01079  SFP+-10G-SR
    Xcvr 15     REV 01   740-031980   AK80MC8       SFP+-10G-SR
    Xcvr 16     REV 01   740-031980   AJC0BHC       SFP+-10G-SR
    Xcvr 19     REV 01   740-021309   J08D26856     SFP+-10G-LR
    Xcvr 21     REV 01   740-031980   AK80KCT       SFP+-10G-SR
    Xcvr 22     REV 01   740-031981   UK90PZL       SFP+-10G-LR
    Xcvr 23     REV 01   740-031980   AK80N1V       SFP+-10G-SR
FPC 3         REV 13   750-036844   EG5074        FPC
  CPU         REV 09   711-030686   EG4064        SNG PMB
  PIC 1        REV 10   750-031903   EG0325        SNG Load
FPC 5         REV 06   750-036844   EH3198        FPC
  CPU
  PIC 0        REV 14   750-031913   EG5134        24x 10GE(LAN) SFP+

```



Xcvr 0	REV 01	740-031980	AK80LBH	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11B03724	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FMH	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J00818	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00743	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11B06125	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B11H02529	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AK80LFB	SFP+-10G-SR
Xcvr 12	REV 01	740-031980	193363A01061	SFP+-10G-SR
Xcvr 15	REV 01	740-031980	B11J00687	SFP+-10G-SR
Xcvr 16	REV 01	740-031980	193363A00738	SFP+-10G-SR
Xcvr 18	REV 01	740-031980	AK80MQX	SFP+-10G-SR
Xcvr 19	REV 01	740-021309	J08C17257	SFP+-10G-LR
Xcvr 22	REV 01	740-031980	B11J00730	SFP+-10G-SR
Xcvr 23	REV 01	740-031980	AK80KEE	SFP+-10G-SR
PIC 1	REV 08	750-036710	EG3105	2x 40GE CFP
Xcvr 0	REV 01	740-034554	B260HLT	CFP-40G-LR4
Xcvr 1	REV 01	740-034554	B11C02847	CFP-40G-LR4
FPC 6	REV 18	750-036844	EJ4391	FPC
CPU	REV 12	711-030686	EJ3257	SNG PMB
FPC 7	REV 18	750-036844	EJ4382	FPC
CPU	REV 12	711-030686	EJ3238	SNG PMB
SPMB 0	REV 10	711-030686	EG5418	SNG PMB
SPMB 1	REV 09	711-030686	EG5373	SNG PMB
SIB 0	REV 07	750-030631	EG4858	SIB-I-8S
SIB 1	REV 07	750-030631	EG4872	SIB-I-8S
SIB 2	REV 07	750-030631	EG4866	SIB-I-8S
SIB 3	REV 07	750-030631	EG6011	SIB-I-8S
SIB 4	REV 07	750-030631	EG4907	SIB-I-8S
SIB 5	REV 07	750-030631	EG4879	SIB-I-8S
SIB 6	REV 07	750-030631	EG4864	SIB-I-8S
SIB 7	REV 07	750-030631	EG4899	SIB-I-8S
SIB 8	REV 07	750-030631	EG4880	SIB-I-8S
Fan Tray 0	REV 04	760-032784	EG1496	Vertical Fan Tray
Fan Tray 1	REV 04	760-030642	EG1335	Horizontal Fan Tray
Fan Tray 2	REV 02	760-030642	ED4952	Horizontal Fan Tray

### show chassis hardware (PTX5000 Packet Transport Router with AC PSM and PDU)

```
user@host> show chassis hardware
```

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			JN12223A6AJA	PTX5000
Midplane	REV 16	750-035893	ACRA1350	Midplane-8S
FPM	REV 12	760-030647	BBBD5625	Front Panel Display
PDU 0	Rev 01	740-048338	1GB83360005	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360074	High Capacity AC PSM
PSM 1	Rev 01	740-048334	1GB43360001	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360104	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360042	High Capacity AC PSM
PSM 4	Rev 01	740-048334	1GB43360068	High Capacity AC PSM
PSM 5	Rev 01	740-048334	1GB43360080	High Capacity AC PSM
PSM 6	Rev 01	740-048334	1GB43360046	High Capacity AC PSM
PSM 7	Rev 01	740-048334	1GB43360100	High Capacity AC PSM
PDU 1	Rev 01	740-048338	1GB83360006	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360069	High Capacity AC PSM
PSM 1	Rev 01	740-048334	1GB43360099	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360050	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360095	High Capacity AC PSM

```

PSM 4          Rev 01  740-048334  1GB43360101  High Capacity AC PSM
PSM 5          Rev 01  740-048334  1GB43360075  High Capacity AC PSM
PSM 6          Rev 01  740-048334  1GB43360047  High Capacity AC PSM
PSM 7          Rev 01  740-048334  1GB43360019  High Capacity AC PSM
CCG 0          REV 09  750-030653  BBAZ5345     Clock Generator
...

```

#### show chassis hardware (PTX5000 Packet Transport Router with FPC2-PTX-PIA)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1204FC0AJA  PTX5000
Midplane      REV 11   750-035893  ACAB8038      Midplane-8S
FPM           REV 12   760-030647  BBBD5619      Front Panel
Display
PDU 0         Rev 04   740-048336  1GB93470043   High Capacity DC PDU
  PSM 0        Rev 04   740-046988  1GB63500184   High Capacity DC PSM
  PSM 2        Rev 04   740-046988  1GB63500169   High Capacity DC PSM
  PSM 4        Rev 04   740-046988  1GB63500306   High Capacity DC PSM
  PSM 6        Rev 04   740-046988  1GB63500074   High Capacity DC PSM
PDU 1         Rev 04   740-048336  1GB93470045   High Capacity DC PDU
  PSM 1        Rev 04   740-046988  1GB63500193   High Capacity DC PSM
  PSM 3        Rev 04   740-046988  1GB63500143   High Capacity DC PSM
  PSM 5        Rev 04   740-046988  1GB63500146   High Capacity DC PSM
  PSM 7        Rev 04   740-046988  1GB63500192   High Capacity DC PSM
CCG 0         REV 09   750-030653  BBBC1909      Clock Generator
CCG 1         REV 09   750-030653  BBBD2970      Clock Generator
...

```

#### show chassis hardware clei-models (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
FPM           REV 08   760-030647  PROTOXCLEI     CRAFT-PTX5000-S
PDU 0         Rev 05   740-032019  IPUPAHLKAA     PWR-SAN-PDU-DC
  PSM 0        Rev 05   740-032022  IPUPAHNKAA     PSM-PTX-DC-120-S
  PSM 1        Rev 04   740-032022  032022XXXX     PWR-SAN-12-DC
  PSM 2        Rev 04   740-032022  032022XXXX     PWR-SAN-12-DC
  PSM 3        Rev 05   740-032022  IPUPAHNKAA     PSM-PTX-DC-120-S
CCG 0         REV 04   750-030653  PROTOXCLEI     CCG-PTX-S
CCG 1         REV 04   750-030653  PROTOXCLEI     CCG-PTX-S
Routing Engine 0 REV 05   740-026942                RE-DUO-C2600-16G-S
Routing Engine 1 REV 06   740-026942                RE-DUO-C2600-16G-S
CB 0          REV 08   750-030625  PROTOXCLEI     CB-PTX-S
CB 1          REV 08   750-030625  PROTOXCLEI     CB-PTX-S
FPC 0         REV 18   750-036844  PROTOXCLEI     FPC-PTX-P1-A
FPC 2         REV 13   750-036844  PROTOXCLEI     FPC-PTX-P1-A
  PIC 0        REV 14   750-031913  PROTOXCLEI     P1-PTX-24-10GE-SFPP
FPC 3         REV 13   750-036844  PROTOXCLEI     FPC-PTX-P1-A
FPC 5
  PIC 0        REV 14   750-031913  PROTOXCLEI     P1-PTX-24-10GE-SFPP
FPC 6         REV 18   750-036844  PROTOXCLEI     FPC-PTX-P1-A
FPC 7         REV 18   750-036844  PROTOXCLEI     FPC-PTX-P1-A
SIB 0         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 1         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 2         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 3         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 4         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008

```

SIB 5	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 6	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 7	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 8	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
Fan Tray 1	REV 04	760-030642	PROTOXCLEI	FAN-PTX-H-S

### show chassis hardware clei-models (PTX5000 Packet Transport Router with AC PSM and PDU)

```
user@host> show chassis hardware clei-models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 16	750-035893	IPMUN00ARA	CHAS-MP-PTX5000-S
FPM	REV 12	760-030647	IPUCA7SCAA	CRAFT-PTX5000-S
PDU 0	Rev 01	740-048338	PROTOACPDU	PDU2-PTX-AC-W
PSM 0	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 1	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 2	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 3	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 4	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 5	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 6	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 7	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PDU 1	Rev 01	740-048338	PROTOACPDU	PDU2-PTX-AC-W
PSM 0	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 1	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 2	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 3	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 4	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 5	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 6	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
PSM 7	Rev 01	740-048334	PROTOACPSM	PSM2-PTX-AC
CCG 0	REV 09	750-030653	IPUCA7DCAA	CCG-PTX-S
...				

### show chassis hardware clei-models (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis hardware clei-models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 11	750-035893	IPMUN00ARA	CHAS-MP-PTX5000-S
FPM	REV 12	760-030647	IPUCA7SCAA	CRAFT-PTX5000-S
PDU 0	Rev 04	740-048336	IPUPAL7KAA	PDU2-PTX-DC-S
PSM 0	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
PSM 2	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
PSM 4	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
PSM 6	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
PDU 1	Rev 04	740-048336	IPUPAL7KAA	PDU2-PTX-DC-S
PSM 1	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
PSM 3	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
PSM 5	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
PSM 7	Rev 04	740-046988	IPUPAL8KAA	PSM2-PTX-DC-S
CCG 0	REV 09	750-030653	IPUCA7DCAA	CCG-PTX-S
CCG 1	REV 09	750-030653	IPUCA7DCAA	CCG-PTX-S
...				

### show chassis hardware detail (PTX5000 Packet Transport Router)

```
user@host> show chassis hardware detail
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
------	---------	-------------	---------------	-------------

Chassis			JN11D1FD7AJA	PTX5000
Midplane	REV 03	711-031896	ABAC5589	Midplane-8S
FPM	REV 08	760-030647	EG1679	Front Panel Display
PDU 0	Rev 05	740-032019	ZE00006	DC Power Dist Unit
PSM 0	Rev 05	740-032022	ZJ00018	DC 12V Power Supply
PSM 1	Rev 04	740-032022	ZC00052	DC 12V Power Supply
PSM 2	Rev 04	740-032022	ZD00051	DC 12V Power Supply
PSM 3	Rev 05	740-032022	ZJ00060	DC 12V Power Supply
CCG 0	REV 04	750-030653	EG3703	Clock Generator
CCG 1	REV 04	750-030653	EG3698	Clock Generator
Routing Engine 0	REV 05	740-026942	P737A-002231	RE-DUO-2600
ad0	3823 MB SMART CF		201006190039C02DC02D	Compact Flash
ad1	62720 MB SMART Lite SATA Drive		2011042300CF4C6B4C6B	Disk 1
Routing Engine 1	REV 06	740-026942	P737A-002438	RE-DUO-2600
ad0	3823 MB SMART CF		20100619053455F055F0	Compact Flash
ad1	62720 MB SMART Lite SATA Drive		20110423000AE8E7E8E7	Disk 1
CB 0	REV 08	750-030625	EG5519	Control Board
CB 1	REV 08	750-030625	EG5516	Control Board
FPC 0	REV 18	750-036844	EJ3080	FPC
CPU	REV 12	711-030686	EJ3260	SNG PMB
FPC 2	REV 13	750-036844	EG5065	FPC
CPU	REV 09	711-030686	EG4082	SNG PMB
PIC 0	REV 14	750-031913	EG5127	24x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	143363A00240	SFP+-10G-SR
Xcvr 1	REV 01	740-031981	UK90PZ1	SFP+-10G-LR
Xcvr 2	REV 01	740-031980	AD1141A04XH	SFP+-10G-SR
Xcvr 3	REV 01	740-031981	UK90Q46	SFP+-10G-LR
Xcvr 4	REV 01	740-031980	AD1141A04X4	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11H02560	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11C01589	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AD1141A04XF	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	123363A01094	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AK80LKF	SFP+-10G-SR
Xcvr 12	REV 01	740-031980	183363A01528	SFP+-10G-SR
Xcvr 14	REV 01	740-031980	193363A01079	SFP+-10G-SR
Xcvr 15	REV 01	740-031980	AK80MC8	SFP+-10G-SR
Xcvr 16	REV 01	740-031980	AJCOBHC	SFP+-10G-SR
Xcvr 19	REV 01	740-021309	J08D26856	SFP+-10G-LR
Xcvr 21	REV 01	740-031980	AK80KCT	SFP+-10G-SR
Xcvr 22	REV 01	740-031981	UK90PZL	SFP+-10G-LR
Xcvr 23	REV 01	740-031980	AK80N1V	SFP+-10G-SR
FPC 3	REV 13	750-036844	EG5074	FPC
CPU	REV 09	711-030686	EG4064	SNG PMB
PIC 1	REV 10	750-031903	EG0325	SNG Load
FPC 5	REV 06	750-036844	EH3198	FPC
CPU				
PIC 0	REV 14	750-031913	EG5134	24x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LBH	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11B03724	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FMH	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J00818	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00743	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11B06125	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B11H02529	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AK80LFB	SFP+-10G-SR
Xcvr 12	REV 01	740-031980	193363A01061	SFP+-10G-SR
Xcvr 15	REV 01	740-031980	B11J00687	SFP+-10G-SR
Xcvr 16	REV 01	740-031980	193363A00738	SFP+-10G-SR
Xcvr 18	REV 01	740-031980	AK80MQX	SFP+-10G-SR
Xcvr 19	REV 01	740-021309	J08C17257	SFP+-10G-LR
Xcvr 22	REV 01	740-031980	B11J00730	SFP+-10G-SR

Xcvr 23	REV 01	740-031980	AK80KEE	SFP+-10G-SR
PIC 1	REV 08	750-036710	EG3105	2x 40GE CFP
Xcvr 0	REV 01	740-034554	B260HLT	CFP-40G-LR4
Xcvr 1	REV 01	740-034554	B11C02847	CFP-40G-LR4
FPC 6	REV 18	750-036844	EJ4391	FPC
CPU	REV 12	711-030686	EJ3257	SNG PMB
FPC 7	REV 18	750-036844	EJ4382	FPC
CPU	REV 12	711-030686	EJ3238	SNG PMB
SPMB 0	REV 10	711-030686	EG5418	SNG PMB
SPMB 1	REV 09	711-030686	EG5373	SNG PMB
SIB 0	REV 07	750-030631	EG4858	SIB-I-8S
SIB 1	REV 07	750-030631	EG4872	SIB-I-8S
SIB 2	REV 07	750-030631	EG4866	SIB-I-8S
SIB 3	REV 07	750-030631	EG6011	SIB-I-8S
SIB 4	REV 07	750-030631	EG4907	SIB-I-8S
SIB 5	REV 07	750-030631	EG4879	SIB-I-8S
SIB 6	REV 07	750-030631	EG4864	SIB-I-8S
SIB 7	REV 07	750-030631	EG4899	SIB-I-8S
SIB 8	REV 07	750-030631	EG4880	SIB-I-8S
Fan Tray 0	REV 04	760-032784	EG1496	Vertical Fan Tray
Fan Tray 1	REV 04	760-030642	EG1335	Horizontal Fan Tray
Fan Tray 2	REV 02	760-030642	ED4952	Horizontal Fan Tray

#### show chassis hardware detail (PTX5000 Packet Transport Router with AC PSM and PDU)

```
user@host> show chassis hardware detail
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN12223A6AJA	PTX5000
Midplane	REV 16	750-035893	ACRA1350	Midplane-8S
FPM	REV 12	760-030647	BBBD5625	Front Panel Display
PDU 0	Rev 01	740-048338	1GB83360005	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360074	High Capacity AC PSM
PSM 1	Rev 01	740-048334	1GB43360001	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360104	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360042	High Capacity AC PSM
PSM 4	Rev 01	740-048334	1GB43360068	High Capacity AC PSM
PSM 5	Rev 01	740-048334	1GB43360080	High Capacity AC PSM
PSM 6	Rev 01	740-048334	1GB43360046	High Capacity AC PSM
PSM 7	Rev 01	740-048334	1GB43360100	High Capacity AC PSM
PDU 1	Rev 01	740-048338	1GB83360006	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360069	High Capacity AC PSM
PSM 1	Rev 01	740-048334	1GB43360099	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360050	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360095	High Capacity AC PSM
PSM 4	Rev 01	740-048334	1GB43360101	High Capacity AC PSM
PSM 5	Rev 01	740-048334	1GB43360075	High Capacity AC PSM
PSM 6	Rev 01	740-048334	1GB43360047	High Capacity AC PSM
PSM 7	Rev 01	740-048334	1GB43360019	High Capacity AC PSM
CCG 0	REV 09	750-030653	BBAZ5345	Clock Generator

#### show chassis hardware detail (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis hardware detail
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1204FC0AJA	PTX5000
Midplane	REV 11	750-035893	ACAB8038	Midplane-8S

FPM	REV 12	760-030647	BBBD5619	Front Panel
Display				
PDU 0	Rev 04	740-048336	1GB93470043	High Capacity DC PDU
PSM 0	Rev 04	740-046988	1GB63500184	High Capacity DC PSM
PSM 2	Rev 04	740-046988	1GB63500169	High Capacity DC PSM
PSM 4	Rev 04	740-046988	1GB63500306	High Capacity DC PSM
PSM 6	Rev 04	740-046988	1GB63500074	High Capacity DC PSM
PDU 1	Rev 04	740-048336	1GB93470045	High Capacity DC PDU
PSM 1	Rev 04	740-046988	1GB63500193	High Capacity DC PSM
PSM 3	Rev 04	740-046988	1GB63500143	High Capacity DC PSM
PSM 5	Rev 04	740-046988	1GB63500146	High Capacity DC PSM
PSM 7	Rev 04	740-046988	1GB63500192	High Capacity DC PSM
CCG 0	REV 09	750-030653	BBBC1909	Clock Generator
CCG 1	REV 09	750-030653	BBBD2970	Clock Generator
...				

### show chassis hardware models (PTX5000 Packet Transport Router)

```
user@host> show chassis hardware models
```

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
FPM	REV 08	760-030647	EG1679	CRAFT-PTX5000-S
PDU 0	Rev 05	740-032019	ZE00006	PWR-SAN-PDU-DC
PSM 0	Rev 05	740-032022	ZJ00018	PSM-PTX-DC-120-S
PSM 1	Rev 04	740-032022	ZC00052	PWR-SAN-12-DC
PSM 2	Rev 04	740-032022	ZD00051	PWR-SAN-12-DC
PSM 3	Rev 05	740-032022	ZJ00060	PSM-PTX-DC-120-S
CCG 0	REV 04	750-030653	EG3703	CCG-PTX-S
CCG 1	REV 04	750-030653	EG3698	CCG-PTX-S
Routing Engine 0	REV 05	740-026942	P737A-002231	RE-DUO-C2600-16G-S
Routing Engine 1	REV 06	740-026942	P737A-002438	RE-DUO-C2600-16G-S
CB 0	REV 08	750-030625	EG5519	CB-PTX-S
CB 1	REV 08	750-030625	EG5516	CB-PTX-S
FPC 0	REV 18	750-036844	EJ3080	FPC-PTX-P1-A
FPC 2	REV 13	750-036844	EG5065	FPC-PTX-P1-A
PIC 0	REV 14	750-031913	EG5127	P1-PTX-24-10GE-SFPP
FPC 3	REV 13	750-036844	EG5074	FPC-PTX-P1-A
FPC 5				
PIC 0	REV 14	750-031913	EG5134	P1-PTX-24-10GE-SFPP
FPC 6	REV 18	750-036844	EJ4391	FPC-PTX-P1-A
FPC 7	REV 18	750-036844	EJ4382	FPC-PTX-P1-A
SIB 0	REV 07	750-030631	EG4858	SIB-I-PTX5008
SIB 1	REV 07	750-030631	EG4872	SIB-I-PTX5008
SIB 2	REV 07	750-030631	EG4866	SIB-I-PTX5008
SIB 3	REV 07	750-030631	EG6011	SIB-I-PTX5008
SIB 4	REV 07	750-030631	EG4907	SIB-I-PTX5008
SIB 5	REV 07	750-030631	EG4879	SIB-I-PTX5008
SIB 6	REV 07	750-030631	EG4864	SIB-I-PTX5008
SIB 7	REV 07	750-030631	EG4899	SIB-I-PTX5008
SIB 8	REV 07	750-030631	EG4880	SIB-I-PTX5008
Fan Tray 1	REV 04	760-030642	EG1335	FAN-PTX-H-S

### show chassis hardware models (PTX5000 Packet Transport Router with AC PSM and PDU)

```
user@host> show chassis hardware models
```

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 16	750-035893	ACRA1350	CHAS-MP-PTX5000-S
FPM	REV 12	760-030647	BBBD5625	CRAFT-PTX5000-S
PDU 0	Rev 01	740-048338	1GB83360005	PDU2-PTX-AC-W

```

PSM 0      Rev 01  740-048334  1GB43360074  PSM2-PTX-AC
PSM 1      Rev 01  740-048334  1GB43360001  PSM2-PTX-AC
PSM 2      Rev 01  740-048334  1GB43360104  PSM2-PTX-AC
PSM 3      Rev 01  740-048334  1GB43360042  PSM2-PTX-AC
PSM 4      Rev 01  740-048334  1GB43360068  PSM2-PTX-AC
PSM 5      Rev 01  740-048334  1GB43360080  PSM2-PTX-AC
PSM 6      Rev 01  740-048334  1GB43360046  PSM2-PTX-AC
PSM 7      Rev 01  740-048334  1GB43360100  PSM2-PTX-AC
PDU 1      Rev 01  740-048338  1GB83360006  PDU2-PTX-AC-W
PSM 0      Rev 01  740-048334  1GB43360069  PSM2-PTX-AC
PSM 1      Rev 01  740-048334  1GB43360099  PSM2-PTX-AC
PSM 2      Rev 01  740-048334  1GB43360050  PSM2-PTX-AC
PSM 3      Rev 01  740-048334  1GB43360095  PSM2-PTX-AC
PSM 4      Rev 01  740-048334  1GB43360101  PSM2-PTX-AC
PSM 5      Rev 01  740-048334  1GB43360075  PSM2-PTX-AC
PSM 6      Rev 01  740-048334  1GB43360047  PSM2-PTX-AC
PSM 7      Rev 01  740-048334  1GB43360019  PSM2-PTX-AC
CCG 0      REV 09  750-030653  BBAZ5345     CCG-PTX-S
...

```

### show chassis hardware models (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane     REV 11   750-035893  ACAB8038      CHAS-MP-PTX5000-S
FPM          REV 12   760-030647  BBBD5619      CRAFT-PTX5000-S
PDU 0        Rev 04   740-048336  1GB93470043   PDU2-PTX-DC-S
  PSM 0      Rev 04   740-046988  1GB63500184   PSM2-PTX-DC-S
  PSM 2      Rev 04   740-046988  1GB63500169   PSM2-PTX-DC-S
  PSM 4      Rev 04   740-046988  1GB63500306   PSM2-PTX-DC-S
  PSM 6      Rev 04   740-046988  1GB63500074   PSM2-PTX-DC-S
PDU 1        Rev 04   740-048336  1GB93470045   PDU2-PTX-DC-S
  PSM 1      Rev 04   740-046988  1GB63500193   PSM2-PTX-DC-S
  PSM 3      Rev 04   740-046988  1GB63500143   PSM2-PTX-DC-S
  PSM 5      Rev 04   740-046988  1GB63500146   PSM2-PTX-DC-S
  PSM 7      Rev 04   740-046988  1GB63500192   PSM2-PTX-DC-S
CCG 0        REV 09   750-030653  BBBC1909      CCG-PTX-S
CCG 1        REV 09   750-030653  BBBD2970      CCG-PTX-S
...

```

### show chassis hardware extensive (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
.....
PDU 0        Rev 04   740-032019  UE0003         DC Power Dist Unit
Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         740-032019      S/N:           UE0003
Assembly ID: 0x043d          Assembly Version: 04.00
Date:        11-29-2010      Assembly Flags: 0x00
Version:     Rev 04          CLEI Code:     032022XXXX
ID: DC Power Dist Unit      FRU Model Number: PWR-SAN-PDU-DC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 3d 04 00 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 32 30 31 39 00 00
Address 0x20: 53 2f 4e 20 55 45 30 30 30 33 00 00 00 1d 0b 07

```

```

Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 30 33 32 30 32 32 58 58 58 58 50
Address 0x50: 57 52 2d 53 41 4e 2d 50 44 55 2d 44 43 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 a3 ff ff ff ff ff ff ff ff ff ff ff
PSM 0          Rev 04    740-032022    YG00065          DC 12V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-032022      S/N:              YG00065
Assembly ID:   0x0440          Assembly Version:  04.00
Date:          07-30-2010      Assembly Flags:    0x00
Version:       Rev 04          CLEI Code:         032022XXXX
ID: DC 12V Power Supply Module FRU Model Number: PWR-SAN-12-DC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 40 04 00 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 32 30 32 32 00 00
Address 0x20: 53 2f 4e 20 59 47 30 30 30 36 35 00 00 1e 07 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 30 33 32 30 32 32 58 58 58 58 50
Address 0x50: 57 52 2d 53 41 4e 2d 31 32 2d 44 43 20 20 20 20
Address 0x60: 20 20 20 20 20 20 01 00 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 0c ff ff ff ff ff ff ff ff ff ff ff ff

```

#### show chassis hardware extensive (PTX1000 Packet Transport Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               UNDEFINED      PTX1000
Pseudo CB 0
Routing Engine 0
FPC 0          REV 06    750-053330    ACAM4850      PTX1000-FPC-P2-BUILTIN
CPU            BUILTIN    BUILTIN      FPC CPU
PIC 0          BUILTIN    BUILTIN      288X10GE/72X40GE/24X100GE

Xcvr 2         REV 01    740-046565    QE240845      QSFP+-40G-SR4
Xcvr 3         REV 01    740-046565    QE240962      QSFP+-40G-SR4
Xcvr 5         REV 01    740-032986    ES400LZ       QSFP+-40G-SR4
Xcvr 12        REV 01    740-054053    QE419452      QSFP+-4X10G-SR
Xcvr 18        REV 01    740-054053    QE419481      QSFP+-4X10G-SR
Xcvr 30        REV 01    740-046565    QE440485      QSFP+-40G-SR4
Xcvr 48        REV 01    740-032986    ES400K3       QSFP+-40G-SR4
Xcvr 68        REV 01    740-046565    QF2805J3      QSFP+-40G-SR4
Mezz           REV 05    711-053333    ACAM4282      Mezzanine Board
Power Supply 2  REV 01    740-054405    1EDN4470131   AC AFO 1600W PSU
Power Supply 3  REV 01    740-054405    1EDN4470112   AC AFO 1600W PSU
Fan Tray 0                               PTX1000 Fan Tray 0, Front
to Back Airflow - AFO
Fan Tray 1                               PTX1000 Fan Tray 1, Front
to Back Airflow - AFO
Fan Tray 2                               PTX1000 Fan Tray 2, Front
to Back Airflow - AFO

```

#### show chassis hardware extensive (PTX5000 with Control Board 2)

```

user@host> show chassis hardware grep CB
CB 0          REV 06    750-055537    ACLZ9541      Control Board 2
CB 1          REV 06    750-055537    ACLY5329      Control Board 2

```



## show chassis hardware (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis hardware
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              REV 05    710-017414   JN1100FB1AFB   MX480
Midplane             REV 02    710-017254   KG1872         MX480 Midplane
FPM Board            REV 02    740-017343   QCS0812A00N    DC Power Entry Module
PEM 2                Rev 02    740-017343   QCS0812A00U    DC Power Entry Module
PEM 3                Rev 02    740-015113   1000740938     RE-S-1300
Routing Engine 0     REV 07    710-021523   KF4630         MX SCB
CB 0                 REV 11    750-037207   ZW9726         AS-MCC
FPC 1                REV 04    711-038173   ZW4819         AS-MCC PMB
CPU                  REV 06    750-037214   ZW3574         AS-MSC
MIC 0                BUILTIN   BUILTIN       AS-MSC
PIC 0                REV 00    750-037211   BUILTIN        AS-MXC
MIC 1                BUILTIN   BUILTIN       AS-MXC
PIC 2                BUILTIN   BUILTIN       AS-MXC

```

## show chassis hardware extensive (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis hardware extensive
FPC 1                REV 11    750-037207   ZW9726         AS-MCC
Jedec Code: 0x7fb0   EEPROM Version: 0x02
P/N: 750-037207     S/N: ZW9726
Assembly ID: 0x0b37  Assembly Version: 01.11
Date: 02-17-2012    Assembly Flags: 0x00
Version: REV 11     CLEI Code: PROTOXCLEI
ID: AS-MCC          FRU Model Number: 750-037207
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 37 01 0b 52 45 56 20 31 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 30 37 00 00
Address 0x20: 53 2f 4e 20 5a 57 39 37 32 36 00 00 00 11 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 35 30 2d 30 33 37 32 30 37 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 31 31 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 5e ff ff ff ff ff ff ff ff ff ff ff ff
CPU                  REV 04    711-038173   ZW4819         AS-MCC-PMB
Jedec Code: 0x7fb0   EEPROM Version: 0x02
P/N: 711-038173     S/N: ZW4819
Assembly ID: 0x0b38  Assembly Version: 01.04
Date: 12-30-2011    Assembly Flags: 0x00
Version: REV 04
ID: AS-MCC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 38 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 38 31 37 33 00 00
Address 0x20: 53 2f 4e 20 5a 57 34 38 31 39 00 00 00 1e 0c 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 31 31 2d 30 33 38 31 37 33 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 30 34 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 60 00 00 00 00 00 00 00 00 00 00 00 00
MIC 0                REV 06    750-037214   ZW3574         AS-MSC

```

```

Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-037214          S/N: ZW3574
Assembly ID: 0x0a44        Assembly Version: 01.06
Date: 02-19-2012          Assembly Flags: 0x00
Version: REV 06           CLEI Code: PROTOXCLEI
ID: AS-MSC                FRU Model Number: 750-037214
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0a 44 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 31 34 00 00
  Address 0x20: 53 2f 4e 20 5a 57 33 35 37 34 00 00 00 13 02 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 37
  Address 0x50: 35 30 2d 30 33 37 32 31 34 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 30 36 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 60 c0 03 e5 f4 00 00 00 00 00 00 00 00
  PIC 0                BUILTIN          BUILTIN          AS-MSC
MIC 1                REV 00          750-037211          AS-MXC
Jedec Code: 0x7fb0          EEPROM Version: 0x01
P/N: 750-037211
Assembly ID: 0x0a43        Assembly Version: 01.00
Date: 255-255-65535        Assembly Flags: 0x00
Version: REV 00
ID: AS-MXC
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0a 43 01 00 52 45 56 20 30 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 31 31 00 00
  Address 0x20: 00 00 00 00 00 00 00 00 00 00 00 00 00 ff ff ff
  Address 0x30: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff c0 02 e6 6c 7f b0 02 ff 0a 44 01 06
  PIC 2                BUILTIN          BUILTIN          AS-MXC

```

### show chassis hardware (ACX5048 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
FPC 0          REV 05      650-056267   VF3714170810   ACX5048
CPU
PIC 0          BUILTIN     BUILTIN     48x10G-6x40G
  Xcvr 0        REV 02      740-011613   NR2051S        SFP-SX
  Xcvr 33        REV 01      740-030589   SE5N290041     SFP+-10G-LPBK
  Xcvr 35        REV 01      740-030589   SE5N290926     SFP+-10G-LPBK
  Xcvr 37        REV 01      740-030589   SE5N290049     SFP+-10G-LPBK
  Xcvr 39        REV 01      740-030589   SE5N290046     SFP+-10G-LPBK
  Xcvr 48        NON-JNPR    409310098    UNKNOWN
Power Supply 1  REV 03      740-041741   1GA24081097    JPSU-650W-AC-AFO
Fan Tray 0
  to Back Airflow - AFO
Fan Tray 1
  to Back Airflow - AFO

```

```

Fan Tray 2                                ACX5K Fan Tray 2, Front
  to Back Airflow - AFO
Fan Tray 3                                ACX5K Fan Tray 3, Front
  to Back Airflow - AFO
Fan Tray 4                                ACX5K Fan Tray 4, Front
  to Back Airflow - AFO

```

### show chassis hardware detail (ACX5048 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VF3714170810  ACX5048
Pseudo CB 0
Routing Engine 0      BUILTIN      BUILTIN        ACX5K Routing Engine
  ad0      509 MB  QEMU HARDDISK  QM00001        Hard Disk
  ad1     4095 MB  QEMU HARDDISK  QM00002        Hard Disk
  ad2      511 MB  QEMU HARDDISK  QM00003        Hard Disk
  ad3     1023 MB  QEMU HARDDISK  QM00004        Hard Disk
  usb0 (addr 1) product 0x0000 0  vendor 0x0000  uhub1
  usb0 (addr 2) product 0x0020 32  vendor 0x8087  uhub2
FPC 0              REV 05   650-056267    VF3714170810  ACX5048
CPU                BUILTIN      BUILTIN        FPC CPU
PIC 0              BUILTIN      BUILTIN        48x10G-6x40G
  Xcvr 0              REV 02   740-011613    NR2051S        SFP-SX
  Xcvr 33             REV 01   740-030589    SE5N290041     SFP+-10G-LPBK
  Xcvr 35             REV 01   740-030589    SE5N290926     SFP+-10G-LPBK
  Xcvr 37             REV 01   740-030589    SE5N290049     SFP+-10G-LPBK
  Xcvr 39             REV 01   740-030589    SE5N290046     SFP+-10G-LPBK
  Xcvr 48              NON-JNPR    409310098      UNKNOWN
Power Supply 1      REV 03   740-041741    1GA24081097    JPSU-650W-AC-AFO
Fan Tray 0                                ACX5K Fan Tray 0, Front
  to Back Airflow - AFO
Fan Tray 1                                ACX5K Fan Tray 1, Front
  to Back Airflow - AFO
Fan Tray 2                                ACX5K Fan Tray 2, Front
  to Back Airflow - AFO
Fan Tray 3                                ACX5K Fan Tray 3, Front
  to Back Airflow - AFO
Fan Tray 4                                ACX5K Fan Tray 4, Front
  to Back Airflow - AFO

```

### show chassis hardware clei-models (ACX5048 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Routing Engine 0      BUILTIN      CMMRG00BRA  ACX5048
FPC 0              REV 05   650-056267    CMMRG00BRA  ACX5048
PIC 0              BUILTIN      CMMRG00BRA  ACX5048
Power Supply 1      REV 03   740-041741    CMUPABHBAA  JPSU-650W-AC-AFO
Fan Tray 0                                ACX5K-FAN
Fan Tray 1                                ACX5K-FAN
Fan Tray 2                                ACX5K-FAN
Fan Tray 3                                ACX5K-FAN
Fan Tray 4                                ACX5K-FAN

```

### show chassis hardware models (ACX5048 Router)

```

user@host> show chassis hardware models

```

```

Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Routing Engine 0
FPC 0          REV 05    650-056267  VF3714170810  ACX5048
  PIC 0          BUILTIN   BUILTIN     BUILTIN       ACX5048
Power Supply 1  REV 03    740-041741  1GA24081097  JPSU-650W-AC-AFO
Fan Tray 0
Fan Tray 1
Fan Tray 2
Fan Tray 3
Fan Tray 4

```

### show chassis hardware (ACX5096 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
FPC 0          REV 09    650-053391  VB3714510139  ACX5096
  CPU          BUILTIN   BUILTIN     BUILTIN       FPC CPU
  PIC 0          BUILTIN   BUILTIN     BUILTIN       96x10G-8x40G
    Xcvr 0      REV 01    740-021308  ARS186H       SFP+-10G-SR
    Xcvr 2      REV 01    740-031851  AM1045SUA1G  SFP-SX
    Xcvr 10     REV 02    740-011613  NS11KRP       SFP-SX
    Xcvr 14     REV 01    740-031980  AMCOLKL       SFP+-10G-SR
    Xcvr 20     REV 01    740-021308  ARS18A2       SFP+-10G-SR
    Xcvr 30     REV 02    740-011613  PJ21954       SFP-SX
    Xcvr 35     REV 01    740-031851  PN344LV       SFP-SX
    Xcvr 40     REV 01    740-031851  PLG028R       SFP-SX
    Xcvr 41     REV 01    740-021308  L12D01919     SFP+-10G-SR
    Xcvr 46     REV 01    740-011613  PD91F10       SFP-SX
    Xcvr 64     REV 01    740-031980  AMSOYSS       SFP+-10G-SR
    Xcvr 96     REV 01    740-032986  QE481421      QSFP+-40G-SR4
    Xcvr 99     REV 01    740-032986  QE494942      QSFP+-40G-SR4
    Xcvr 100    REV 01    740-032986  QE494756      QSFP+-40G-SR4
Power Supply 0  REV 01    740-053352  1GD14220106  JPSU-850W-AC-AFO
Power Supply 1  REV 01    740-053352  1GD14220102  JPSU-850W-AC-AFO
Fan Tray 0
  to Back Airflow - AFO
Fan Tray 1
  to Back Airflow - AFO
Fan Tray 2
  to Back Airflow - AFO

```

### show chassis hardware detail (ACX5096 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
  ad0      509 MB  QEMU HARDDISK  QM00001  Hard Disk
  ad1     4095 MB  QEMU HARDDISK  QM00002  Hard Disk
  ad2      511 MB  QEMU HARDDISK  QM00003  Hard Disk
  ad3     1023 MB  QEMU HARDDISK  QM00004  Hard Disk
  usb0 (addr 1)  product 0x0000 0  vendor 0x0000  uhub1
  usb0 (addr 2)  product 0x0020 32  vendor 0x8087  uhub2

```

FPC 0	REV 09	650-053391	VB3714510139	ACX5096
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	96x10G-8x40G
Xcvr 0	REV 01	740-021308	ARS186H	SFP+-10G-SR
Xcvr 10	REV 02	740-011613	NS11KRP	SFP-SX
Xcvr 14	REV 01	740-031980	AMCOLKL	SFP+-10G-SR
Xcvr 20	REV 01	740-021308	ARS18A2	SFP+-10G-SR
Xcvr 30	REV 02	740-011613	PJ21954	SFP-SX
Xcvr 41	REV 01	740-021308	L12D01919	SFP+-10G-SR
Xcvr 46	REV 01	740-011613	PD91F10	SFP-SX
Xcvr 64	REV 01	740-031980	AMSOYSS	SFP+-10G-SR
Xcvr 78	REV 01	740-031851	AM1045SUA1G	SFP-SX
Xcvr 96	REV 01	740-032986	QE481421	QSFP+-40G-SR4
Xcvr 99	REV 01	740-032986	QE494942	QSFP+-40G-SR4
Xcvr 100	REV 01	740-032986	QE494756	QSFP+-40G-SR4
Power Supply 0	REV 01	740-053352	1GD14220106	JPSU-850W-AC-AFO
Power Supply 1	REV 01	740-053352	1GD14220102	JPSU-850W-AC-AFO
Fan Tray 0				ACX5K Fan Tray 0, Front
to Back Airflow - AFO				
Fan Tray 1				ACX5K Fan Tray 1, Front
to Back Airflow - AFO				
Fan Tray 2				ACX5K Fan Tray 2, Front
to Back Airflow - AFO				

#### show chassis hardware clei-models (ACX5096 Router)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Routing Engine 0		BUILTIN	CMMNX10BRA	ACX5096
FPC 0	REV 09	650-053391	CMMNX10BRA	ACX5096
PIC 0		BUILTIN	CMMNX10BRA	ACX5096
Power Supply 0	REV 01	740-053352	CMUPACSBAA	JPSU-850W-AC-AFO
Power Supply 1	REV 01	740-053352	CMUPACSBAA	JPSU-850W-AC-AFO
Fan Tray 0				ACX5K-FAN
Fan Tray 1				ACX5K-FAN
Fan Tray 2				ACX5K-FAN

#### show chassis hardware models (ACX5096 Router)

```
user@host> show chassis hardware models
```

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
Routing Engine 0		BUILTIN	BUILTIN	ACX5096
FPC 0	REV 09	650-053391	VB3714510139	ACX5096
PIC 0		BUILTIN	BUILTIN	ACX5096
Power Supply 0	REV 01	740-053352	1GD14220106	JPSU-850W-AC-AFO
Power Supply 1	REV 01	740-053352	1GD14220102	JPSU-850W-AC-AFO
Fan Tray 0				ACX5K-FAN
Fan Tray 1				ACX5K-FAN
Fan Tray 2				ACX5K-FAN

#### show chassis hardware (ACX500 Router)

```
user@host> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			VJ0214510035	ACX500-AC
Midplane	REV 01	650-055932	VJ0214510035	ACX500-AC
Routing Engine		BUILTIN	BUILTIN	Routing Engine

FEB 0		BUILTIN	BUILTIN	Forwarding Engine
Processor				
FPC 0		BUILTIN	BUILTIN	FPC BUILTIN
MIC 0		BUILTIN	BUILTIN	2x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	2x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031851	PMF2Y3C	SFP-SX
Xcvr 1	REV 01	740-031851	PN342QN	SFP-SX
MIC 1		BUILTIN	BUILTIN	4x 1GE(LAN) SFP, RJ45
PIC 1		BUILTIN	BUILTIN	4x 1GE(LAN) SFP, RJ45
Xcvr 0	REV 01	740-011613	PF30K0L	SFP-SX
MIC 2		BUILTIN	BUILTIN	MS BUILTIN
PIC 2		BUILTIN	BUILTIN	MS BUILTIN

### show chassis hardware detail (ACX500 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VJ0214510035  ACX500-AC
Midplane      REV 01   650-055932  VJ0214510035  ACX500-AC
Routing Engine BUILTIN  BUILTIN      Routing Engine
da0           3820 MB  USB DISK 2.0 Nand Flash 0
FEB 0                               BUILTIN      BUILTIN      Forwarding Engine
Processor
FPC 0                               BUILTIN      BUILTIN      FPC BUILTIN
MIC 0                               BUILTIN      BUILTIN      2x 1GE(LAN) SFP
PIC 0                               BUILTIN      BUILTIN      2x 1GE(LAN) SFP
Xcvr 0        REV 01   740-031851  PMF2Y3C       SFP-SX
Xcvr 1        REV 01   740-031851  PN342QN       SFP-SX
MIC 1                               BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45
PIC 1                               BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45
Xcvr 0        REV 01   740-011613  PF30K0L       SFP-SX
MIC 2                               BUILTIN      BUILTIN      MS BUILTIN
PIC 2                               BUILTIN      BUILTIN      MS BUILTIN

```

### show chassis hardware extensive (ACX500 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VJ0214510035  ACX500-AC
Jedec Code:   0x7fb0                      EEPROM Version: 0x02
S/N:          VJ0214510035
Assembly ID:  0x057c                      Assembly Version: 00.00
Date:         00-00-0000                  Assembly Flags:  0x00
ID: ACX500-AC
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 7c 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 56 4a 30 32 31 34 35 31 30 30 33 35 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 01   650-055932  VJ0214510035  ACX500-AC
Jedec Code:   0x7fb0                      EEPROM Version: 0x02
P/N:         650-055932                  S/N:          VJ0214510035

```

```

Assembly ID: 0x057c      Assembly Version: 01.00
Date:      12-23-2014    Assembly Flags: 0x00
Version:    REV 01       CLEI Code:      PROTOXCLEI
ID: ACX500-AC            FRU Model Number: ACX500-AC

```

## Board Information Record:

```
Address 0x00: ad 01 00 80 f0 1c 2d 1b 60 80 ff ff ff ff ff ff
```

## I2C Hex Data:

```

Address 0x00: 7f b0 02 fe 05 7c 01 00 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 36 35 30 2d 30 35 35 39 33 32 00 00
Address 0x20: 56 4a 30 32 31 34 35 31 30 30 33 35 00 17 0c 07
Address 0x30: de ff ff ff ad 01 00 80 f0 1c 2d 1b 60 80 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 41
Address 0x50: 43 58 35 30 30 2d 41 43 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 30 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 56 4a 30 32 31 34 35 31 30 30 33 35

```

```

Routing Engine      BUILTIN      BUILTIN      Routing Engine
da0      3820 MB  USB DISK 2.0      Nand Flash 0
FEB 0      BUILTIN      BUILTIN      Forwarding Engine

```

## Processor

```

FPC 0      BUILTIN      BUILTIN      FPC BUILTIN
MIC 0      BUILTIN      BUILTIN      2x 1GE(LAN) SFP

```

```

Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:      BUILTIN      S/N:      BUILTIN
Assembly ID: 0x0a40      Assembly Version: 00.00
Date:      00-00-0000      Assembly Flags: 0x00
ID: 2x 1GE(LAN) SFP

```

## Board Information Record:

```
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

## I2C Hex Data:

```

Address 0x00: 00 00 00 00 0a 40 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 de ad be ef 64 20 22 a8 60 af 21 38

```

```

PIC 0      BUILTIN      BUILTIN      2x 1GE(LAN) SFP
Xcvr 0      REV 01      740-031851  PMF2Y3C      SFP-SX
Xcvr 1      REV 01      740-031851  PN342QN      SFP-SX
MIC 1      BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45

```

```

Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:      BUILTIN      S/N:      BUILTIN
Assembly ID: 0x0aac      Assembly Version: 00.00
Date:      00-00-0000      Assembly Flags: 0x00
ID: 4x 1GE(LAN) SFP, RJ45

```

## Board Information Record:

```
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

## I2C Hex Data:

```

Address 0x00: 00 00 00 00 0a ac 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 64 20 b5 c0 60 af 21 38

```

```

PIC 1      BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45
Xcvr 0      REV 01      740-011613  PF30K0L      SFP-SX
MIC 2      BUILTIN      BUILTIN      MS BUILTIN
Jedec Code: 0x0000      EEPROM Version: 0x00

```

```
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:  0x0aaf          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MS BUILTIN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a af 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 de ad be ef 64 22 cd 48 60 af 21 38
          PIC 2          BUILTIN          BUILTIN          MS BUILTIN
```

#### show chassis hardware clei-models (ACX500 Router)

```
user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Midplane      REV 01   650-055932  PROTOXCLEI     ACX500-AC
Routing Engine
FEB 0         BUILTIN
FPC 0         BUILTIN
```

#### show chassis hardware models (ACX500 Router)

```
user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number   FRU model number
Midplane      REV 01   650-055932  VJ0214510035   ACX500-AC
Routing Engine
FEB 0         BUILTIN   BUILTIN
FPC 0         BUILTIN   BUILTIN
```



## show chassis lccs

<b>Syntax</b>	show chassis lccs
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(TX Matrix and TX Matrix Plus routers only ) On a TX Matrix router, display the status of all T640 LCC connected to the TX Matrix router. On a TX Matrix Plus router, display the status of all LCC connected to the TX Matrix Plus router.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">request chassis lcc on page 288</a></li> <li>• <i>Configuring Line-Card Upgrade Groups for Nonstop Software Upgrade (CLI Procedure)</i></li> <li>• <i>fpc</i></li> </ul>
<b>List of Sample Output</b>	<a href="#">show chassis lccs on page 1111</a> <a href="#">show chassis lccs (TX Matrix Plus router with 3D SIBs) on page 1112</a>
<b>Output Fields</b>	Table 33 on page 1111 lists the output fields for the <b>show chassis lccs</b> command. Output fields are listed in the approximate order in which they appear.

Table 33: show chassis lccs Output Fields

Field Name	Field Description
Slot	LCC slot number.
State	LCC status: <ul style="list-style-type: none"> <li>• <b>Online</b>—LCC is online and running.</li> <li>• <b>Offline</b>—LCC is powered down.</li> <li>• <b>Empty</b>—No LCC is present.</li> </ul>
Uptime	How long the LCC has been up and running.

## Sample Output

### show chassis lccs

```

user@host> show chassis lccs
Slot  State          Uptime
 0    Online          3 minutes, 17 seconds
 1    Empty

```

2	Online	3 minutes, 23 seconds
3	Empty	

#### show chassis lccs (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis lccs
```

Slot	State	Uptime
0	Offline	
1	Empty	
2	Online	1 day, 4 hours, 57 minutes, 7 seconds
3	Empty	
4	Online	1 day, 4 hours, 56 minutes, 58 seconds
5	Empty	
6	Empty	
7	Online	3 hours, 45 minutes, 41 seconds

## show chassis lcc-mode

**Syntax** show chassis lcc-mode

**Release Information** Command introduced in Junos OS Release 13.1.

**Description** (TX Matrix Plus routers only) Display the mode in which LCCs are connected to a TX Matrix Plus router.



**NOTE:** This command is supported only on TX Matrix Plus routers with 3D SIBs.

**Options** This command has no options.

**Required Privilege Level** view

**Related Documentation**

- [lcc-mode on page 211](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)

**List of Sample Output** [show chassis lcc-mode \(TX Matrix Plus Router with 3D SIBs\) on page 1113](#)

**Output Fields** [Table 34 on page 1113](#) lists the output fields for the **show chassis lcc-mode** command. Output fields are listed in the approximate order in which they appear.

*Table 34: show chassis lcc-mode Output Fields*

Field Name	Field Description
Slot	The LCC number.
LCC-mode	Displays the mode of the LCC: <ul style="list-style-type: none"> <li>• <b>T1600</b>—LCC functions as a T1600 router.</li> <li>• <b>T4000</b>—LCC functions as a T4000 router.</li> <li>• <b>EMPTY</b>—LCC is not configured as either a T1600 or a T4000 router.</li> </ul>

## Sample Output

**show chassis lcc-mode (TX Matrix Plus Router with 3D SIBs)**

```
user@host> show chassis lcc-mode
```

```
Slot          LCC-mode
```

0	T4000
1	EMPTY
2	T4000
3	EMPTY
4	T4000
5	EMPTY
6	T1600
7	EMPTY

## show chassis location

<b>List of Syntax</b>	<a href="#">Syntax on page 1115</a> <a href="#">Syntax (TX Matrix Router) on page 1115</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1115</a> <a href="#">Syntax (MX Series Router) on page 1115</a> <a href="#">Syntax (QFX Series) on page 1115</a> <a href="#">Syntax (OCX Series) on page 1115</a>
<b>Syntax</b>	show chassis location
<b>Syntax (TX Matrix Router)</b>	show chassis location <fpc   interface (by-name <i>name</i>   by-slot fpc number lcc number)   lcc number   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show chassis location <fpc   interface (by-name <i>name</i>   by-slot fpc number lcc number)   lcc number   sfc number>
<b>Syntax (MX Series Router)</b>	show chassis location <all-members> <local> <member <i>member-id</i> >
<b>Syntax (QFX Series)</b>	show chassis location <interconnect-device <i>name</i> > <node-device <i>name</i> >
<b>Syntax (OCX Series)</b>	show chassis location
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Display the physical location of the chassis. This command can only be used on the master Routing Engine.
<b>Options</b>	<p><b>none</b>—Display all information about the physical location of the chassis. On a TX Matrix router, display all information about the physical location of the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display all information about the physical location of the TX Matrix Plus router and its attached routers.</p> <p><b>all-members</b>—(MX Series routers only) (Optional) Display the physical location of the chassis for all the member routers in the Virtual Chassis configuration.</p> <p><b>fpc</b>—(TX Matrix router and TX Matrix Plus router only) (Optional) Display the physical location of all Flexible PIC Concentrators (FPCs).</p>

**interconnect-device *name***—(QFabric systems only) (Optional) Display the physical location of the Interconnect device.

**interface by-name *name***—(TX Matrix and TX Matrix Plus routers only) (Optional) Display the physical location of a specified interface name. On a TX Matrix router, this option displays the FPC number and T640 router (line-card chassis) number associated with the specified interface. On a TX Matrix Plus router, this option displays the FPC number and router (line-card chassis) number associated with the specified interface.

**interface by-slot fpc *number* lcc *number***—(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix router, display the global FPC number of an interface by specifying its local FPC number and T640 router (line-card chassis) number. On a TX Matrix Plus router, display the global FPC number of an interface by specifying its local FPC number and router (line-card chassis) number.

- The global FPC number is the FPC slot number when all the FPC slots in the routing matrix are considered: **0** through **31**. On TX Matrix Plus router with 3D SIBs, the value is **0** through **63**. The local FPC number is the FPC slot number on a particular T640 router.
- For **fpc**, replace *number* with a value from **0** through **7**.
- For **lcc**, replace *number* with a value from **0** through **7**.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the physical location of a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display the physical location of a specified router (line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display the physical location of the chassis for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display the physical location of the chassis for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**node-device *name***—(QFabric systems only) (Optional) Display the physical location of the Node device.

**scc**—(TX Matrix routers only) (Optional) Display the physical location of the TX Matrix router (switch-card chassis).

**sfc**—(TX Matrix Plus routers only) (Optional) Display the physical location of the TX Matrix Plus router (or switch-fabric chassis).

**Required Privilege Level**

view

**Related Documentation**

- [Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router on page 121](#)

**List of Sample Output**

[show chassis location on page 1118](#)  
[show chassis location fpc \(TX Matrix Router\) on page 1118](#)  
[show chassis location interface by-slot \(TX Matrix Router\) on page 1118](#)  
[show chassis location fpc \(TX Matrix Plus Router\) on page 1118](#)  
[show chassis location interface by-slot \(TX Matrix Plus Router\) on page 1118](#)  
[show chassis location \(QFX Series and OCX Series\) on page 1118](#)  
[show chassis location \(QFabric Systems\) on page 1118](#)

**Output Fields**

[Table 35 on page 1117](#) lists the output fields for the **show chassis location** command. Output fields are listed in the approximate order in which they appear.

*Table 35: show chassis location Output Fields*

Field Name	Field Description
country-code	Country code information.
postal-code	Postal code information.
Building	Building information.
Floor	Floor information.
Global FPC	Global FPC number. The FPC slot number, when all FPC slots in the routing matrix are considered. The range of values is 0 through 31. On TX Matrix Plus router with 3D SIBs the value is 0 through 63.
LATA	Local access transport area information.
LCC	Line-card chassis number. On a TX Matrix router, the number of a particular T640 router connected to the TX Matrix router. On a TX Matrix Plus router, the number of a particular router connected to the TX Matrix Plus router.

Table 35: show chassis location Output Fields (continued)

Field Name	Field Description
<b>Local FPC</b>	Local FPC number. On a TX Matrix router, the FPC slot number on a particular T640 router. On a TX Matrix Plus router, the FPC slot number on a particular router.

## Sample Output

### show chassis location

```
user@host> show chassis location
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```

### show chassis location fpc (TX Matrix Router)

```
user@host> show chassis location fpc
Global FPC    LCC    Local FPC
    17         2         1
    21         2         5
```

### show chassis location interface by-slot (TX Matrix Router)

```
user@host> show chassis location interface by-slot fpc 1 lcc 1
Global FPC: 9
```

### show chassis location fpc (TX Matrix Plus Router)

```
user@host> show chassis location fpc
Global FPC    LCC    Local FPC
    0         0         0
    1         0         1
```

### show chassis location interface by-slot (TX Matrix Plus Router)

```
user@host> show chassis location interface by-slot fpc 2 lcc 1
Global FPC: 10
```

### show chassis location (QFX Series and OCX Series)

```
user@switch> show chassis location
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```

### show chassis location (QFabric Systems)

```
user@switch> show chassis location interconnect-device interconnect1
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```



## show chassis mac-addresses

<b>List of Syntax</b>	<a href="#">Syntax on page 1119</a> <a href="#">Syntax (TX Matrix Router) on page 1119</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1119</a> <a href="#">Syntax (MX Series Router) on page 1119</a> <a href="#">Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX2008, and MX10008 3D Universal Edge Routers) on page 1119</a> <a href="#">Syntax (PTX Series) on page 1119</a> <a href="#">Syntax (QFX Series) on page 1119</a> <a href="#">Syntax (OCX Series) on page 1119</a> <a href="#">Syntax (ACX Series Universal Metro Routers) on page 1119</a> <a href="#">Syntax (ACX5048 and ACX5096 Routers) on page 1120</a> <a href="#">Syntax (ACX500 Routers) on page 1120</a> <a href="#">Syntax (EX9251, EX9253 Switches) on page 1120</a>
<b>Syntax</b>	<b>show chassis mac-addresses</b>
<b>Syntax (TX Matrix Router)</b>	<b>show chassis mac-addresses</b> <b>&lt;fcc number   scc&gt;</b>
<b>Syntax (TX Matrix Plus Router)</b>	<b>show chassis mac-addresses</b> <b>&lt;fcc number   sfc number&gt;</b>
<b>Syntax (MX Series Router)</b>	<b>show chassis mac-addresses</b> <b>&lt;all-members&gt;</b> <b>&lt;local&gt;</b> <b>&lt;member member-id&gt;</b>
<b>Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX2008, and MX10008 3D Universal Edge Routers)</b>	<b>show chassis mac-addresses</b>
<b>Syntax (PTX Series)</b>	<b>show chassis mac-addresses</b>
<b>Syntax (QFX Series)</b>	<b>show chassis mac-addresses</b> <b>&lt;interconnect-device name&gt;</b> <b>&lt;node-group name&gt;</b>
<b>Syntax (OCX Series)</b>	<b>show chassis mac-addresses</b>
<b>Syntax (ACX Series Universal Metro Routers)</b>	<b>show chassis mac-addresses</b>

**Syntax (ACX5048 and ACX5096 Routers)**    `show chassis mac-addresses`

**Syntax (ACX500 Routers)**    `show chassis mac-addresses`

**Syntax (EX9251, EX9253 Switches)**    `show chassis mac-addresses`

**Release Information**    Command introduced before JUNOS Release 7.4.  
Command introduced in JUNOS Release 9.0 for EX Series switches.  
sfc option introduced for the TX Matrix Plus router in JUNOS Release 9.6.  
Command introduced in Junos OS Release 11.1 for QFX Series.  
Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.  
Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.  
Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.  
Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.  
Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.  
Command introduced in Junos OS Release 17.2 for PTX10008 Routers.  
Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.  
Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.  
Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.  
Command introduced in JUNOS Release 18.1R1 for EX9251 switches.  
Command introduced in Junos OS Release 18.2 for EX9253 Switches.  
Command introduced in Junos OS Release 18.2 for MX10008 3D Universal Edge Routers.

**Description**    Display the media access control (MAC) addresses for the router, switch chassis, or switch.

**Options**    **none**—(TX Matrix, TX Matrix Plus routers, QFX Series, and OCX Series Switches) Display the MAC addresses for the router chassis or switch. On a TX Matrix router, display MAC addresses on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display MAC addresses on the TX Matrix Plus router and its attached routers.

**all-members**—(MX Series routers only) (Optional) Display the MAC addresses for all the member routers of the Virtual Chassis configuration.

**interconnect-device *name***—(QFabric switches only) (Optional) Display the MAC addresses for the Interconnect device.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display MAC addresses for a specified T640 router (or line-card chassis) that is connected to the TX Matrix Plus router. On a TX Matrix Plus router, display MAC addresses for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display the MAC addresses for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display the MAC addresses for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**node-group *name***—(QFabric switches only) (Optional) Display the MAC addresses for the specified Node group.

**scc**—(TX Matrix routers only) (Optional) Display MAC addresses for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display MAC addresses for the TX Matrix Plus router (or switch-fabric chassis).

**Required Privilege Level**

view

**Related Documentation**

- [ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping](#)

**List of Sample Output**

[show chassis mac-addresses on page 1122](#)  
[show chassis mac-addresses \(MX150\) on page 1122](#)  
[show chassis mac-addresses \(MX104 Router\) on page 1123](#)  
[show chassis mac-addresses \(MX2010 Router\) on page 1123](#)  
[show chassis mac-addresses \(MX2020 Router\) on page 1123](#)  
[show chassis mac-addresses \(MX2008 Router\) on page 1123](#)  
[show chassis mac-addresses \(MX10003\) on page 1123](#)  
[show chassis mac-addresses \(MX204\) on page 1123](#)  
[show chassis mac-addresses \(MX10008\) on page 1124](#)  
[show chassis mac-addresses \(PTX10008 Router\) on page 1124](#)  
[show chassis mac-addresses \(TX Matrix Router\) on page 1124](#)  
[show chassis mac-addresses \(TX Matrix Plus Router\) on page 1124](#)  
[show chassis mac-addresses \(QFX Series and OCX Series \) on page 1125](#)  
[show chassis mac-addresses interconnect-device \(QFabric Switches\) on page 1125](#)

[show chassis mac-addresses node-group \(QFabric Switches\) on page 1125](#)  
[show chassis mac-addresses \(ACX2000 Universal Metro Router\) on page 1126](#)  
[show chassis mac-addresses \(ACX5048 and ACX5096 Routers\) on page 1126](#)  
[show chassis mac-addresses \(ACX500 Routers\) on page 1126](#)  
[show chassis mac-addresses \(EX9251 Switches\) on page 1126](#)  
[show chassis mac-addresses \(EX9253 Switches\) on page 1126](#)

**Output Fields** Table 36 on page 1122 lists the output fields for the **show chassis mac-addresses** command. Output fields are listed in the approximate order in which they appear.

*Table 36: show chassis mac-addresses Output Fields*

Field Name	Field Description
<b>MAC address information</b>	
Public base address	<p>Base address of the MAC addresses allocated to this router or switch, for example 00:24:dc:18:09:40. This address is also printed on the box of the device.</p> <p>Public MAC addresses are those addresses your switch/router assigns to Ethernet interfaces. The public base address is the first MAC address your device assigns to an interface. Consecutive public count MAC addresses are reserved for additional interfaces.</p>
	<p>Number of allocated public addresses, for example 64. Public addresses are calculated starting with the public base address. If the public base address is 00:24:dc:18:09:40, then the MAC address of ge-0/0/0 on this device is 00:24:dc:18:09:40, and ge-0/0/1 is 00:24:dc:18:09:41, and so on, up to 64 available addresses.</p>
Private base address	<p>Base address of the private MAC addresses allocated to this router or switch. The private base address is the first MAC address after the allocated consecutive public count addresses. For example, if 00:24:dc:18:09:40 is the public base and 0x40 is the public count in hex, then 00:24:dc:18:09:80 would be the private base.</p>
Private count	Number of allocated private addresses.

## Sample Output

### show chassis mac-addresses

```

user@host> show chassis mac-addresses
MAC address information
  Public base address  0:90:69:0:4:0
  Public count         1008
  Private base address 0:90:69:0:7:f0
  Private count        16

```

### show chassis mac-addresses (MX150)

```

user@host > show chassis mac-addresses
MAC address information:
  Public base address  f4:cc:55:2b:4c:00
  Public count         1984

```

```

Private base address    f4:cc:55:2b:53:c0
Private count           64

```

The MAC address displayed is the actual MAC address of the first physical port.

#### show chassis mac-addresses (MX104 Router)

```

user@host > show chassis mac-addresses
MAC address information:
  Public base address    b0:a8:6e:a1:e8:58
  Public count           2032
  Private base address    b0:a8:6e:a1:f0:48
  Private count           16

```

#### show chassis mac-addresses (MX2010 Router)

```

user@host> show chassis mac-addresses
MAC address information:
  Public base address    64:87:88:04:50:00
  Public count           1984
  Private base address    64:87:88:04:57:c0
  Private count           64

```

#### show chassis mac-addresses (MX2020 Router)

```

user@host> show chassis mac-addresses
MAC address information:
  Public base address    2c:21:72:70:20:00
  Public count           4032
  Private base address    2c:21:72:70:2f:c0
  Private count           64

```

#### show chassis mac-addresses (MX2008 Router)

```

user@host> show chassis mac-addresses
MAC address information:
  Public base address    f4:cc:55:3e:35:00
  Public count           1984
  Private base address    f4:cc:55:3e:3c:c0
  Private count           64

```

#### show chassis mac-addresses (MX10003)

```

user@host> show chassis mac-addresses

MAC address information:
  Public base address    28:8a:1c:6f:78:5c
  Public count           3904
  Private base address    28:8a:1c:6f:87:9c
  Private count           192

```

#### show chassis mac-addresses (MX204)

```

user@host> show chassis mac-addresses

MAC address information:
  Public base address    38:4f:49:80:18:00
  Public count           2032

```

```
Private base address    38:4f:49:80:1f:f0
Private count           16
```

#### show chassis mac-addresses (MX10008)

```
user@host> show chassis mac-addresses
MAC address information:
  Public base address    84:c1:c1:61:6f:35
  Public count           1856
  Private base address   84:c1:c1:61:76:75
  Private count          192
```

#### show chassis mac-addresses (PTX10008 Router)

```
user@host> show chassis mac-addresses
MAC address information:
  Public base address    30:b6:4f:0a:7a:bb
  Public count           1856
  Private base address   30:b6:4f:0a:81:fb
  Private count          192
```

#### show chassis mac-addresses (TX Matrix Router)

```
user@host> show chassis mac-addresses
scc-re0:
-----
MAC address information:
  Public base address    00:05:85:9e:cc:00
  Public count           8064
  Private base address   00:05:85:9e:eb:80
  Private count          128
lcc0-re0:
-----
MAC address information:
  Public base address    00:05:85:68:98:00
  Public count           2032
  Private base address   00:05:85:68:9f:f0
  Private count          16
lcc2-re0:
-----
MAC address information:
  Public base address    00:05:85:68:78:00
  Public count           2032
  Private base address   00:05:85:68:7f:f0
  Private count          16
```

#### show chassis mac-addresses (TX Matrix Plus Router)

```
user@host> show chassis mac-addresses
sfc0-re0:
-----
MAC address information:
  Public base address    00:1d:b5:14:00:00
  Public count           65023
  Private base address   00:1d:b5:14:fd:ff
  Private count          512

lcc0-re0:
-----
MAC address information:
```

```

Public base address    00:1f:12:7a:84:00
Public count          2032
Private base address   00:1f:12:7a:8b:f0
Private count          16

```

```
lcc1-re0:
```

```
-----
MAC address information:
```

```

Public base address    00:22:83:42:48:00
Public count          2032
Private base address   00:22:83:42:4f:f0
Private count          16

```

```
lcc2-re0:
```

```
-----
MAC address information:
```

```

Public base address    00:1f:12:c3:58:00
Public count          2032
Private base address   00:1f:12:c3:5f:f0
Private count          16

```

```
lcc3-re0:
```

```
-----
MAC address information:
```

```

Public base address    00:21:59:ef:b8:00
Public count          2032
Private base address   00:21:59:ef:bf:f0
Private count          16

```

#### show chassis mac-addresses (QFX Series and OCX Series )

```

user@switch> show chassis mac-addresses
MAC address information:
Public base address 02:00:08:00:00:00
Public count 512
Private base address 02:00:00:00:00:00
Private count 64

```

#### show chassis mac-addresses interconnect-device (QFabric Switches)

```

user@switch> show chassis mac-addresses interconnect-device interconnect1
MAC address information:
Public base address    00:1f:12:30:9c:c0
Public count          58
Private base address   00:1f:12:30:9c:fa
Private count          6

```

#### show chassis mac-addresses node-group (QFabric Switches)

```

user@switch> show chassis mac-addresses node-group NW-NG-0
MAC address information:
-----
RE:
FC MAC base    00:11:00:00:00:00
FC MAC count   2
VLAN MAC       00:11:00:00:00:09
EC6007
Base address   00:00:01:76:00:00
Count          64
EC6008

```

```
Base address  00:22:83:22:52:ae
Count        260
```

#### show chassis mac-addresses (ACX2000 Universal Metro Router)

```
user@switch> show chassis mac-addresses
MAC address information:
  Public base address  84:18:88:c0:2b:00
  Public count         112
  Private base address 84:18:88:c0:2b:70
  Private count        16
```

#### show chassis mac-addresses (ACX5048 and ACX5096 Routers)

```
user@host> show chassis mac-addresses
FPC 0
  Base address  64:64:9b:5e:0a:00
  Count         1280
```

#### show chassis mac-addresses (ACX500 Routers)

```
user@host> show chassis mac-addresses
MAC address information:
  Public base address  f0:1c:2d:1b:60:80
  Public count         112
  Private base address f0:1c:2d:1b:60:f0
  Private count        16
```

#### show chassis mac-addresses (EX9251 Switch)

```
user@switch> show chassis mac-addresses
MAC address information:
  Public base address  4c:16:fc:90:68:00
  Public count         2032
  Private base address 4c:16:fc:90:6f:f0
  Private count        16
```

#### show chassis mac-addresses (EX9253 Switch)

```
user@switch> show chassis mac-addresses
MAC address information:
  Public base address  38:4f:49:8f:00:b8
  Public count         2330
  Private base address 38:4f:49:8f:09:d2
  Private count        1766
```



## show chassis psd

**Syntax** `show chassis psd`

**Release Information** Command introduced in Junos OS Release 9.1.

**Description** (Root System Domain [RSD] only) Display information about Protected System Domains (PSDs). A PSD is initially created by the RSD configuration. An RSD and PSDs are supported on a T320 or T640 router, or a T1600 routing node, or a TX Matrix Plus Platform that is interconnected with the JCS1200 platform.



**NOTE:** RSD configuration is not supported on a routing matrix based on TX Matrix Plus router with 3D SIBs.

**Options** This command has no options.

**Additional Information** For more information about PSDs, RSDs, and the JCS1200 platform, see the *Junos OS Protected System Domain Feature Guide for Routing Devices*.

**Required Privilege Level** view

**List of Sample Output** [show chassis psd on page 1127](#)

**Output Fields** [Table 37 on page 1127](#) lists the output fields for the `show chassis psd` command. Output fields are listed in the approximate order in which they appear.

*Table 37: show chassis psd Output Fields*

Field Name	Field Description
Slot Description	PSD identification.
State	PSD status: <ul style="list-style-type: none"> <li>• <b>Online</b>—PSD is online and running.</li> <li>• <b>Offline</b>—PSD is powered down.</li> </ul>
Uptime	Length of time that the PSD has been up and running.

## Sample Output

`show chassis psd`

```
{master}
```

```
user@host> show chassis psd
```

Slot	Description	State	Uptime
1		Online	12 hours, 19 minutes, 51 seconds
2		Online	2 hours, 18 minutes, 17 seconds
3		Online	12 hours, 19 minutes, 51 seconds

## show chassis pic

<b>List of Syntax</b>	<a href="#">Syntax on page 1129</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 1129</a> <a href="#">Syntax (MX Series Routers and EX Series Switches) on page 1129</a> <a href="#">Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) on page 1129</a> <a href="#">Syntax (PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers) on page 1129</a> <a href="#">Syntax (QFX Series) on page 1129</a> <a href="#">Syntax (OCX Series) on page 1129</a> <a href="#">Syntax (ACX Series Universal Metro Routers) on page 1130</a> <a href="#">Syntax (ACX5048 and ACX5096 Routers) on page 1130</a> <a href="#">Syntax (ACX500 Routers) on page 1130</a>
<b>Syntax</b>	<code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	<code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> &lt;lcc <i>number</i>&gt;</code>
<b>Syntax (MX Series Routers and EX Series Switches)</b>	<code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> &lt;all-members&gt; &lt;local&gt; &lt;member <i>member-id</i>&gt;</code>
<b>Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers)</b>	<code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
<b>Syntax (PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers)</b>	<code>show chassis pic transport fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
<b>Syntax (QFX Series)</b>	<code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> &lt;interconnect-device <i>name</i> (fpc-slot <i>slot-number</i>   pic-slot <i>slot-number</i>)&gt; &lt;node-device <i>name</i> pic-slot <i>slot-number</i>&gt;</code>
<b>Syntax (OCX Series)</b>	<code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>

Syntax (ACX Series Universal Metro Routers)	<code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
Syntax (ACX5048 and ACX5096 Routers)	<code>show chassis pic</code> <code>(fpc-slot <i>slot-number</i>   pic-slot <i>slot-number</i>)</code>
Syntax (ACX500 Routers)	<code>show chassis pic</code> <code>(fpc-slot <i>slot-number</i>   pic-slot <i>slot-number</i>)</code>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 13.2 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p><b>transport</b> option introduced in Junos OS Release 16.1R1 for MX Series Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p>
Description	Display status information about the PIC installed in the specified Flexible PIC Concentrator (FPC) and PIC slot.
Options	<p><b>fpc-slot <i>slot-number</i></b>—Display information about the PIC in this particular FPC slot:</p> <ul style="list-style-type: none"><li>On a TX Matrix router, if you specify the number of the T640 router by using the <b>lcc <i>number</i></b> option (the recommended method), replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>31</b>.</li></ul> <p>Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 router by using the <b>lcc <i>number</i></b> option (the recommended method), replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>31</b>. For example, the following commands have the same result:</p> <pre>user@host&gt; show chassis pic fpc-slot 1 lcc 1 pic-slot 1 user@host&gt; show chassis pic fpc-slot 9 pic-slot 1</pre> <ul style="list-style-type: none"><li>M120 routers only—Replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>5</b>.</li><li>MX80 routers only—Replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>1</b>.</li><li>MX104 routers only—Replace <b><i>slot-number</i></b> with a value from <b>0</b> through <b>2</b>.</li></ul>

- MX240 routers only—Replace **slot-number** with a value from 0 through 2.
- MX480 routers only—Replace **slot-number** with a value from 0 through 5.
- MX960 routers only—Replace **slot-number** with a value from 0 through 11.
- MX2010 routers only—Replace **slot-number** with a value from 0 through 9.
- MX2020 routers only—Replace **slot-number** with a value from 0 through 19.
- MX2008 routers only—Replace **slot-number** with a value from 0 through 9.
- MX10003 routers only—Replace **slot-number** with a value from 0 through 1.
- Other routers—Replace **slot-number** with a value from 0 through 7.
- EX Series switches:
  - EX3200 switches and EX4200 standalone switches—Replace **slot-number** with 0.
  - EX4200 switches in a Virtual Chassis configuration—Replace **slot-number** with a value from 0 through 9 (switch's member ID).
  - EX8208 switches—Replace **slot-number** with a value from 0 through 7 (line card).
  - EX8216 switches—Replace **slot-number** with a value from 0 through 15 (line card).
- QFX Series:
  - QFX3500, QFX3600, QFX5100, and OCX Series standalone switches—Replace **slot-number** with 0. In the command output, FPC refers to a line card. The FPC number equals the slot number for the line card.
  - QFabric systems—Replace **slot-number** with any number between 0 and 15. In the command output, FPC refers to a line card. The FPC number equals the slot number for the line card.

**all-members**—(MX Series routers and EX Series switches only) (Optional) Display PIC information for all member routers in the Virtual Chassis configuration.

**interconnect-device name**—(QFabric systems only) (Optional) Display PIC information for a specified Interconnect device.

**lcc number**—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display PIC information for a specified T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display PIC information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers and EX Series switches only) (Optional) Display PIC information for the local Virtual Chassis member.

**member *member-id***—(MX Series routers and EX Series switches only) (Optional) Display PIC information for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**node-device *name***—(QFabric systems only) (Optional) Display PIC information for a specified Node device.

**pic-slot *slot-number***—Display information about the PIC in this particular PIC slot. For routers, replace *slot-number* with a value from 0 through 3. For EX3200 and EX4200 switches, replace *slot-number* with 0 for built-in network interfaces and 1 for interfaces on uplink modules. For EX8208 and EX8216 switches, replace *slot-number* with 0. For the QFX3500 standalone switch and the QFabric system, replace *slot-number* with 0 or 1.

**transport**—Display PIC information for optical transport network.

**Required Privilege Level**

view

**Related Documentation**

- [request chassis pic on page 290](#)
- [show chassis hardware on page 870](#)
- [100-Gigabit Ethernet Type 4 PIC with CFP Overview](#)

**List of Sample Output**

[show chassis pic fpc-slot pic-slot on page 1136](#)  
[show chassis pic fpc-slot pic-slot \(PIC Offline\) on page 1136](#)  
[show chassis pic fpc-slot pic-slot \(FPC Offline\) on page 1136](#)  
[show chassis pic fpc-slot pic-slot \(FPC Not Present\) on page 1136](#)  
[show chassis pic fpc-slot pic-slot \(PIC Not Present\) on page 1137](#)  
[show chassis pic fpc-slot 3 pic-slot 0 \(M120 Router\) on page 1137](#)  
[show chassis pic fpc-slot pic-slot \(MX150\) on page 1137](#)  
[show chassis pic fpc-slot pic-slot \(MX104 Router\) on page 1137](#)

[show chassis pic fpc-slot pic-slot \(MX960 Router with Bidirectional Optics\) on page 1138](#)  
[show chassis pic fpc-slot pic-slot \(MX480 Router with 100-Gigabit Ethernet MIC\) on page 1138](#)  
[show chassis pic fpc-slot pic-slot \(MX240, MX480, MX960 Routers with Application Services Modular Line Card\) on page 1138](#)  
[show chassis pic fpc-slot pic-slot \(MX960 Router with MPC5EQ\) on page 1138](#)  
[show chassis pic fpc-slot pic-slot \(MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC\) on page 1139](#)  
[show chassis pic fpc-slot pic-slot on page 1139](#)  
[show chassis pic fpc-slot pic-slot \(MX10003 Routers\) on page 1140](#)  
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[show chassis pic fpc-slot pic-slot \(PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC\) on page 1141](#)  
[show chassis pic fpc-slot pic-slot \(MX480 Router with MPC4E\) on page 1141](#)  
[show chassis pic fpc-slot pic-slot \(MX480 router with OTN Interface\) on page 1141](#)  
[show chassis pic fpc-slot pic-slot \(MX2010 Router with OTN Interfaces\) on page 1142](#)  
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[show chassis pic fpc-slot pic-slot \(MX2010 Router\) on page 1144](#)  
[show chassis pic fpc-slot pic-slot \(T1600 Router with 100-Gigabit Ethernet PIC\) on page 1144](#)  
[show chassis pic fpc-slot pic-slot lcc \(TX Matrix Router\) on page 1144](#)  
[show chassis pic fpc-slot pic-slot lcc \(TX Matrix Plus Router\) on page 1144](#)  
[show chassis pic fpc-slot pic-slot \(Next-Generation SONET/SDH SFP\) on page 1145](#)  
[show chassis pic fpc-slot pic-slot \(12-Port T1/E1\) on page 1145](#)  
[show chassis pic fpc-slot 0 pic-slot 1 \(4x CHOC3 SONET CE SFP\) on page 1145](#)  
[show chassis pic fpc-slot 0 pic-slot 0 \(SONET/SDH OC3/STM1 \[Multi-Rate\] MIC with SFP\) on page 1146](#)  
[show chassis pic fpc-slot 3 pic-slot 0 \(8-port Channelized SONET/SDH OC3/STM1 \[Multi-Rate\] MIC with SFP\) on page 1146](#)  
[show chassis pic fpc-slot 5 pic-slot 0 \(4-port Channelized SONET/SDH OC3/STM1 \[Multi-Rate\] MIC with SFP\) on page 1146](#)  
[show chassis pic fpc-slot 1 pic-slot 0 \(1-port OC192/STM64 MIC with XFP\) on page 1147](#)  
[show chassis pic fpc-slot 1 pic-slot 2 \(8-port DS3/E3 MIC\) on page 1147](#)  
[show chassis pic fpc-slot pic-slot \(OTN\) on page 1147](#)  
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[show chassis pic transport fpc-slot pic-slot \(PTX Series Packet Transport Routers\) on page 1149](#)  
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[show chassis pic fpc-slot 0 pic-slot 0 \(ACX5096 Router\) on page 1149](#)  
[show chassis pic fpc-slot 0 pic-slot 0 \(ACX5048 Router\) on page 1153](#)  
[show chassis pic fpc-slot 0 pic-slot 0 \(ACX500 Router\) on page 1153](#)  
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[show chassis pic fpc-slot 0 pic-slot 0 \(EX9251 Switches\) on page 1154](#)  
[show chassis pic fpc-slot 0 pic-slot 0 \(EX9253 Switches\) on page 1154](#)

**Output Fields** Table 38 on page 1134 lists the output fields for the **show chassis pic** command. Output fields are listed in the approximate order in which they appear.

*Table 38: show chassis pic Output Fields*

Field Name	Field Description
Type	PIC type.  <b>NOTE:</b> On the 1-port OC192/STM64 MICs with the SDH framing mode, the type is displayed as <b>MIC-3D-1STM64-XFP</b> and with the SONET framing mode, the type is displayed as <b>MIC-3D-1OC192-XFP</b> . By default, the 1-port OC192/STM64 MICs displays the type as <b>MIC-3D-1OC192-XFP</b> .
Account Layer2 Overhead	(MX Series routers) Indicates whether functionality to count the Layer 2 overhead bytes in the interface statistics at the PIC level is enabled or disabled.
ASIC type	Type of ASIC on the PIC.
State	Status of the PIC. State is displayed only when a PIC is in the slot. <ul style="list-style-type: none"> <li>• <b>Online</b>— PIC is online and running.</li> <li>• <b>Offline</b>—PIC is powered down.</li> </ul>
PIC version	PIC hardware version.
Uptime	How long the PIC has been online.
Package	(Multiservices PICs only) Services package supported: <b>Layer-2</b> or <b>Layer-3</b> .
Port Number	Port number for the PIC.
Cable Type	Type of cable connected to the port: <b>LH</b> , <b>LX</b> , or <b>SX</b> .



Table 38: show chassis pic Output Fields (continued)

Field Name	Field Description
<b>PIC Port Information (MX480 Router 100-Gigabit Ethernet CFP)</b>	<p>Port-level information for the PIC.</p> <ul style="list-style-type: none"> <li>• Port—Port number</li> <li>• Cable type—Type of optical transceiver installed.</li> <li>• Fiber type—Type of fiber. SM is single-mode.</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number.</li> <li>• Wavelength—Wavelength of the transmitted signal. Uplinks and downlinks are always 1550 nm. There is a separate fiber for each direction</li> <li>• Xcvr Firmware—Transceiver firmware version.</li> </ul>
<b>PIC Port Information (MX960 Router Bidirectional Optics )</b>	<p>Port-level information for the PIC.</p> <ul style="list-style-type: none"> <li>• Port—Port number</li> <li>• Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed. Uplink interfaces display -U. Down link interfaces display -D.</li> <li>• Fiber type—Type of fiber. SM is single-mode.</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number. <ul style="list-style-type: none"> <li>• BX10-10-km bidirectional optics.</li> <li>• BX40-40-km bidirectional optics.</li> <li>• SFP-LX-40-km SFP optics.</li> </ul> </li> <li>• Wavelength—Wavelength of the transmitted signal. Uplinks are always 1310 nm. Downlinks are either 1490 nm or 1550 nm.</li> </ul>
<b>PIC Port Information (Next-Generation SONET/SDH SFP)</b>	<p>Port-level information for the next-generation SONET/SDH SFP PIC.</p> <ul style="list-style-type: none"> <li>• Port—Port number.</li> <li>• Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed.</li> <li>• Fiber type—Type of fiber: <b>SM</b> (single-mode) or <b>MM</b> (multimode).</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number.</li> <li>• Wavelength—Wavelength of the transmitted signal. Next-generation SONET/SDH SFPs use 1310 nm.</li> </ul>
<b>PIC port information (MX104 router)</b>	<p>Port-level information for the PIC.</p> <ul style="list-style-type: none"> <li>• Port—Port number</li> <li>• Cable type—Type of optical transceiver installed.</li> <li>• Fiber type—Type of fiber. SM is single-mode.</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number.</li> <li>• Wavelength—Wavelength of the transmitted signal.</li> <li>• Xcvr Firmware—Firmware version of the transceiver.</li> </ul>

*Table 38: show chassis pic Output Fields (continued)*

Field Name	Field Description
Port speed information	Information pertaining to port speed: <ul style="list-style-type: none"> <li>• Port—Port number.</li> <li>• PFE—Packet Forwarding Engine slot number.</li> <li>• Capable Port Speed—Speed supported by each port.</li> </ul>
Multirate Mode	Rate-selectability status for the MIC: <b>Enabled</b> or <b>Disabled</b> .
Channelization	Indicates whether channelization is enabled or disabled on the DS3/E3 MIC.
Administrative State	Indicates the administrative state of the PIC. Possible values are: In Service (Default) and Out of Service.
Operational State	Indicates the operational state of the PIC. Possible values are: Normal and Fault.

## Sample Output

### show chassis pic fpc-slot pic-slot

```

user@host> show chassis pic fpc-slot 2 pic-slot 0
PIC fpc slot 2 pic slot 0 information:
  Type                10x 1GE(LAN), 1000 BASE
  ASIC type           H chip
  State                Online
  PIC version          1.1
  Uptime               1 day, 50 minutes, 58 seconds
PIC Port Information:
  Port      Cable      Xcvr      Xcvr Vendor
  Number    Type        Vendor Name  Part Number
  0          GIGE 1000EX  FINISAR CORP.  FTRJ8519P1BNL-J3
  1          GIGE 1000EX  FINISAR CORP.  FTRJ-8519-7D-JUN

```

### show chassis pic fpc-slot pic-slot (PIC Offline)

```

user@host> show chassis pic fpc-slot 1 pic-slot 0
PIC fpc slot 1 pic slot 0 information:
  State                Offline

```

### show chassis pic fpc-slot pic-slot (FPC Offline)

```

user@host> show chassis pic fpc-slot 1 pic-slot 0
FPC 1 is not online

```

### show chassis pic fpc-slot pic-slot (FPC Not Present)

```

user@host> show chassis pic fpc-slot 4 pic-slot 0
FPC slot 4 is empty

```

**show chassis pic fpc-slot pic-slot (PIC Not Present)**

```
user@host> show chassis pic fpc-slot 5 pic-slot 2
FPC 5, PIC 2 is empty
```

**show chassis pic fpc-slot 3 pic-slot 0 (M120 Router)**

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
PC slot 3, PIC slot 0 information:
  Type                2x G/E IQ, 1000 BASE
  ASIC type           IQ GE 2 VLAN-TAG FPGA
  State               Online
  PIC version         1.16
  Uptime              3 hours, 3 minutes

PIC Port Information:
  Port      Cable      Xcvr      Xcvr Vendor
  Number    Type        Vendor Name Part Number
  0         GIGE 1000SX  FINISAR CORP.  FTRJ8519P1BNL-J3
  1         GIGE 1000SX  FINISAR CORP.  FTRJ-8519-7D-JUN
```

**show chassis pic fpc-slot pic-slot (MX150)**

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                Virtual
  State               Online
  PIC version         0.0
  Uptime              7 days, 19 hours, 44 minutes, 40 seconds

PIC port information:
  Fiber      Xcvr vendor      Wave-      Xcvr
  Port Cable type  type  Xcvr vendor      part number  length
Firmware
  10  GIGE 1000T   n/a  Methode Elec.    SP7041-M1-JN  n/a      0.0
  11  GIGE 1000T   n/a  Methode Elec.    SP7041-M1-JN  n/a      0.0
```

**show chassis pic fpc-slot pic-slot (MX104 Router)**

```
user@host> show chassis pic fpc-slot 1 pic-slot 1
FPC slot 1, PIC slot 1 information:
  Type                10x 1GE(LAN) -E SFP
  State               Online
  PIC version         1.1
  Uptime              1 hour, 30 minutes, 59 seconds

PIC port information:
  Fiber      Xcvr vendor      Wave-      Xcvr
  Port Cable type  type  Xcvr vendor      part number  length
Firmware
  3  GIGE 1000T   n/a  Methode Elec.    SP7041-M1-JN  n/a      0.0
  6  GIGE 1000LX10 SM  FINISAR CORP.    FTLF1318P2BTL-J1 1310 nm 0.0
  8  GIGE 1000T   n/a  Methode Elec.    SP7041-M1-JN  n/a      0.0
```

9 GIGE 1000T n/a Methode Elec. SP7041-M1-JN n/a 0.0

### show chassis pic fpc-slot pic-slot (MX960 Router with Bidirectional Optics)

```
user@host> show chassis pic fpc-slot 4 pic-slot 1
FPC slot 4, PIC slot 1 information:
  Type                10x 1GE(LAN)
  Account Layer2 Overhead Enabled
  State                Online
  PIC version          0.0
  Uptime               18 days, 5 hours, 41 minutes, 54 seconds

PIC port information:
  Port  Cable type      Fiber type  Xcvr vendor      Xcvr vendor      Wavelength
                                part number
0      SFP-1000BASE-BX10-D SM SumitomoElectric SBP6H44-J3-BW-49 1490 nm
1      SFP-1000BASE-BX10-D SM SumitomoElectric SBP6H44-J3-BW-49 1490 nm
2      SFP-1000BASE-BX10-D SM SumitomoElectric SBP6H44-J3-BW-49 1490 nm
3      SFP-1000BASE-BX10-D SM OCP              TRXBG1LXDBVM2-JW 1490 nm
4      SFP-1000BASE-BX10-D SM OCP              TRXBG1LXDBVM2-JW 1490 nm
5      SFP-1000BASE-BX10-U SM SumitomoElectric SBP6H44-J3-BW-31 1310 nm
6      SFP-1000BASE-BX10-U SM SumitomoElectric SBP6H44-J3-BW-31 1310 nm
7      SFP-1000BASE-BX10-U SM OCP              TRXBG1LXDBBMH-J1 1310 nm
8      SFP-1000BASE-BX10-U SM OCP              TRXBG1LXDBBMH-J1 1310 nm
9      SFP-1000BASE-BX10-U SM SumitomoElectric SBP6H44-J3-BW-31 1310 nm
```

### show chassis pic fpc-slot pic-slot (MX480 Router with 100-Gigabit Ethernet MIC)

```
user@host> show chassis pic fpc-slot 1 pic-slot 2
FPC slot 1, PIC slot 2 information:
  Type                1X100GE CFP
  State                Online
  PIC version          2.10
  Uptime               4 minutes, 48 seconds

PIC port information:
  Port  Cable type      Fiber type  Xcvr vendor      Xcvr vendor      Wavelength
                                part number
0      100GBASE LR4     SM FINISAR CORP.   FTLC1181RDN5-J3 1310 nm

Xcvr vendor
firmware version
1.8
```

### show chassis pic fpc-slot pic-slot (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```
user@host> show chassis pic fpc-slot 1 pic-slot 2
FPC slot 1, PIC slot 2 information:
  Type                AS-MXC
  State                Online
  PIC version          1.0
  Uptime               11 hours, 18 minutes, 3 seconds
```

### show chassis pic fpc-slot pic-slot (MX960 Router with MPC5EQ)

```
user@host> show chassis pic fpc-slot 0 pic-slot 3
FPC slot 0, PIC slot 3 information:
  Type                1X100GE CFP2 OTN
```

```

State                               Online
PIC version                         0.0
Uptime                             1 hour, 22 minutes, 42 seconds

PIC port information:
Fiber                               Xcvr vendor      Wave-      Xcvr
Port Cable type                    type Xcvr vendor      part number  length
Firmware
0  100GBASE LR4                    n/a  Oclaro Inc.      TRB5E20FNF-LF150 1309 nm 1.0

```

### show chassis pic fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```

user@host> show chassis pic fpc-slot 3 pic-slot 0
FPC slot 3, PIC slot 0 information:
Type                               1X100GE DWDM CFP2-ACO
State                               Online
PIC version                         1.3
Uptime                             9 hours, 4 minutes, 43 seconds

PIC port information:
Fiber                               Xcvr vendor      Wave-      Xcvr
Port Cable type                    type Xcvr vendor      part number  length
Firmware
0  100G LH                          SM  OCLARO           TRB100AJ-01    1528.77 nm -
1568.36 nm 20.10

```

### show chassis pic fpc-slot pic-slot

```

user@host> show chassis pic fpc-slot 1 pic-slot 1

FPC slot 1, PIC slot 1 information:
Type                               MIC1-MACSEC
State                               Online
PIC version                         1.5
Uptime                             2 hours, 52 minutes, 1 second

PIC port information:
Fiber                               Xcvr vendor      Wave-      Xcvr
Port Cable type                    type Xcvr vendor      part number  length
Firmware
8  40GBASE SR4                     MM  AVAGO            AFBR-79EQDZ-JU2 850 nm 0.0
10 40GBASE SR4                     MM  AVAGO            AFBR-79EQDZ-JU2 850 nm 0.0

Port speed information:
Port  PFE      Capable Port Speeds
0      0        4x10GE, 40GE, 100GE
1      0        4x10GE, 40GE, 100GE
2      0        4x10GE, 40GE, 100GE
3      0        4x10GE, 40GE, 100GE
4      0        4x10GE, 40GE, 100GE
5      0        4x10GE, 40GE, 100GE
6      0        4x10GE, 40GE, 100GE
7      0        4x10GE, 40GE, 100GE
8      0        4x10GE, 40GE, 100GE

```

```

9      0      4x10GE, 40GE, 100GE
10     0      4x10GE, 40GE, 100GE
11     0      4x10GE, 40GE, 100GE

```

### show chassis pic fpc-slot pic-slot (MX10003 Routers)

```
user@host > show chassis pic fpc-slot 0 pic-slot 0
```

```
FPC slot 0, PIC slot 1 information:
```

```

Type           MIC1
State          Online
PIC version    1.5
Uptime         13 hours, 54 minutes, 33 seconds

```

```
PIC port information:
```

		Fiber		Xcvr vendor	Wave-	Xcvr
Port	Cable type	type	Xcvr vendor	part number	length	
0	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU2	850 nm	0.0
11	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU2	850 nm	0.0

```
Port speed information:
```

Port	PFE	Capable	Port Speeds
0	0	4x10GE, 40GE, 100GE	
1	0	4x10GE, 40GE, 100GE	
2	0	4x10GE, 40GE, 100GE	
3	0	4x10GE, 40GE, 100GE	
4	1	4x10GE, 40GE, 100GE	
5	1	4x10GE, 40GE, 100GE	
6	1	4x10GE, 40GE, 100GE	
7	1	4x10GE, 40GE, 100GE	
8	2	4x10GE, 40GE, 100GE	
9	2	4x10GE, 40GE, 100GE	
10	2	4x10GE, 40GE, 100GE	
11	2	4x10GE, 40GE, 100GE	

### show chassis pic fpc-slot pic-slot (MX204 Routers)

```
user@host > show chassis pic fpc-slot 0 pic-slot 0
```

```
FPC slot 0, PIC slot 0 information:
```

```

Type           4XQSFP28 PIC
State          Online
PIC version    0.0
Uptime         2 days, 7 hours, 6 minutes, 10 seconds

```

```
PIC port information:
```

	JNPR	Fiber		Xcvr vendor	Wave-	Xcvr
Port	Cable type	type	Xcvr vendor	part number	length	
0	100GBASE SR4 REV 01	MM	JUNIPER-FINISAR	FTLC9551REPM-J1	850 nm	0.0
1	4X10GBASE SR REV 01	MM	AVAGO	AFBR-79EEPZ-JU2	850 nm	0.0
2	100GBASE LR4 REV 01	SM	JUNIPER-FINISAR	FTLC1151RDPL-J3	1302 nm	0.0

```

3    100GBASE LR4      SM    JUNIPER-FINISAR    FTLC1151RDPL-J3    1302 nm    0.0
    REV 01

```

Port speed information:

Port	PFE	Capable Port Speeds
0	0	4x10GE, 40GE, 100GE
1	0	4x10GE, 40GE, 100GE
2	0	4x10GE, 40GE, 100GE
3	0	4x10GE, 40GE, 100GE

### show chassis pic fpc-slot pic-slot (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```
user@host > show chassis pic fpc-slot 4 pic-slot 0
```

FPC slot 4, PIC slot 0 information:

```

Type                5X100GE DWDM CFP2-ACO
State                Online
PIC version          1.17
Uptime                1 day, 5 hours, 15 minutes, 17 seconds

```

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	part number	Wave-length	Xcvr
0	100G LH	SM	MULTILANE SAL	ML4030-ACO-2	1528.77 nm	-
1	100G LH	SM	MULTILANE SAL	ML4030-ACO-2	1528.77 nm	-
2	100G LH	SM	JUNIPER-FUJITSU	FIM38500/222	1528.77 nm	-
3	100G LH	SM	FUJITSU	FIM38500/222	1528.77 nm	-
4	100G LH	SM	FUJITSU	FIM38500/222	1528.77 nm	-

### show chassis pic fpc-slot pic-slot (MX480 Router with MPC4E)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
```

FPC slot 3, PIC slot 0 information:

```

Type                4x10GE SFPP
State                Online
PIC version          0.0
Uptime                41 seconds

```

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	part number	Wave-length	Xcvr
0	10GBASE SR	MM	OPNEXT, INC.	TRS2001EM-0014	850 nm	0.0
1	10GBASE SR	MM	OPNEXT, INC.	TRS2001EM-0014	850 nm	0.0

### show chassis pic fpc-slot pic-slot (MX480 router with OTN Interface)

```
user@host> show chassis pci fpc-slot 4 pic-slot 0
```

FPC slot 4, PIC slot 0 information:

```
Type                12X10GE SFPP OTN
```

```

State
PIC version      Online
Uptime          0.0
                5 hours, 28 minutes, 23 seconds

PIC port information:

Fiber

Xcvr vendor      Wave-   Xcvr
part number      length

Port Cable type  type  Xcvr vendor      part number      length
Firmware
0   10GBASE SR   MM   FINISAR CORP.    FTLX8571D3BNL-J1 850 nm   0.0
1   10GBASE SR   MM   FINISAR CORP.    FTLX8571D3BCL-J1 850 nm   0.0
2   10GBASE SR   MM   OPNEXT, INC.     TRS2001EM-0014   850 nm   0.0

```

### show chassis pic fpc-slot pic-slot (MX2010 Router with OTN Interfaces)

```

user@host> show chassis pic fpc-slot 9 pic-slot 0
FPC slot 9, PIC slot 0 information:
Type                2X100GE CFP2 OTN
State               Online
PIC version         1.9
Uptime              3 hours, 56 minutes, 16 seconds

PIC port information:

Fiber

Xcvr vendor      Wave-   Xcvr
part number      length

Port Cable type  type  Xcvr vendor      part number      length
Firmware
0   100GBASE LR4-D  SM   FUJITSU          FIM37300/222     1310 nm   1.3
1   100GBASE SR10  MM   AVAGO            AFBR-8420Z       n/a       1.0

```

### show chassis pic fpc-slot pic-slot (MX2010 Router)

```

user@host> show chassis pic fpc-slot 9 pic-slot 3
FPC slot 9, PIC slot 3 information:
Type                1X100GE CFP
Account Layer2 Overhead Enabled
State               Online
PIC version         0.0
Uptime              14 hours, 51 seconds

```

### show chassis pic fpc-slot pic-slot (MX2020 Router)

```

user@host> show chassis pic fpc-slot 19 pic-slot 3
FPC slot 19, PIC slot 3 information:
Type                4x 10GE(LAN) SFP+
Account Layer2 Overhead Enabled
State               Online
PIC version         0.0
Uptime              1 day, 11 hours, 26 minutes, 36 seconds

PIC port information:

Fiber

Xcvr vendor      Wave-   Xcvr
part number      length

Port Cable type  type  Xcvr vendor      part number      length
Firmware
0   10GBASE SR   MM   SumitomoElectric SPP5200SR-J6-M   850 nm   0.0

```



1	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm	0.0
2	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm	0.0
3	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm	0.0

### show chassis pic fpc-slot pic-slot (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis pic fpc-slot 18 pic-slot 2
FPC slot 18, PIC slot 2 information:
  Type          3X40GE QSFP
  State          Online
  PIC version    0.0
  Uptime        6 minutes, 31 seconds

PIC port information:

```

		Fiber		Xcvr vendor	Wave-	Xcvr
Port	Cable type	type	Xcvr vendor	part number	length	
0	40GBASE SR4	MM	AVAGO	AFBR-79E4Z-D-JU2	850 nm	0.0
1	40GBASE SR4	MM	AVAGO	AFBR-79E4Z-D-JU2	850 nm	0.0
2	40GBASE SR4	MM	AVAGO	AFBR-79E4Z-D-JU2	850 nm	0.0

### show chassis pic fpc-slot pic-slot (MX2020 Router with MPC6E and OTN MIC)

```

user@host> show chassis pic fpc-slot 3 pic-slot 0
FPC slot 0, PIC slot 1 information:
  Type          24X10GE SFPP OTN
  State          Online
  PIC version    1.1
  Uptime        1 hour, 33 minutes, 59 seconds

PIC port information:

```

		Fiber		Xcvr vendor	Wave-	Xcvr
Port	Cable type	type	Xcvr vendor	part number	length	
7	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm	0.0
9	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
12	10GBASE LR	SM	FINISAR CORP.	FTLX1472M3BNL-J3	1310 nm	0.0
20	10GBASE ZR	SM	FINISAR CORP.	FTLX1871M3BNL-J3	1550 nm	0.0
21	10GBASE ER	SM	FINISAR CORP.	FTLX1671D3BTL-J4	1550 nm	0.0
22	10GBASE LR	SM	SOURCEPHOTONICS	SPP10SLREDFCJNP	1310 nm	0.0
23	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm	0.0

### show chassis pic fpc-slot pic-slot (MX2020 Router with MPC4E)

```

user@host> show chassis pic fpc-slot 14 pic-slot 0

```

FPC slot 14, PIC slot 2 information:

```
Type          4x10GE SFPP
State          Online
PIC version    0.0
Uptime        1 day, 14 hours, 49 minutes, 9 seconds
```

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	part number	Wave-length	Xcvr
0	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
1	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
3	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0

#### show chassis pic fpc-slot pic-slot (MX2010 Router)

```
user@host> show chassis pic fpc-slot 9 pic-slot 3
```

FPC slot 9, PIC slot 3 information:

```
Type          1X100GE CFP
Account Layer2 Overhead Enabled
State          Online
PIC version    0.0
Uptime        14 hours, 51 seconds
```

#### show chassis pic fpc-slot pic-slot (T1600 Router with 100-Gigabit Ethernet PIC)

```
user@host> run show chassis pic fpc-slot 3 pic-slot 1
```

FPC slot 3, PIC slot 1 information:

```
Type          100GE SLOT1
ASIC type      Brooklyn 100GE FPGA
State          Online
PIC version    1.3
Uptime        10 minutes, 44 seconds
```

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	part number	Wavelength
0	100GBASE LR4	SM	Opnext Inc.	TRC5E20ENFSF000F	1310 nm

#### show chassis pic fpc-slot pic-slot lcc (TX Matrix Router)

```
user@host> show chassis pic fpc-slot 1 pic-slot 1 lcc 0
```

lcc0-re0:

-----

PIC fpc slot 1 pic slot 1 information:

```
Type          4x OC-3 SONET, SMIR
ASIC type      D chip
State          Online
PIC version    1.2
Uptime        5 days, 2 hours, 12 minutes, 8 seconds
```

#### show chassis pic fpc-slot pic-slot lcc (TX Matrix Plus Router)

```
user@host> show chassis pic pic-slot 0 fpc-slot 8
```

lcc0-re0:

-----

FPC slot 8, PIC slot 0 information:

```
Type          1x 10GE(LAN/WAN)
State          Online
Uptime         2 hours, 46 minutes, 23 seconds
```

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	part number	Wavelength
0	10GBASE ZR	SM	Opnext Inc.	TRF7061BN-LF150	1550 nm
0	10GBASE ZR	SM	FINISAR CORP.	FTRX-1811-3-J2	1550 nm

### show chassis pic fpc-slot pic-slot (Next-Generation SONET/SDH SFP)

user@host> show chassis pic fpc-slot 4 pic-slot 0

FPC slot 4, PIC slot 0 information:

```
Type          4x OC-3 1x OC-12 SFP
ASIC type      D FPGA
State          Online
PIC version    1.3
Uptime         1 day, 50 minutes, 4 seconds
```

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	part number	Wavelength
0	OC48 short reach	SM	FINISAR CORP.	FTRJ1321P1BTL-J2	1310 nm
1	OC3 short reach	MM	OCF	TRPA03MM3BAS-JE	1310 nm
2	OC3 short reach	MM	OCF	TRXA03MM3BAS-JW	1310 nm
3	OC12 inter reach	SM	FINISAR CORP.	FTLF1322P1BTR	1310 nm

### show chassis pic fpc-slot pic-slot (12-Port T1/E1)

user@host> show chassis pic fpc-slot 0 pic-slot 3

FPC slot 0, PIC slot 3 information:

```
Type          12x T1/E1 CE
State          Online
PIC version    1.1
CPU load average 1 percent
Interrupt load average 0 percent
Total DRAM size 128 MB
Memory buffer utilization 100 percent
Memory heap utilization 4 percent
Uptime         1 day, 22 hours, 28 minutes, 12 seconds
Internal Clock Synchronization Normal
```

### show chassis pic fpc-slot 0 pic-slot 1 (4x CHOC3 SONET CE SFP)

user@host> show chassis pic fpc-slot 0 pic-slot 1

FPC slot 0, PIC slot 1 information:

```
Type          4x CHOC3 SONET CE SFP
State          Online
PIC version    1.3
CPU load average 1 percent
Interrupt load average 0 percent
Total DRAM size 128 MB
Memory buffer utilization 99 percent
Memory heap utilization 4 percent
Uptime         1 day, 22 hours, 55 minutes, 37 seconds
Internal Clock Synchronization Normal
```

## PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wavelength
0	OC3 short reach	MM	AVAGO	HFBR-57E0P-JU2	n/a
1	OC3 short reach	MM	AVAGO	HFBR-57E0P-JU2	n/a
3	OC3 long reach	SM	OPNEXT INC	TRF5456AVLB314	1310 nm

## show chassis pic fpc-slot 0 pic-slot 0 (SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
```

```
FPC slot 0, PIC slot 0 information:
```

Type	MIC-3D-80C30C12-40C48
State	Online
PIC version	1.8
Uptime	3 days, 22 hours, 3 minutes, 50 seconds

## PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wavelength
1	OC12 inter reach	SM	FINISAR CORP	FTRJ1322P1BTR-J3	1310 nm
7	OC12 inter reach	SM	FINISAR CORP	FTRJ1322P1BTR-J3	1310 nm
Multirate Mode		Enabled			

## show chassis pic fpc-slot 3 pic-slot 0 (8-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
```

```
FPC slot 3, PIC slot 0 information:
```

Type	MIC-3D-8CHOC3-4CHOC12
State	Online
PIC version	1.9
Uptime	1 hour, 21 minutes, 24 seconds

## PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wavelength
0	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm
1	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm
2	OC12 inter reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J2	1310 nm
4	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm
5	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm
6	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm
7	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm

## show chassis pic fpc-slot 5 pic-slot 0 (4-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 5 pic-slot 0
```

```
FPC slot 5, PIC slot 0 information:
```

Type	MIC-3D-4CHOC3-2CHOC12
State	Online
PIC version	1.9
Uptime	1 hour, 21 minutes

## PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wavelength
1	OC12 inter reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm
2	OC12 inter reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm
3	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3	1310 nm

**show chassis pic fpc-slot 1 pic-slot 0 (1-port OC192/STM64 MIC with XFP)**

```

user@host> show chassis pic fpc-slot 1 pic-slot 0
FPC slot 1, PIC slot 0 information:
  Type          MIC-3D-10C192-XFP
  State         Online
  PIC version   1.2
  Uptime        1 day, 11 hours, 4 minutes, 6 seconds

PIC port information:
  Port  Cable type      Fiber type  Xcvr vendor  Xcvr vendor  Wavelength
  0      OC192 short reach n/a    FINISAR CORP.  FTLX1412M3BCL-J3  1310 nm

```

**show chassis pic fpc-slot 1 pic-slot 2 (8-port DS3/E3 MIC)**

```

user@host> show chassis pic fpc-slot 1 pic-slot 2
FPC slot 1, PIC slot 2 information:
  Type          MIC-3D-8DS3-E3
  State         Online
  PIC version   1.10
  Uptime        4 days, 1 hour, 29 minutes, 19 seconds
  Channelization Mode  Disabled

```

**show chassis pic fpc-slot pic-slot (OTN)**

```

user@host> show chassis pic fpc-slot 5 pic-slot 0
PIC fpc slot 5 pic slot 0 information:
  Type          1x10GE(LAN),OTN
  ASIC type     H chip
  State         Online
  PIC version   1.0
  Uptime        5 minutes, 50 seconds

```

**show chassis pic fpc-slot pic-slot (QFX3500 Switch)**

```

user@switch> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type 48x 10G-SFP+ Builtin
  State Online
  Uptime 3 days, 3 hours, 5 minutes, 20 seconds

```

**show chassis pic fpc-slot pic-slot (QFX5100 Switches and OCX Series )**

```

user@switch> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type          Unknown Builtin
  State         Online
  Uptime        1 day, 17 hours, 5 minutes, 9 seconds

```

**show chassis pic interconnect-device fpc-slot pic-slot (QFabric Systems)**

```

user@switch> show chassis pic interconnect-device interconnect1 fpc-slot 9 pic-slot 0
FPC slot 9, PIC slot 0 information:
  Type          16x 40G-GE Builtin
  State         Online
  Uptime        2 hours, 47 minutes, 40 seconds

```

**show chassis pic node-device fpc-slot pic-slot (QFabric System)**

```
user@switch> show chassis pic node-device node1 pic-slot 0
```

```
FPC slot node1, PIC slot 0 information:
```

```
Type                48x 10G-SFP+Builtn
State                Online
Uptime               2 hours, 52 minutes, 37 seconds
```

```
PIC port information:
```

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wavelength
0	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
1	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
2	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
3	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
4	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
5	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
6	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
7	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
8	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
9	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
10	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
11	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
12	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
13	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
14	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
15	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
16	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
17	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
18	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
19	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
20	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
21	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
22	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
23	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
24	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
25	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
26	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
27	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
28	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
29	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
30	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
31	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
32	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
33	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
34	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
35	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
36	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
37	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
38	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
39	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
40	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
41	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
42	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
43	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
44	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
45	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
46	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm
47	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3	850 nm

**show chassis pic fpc-slot 0 pic-slot 1 (ACX2000 Universal Metro Router)**

```

user@host> show chassis pic fpc-slot 0 pic-slot 1
FPC slot 0, PIC slot 1 information:
  Type                8x 1GE(LAN) RJ45 Built-in
  State                Online
  Uptime               6 days, 2 hours, 51 minutes, 11 seconds

```

**show chassis pic FPC-slot 1 PIC-slot 0 (MX Routers with Media Services Blade [MSB])**

```

user@switch> show chassis pic fpc-slot 1 pic-slot 0
FPC slot 1, PIC slot 0 information:
  Type                AS-MSB
  State                Online
  PIC version          1.6
  Uptime               11 hours, 17 minutes, 56 seconds

```

**show chassis pic FPC slot 1, PIC slot 2 (MX Routers with Media Services Blade [MSB])**

```

user@switch> show chassis pic fpc-slot 1 pic-slot 2
  Type                AS-MXC
  State                Online
  PIC version          1.0
  Uptime               11 hours, 18 minutes, 3 seconds

```

**show chassis pic transport fpc-slot pic-slot (PTX Series Packet Transport Routers)**

```

user@host> show chassis pic transport fpc-slot 2 pic-slot 0
Administrative State: In Service
Operational State:   Normal

```

**show chassis pic transport fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)**

```

user@host> show chassis pic transport fpc-slot 3 pic-slot 0
Administrative State: In Service
Operational State:   Normal

```

**show chassis pic fpc-slot 0 pic-slot 0 (ACX5096 Router)**

```

user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                96x10G-8x40G
  State                Online
  PIC version          2.9
  Uptime               21 hours, 28 minutes, 13 seconds

```

**PIC port information:**

		Fiber		Xcvr vendor	Wave-	Xcvr
Port	Cable type	type	Xcvr vendor	part number	length	
Firmware						
0	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
1	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	0.0
3	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0

4	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
5	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
6	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
7	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
8	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
9	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
10	10GBASE SR	MM	OPNEXT, INC.	TRS2001EN-0014	850 nm	0.0
11	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
12	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
13	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
14	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
15	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
16	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
17	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
18	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
19	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	0.0
20	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm	0.0
21	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
22	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
23	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
24	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
25	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm	0.0
26	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
27	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
28	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
29	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P3BNL-J1	850 nm	0.0
31	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
32	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
33	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
34	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
35	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm	0.0



36	10GBASE SR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm	0.0
37	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
38	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
40	GIGE 1000LX10	SM	FINISAR CORP.	FTLF1318P2BTL-J1	1310 nm	0.0
41	10GBASE LR	SM	OPNEXT, INC	TRS5021EN-S201	1310 nm	0.0
42	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	0.0
43	10GBASE LR	SM	SumitomoElectric	SPP5100LR-J3	1310 nm	0.0
44	10GBASE LR	SM	SumitomoElectric	SPP5100LR-J3	1310 nm	0.0
45	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	0.0
46	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	0.0
47	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
48	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
49	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
50	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
51	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
52	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
53	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
54	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
55	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
56	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
57	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
58	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
59	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
60	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
61	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
62	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
63	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
64	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
65	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
66	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm	0.0

67	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
68	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
69	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
70	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
71	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm	0.0
72	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	0.0
73	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
74	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
75	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
76	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
77	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm	0.0
78	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm	0.0
79	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm	0.0
80	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm	0.0
81	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm	0.0
82	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm	0.0
83	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm	0.0
84	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm	0.0
85	10GBASE LR	SM	OPNEXT, INC	TRS5021EN-S201	1310 nm	0.0
86	10GBASE ER	SM	OPNEXT, INC	TRS7050EN-S201	1550 nm	0.0
87	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm	0.0
88	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm	0.0
89	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm	0.0
90	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm	0.0
91	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm	0.0
92	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm	0.0
93	10GBASE LR	SM	SumitomoElectric	SPP5100LR-J3	1310 nm	0.0
94	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm	0.0
95	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
96	40GBASE SR4	MM	AVAGO	AFBR-79E4Z-D-JU1	850 nm	0.0
97	40GBASE SR4	MM	AVAGO	AFBR-79E4Z-D-JU1	850 nm	0.0

98	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0
99	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0
100	40GBASE CU 1M	n/a	Molex Inc.	1110409055	n/a	0.0
101	40GBASE CU 1M	n/a	Molex Inc.	1110409055	n/a	0.0
102	40GBASE CU 1M	n/a	Molex Inc.	1110409055	n/a	0.0
103	40GBASE CU 1M	n/a	Molex Inc.	1110409055	n/a	0.0

### show chassis pic fpc-slot 0 pic-slot 0 (ACX5048 Router)

```

user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type          96x10G-8x40G
  State          Online
  PIC version    2.9
  Uptime        1 day, 5 hours, 27 minutes, 25 seconds

PIC port information:

```

		Fiber		Xcvr vendor	Wave-	Xcvr
Port	Cable type	type	Xcvr vendor	part number	length	
0	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
10	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P3BNL-J1	850 nm	0.0
14	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
20	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
30	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P2BNL-J1	850 nm	0.0
41	10GBASE SR	MM	OPNEXT, INC.	TRS2001EN-0014	850 nm	0.0
46	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P2BNL-J1	850 nm	0.0
64	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
78	GIGE 1000SX	MM	AVAGO	AFBR-5715PZ-JU2	850 nm	0.0
96	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0
99	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0
100	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0

### show chassis pic fpc-slot 0 pic-slot 0 (ACX500 Router)

```

user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type          2x 1GE(LAN) SFP Builtin
  State          Online
  Uptime        17 hours, 54 minutes, 45 seconds

```

**show chassis pic fpc-slot 0 pic-slot 1 (ACX500 Router)**

```

user@host> show chassis pic fpc-slot 0 pic-slot 1
FPC slot 0, PIC slot 1 information:
  Type                4x 1GE(LAN) RJ45, SFP Built-in
  State                Online
  Uptime               17 hours, 54 minutes, 45 seconds

```

**show chassis pic transport fpc-slot pic-slot (PTX Series Packet Transport Routers)**

```

user@host> show chassis pic transport fpc-slot 2 pic-slot 0
Administrative State: In Service
Operational State: Normal

```

**show chassis pic transport fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)**

```

user@host> show chassis pic transport fpc-slot 3 pic-slot 0
Administrative State: In Service
Operational State: Normal

```

**show chassis pic fpc-slot 0 pic-slot 0 (EX9251 Switches)**

```

user@switch> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                4XQSFP28 PIC
  State                Online
  PIC version          0.0
  Uptime               1 day, 2 hours, 22 minutes, 3 seconds

PIC port information:

```

JNPR		Fiber	Xcvr vendor	Wave-	Xcvr
Port	Cable type	type	Xcvr vendor	part number	length
0	40GBASE CU 50CM REV 01	n/a	Amphenol	601100000	n/a 0.0
2	40GBASE SR4 REV 01	MM	AVAGO	AFBR-79EQDZ-JU2	850 nm 0.0

```

Port speed information:
  Port  PFE    Capable Port Speeds
  0     0      4x10GE, 40GE, 100GE
  1     0      4x10GE, 40GE, 100GE
  2     0      4x10GE, 40GE, 100GE
  3     0      4x10GE, 40GE, 100GE

```

**show chassis pic fpc-slot 0 pic-slot 0 (EX9253 Switches)**

```

user@switch> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                6xQSFP
  State                Online
  PIC version          0.0
  Uptime               1 day, 7 minutes, 11 seconds

PIC port information:

```

JNPR		Fiber	Xcvr vendor	Wave-	Xcvr
------	--	-------	-------------	-------	------

Port	Cable type	type	Xcvr vendor	part number	length
0	4X10GBASE SR	MM	AVAGO	AFBR-79EEPZ-JU2	850 nm 0.0
	REV 01				

## Port speed information:

Port	PFE	Capable Port Speeds
0	0	4x10GE, 40GE
1	0	4x10GE, 40GE
2	1	4x10GE, 40GE
3	1	4x10GE, 40GE
4	2	4x10GE, 40GE
5	2	4x10GE, 40GE

## show chassis routing-engine

---

**List of Syntax**    [Syntax on page 1156](#)  
                          [Syntax \(ACX Series Universal Metro Routers\) on page 1156](#)  
                          [Syntax \(EX Series Switches\) on page 1156](#)  
                          [Syntax \(QFX Series\) on page 1156](#)  
                          [Syntax \(MX Series Routers\) on page 1156](#)  
                          [Syntax \(MX2010 3D Universal Edge Routers\) on page 1156](#)  
                          [Syntax \(MX2020 3D Universal Edge Routers\) on page 1156](#)  
                          [Syntax \(MX104 3D Universal Edge Routers\) on page 1157](#)  
                          [Syntax \(MX204, and MX10003 3D Universal Edge Routers\) on page 1157](#)  
                          [Syntax \(PTX Series Packet Transport Routers\) on page 1157](#)  
                          [Syntax \(T Series Routers\) on page 1157](#)  
                          [Syntax \(TX Matrix Routers\) on page 1157](#)  
                          [Syntax \(TX Matrix Plus Routers\) on page 1157](#)

**Syntax**    show chassis routing-engine  
                  <bios | *slot*>

**Syntax (ACX Series Universal Metro Routers)**    show chassis routing-engine

**Syntax (EX Series Switches)**    show chassis routing-engine  
  <*slot*>  
  <satellite [slot-id *slot-id* |device-alias *alias-name*]>

**Syntax (QFX Series)**    show chassis routing-engine  
                                  <interconnect-device *name*>  
                                  <node-device *name*>  
                                  <*slot*>  
                                  <*bios*>  
                                  <*errors*>

**Syntax (MX Series Routers)**    show chassis routing-engine  
                                  <all-members>  
                                  <bios | *slot*>  
                                  <local>  
                                  <member *member-id*>  
                                  <satellite [slot-id *slot-id* |device-alias *alias-name*]>

**Syntax (MX2010 3D Universal Edge Routers)**    show chassis routing-engine  
                                  <bios | *slot*>

**Syntax (MX2020 3D Universal Edge Routers)**    show chassis routing-engine  
                                  <bios | *slot*>

Syntax (MX104 3D Universal Edge Routers)	show chassis routing-engine
Syntax (MX204, and MX10003 3D Universal Edge Routers)	show chassis routing-engine <slot> <bios> <errors>
Syntax (PTX Series Packet Transport Routers)	show chassis routing-engine
Syntax (T Series Routers)	show chassis routing-engine <bios   slot>
Syntax (TX Matrix Routers)	show chassis routing-engine <bios   slot> <lcc number   scc>
Syntax (TX Matrix Plus Routers)	show chassis routing-engine <bios   slot> <lcc number   sfc number>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced in Junos OS Release in 9.6 for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p><b>5 sec CPU Utilization, 1 min CPU Utilization, 5 min CPU Utilization, and 15 min CPU Utilization</b> output fields introduced in Junos OS Release 11.3R1.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p><b>satellite</b> option introduced in Junos OS Release 14.2R3.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switches.</p>
Description	Display the status of the Routing Engine.
Options	<p><b>none</b>—Display information about one or more Routing Engines. On a TX Matrix router, display information about all Routing Engines on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display information about all Routing Engines on the TX Matrix Plus router and its attached routers.</p>

**all-members**—(MX Series routers only) (Optional) Display Routing Engine information for all members of the Virtual Chassis configuration.

**bios**—(Optional) Display the (BIOS) firmware version.

**errors**—(Optional) Display routing engine errors.

**interconnect-device *number***—(QFabric systems only) (Optional) Display Routing Engine information for a specified Interconnect device.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display Routing Engine information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display Routing Engine information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display Routing Engine information for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display Routing Engine information for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**node-device *number***—(QFabric systems only) (Optional) Display Routing Engine information for a specified Node device.

**satellite [*slot-id slot-id* | *device-alias alias-name*]**—(Junos Fusion only) (Optional) Display Routing Engine information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

**scc**—(TX Matrix routers only) (Optional) Display Routing Engine information for the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display Routing Engine information for the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**slot**—(Systems with multiple Routing Engines) (Optional) Display information for an individual Routing Engine. Replace *slot* with 0 or 1. For QFX3500 switches, there is only one Routing Engine, so you do not need to specify the slot number.



<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">request chassis routing-engine master on page 296</a></li> <li>• <a href="#">Configuring Routing Engine Redundancy</a></li> <li>• <a href="#">Switching the Global Master and Backup Roles in a Virtual Chassis Configuration</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show chassis routing-engine (M5 Router) on page 1162</a> <a href="#">show chassis routing-engine (M10 Router) on page 1163</a> <a href="#">show chassis routing-engine (M20 Router) on page 1163</a> <a href="#">show chassis routing-engine (M40 Router) on page 1164</a> <a href="#">show chassis routing-engine (M120 Router) on page 1164</a> <a href="#">show chassis routing-engine (M160 Router) on page 1165</a> <a href="#">show chassis routing-engine (MX104 Router) on page 1166</a> <a href="#">show chassis routing-engine (MX240 Router) on page 1166</a> <a href="#">show chassis routing-engine (MX480 Router) on page 1167</a> <a href="#">show chassis routing-engine (MX960 Router) on page 1168</a> <a href="#">show chassis routing-engine (MX2010 Router) on page 1170</a> <a href="#">show chassis routing-engine (MX2020 Router) on page 1171</a> <a href="#">show chassis routing-engine (MX10003 Router) on page 1171</a> <a href="#">show chassis routing-engine (MX204 Router) on page 1172</a> <a href="#">show chassis routing-engine (T320 Router) on page 1173</a> <a href="#">show chassis routing-engine (T640 Router) on page 1174</a> <a href="#">show chassis routing-engine (T1600 Router) on page 1174</a> <a href="#">show chassis routing-engine (T4000 Router) on page 1175</a> <a href="#">show chassis routing-engine (TX Matrix Router) on page 1176</a> <a href="#">show chassis routing-engine lcc (TX Matrix Router) on page 1177</a> <a href="#">show chassis routing-engine bios (TX Matrix Router) on page 1178</a> <a href="#">show chassis routing-engine (TX Matrix Plus Router) on page 1178</a> <a href="#">show chassis routing-engine lcc (TX Matrix Plus Router) on page 1179</a> <a href="#">show chassis routing-engine bios (TX Matrix Plus Router) on page 1180</a> <a href="#">show chassis routing-engine (QFX Series) on page 1180</a> <a href="#">show chassis routing-engine (OCX Series) on page 1181</a> <a href="#">show chassis routing-engine interconnect-device (QFabric Systems) on page 1181</a> <a href="#">show chassis routing-engine (PTX Series Packet Transport Router) on page 1182</a> <a href="#">show chassis routing-engine (EX9200 Switch) on page 1182</a> <a href="#">show chassis routing-engine (EX9251 Switch) on page 1183</a> <a href="#">show chassis routing-engine (ACX2000 Universal Metro Router) on page 1184</a> <a href="#">show chassis routing-engine (ACX1000 Universal Metro Router) on page 1184</a> <a href="#">show chassis routing-engine (Displaying the guest reboot reason on PTX5000,MX240, MX480, MX960&lt; MX2010, and MX2020) on page 1184</a>
<b>Output Fields</b>	<p><a href="#">Table 39 on page 1160</a> lists the output fields for the <b>show chassis routing-engine</b> command. Output fields are listed in the approximate order in which they appear.</p>

Table 39: show chassis routing-engine Output Fields

Field Name	Field Description
Slot	(Systems with single and multiple Routing Engines) Slot number.
Current state	(Systems with multiple Routing Engines) Current state of the Routing Engine: <b>Master</b> , <b>Backup</b> , or <b>Disabled</b> .
Election priority	(Systems with multiple Routing Engines) Election priority for the Routing Engine: <b>Master</b> or <b>Backup</b> .
Temperature	Temperature of the air flowing past the Routing Engine.
CPU Temperature	Temperature of the CPU.
DRAM	Total DRAM available to the Routing Engine's processor.  Starting with Junos OS Release 12.3R1, the DRAM field displays both available memory and installed memory.
Memory utilization	Percentage of Routing Engine memory being used.  <b>NOTE:</b> For platforms running Junos OS with upgraded FreeBSD, the way memory utilization is calculated has changed. Starting in Junos OS Release 15.1R1, inactive memory is no longer included in the calculation for memory utilization. Inactive memory is now considered as free. That is, the value for used memory decreases and results in more memory to be available for other processes. For platforms that run Junos OS with upgraded FreeBSD, see <i>Release Information for Junos OS with Upgraded FreeBSD</i> .
CPU utilization	Information about the Routing Engine's CPU utilization: <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
5 sec CPU Utilization	Information about the Routing Engine's CPU utilization in the past 5 seconds: <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
1 min CPU Utilization	Information about the Routing Engine's CPU utilization in the past 1 minute: <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>

Table 39: show chassis routing-engine Output Fields (continued)

Field Name	Field Description
<b>5 min CPU Utilization</b>	Information about the Routing Engine's CPU utilization in the past 5 minutes: <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
<b>15 min CPU Utilization</b>	Information about the Routing Engine's CPU utilization in the past 15 minutes: <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
<b>Model</b>	Routing Engine model number.
<b>Serial ID</b>	(Systems with multiple Routing Engines) Identification number of the Routing Engine in this slot.
<b>Start time</b>	Time at which the Routing Engine started running.
<b>Uptime</b>	How long the Routing Engine has been running.
Routing Engine BIOS Version	BIOS version being run by the Routing Engine.

Table 39: show chassis routing-engine Output Fields (continued)

Field Name	Field Description
Last reboot reason	<p>Reason for last reboot, including:</p> <ul style="list-style-type: none"> <li><b>power cycle/failure</b>—Halt of the Routing Engine using the <b>halt</b> command, powering down using the power button on the chassis or any other method (such as removal of the control board or Routing Engine), and then powering back the Routing Engine. A halt of the operating system also occurs if you enter the <b>request system halt</b> command. You can enter this command to halt the system operations on the chassis or specific Routing Engines. To restart the software, press any key on the keyboard.</li> <li><b>watchdog</b>—Reboot due to a hardware watchdog. A watchdog is a hardware monitoring process that examines the health and performance of the router to enable the device to recover from failures. A watchdog checks for problems at certain intervals, and reboots the routing engine if a problem is encountered.</li> <li><b>reset-button reset</b>—(Not available on the EX Series switch) Reboot due to pressing of the reset button on the Routing Engine.</li> <li><b>power-button hard power off</b>—Reboot due to pressing of the power button on the chassis. A powering down of the software also occurs if you enter the <b>request system power-off</b> command. You can enter this command to power down the chassis or specific Routing Engines; you can then restart the software.</li> <li><b>misc hardware reason</b>—Reboot due to miscellaneous hardware reasons.</li> <li><b>thermal shutdown</b>—Reboot due to the router or switch reaching a critical temperature at which point it is unsafe to continue operations.</li> <li><b>hard disk failure</b>—Reboot due to a hard disk or solid-state drive (SSD) failure.</li> <li><b>reset from debugger</b>—Reboot due to reset from the debugger.</li> <li><b>chassis control reset</b>—Restart the chassis process that manages PICs, FPCs, and other hardware components. The chassis control module that runs the Routing Engine performs management and monitoring functions, and it provides a single access point for operational and maintenance functions. A reset of the chassis management process occurs when you enter the <b>restart chassis-control</b> command.</li> <li><b>bios auto recovery reset</b>—Reboot due to a BIOS auto-recovery reset.</li> <li><b>could not be determined</b>—Reboot due to an undetermined reason.</li> <li><b>Router rebooted after a normal shutdown</b>—Reboot due to a normal shutdown. This reason is displayed if the Routing Engine is powered down by pushing and holding the online/offline button on the Routing Engine faceplate for 30 seconds, and then powered back. A reboot of the software also occurs if you enter the <b>request system reboot</b> command. You can enter this command to reboot the chassis or specific Routing Engines.</li> <li><b>Hypervisor reboot</b>—When both Linux host and Junos OS is rebooted using the <b>request vmhost reboot</b> command.</li> <li><b>VJUNOS Reboot</b>—When Junos OS is rebooted using the <b>request system reboot</b> command.</li> </ul>
Load averages	Routing Engine load averages for the last 1, 5, and 15 minutes.

## Sample Output

### show chassis routing-engine (M5 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature           25 degrees C / 77 degrees F
  DRAM                  768 MB
  Memory utilization     21 percent
  CPU utilization:

```

```

User                0 percent
Background          0 percent
Kernel              0 percent
Interrupt            0 percent
Idle                100 percent
Model               RE-2.0
Serial ID            31000007349bf701
Start time           2003-12-04 09:42:17 PST
Uptime               26 days, 1 hour, 12 minutes, 27 seconds
Last reboot reason   Router rebooted after a normal shutdown
Load averages:       1 minute   5 minute   15 minute
                     0.00       0.01       0.00

```

### show chassis routing-engine (M10 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature        25 degrees C / 77 degrees F
  DRAM                768 MB
  Memory utilization  21 percent
  CPU utilization:
    User              0 percent
    Background        0 percent
    Kernel             0 percent
    Interrupt          0 percent
    Idle              100 percent
  Model              RE-2.0
  Serial ID           31000007349bf701
  Start time           2003-12-04 09:42:17 PST
  Uptime               26 days, 1 hour, 12 minutes, 27 seconds
  Last reboot reason   Router rebooted after a normal shutdown
  Load averages:       1 minute   5 minute   15 minute
                       0.00       0.01       0.00

```

### show chassis routing-engine (M20 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Slot 0:
    Current state      Master
    Election priority   Master (default)
    Temperature        29 degrees C / 84 degrees F
    DRAM                768 MB
    Memory utilization  20 percent
    CPU utilization:
      User              1 percent
      Background        0 percent
      Kernel             2 percent
      Interrupt          0 percent
      Idle              97 percent
    Model              RE-2.0
    Serial ID           58000007348d9a01
    Start time           2003-12-30 07:05:47 PST
    Uptime               3 hours, 41 minutes, 14 seconds
    Last reboot reason   Router rebooted after a normal shutdown
    Load averages:       1 minute   5 minute   15 minute
                       0.00       0.02       0.00
  Routing Engine status:
    Slot 1:
      Current state      Backup

```

Election priority	Backup (default)
Temperature	29 degrees C / 84 degrees F
DRAM	768 MB
Memory utilization	0 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	1 percent
Interrupt	0 percent
Idle	99 percent
Model	RE-2.0
Serial ID	d800000734745701
Start time	2003-06-17 16:37:33 PDT
Uptime	195 days, 18 hours, 47 minutes, 9 seconds
Last reboot reason	Router rebooted after a normal shutdown

#### show chassis routing-engine (M40 Router)

```
user@host> show chassis routing-engine
Routing Engine status:
  Temperature          25 degrees C / 77 degrees F
  DRAM                 768 MB
  Memory utilization   21 percent
  CPU utilization:
    User               0 percent
    Background         0 percent
    Kernel             0 percent
    Interrupt          0 percent
    Idle               100 percent
  Model               RE-2.0
  Serial ID           31000007349bf701
  Start time          2003-12-04 09:42:17 PST
  Uptime              26 days, 1 hour, 12 minutes, 27 seconds
  Last reboot reason   Router rebooted after a normal shutdown
  Load averages:      1 minute   5 minute   15 minute
                      0.00       0.01      0.00
```

#### show chassis routing-engine (M120 Router)

```
user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state        Master
  Election priority    Master (default)
  Temperature          46 degrees C / 114 degrees F
  CPU temperature      44 degrees C / 111 degrees F
  DRAM                 2048 MB
  Memory utilization   18 percent
  CPU utilization:
    User               0 percent
    Background         0 percent
    Kernel             5 percent
    Interrupt          0 percent
    Idle               95 percent
  Model               RE-A-1000
  Serial ID           1000621154
  Start time          2006-10-31 17:10:05 PST
  Uptime              14 minutes, 31 seconds
  Last reboot reason   Router rebooted after a normal shutdown
  Load averages:      1 minute   5 minute   15 minute
```

```

                                0.02      0.07      0.07
Routing Engine status:
Slot 1:
  Current state                Backup
  Election priority            Backup (default)
  Temperature                  45 degrees C / 113 degrees F
  CPU temperature              42 degrees C / 107 degrees F
  DRAM                        2048 MB
  Memory utilization           15 percent
  CPU utilization:
    User                       0 percent
    Background                 0 percent
    Kernel                     0 percent
    Interrupt                   0 percent
    Idle                       100 percent
  Model                       RE-A-1000
  Serial ID                   1000621151
  Start time                  2006-10-31 17:10:04 PST
  Uptime                      14 minutes, 30 seconds
  Last reboot reason           Router rebooted after a normal shutdown

```

### show chassis routing-engine (M160 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state                Master
  Election priority            Master (default)
  Temperature                  43 degrees C / 109 degrees F
  DRAM                        2048 MB
  Memory utilization           11 percent
  CPU utilization:
    User                       1 percent
    Background                 0 percent
    Kernel                     2 percent
    Interrupt                   0 percent
    Idle                       97 percent
  Model                       RE-3.0
  Serial ID                   210865700403
  Start time                  2003-12-23 12:25:55 PST
  Uptime                      6 days, 22 hours, 33 minutes, 24 seconds
  Last reboot reason           Router rebooted after a normal shutdown
  Load averages:              1 minute   5 minute   15 minute
                                0.24      0.13      0.04

Routing Engine status:
Slot 1:
  Current state                Backup
  Election priority            Backup (default)
  Temperature                  40 degrees C / 104 degrees F
  DRAM                        2048 MB
  Memory utilization           9 percent
  CPU utilization:
    User                       0 percent
    Background                 0 percent
    Kernel                     0 percent
    Interrupt                   0 percent
    Idle                       100 percent
  Model                       RE-3.0
  Serial ID                   210865700332
  Start time                  2003-12-23 12:25:55 PST

```

Uptime	6 days, 22 hours, 33 minutes, 21 seconds
Last reboot reason	Router rebooted after a normal shutdown

### show chassis routing-engine (MX104 Router)

```
user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             32 degrees C / 89 degrees F
  CPU temperature         42 degrees C / 107 degrees F
  DRAM                   3840 MB (3840 MB installed)
  Memory utilization      18 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                3 percent
    Interrupt             2 percent
    Idle                  94 percent
  Model                  RE-MX-104
  Serial ID              CAAR5925
  Start time             2013-06-05 13:17:08 IST
  Uptime                 1 hour, 15 minutes, 8 seconds
  Last reboot reason      0x200:normal shutdown
  Load averages:         1 minute  5 minute  15 minute
                        0.87      0.90      0.41

Routing Engine status:
Slot 1:
  Current state           Backup
  Election priority       Backup (default)
  Temperature             32 degrees C / 89 degrees F
  CPU temperature         38 degrees C / 100 degrees F
  DRAM                   3840 MB (3840 MB installed)
  Memory utilization      13 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             2 percent
    Idle                  97 percent
  Model                  RE-MX-104
  Serial ID              CAAM6369
  Start time             2013-06-05 13:07:37 IST
  Uptime                 1 hour, 24 minutes, 34 seconds
  Last reboot reason      0x200:normal shutdown
  Load averages:         1 minute  5 minute  15 minute
                        0.19      0.15      0.06
```

### show chassis routing-engine (MX240 Router)

```
user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             36 degrees C / 96 degrees F
  CPU temperature         35 degrees C / 95 degrees F
  DRAM                   3314 MB (8192 MB installed)
  Memory utilization      37 percent
```



```

5 sec CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
1 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
5 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
15 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
Model          RE-S-1800x4
Serial ID      9009074155
Start time     2014-10-13 00:35:41 PDT
Uptime         98 days, 2 hours, 6 minutes, 35 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages: 1 minute  5 minute 15 minute
                0.12      0.12      0.13

Routing Engine status:
Slot 1:
  Current state      Present

```

### show chassis routing-engine (MX480 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state      Backup
  Election priority   Master (default)
  Temperature        30 degrees C / 86 degrees F
  CPU temperature     32 degrees C / 89 degrees F
  DRAM               3314 MB (8192 MB installed)
  Memory utilization  51 percent
  5 sec CPU utilization:
    User          0 percent
    Background    0 percent
    Kernel        0 percent
    Interrupt     0 percent
    Idle          100 percent
  1 min CPU utilization:
    User          0 percent
    Background    0 percent
    Kernel        0 percent
    Interrupt     0 percent
    Idle          0 percent
  5 min CPU utilization:
    User          0 percent
    Background    0 percent

```

```

Kernel                                0 percent
Interrupt                             0 percent
Idle                                  0 percent
15 min CPU utilization:
  User                                0 percent
  Background                           0 percent
  Kernel                               0 percent
  Interrupt                             0 percent
  Idle                                  0 percent
Model                                  RE-S-1800x4
Serial ID                              9009079817
Start time                             2015-01-19 01:45:58 PST
Uptime                                 7 minutes, 23 seconds
Last reboot reason                      Router rebooted after a normal shutdown.
Load averages:                         1 minute   5 minute  15 minute
                                         0.16      0.16    0.09

Routing Engine status:
Slot 1:
  Current state                         Master
  Election priority                     Backup (default)
  Temperature                           31 degrees C / 87 degrees F
  CPU temperature                       32 degrees C / 89 degrees F
  DRAM                                  8144 MB (8192 MB installed)
  Memory utilization                     23 percent
  5 sec CPU utilization:
    User                                0 percent
    Background                           0 percent
    Kernel                               1 percent
    Interrupt                             0 percent
    Idle                                  99 percent
  1 min CPU utilization:
    User                                0 percent
    Background                           0 percent
    Kernel                               1 percent
    Interrupt                             0 percent
    Idle                                  98 percent
  5 min CPU utilization:
    User                                0 percent
    Background                           0 percent
    Kernel                               1 percent
    Interrupt                             0 percent
    Idle                                  98 percent
  15 min CPU utilization:
    User                                0 percent
    Background                           0 percent
    Kernel                               1 percent
    Interrupt                             0 percent
    Idle                                  98 percent
Model                                  RE-S-1800x4
Serial ID                              9009079838
Start time                             2015-01-09 10:52:20 PST
Uptime                                 9 days, 15 hours, 1 minute, 4 seconds
Last reboot reason                      Router rebooted after a normal shutdown.
Load averages:                         1 minute   5 minute  15 minute
                                         0.10      0.16    0.16

```

### show chassis routing-engine (MX960 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:

```

```

Current state                Master
Election priority            Master (default)
Temperature                  37 degrees C / 98 degrees F
CPU temperature              34 degrees C / 93 degrees F
DRAM                        3313 MB (16384 MB installed)
Memory utilization           31 percent
5 sec CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     3 percent
  Interrupt                  1 percent
  Idle                       96 percent
1 min CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     4 percent
  Interrupt                  1 percent
  Idle                       96 percent
5 min CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     4 percent
  Interrupt                  1 percent
  Idle                       95 percent
15 min CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     4 percent
  Interrupt                  1 percent
  Idle                       95 percent
Model                       RE-S-1800x4
Serial ID                   9013043785
Start time                  2015-01-12 23:37:53 PST
Uptime                      6 days, 2 hours, 17 minutes, 3 seconds
Last reboot reason          Router rebooted after a normal shutdown.
Load averages:              1 minute  5 minute  15 minute
                           0.00        0.02      0.00

Routing Engine status:
Slot 1:
  Current state              Backup
  Election priority          Backup (default)
  Temperature                37 degrees C / 98 degrees F
  CPU temperature            34 degrees C / 93 degrees F
  DRAM                       3313 MB (16384 MB installed)
  Memory utilization         26 percent
  5 sec CPU utilization:
    User                     0 percent
    Background               0 percent
    Kernel                   0 percent
    Interrupt                0 percent
    Idle                     99 percent
  1 min CPU utilization:
    User                     0 percent
    Background               0 percent
    Kernel                   0 percent
    Interrupt                0 percent
    Idle                     0 percent
  5 min CPU utilization:
    User                     0 percent
    Background               0 percent
    Kernel                   0 percent

```

```

Interrupt          0 percent
Idle              0 percent
15 min CPU utilization:
User              0 percent
Background        0 percent
Kernel           0 percent
Interrupt         0 percent
Idle             0 percent
Model             RE-S-1800x4
Serial ID         9013037303
Start time        2015-01-12 23:25:29 PST
Uptime            6 days, 2 hours, 29 minutes, 21 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages:    1 minute   5 minute   15 minute
                  0.00      0.00      0.00

```

### show chassis routing-engine (MX2010 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state      Master
Election priority  Master (default)
Temperature        41 degrees C / 105 degrees F
CPU temperature    38 degrees C / 100 degrees F
DRAM              3313 MB (16384 MB installed)
Memory utilization 37 percent
5 sec CPU utilization:
User              0 percent
Background        0 percent
Kernel           2 percent
Interrupt         2 percent
Idle             96 percent
1 min CPU utilization:
User              0 percent
Background        0 percent
Kernel           2 percent
Interrupt         2 percent
Idle             97 percent
5 min CPU utilization:
User              0 percent
Background        0 percent
Kernel           2 percent
Interrupt         2 percent
Idle             97 percent
15 min CPU utilization:
User              0 percent
Background        0 percent
Kernel           2 percent
Interrupt         2 percent
Idle             97 percent
Model             RE-S-1800x4
Serial ID         9009146890
Start time        2015-01-18 21:35:12 PST
Uptime            4 hours, 21 minutes, 34 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages:    1 minute   5 minute   15 minute
                  0.11      0.14      0.14

```

**show chassis routing-engine (MX2020 Router)**

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             2 degrees C / 35 degrees F
  CPU temperature         32 degrees C / 89 degrees F
  DRAM                   32735 MB (32768 MB installed)
  Memory utilization      10 percent
  5 sec CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  98 percent
  1 min CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  99 percent
  5 min CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  99 percent
  15 min CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  99 percent
  Model                  RE-S-2X00x8
  Serial ID              CADN0309
  Start time             2015-01-08 16:31:15 PST
  Uptime                 4 days, 22 hours, 59 minutes, 3 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.39       0.41       0.34

```

**show chassis routing-engine (MX10003 Router)**

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             43 degrees C / 109 degrees F
  CPU temperature         40 degrees C / 104 degrees F
  DRAM                   49112 MB (49152 MB installed)
  Memory utilization      4 percent
  5 sec CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                2 percent
    Interrupt             0 percent

```

```

Idle 98 percent
1 min CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 98 percent
5 min CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 98 percent
15 min CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 96 percent
Model RE-S-2X00x6
Start time 2017-08-08 23:13:16 PDT
Uptime 53 minutes, 38 seconds
Last reboot reason 0x1:power cycle/failure
Load averages: 1 minute 5 minute 15 minute
                0.23 0.28 0.25

Routing Engine status:
Slot 1:
Current state Backup
Election priority Backup (default)
Temperature 38 degrees C / 100 degrees F
CPU temperature 39 degrees C / 102 degrees F
DRAM 49112 MB (49152 MB installed)
Memory utilization 4 percent
5 sec CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 99 percent
Model RE-S-2X00x6
Start time 2017-08-08 23:13:18 PDT
Uptime 53 minutes, 25 seconds
Last reboot reason 0x1:power cycle/failure
Load averages: 1 minute 5 minute 15 minute
                0.21 0.19 0.17

```

### show chassis routing-engine (MX204 Router)

```
user@host> show chassis routing-engine
```

```

Routing Engine status:
Temperature 52 degrees C / 125 degrees F
CPU temperature 52 degrees C / 125 degrees F
DRAM 16341 MB (16384 MB installed)
Memory utilization 11 percent
5 sec CPU utilization:
User 0 percent
Background 0 percent
Kernel 0 percent
Interrupt 0 percent
Idle 100 percent

```

```

1 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        0 percent
  Interrupt     0 percent
  Idle          100 percent
5 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        0 percent
  Interrupt     0 percent
  Idle          100 percent
15 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        0 percent
  Interrupt     0 percent
  Idle          100 percent
Model          RE-S-2X00x6
Start time     2017-11-04 00:30:31 PDT
Uptime        4 days, 7 hours, 17 minutes, 3 seconds
Last reboot reason 0x1:power cycle/failure
Load averages: 1 minute  5 minute  15 minute
                  0.17      0.12      0.13

```

### show chassis routing-engine (T320 Router)

```

user@host> show chassis routing-engine
Slot 0:
  Current state      Master
  Election priority  Master (default)
  Temperature        51 degrees C / 123 degrees F
  CPU temperature    55 degrees C / 131 degrees F
  DRAM               3584 MB
  Memory utilization 11 percent
  CPU utilization:
    User             0 percent
    Background       0 percent
    Kernel           2 percent
    Interrupt        0 percent
    Idle             97 percent
  Model              RE-A-2000
  Serial ID          9009010618
  Start time         2012-10-10 01:24:05 PDT
  Uptime             5 days, 10 hours, 49 minutes, 23 seconds
  Last reboot reason 0x1:power cycle/failure
  Load averages:    1 minute  5 minute  15 minute
                      0.00      0.05      0.04

Routing Engine status:
Slot 1:
  Current state      Backup
  Election priority  Backup (default)
  Temperature        45 degrees C / 113 degrees F
  CPU temperature    48 degrees C / 118 degrees F
  DRAM               3584 MB
  Memory utilization 9 percent
  CPU utilization:
    User             0 percent
    Background       0 percent
    Kernel           0 percent
    Interrupt        0 percent

```

Idle	100 percent
Model	RE-A-2000
Serial ID	9009003642
Start time	2012-10-10 01:24:04 PDT
Uptime	5 days, 10 hours, 49 minutes, 28 seconds
Last reboot reason	0x1:power cycle/failure

#### show chassis routing-engine (T640 Router)

```
user@host> show chassis routing-engine
```

Routing Engine status:

Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	50 degrees C / 122 degrees F
CPU temperature	58 degrees C / 136 degrees F
DRAM	3584 MB
Memory utilization	14 percent
CPU utilization:	
User	1 percent
Background	0 percent
Kernel	4 percent
Interrupt	1 percent
Idle	95 percent
Model	RE-A-2000
Serial ID	1000686556
Start time	2012-10-10 01:24:02 PDT
Uptime	5 days, 10 hours, 50 minutes, 27 seconds
Last reboot reason	0x1:power cycle/failure
Load averages:	1 minute    5 minute    15 minute
	1.24        0.33        0.12

Routing Engine status:

Slot 1:

Current state	Backup
Election priority	Backup (default)
Temperature	44 degrees C / 111 degrees F
CPU temperature	49 degrees C / 120 degrees F
DRAM	3584 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	1 percent
Idle	99 percent
Model	RE-A-2000
Serial ID	1000702739
Start time	2012-10-10 01:24:02 PDT
Uptime	5 days, 10 hours, 50 minutes, 26 seconds
Last reboot reason	0x1:power cycle/failure

#### show chassis routing-engine (T1600 Router)

```
user@host> show chassis routing-engine
```

Routing Engine status:

Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	48 degrees C / 118 degrees F
CPU temperature	58 degrees C / 136 degrees F



```

DRAM                                3584 MB
Memory utilization                    13 percent
CPU utilization:
  User                               0 percent
  Background                         0 percent
  Kernel                             3 percent
  Interrupt                           1 percent
  Idle                               96 percent
Model                                RE-A-2000
Serial ID                            1000704521
Start time                           2012-10-10 01:23:41 PDT
Uptime                               5 days, 10 hours, 46 minutes, 56 seconds
Last reboot reason                    0x1:power cycle/failure
Load averages:                       1 minute   5 minute   15 minute
                                      0.05       0.03       0.01

Routing Engine status:
Slot 1:
  Current state                       Backup
  Election priority                   Backup (default)
  Temperature                         44 degrees C / 111 degrees F
  CPU temperature                     48 degrees C / 118 degrees F
  DRAM                                3584 MB
  Memory utilization                  12 percent
  CPU utilization:
    User                             0 percent
    Background                       0 percent
    Kernel                           0 percent
    Interrupt                         0 percent
    Idle                             100 percent
  Model                              RE-A-2000
  Serial ID                          9009006579
  Start time                         2012-10-10 01:23:42 PDT
  Uptime                             5 days, 10 hours, 46 minutes, 54 seconds
  Last reboot reason                 0x1:power cycle/failure

```

#### show chassis routing-engine (T4000 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state                       Master
  Election priority                   Master (default)
  Temperature                         33 degrees C / 91 degrees F
  CPU temperature                     50 degrees C / 122 degrees F
  DRAM                                8960 MB
  Memory utilization                  18 percent
  CPU utilization:
    User                             0 percent
    Background                       0 percent
    Kernel                           4 percent
    Interrupt                         1 percent
    Idle                             95 percent
  Model                              RE-DUO-1800
  Serial ID                          P737F-002248
  Start time                         2012-02-09 22:49:53 PST
  Uptime                             2 hours, 21 minutes, 35 seconds
  Last reboot reason                 Router rebooted after a normal shutdown.
  Load averages:                     1 minute   5 minute   15 minute
                                      0.00       0.04       0.00

Routing Engine status:
Slot 1:

```

Current state	Backup
Election priority	Backup (default)
Temperature	32 degrees C / 89 degrees F
CPU temperature	46 degrees C / 114 degrees F
DRAM	8960 MB
Memory utilization	24 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	99 percent
Model	RE-DUO-1800
Serial ID	P737F-002653
Start time	2012-02-08 20:12:51 PST
Uptime	1 day, 4 hours, 58 minutes, 28 seconds
Last reboot reason	Router rebooted after a normal shutdown.

### show chassis routing-engine (TX Matrix Router)

```
user@host> show chassis routing-engine
scc-re0:
```

#### Routing Engine status:

##### Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	34 degrees C / 93 degrees F
CPU temperature	33 degrees C / 91 degrees F
DRAM	2048 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-4.0
Serial ID	P11123900153
Start time	2004-08-05 18:42:05 PDT
Uptime	9 days, 22 hours, 49 minutes, 50 seconds
Last reboot reason	Router rebooted after a normal shutdown
Load averages:	1 minute    5 minute    15 minute
	0.00        0.08        0.07

##### lcc0-re0:

#### Routing Engine status:

##### Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	33 degrees C / 91 degrees F
CPU temperature	30 degrees C / 86 degrees F
DRAM	2048 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	1 percent
Interrupt	0 percent
Idle	98 percent

```

Model RE-3.0
Serial ID 210865700363
Start time 2004-08-05 18:42:05 PDT
Uptime 9 days, 22 hours, 48 minutes, 20 seconds
Last reboot reason Router rebooted after a normal shutdown
Load averages: 1 minute 5 minute 15 minute
                0.00      0.02      0.00

```

lcc2-re0:

-----  
Routing Engine status:

Slot 0:

```

Current state Master
Election priority Master (default)
Temperature 34 degrees C / 93 degrees F
CPU temperature 35 degrees C / 95 degrees F
DRAM 2048 MB
Memory utilization 12 percent
CPU utilization:
  User 0 percent
  Background 0 percent
  Kernel 2 percent
  Interrupt 0 percent
  Idle 98 percent
Model RE-4.0
Serial ID P11123900126
Start time 2004-08-05 18:42:05 PDT
Uptime 9 days, 22 hours, 49 minutes, 4 seconds
Last reboot reason Router rebooted after a normal shutdown
Load averages: 1 minute 5 minute 15 minute
                0.01      0.01      0.0

```

### show chassis routing-engine lcc (TX Matrix Router)

```
user@host> show chassis routing-engine 0 lcc 0
```

lcc0-re0:

-----  
Routing Engine status:

Slot 0:

```

Current state Master
Election priority Master (default)
Temperature 33 degrees C / 91 degrees F
CPU temperature 30 degrees C / 86 degrees F
DRAM 2048 MB
Memory utilization 12 percent
CPU utilization:
  User 0 percent
  Background 0 percent
  Kernel 1 percent
  Interrupt 0 percent
  Idle 98 percent
Model RE-3.0
Serial ID 210865700363
Start time 2004-08-05 18:42:05 PDT
Uptime 7 days, 22 hours, 49 minutes, 6 seconds
Last reboot reason Router rebooted after a normal shutdown
Load averages: 1 minute 5 minute 15 minute
                0.00      0.00      0.00

```

### show chassis routing-engine bios (TX Matrix Router)

```
user@host> show chassis routing-engine bios
scc-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.0
```

```
1cc0-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.17
```

```
1cc2-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.0
```

### show chassis routing-engine (TX Matrix Plus Router)

```
user@host> show chassis routing-engine
sfc0-re0:
```

```
-----
Routing Engine status:
```

```
Slot 0:
```

Current state	Master
Election priority	Master (default)
Temperature	27 degrees C / 80 degrees F
CPU temperature	42 degrees C / 107 degrees F
DRAM	3327 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-TXP-SFC
Serial ID	737A-1024
Start time	2009-05-11 17:39:49 PDT
Uptime	3 hours, 45 minutes, 25 seconds
Last reboot reason	Router rebooted after a normal shutdown.
Load averages:	1 minute    5 minute    15 minute
	0.00        0.00        0.00

```
Routing Engine status:
```

```
Slot 1:
```

Current state	Backup
Election priority	Backup (default)
Temperature	29 degrees C / 84 degrees F
CPU temperature	43 degrees C / 109 degrees F
DRAM	3327 MB
Memory utilization	11 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-SFC
Serial ID	737A-1024
Start time	2009-05-11 17:08:54 PDT
Uptime	4 hours, 16 minutes, 52 seconds
Last reboot reason	0x1:power cycle/failure

```
1cc0-re0:
```

-----  
Routing Engine status:

## Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	30 degrees C / 86 degrees F
CPU temperature	43 degrees C / 109 degrees F
DRAM	3327 MB
Memory utilization	9 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-TXP-LCC
Serial ID	737F-1024
Start time	2009-05-11 17:40:32 PDT
Uptime	3 hours, 44 minutes, 51 seconds
Last reboot reason	Router rebooted after a normal shutdown.
Load averages:	1 minute    5 minute    15 minute
	0.00        0.00        0.00

## Routing Engine status:

## Slot 1:

Current state	Backup
Election priority	Backup (default)
Temperature	30 degrees C / 86 degrees F
CPU temperature	43 degrees C / 109 degrees F
DRAM	3327 MB
Memory utilization	9 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-LCC
Serial ID	737F-1024
Start time	2009-05-06 17:31:32 PDT
Uptime	5 days, 3 hours, 54 minutes, 19 seconds
Last reboot reason	Router rebooted after a normal shutdown.

**show chassis routing-engine lcc (TX Matrix Plus Router)**

```
user@host> show chassis routing-engine 0 lcc 0
lcc0-re0:
```

-----  
Routing Engine status:

## Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	30 degrees C / 86 degrees F
CPU temperature	43 degrees C / 109 degrees F
DRAM	3327 MB
Memory utilization	9 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent

```

Model RE-TXP-LCC
Serial ID 737F-1024
Start time 2009-05-11 17:40:32 PDT
Uptime 3 hours, 45 minutes, 26 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages: 1 minute 5 minute 15 minute
                0.00      0.00      0.00

Routing Engine status:
Slot 1:
  Current state Backup
  Election priority Backup (default)
  Temperature 30 degrees C / 86 degrees F
  CPU temperature 43 degrees C / 109 degrees F
  DRAM 3327 MB
  Memory utilization 9 percent
  CPU utilization:
    User 0 percent
    Background 0 percent
    Kernel 0 percent
    Interrupt 0 percent
    Idle 100 percent
  Model RE-TXP-LCC
  Serial ID 737F-1024
  Start time 2009-05-06 17:31:32 PDT
  Uptime 5 days, 3 hours, 54 minutes, 59 seconds
  Last reboot reason Router rebooted after a normal shutdown.

```

#### show chassis routing-engine bios (TX Matrix Plus Router)

```

user@host> show chassis routing-engine bios
sfc0-re0:

```

```

-----
Routing Engine BIOS Version: V0.0.Z

```

```

lcc0-re0:

```

```

-----
Routing Engine BIOS Version: V0.0.N

```

#### show chassis routing-engine (QFX Series)

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state Master
  Election priority Master (default)
  DRAM 2820 MB
  Memory utilization 49 percent
  CPU utilization:
    User 1 percent
    Background 0 percent
    Kernel 1 percent
    Interrupt 0 percent
    Idle 97 percent
  Model QFX3500-48S4Q
  Serial ID S/N ED3709
  Uptime 3 days, 4 hours, 29 minutes, 42 seconds
  Last reboot reason 0x200:chassis control reset
  Load averages: 1 minute 5 minute 15 minute
                0.37 0.26 0.19

```

**show chassis routing-engine (OCX Series)**

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state Master
Election priority Master (default)
DRAM 2820 MB
Memory utilization 49 percent
CPU utilization:
User 1 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 97 percent
Model OCX-1100-48SX-AFI
Serial ID S/N ED3709
Uptime 3 days, 4 hours, 29 minutes, 42 seconds
Last reboot reason 0x200:chassis control reset
Load averages: 1 minute 5 minute 15 minute
0.37 0.26 0.19

```

**show chassis routing engine interconnect-device (QFabric Systems)**

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state Master
Election priority Master (default)
Temperature 48 degrees C / 118 degrees F
DRAM 3312 MB
Memory utilization 63 percent
CPU utilization:
User 14 percent
Background 0 percent
Kernel 5 percent
Interrupt 0 percent
Idle 81 percent
Model RE-QFXC08-CB4S
Serial ID BUILTIN
Start time 2011-07-06 13:26:15 UTC
Uptime 11 hours, 24 minutes, 57 seconds
Last reboot reason 0x4:reset-button reset
Load averages: 1 minute 5 minute 15 minute
2.62 2.31 2.28

Routing Engine status:
Slot 1:
Current state Backup
Election priority Backup (default)
Temperature 39 degrees C / 102 degrees F
DRAM 3312 MB
Memory utilization 59 percent
CPU utilization:
User 9 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 91 percent
Model RE-QFXC08-CB4S
Serial ID BUILTIN

```

Start time	2011-07-06 13:24:58 UTC
Uptime	11 hours, 26 minutes, 18 seconds
Last reboot reason	0x4:reset-button reset

### show chassis routing-engine (PTX Series Packet Transport Router)

```
user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             60 degrees C / 140 degrees F
  CPU temperature         76 degrees C / 168 degrees F
  DRAM                    17152 MB
  Memory utilization      11 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                4 percent
    Interrupt             0 percent
    Idle                  95 percent
  Model                   RE-DUO-2600
  Serial ID               P737A-002231
  Start time              2011-12-21 16:54:37 PST
  Uptime                  25 minutes, 44 seconds
  Last reboot reason      Router rebooted after a normal shutdown.
  Load averages:         1 minute   5 minute   15 minute
                        0.01        0.02        0.06

Routing Engine status:
Slot 1:
  Current state           Backup
  Election priority       Backup (default)
  Temperature             50 degrees C / 122 degrees F
  CPU temperature         64 degrees C / 147 degrees F
  DRAM                    17152 MB
  Memory utilization      10 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                0 percent
    Interrupt             0 percent
    Idle                  99 percent
  Model                   RE-DUO-2600
  Serial ID               P737A-002438
  Start time              2011-12-21 16:52:26 PST
  Uptime                  27 minutes, 49 seconds
  Last reboot reason      Router rebooted after a normal shutdown.
```

### show chassis routing-engine (EX9200 Switch)

```
user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             35 degrees C / 95 degrees F
  CPU temperature         33 degrees C / 91 degrees F
  DRAM                    8157 MB
  Installed Memory        8192 MB
```



```

Memory utilization          18 percent
CPU utilization:
  User                      1 percent
  Background                0 percent
  Kernel                    4 percent
  Interrupt                 1 percent
  Idle                      94 percent
Model                      RE-S-EX9200-1800X4
Serial ID                  9009119555
Start time                 2014-03-12 14:58:05 UTC
Uptime                     1 hour, 41 minutes, 51 seconds
Last reboot reason         Router rebooted after a normal shutdown.
Load averages:             1 minute   5 minute   15 minute
                           0.02       0.02       0.00

Routing Engine status:
Slot 1:
  Current state             Backup
  Election priority         Backup (default)

[...Output truncated...]

```

### show chassis routing-engine (EX9251 Switch)

```

user@switch> show chassis routing-engine
Routing Engine status:
  Temperature               50 degrees C / 122 degrees F
  CPU temperature           50 degrees C / 122 degrees F
  DRAM                     16340 MB (16384 MB installed)
  Memory utilization        6 percent
  5 sec CPU utilization:
    User                    2 percent
    Background              0 percent
    Kernel                  19 percent
    Interrupt               0 percent
    Idle                    79 percent
  1 min CPU utilization:
    User                    2 percent
    Background              0 percent
    Kernel                  19 percent
    Interrupt               0 percent
    Idle                    79 percent
  5 min CPU utilization:
    User                    2 percent
    Background              0 percent
    Kernel                  19 percent
    Interrupt               0 percent
    Idle                    79 percent
  15 min CPU utilization:
    User                    2 percent
    Background              0 percent
    Kernel                  19 percent
    Interrupt               0 percent
    Idle                    79 percent
Model                      RE-S-2X00x6
Start time                 2018-03-08 05:11:33 PST
Uptime                     10 days, 18 hours, 59 minutes, 15 seconds
Last reboot reason         0x4000:VJUNOS reboot
Load averages:             1 minute   5 minute   15 minute
                           1.06       1.09       1.08

```

**show chassis routing-engine (ACX2000 Universal Metro Router)**

```
user@host> show chassis routing-engine
Routing Engine status:
  Temperature           53 degrees C / 127 degrees F
  DRAM                   1536 MB
  Memory utilization     25 percent
  CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel               0 percent
    Interrupt            1 percent
    Idle                 99 percent
  Model                 RE-ACX-2000
  Start time             2012-05-09 00:57:07 PDT
  Uptime                 5 days, 3 hours, 16 minutes, 15 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.00        0.03        0.05
```

**show chassis routing-engine (ACX1000 Universal Metro Router)**

```
user@host> show chassis routing-engine
Routing Engine status:
  Temperature           36 degrees C / 96 degrees F
  DRAM                   768 MB
  Memory utilization     50 percent
  CPU utilization:
    User                 3 percent
    Background           0 percent
    Kernel               6 percent
    Interrupt            0 percent
    Idle                 91 percent
  Model                 RE-ACX-1000
  Start time             2012-05-10 07:12:23 PDT
  Uptime                 4 days, 10 hours, 46 minutes, 53 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.00        0.00        0.00
```

**show chassis routing-engine (Displaying the guest reboot reason on PTX5000,MX240, MX480, MX960, MX2010, and MX2020)**

```
user@host> show chassis routing-engine re0 | match "Last reboot reason"
Last reboot reason 0x4000:VJUNOS reboot
```

## show chassis sibs

<b>List of Syntax</b>	<a href="#">Syntax on page 1185</a> <a href="#">Syntax (TX Matrix Router) on page 1185</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1185</a> <a href="#">Syntax (PTX Series Packet Transport Routers) on page 1185</a>
<b>Syntax</b>	show chassis sibs
<b>Syntax (TX Matrix Router)</b>	show chassis sibs <lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show chassis sibs <lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (PTX Series Packet Transport Routers)</b>	show chassis sibs <detail> <slot>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Routers.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p><b>detail</b> and <b>sib-slot</b> options introduced for the PTX Packet Transport Router in Junos OS Release 12.1</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p>
<b>Description</b>	(M320,T Series routers, TX Matrix routers, TX Matrix Plus routers, and PTX Series routers only) Display Switch Interface Boards (SIBs) status information.
<b>Options</b>	<p><b>none</b>—(TX Matrix routers and TX Matrix Plus routers only) On a TX Matrix router, display the SIB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display the SIB status for the TX Matrix Plus router and its attached routers.</p> <p><b>detail</b>—(PTX Series) (Optional) Display detailed SIB status information.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display SIB status information for a specified T640 router (line-card chassis or LCC) that is connected to the TX Matrix router. On a TX Matrix Plus router, display SIB status information for a specified T1600 or T4000 router (LCC) that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**scc**—(TX Matrix routers only) (Optional) Display SIB status information for the TX Matrix router (switch-card chassis).

**sfc number**—(TX Matrix Plus routers only) (Optional) Display SIB status information for the TX Matrix Plus router (switch-fabric chassis or SFC). Replace *number* with 0.

**slot**—(PTX Series) (Optional) Display status information about the SIB in the specified slot only. The range of values is 0 through 8.

**Required Privilege Level**

view

**Related Documentation**

- [request chassis sib on page 303](#)
- [show chassis spmb sibs on page 1208](#)
- [show chassis environment sib on page 553](#)
- [Monitoring the SIBs](#)
- [M320 SIB Description](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

[show chassis sibs \(T640 Router\) on page 1189](#)  
[show chassis sibs \(T4000 Router\) on page 1189](#)  
[show chassis sibs \(TX Matrix Router\) on page 1190](#)  
[show chassis sibs \(T1600 Router\) on page 1190](#)  
[show chassis sibs \(TX Matrix Plus Router\) on page 1190](#)  
[show chassis sibs \(TX Matrix Plus Router with 3D SIBs\) on page 1192](#)  
[show chassis sibs sfc \(TX Matrix Plus Router\) on page 1193](#)  
[show chassis sibs lcc \(TX Matrix Plus Router\) on page 1194](#)  
[show chassis sibs lcc \(TX Matrix Plus Router with 3D SIBs\) on page 1195](#)  
[show chassis sibs \(M320 Router\) on page 1195](#)  
[show chassis sibs \(PTX Series\) on page 1195](#)  
[show chassis sibs \(PTX Series\) on page 1195](#)

**Output Fields** Table 40 on page 1187 lists the output fields for the **show chassis sibs** command. Output fields are listed in the approximate order in which they appear.

*Table 40: show chassis sibs Output Fields*

Field Name	Field Description
Slot	SIB slot number.
Type	(TX Matrix Plus router only) SIB type.
Uptime	How long the SIB has been up and running.
State	<p>SIB status:</p> <ul style="list-style-type: none"> <li>• <b>Activating</b>—SIB is coming online; this is a transitional state.</li> <li>• <b>Deactivating</b>—SIB is going offline; this is a transitional state.</li> <li>• <b>Connected</b>—SIBs on a T1600 router are connected and trained but are either not online or are spare, because the plane on the TX Matrix Plus router (or switch-fabric chassis) is still offline.</li> <li>• <b>Disconnected</b>—SIBs on all T640 routers on the TX Matrix router (switch-card chassis) are in the <b>Disconnected</b> state, because a SIB on the SCC has gone offline. Likewise, SIBs on all T1600 routers on the TX Matrix Plus router (or switch-fabric chassis) are in the <b>Disconnected</b> state, because a SIB on the SFC has gone offline.</li> </ul> <p>On the TX Matrix Plus router with 3D SIBs, the LCC SIB is also disconnected if the F13 SIB is online, but none of the cables are connected or trained.</p> <ul style="list-style-type: none"> <li>• <b>Online</b>—SIB is operational and running.</li> <li>• <b>Offline</b>—SIB is powered down.</li> </ul> <p><b>NOTE:</b> If a SIB transitions to the <b>Offline</b> state, the command displays an appropriate reason in the output. For instance, if the SIB is taken offline using the <b>request chassis sib</b> command, the <b>show chassis sibs</b> command displays <b>--- Offlined by cli command ---</b> in the output.</p> <ul style="list-style-type: none"> <li>• <b>Spare</b>—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic.</li> </ul> <p><b>NOTE:</b> <b>Spare</b> does not apply to PTX Series Packet Transport Routers, as there are no spare SIBs.</p> <ul style="list-style-type: none"> <li>• <b>Empty</b>—No SIB is present.</li> <li>• <b>Fault</b>—SIB is in an alarmed state in which none of the SIB's planes are operational for one of the following reasons: <ul style="list-style-type: none"> <li>• All onboard fabric ASICs are not operational.</li> <li>• Fiber-optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> </ul> </li> <li>• <b>Check</b>—SIB is in an alarmed state due to link errors or destination errors. A SIB can transition to the <b>Check</b> state from the online or spare state.</li> </ul>

Table 40: show chassis sibs Output Fields (continued)

Field Name	Field Description
	<p>The <b>Check</b> state can be caused by the following reasons:</p> <ul style="list-style-type: none"> <li>• Unsupported FPC installed on a router.</li> <li>• SIB not inserted properly (such as bent pins).</li> <li>• Destination errors are detected on the SIB. In this case, the Packet Forwarding Engine stops using the SIB to send traffic to the affected destination Packet Forwarding Engine. When a Packet Forwarding Engine cannot be reached on that plane or SIB, a destination error is reported against that SIB.</li> </ul> <p><b>NOTE:</b> For SIBs in the <b>Check</b> state, the output displays some additional information:</p> <ul style="list-style-type: none"> <li>• In Junos OS Release 9.6 and later, the <b>Check</b> state message shows the number of Packet Forwarding Engines in the plane having destination errors. For example, <b>Check (10 destination errors)</b> indicates 10 Packet Forwarding Engines cannot be reached on that particular SIB. If there are no destination errors, and if the SIB transitions to the <b>Check</b> state because of link errors only, the <b>Check</b> state message shows <b>Check (0 destination errors)</b>.</li> <li>• In Junos OS Release 9.5 and earlier, the <b>Check</b> state message shows <b>Check (destination errors)</b> if there are Packet Forwarding Engines with destination errors in this plane. However, it does not show the number of Packet Forwarding Engines having destination errors. If there are no destination errors and if the SIB transitions to the <b>Check</b> state because of link errors only, the <b>Check</b> state message shows <b>Check (no destination errors)</b>.</li> </ul> <p>If the SIB is in a <b>Check</b> state, because of destination errors, the CLI displays an additional line in the output, use "<b>show chassis fabric fpcs</b>" and "<b>show chassis fabric sibs</b>" for more details.</p> <ul style="list-style-type: none"> <li>• Link errors are detected on the channel between the SIB and a Packet Forwarding Engine. Link errors can be detected at initialization time or runtime: <ul style="list-style-type: none"> <li>• Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The <b>show chassis fabric fpcs</b> command shows <b>Plane disabled</b> as status for this link.</li> <li>• Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The <b>show chassis fabric fpcs</b> command shows <b>Link error</b> as the status for this link.</li> </ul> </li> </ul> <p><b>NOTE:</b> The <b>Check</b> state does not apply to PTX Series Packet Transport Routers.</p> <ul style="list-style-type: none"> <li>• <b>SFC Error</b>—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the <b>Fault</b> state (for instance, because of link errors), and then if an LCC SIB (connected to the F13 SIB) comes online, the LCC SIB transitions to the <b>SFC Error</b> state. This state indicates that the F13 SIB to which the LCC SIB is connected has errors.</li> </ul> <p><b>NOTE:</b> The <b>Connected</b>, <b>Disconnected</b>, and <b>SFC Error</b> states are only applicable to the SIBs on an LCC.</p>

Table 40: show chassis sibs Output Fields (continued)

Field Name	Field Description
	<ul style="list-style-type: none"> <li><b>Invalid</b>—The specific SIB slot is not valid for 4-LCC chassis configuration. See the <i>TX Matrix Plus Hardware Guide</i> for more information about the supported SIB slots.</li> </ul> <p><b>NOTE:</b> The <b>Invalid</b> state is applicable to TX Matrix Plus routers only.</p>
<b>Fabric links</b>	<p>Indicates status of fabric links on the SIB.</p> <ul style="list-style-type: none"> <li><b>Active</b>—All fabric links on SIB are active. Errors detected on the SIB's fabric links, if any, are reported in the Errors column.</li> <li><b>Unused</b>—All fabric links on the SIB are not used for fabric traffic.</li> </ul>
<b>Errors</b>	<p>Indicates if there is any error on the SIB.</p> <ul style="list-style-type: none"> <li><b>None</b>—No errors</li> <li><b>Link Errors</b>—Fabric link errors were found on SIB RX link.</li> <li><b>Cell drops</b>—Fabric cell drops were found on the SIB ASIC.</li> <li><b>Link Errors, Cell drops</b>—Both link errors and cell drops were detected on at least one of the SIB's fabric links.</li> <li><b>Asic Errors</b>—A fault affecting one of the ASICs on the SIB is detected. It can be an IO error or an internal error signaled by the ASIC.</li> </ul>
<b>Link Errors</b>	<p>indicate the number of links which are marked faulty because the errors on them have crossed threshold.</p>
<b>Cable Errors</b>	<p>Indicate the number of mandatory cables that are not connected, or in up state for that plane</p>
<b>Destination Errors</b>	<p>Indicate the number of destinations that are not reachable on this plane.</p>

## Sample Output

### show chassis sibs (T640 Router)

```

user@host> show chassis sibs
Slot  State                      Uptime
0      Empty
1      Offline                      --- Offlined by cli command ---
2      Check (21 destination errors) 1 day, 1 hour, 32 minutes, 55 seconds
3      Check (0 destination errors)  1 day, 1 hour, 32 minutes, 45 seconds
4      Empty

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

### show chassis sibs (T4000 Router)

```

user@host> show chassis sibs

```

Slot	State	Uptime
0	Spare	
1	Online	3 hours, 48 minutes, 38 seconds
2	Online	3 hours, 48 minutes, 22 seconds
3	Online	3 hours, 48 minutes, 5 seconds
4	Online	3 hours, 47 minutes, 49 seconds

### show chassis sibs (TX Matrix Router)

```
user@host> show chassis sibs
scc-re0:
-----
Slot  State              Uptime
0     Empty
1     Empty
2     Offline             --- Offlined by cli command ---
3     Offline
4     Online              7 days, 21 hours, 50 minutes, 4 seconds
lcc0-re0:
-----
Slot  State              Uptime
0     Offline             --- Offlined by cli command ---
1     Empty
2     Check (21 destination errors)  1 day, 1 hour, 32 minutes, 55 seconds
3     Check (0 destination errors)   1 day, 1 hour, 32 minutes, 45 seconds
4     Empty

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details
```

### show chassis sibs (T1600 Router)

```
user@host> show chassis sibs
Slot
Slot  State              Uptime
0     Check (destination errors)    2 hours, 23 minutes, 2 seconds
1     Offline             --- Offlined by cli command ---
2     Check (destination errors)    2 hours, 23 minutes, 3 seconds
3     Check (destination errors)    2 hours, 23 minutes, 3 seconds
4     Check (destination errors)    2 hours, 23 minutes, 3 seconds

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details
```

### show chassis sibs (TX Matrix Plus Router)

```
user@host> show chassis sibs
sfc0-re0:
-----
Slot  State              Type          Link errors  Destination errors  Uptime
0     Spare              SIB F13      NONE         NONE
1     Empty
2     Invalid
3     Online             SIB F13      NONE         NONE              1 hour,
53 minutes, 19 seconds
4     Empty
5     Invalid
6     Online             SIB F13      NONE         NONE              1 hour,
53 minutes, 8 seconds
7     Empty
8     Online             SIB F13      NONE         NONE              1 hour,
```



```

52 minutes, 57 seconds
 9   Empty                NONE          NONE
10   Invalid              NONE          NONE
11   Online               SIB F13       NONE          NONE          1 hour,
52 minutes, 46 seconds
12   Empty                NONE          NONE
13   Invalid              NONE          NONE
14   Invalid              NONE          NONE
15   Invalid              NONE          NONE
0/0   Spare               SIB F2S       NONE          NONE
0/2   Spare               SIB F2S       NONE          NONE
0/4   Spare               SIB F2S       NONE          NONE
0/6   Spare               SIB F2S       NONE          NONE
1/0   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 29 seconds
1/2   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 28 seconds
1/4   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 27 seconds
1/6   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 26 seconds
2/0   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 18 seconds
2/2   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 17 seconds
2/4   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 16 seconds
2/6   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 14 seconds
3/0   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 7 seconds
3/2   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 5 seconds
3/4   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 4 seconds
3/6   Online              SIB F2S       NONE          NONE          1 hour,
53 minutes, 3 seconds
4/0   Online              SIB F2S       NONE          NONE          1 hour,
52 minutes, 56 seconds
4/2   Online              SIB F2S       NONE          NONE          1 hour,
52 minutes, 54 seconds
4/4   Online              SIB F2S       NONE          NONE          1 hour,
52 minutes, 53 seconds
4/6   Online              SIB F2S       NONE          NONE          1 hour,
52 minutes, 52 seconds

```

lcc0-re0:

```

-----
Slot State      Link errors Destination errors Uptime
0   Spare       NONE          NONE
1   Online      NONE          NONE          1 hour, 53 minutes, 31
seconds
2   Online      NONE          NONE          1 hour, 53 minutes, 27
seconds
3   Online      NONE          NONE          1 hour, 53 minutes, 23
seconds
4   Online      NONE          NONE          1 hour, 53 minutes, 19
seconds

```

## show chassis sibs (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis sibs
sfc0-re0:
```

```
-----
Slot State      Type      Cable errors Link errors Destination
errors Uptime
0 Online        SIB F13   6          NONE      NONE
  21 hours, 54 minutes, 28 seconds
1 Online        SIB F13   8          NONE      NONE
  21 hours, 54 minutes, 12 seconds
2 Invalid
3 Online        SIB F13   6          NONE      NONE
  21 hours, 57 minutes, 6 seconds
4 Online        SIB F13   8          1         NONE
  21 hours, 56 minutes, 49 seconds
5 Invalid
6 Online        SIB F13   6          NONE      NONE
  21 hours, 56 minutes, 25 seconds
7 Online        SIB F13   8          NONE      NONE
  21 hours, 56 minutes, 8 seconds
8 Online        SIB F13   6          NONE      NONE
  21 hours, 55 minutes, 43 seconds
9 Online        SIB F13   8          NONE      NONE
  21 hours, 55 minutes, 26 seconds
10 Invalid
11 Empty
12 Empty
13 Invalid
14 Invalid
15 Invalid
0/0 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 55 minutes, 16 seconds
0/2 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 54 minutes, 49 seconds
0/4 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 54 minutes, 47 seconds
0/6 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 54 minutes, 45 seconds
1/0 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 57 minutes, 29 seconds
1/2 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 57 minutes, 27 seconds
1/4 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 57 minutes, 25 seconds
1/6 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 57 minutes, 23 seconds
2/0 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 56 minutes, 48 seconds
2/2 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 56 minutes, 46 seconds
2/4 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 56 minutes, 43 seconds
2/6 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 56 minutes, 41 seconds
3/0 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 56 minutes, 6 seconds
3/2 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 56 minutes, 4 seconds
3/4 Online        SIB F2S   -n/a-      NONE      NONE
  21 hours, 56 minutes, 2 seconds
```

```

3/6  Online          SIB F2S          -n/a-      NONE      NONE
    21 hours, 56 minutes
4/0  Online          SIB F2S          -n/a-      NONE      NONE
    21 hours, 55 minutes, 24 seconds
4/2  Online          SIB F2S          -n/a-      NONE      NONE
    21 hours, 55 minutes, 22 seconds
4/4  Online          SIB F2S          -n/a-      NONE      NONE
    21 hours, 55 minutes, 20 seconds
4/6  Online          SIB F2S          -n/a-      NONE      NONE
    21 hours, 55 minutes, 18 seconds

```

lcc0-re0:

```

-----
Slot State          Cable errors Link errors Destination errors Uptime
0  Online          6          NONE          NONE          21 hours,
47 minutes, 29 seconds
1  Online          6          NONE          NONE          21 hours,
47 minutes, 50 seconds
2  Online          6          NONE          NONE          21 hours,
47 minutes, 43 seconds
3  Online          6          NONE          NONE          21 hours,
47 minutes, 36 seconds
4  Empty          NONE          NONE          NONE
use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

lcc4-re0:

```

-----
Slot State          Cable errors Link errors Destination errors Uptime
0  Online          6          NONE          NONE          21 hours,
57 minutes, 1 second
1  Online          6          NONE          NONE          21 hours,
57 minutes, 21 seconds
2  Online          6          NONE          NONE          21 hours,
57 minutes, 14 seconds
3  Online          6          NONE          NONE          21 hours,
57 minutes, 7 seconds
4  Empty          NONE          NONE          NONE
use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

lcc7-re0:

```

-----
Slot State          Cable errors Link errors Destination errors Uptime
0  Online          2          NONE          NONE          21 hours,
56 minutes, 54 seconds
1  Online          2          NONE          NONE          21 hours,
57 minutes, 21 seconds
2  Online          2          NONE          NONE          21 hours,
57 minutes, 12 seconds
3  Online          2          NONE          NONE          21 hours,
57 minutes, 3 seconds
4  Empty          NONE          NONE          NONE
use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

### show chassis sibs sfc (TX Matrix Plus Router))

```
user@host> show chassis sibs sfc 0
```

sfc0-re0:

```

-----
Slot State          Type          Link errors Destination errors Uptime
0  Spare          SIB F13          NONE          NONE
1  Empty

```

2	Invalid		NONE	NONE	
3	Online	SIB F13	NONE	NONE	12 hours,
6	minutes, 22 seconds				
4	Empty		NONE	NONE	
5	Invalid		NONE	NONE	
6	Online	SIB F13	NONE	NONE	12 hours,
6	minutes, 11 seconds				
7	Empty		NONE	NONE	
8	Online	SIB F13	NONE	NONE	12 hours,
6	minutes				
9	Empty		NONE	NONE	
10	Invalid		NONE	NONE	
11	Online	SIB F13	NONE	NONE	12 hours,
5	minutes, 49 seconds				
12	Empty		NONE	NONE	
13	Invalid		NONE	NONE	
14	Invalid		NONE	NONE	
15	Invalid		NONE	NONE	
0/0	Spare	SIB F2S	NONE	NONE	
0/2	Spare	SIB F2S	NONE	NONE	
0/4	Spare	SIB F2S	NONE	NONE	
0/6	Spare	SIB F2S	NONE	NONE	
1/0	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 32 seconds				
1/2	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 31 seconds				
1/4	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 30 seconds				
1/6	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 29 seconds				
2/0	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 21 seconds				
2/2	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 20 seconds				
2/4	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 19 seconds				
2/6	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 17 seconds				
3/0	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 10 seconds				
3/2	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 9 seconds				
3/4	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 7 seconds				
3/6	Online	SIB F2S	NONE	NONE	12 hours,
6	minutes, 6 seconds				
4/0	Online	SIB F2S	NONE	NONE	12 hours,
5	minutes, 59 seconds				
4/2	Online	SIB F2S	NONE	NONE	12 hours,
5	minutes, 57 seconds				
4/4	Online	SIB F2S	NONE	NONE	12 hours,
5	minutes, 56 seconds				
4/6	Online	SIB F2S	NONE	NONE	12 hours,
5	minutes, 55 seconds				

**show chassis sibs lcc (TX Matrix Plus Router)**

```
user@host> show chassis sibs lcc 0
lcc0-re0:
```

```
-----
Slot  State                Link errors  Destination errors  Uptime
```

0	Online	NONE	NONE	20 hours, 14 minutes,
50	seconds			
1	Fault	NONE	NONE	
2	Online	NONE	NONE	20 hours, 15 minutes,
2	seconds			
3	Online	NONE	NONE	20 hours, 14 minutes,
58	seconds			
4	Online	NONE	NONE	20 hours, 14 minutes,
54	seconds			

#### show chassis sibs lcc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis sibs lcc 0
lcc0-re0:
-----
Slot State          Cable errors Link errors Destination errors Uptime
0    Disconnected    NONE         NONE         NONE         17 hours,
2 minutes, 37 seconds
1    Online          NONE         NONE         NONE         17 hours,
3 minutes, 6 seconds
2    Online          NONE         NONE         NONE         17 hours,
2 minutes, 59 seconds
3    Online          NONE         NONE         NONE         17 hours,
2 minutes, 52 seconds
4    Online          NONE         NONE         NONE         17 hours,
2 minutes, 44 seconds
```

#### show chassis sibs (M320 Router)

```
user@host> show chassis sibs

0    Online          1 hour, 18 minutes, 3 seconds
1    Offline         --- Offlined by cli command ---
2    Online          1 hour, 18 minutes, 18 seconds
3    Online          1 hour, 18 minutes, 3 seconds
```

#### show chassis sibs (PTX Series)

```
user@host> show chassis sibs
Slot State          Fabric links      Errors
0    Online          Active           Asic Errors
1    Online          Active           Link Errors
2    Online          Active           None
3    Online          Active           Cell drops
4    Offline         Unused           None
5    Online          Active           None
6    Online          Active           None
7    Online          Active           None
8    Online          Active           None
```

#### show chassis sibs (PTX Series)

```
user@host> show chassis sibs detail
Slot 4 information
State          Offline
Reason         Offlined by cli command
Fabric links    Unused
Errors          None
```



## show chassis spmb

<b>List of Syntax</b>	<a href="#">Syntax on page 1197</a> <a href="#">Syntax (MX Series Routers) on page 1197</a> <a href="#">Syntax (T4000 Routers) on page 1197</a> <a href="#">Syntax (TX Matrix Routers) on page 1197</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 1197</a>
<b>Syntax</b>	show chassis spmb
<b>Syntax (MX Series Routers)</b>	show chassis spmb <all-members> <local> <member <i>member-id</i> >
<b>Syntax (T4000 Routers)</b>	show chassis spmb <sibs>
<b>Syntax (TX Matrix Routers)</b>	show chassis spmb <sibs> <lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Routers)</b>	show chassis spmb <sibs> <lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. <b>sibs</b> option introduced for the T1600 and TX Matrix Plus routers in Junos OS Release 9.6. Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers. <b>all-members</b> , <b>local</b> , and <b>member <i>member-id</i></b> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers. Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.
<b>Description</b>	(T Series routers, MX2010, MX2020, and MX2008 routers only) Display Switch Processor Mezzanine Board (SPMB) status information.
<b>Options</b>	<p><b>none</b>—(TX Matrix, TX Matrix Plus router, MX2010, MX2020, and MX2008 routers only)            On a TX Matrix router, display SPMB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display SPMB status for the TX Matrix Plus router and its attached routers. On MX2010, MX2020, and MX2008 routers, display the SPMB status for the routers.</p> <p><b>all-members</b>—(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix router, display information about the SPMB on a specified T640 router (line-card chassis)</p>

that is connected to the TX Matrix router. On a TX Matrix Plus router, display information about the SPMB on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in the local member of the Virtual Chassis.

**member *member-id***—(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in the specified member of the Virtual Chassis. Replace *member-id* with the value 0 or 1.

**scc**—(TX Matrix routers only) (Optional) Display information about the SPMB on the TX Matrix router (switch-card chassis).

**sfc *number***—(TX Matrix Plus router only) (Optional) Display information about the SPMB on the TX Matrix Plus router (switch-fabric chassis). Replace *number* with 0.

**sibs**—(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix Plus router, display information about the SIBs on the TX Matrix router (switch-card chassis). On a TX Matrix Plus router, display information about the SIBs on The TX Matrix Plus router (switch-fabric chassis). The **sibs** option has the following sub-options:

**lcc *number*** (TX Matrix, TX Matrix Plus router only) (Optional) On a TX Matrix router, display information about the SIBs on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display information about the SIBs on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.



- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**scc *number***—(TX Matrix routers only) (Optional) Display information about the SIBs on the TX Matrix router (switch-card chassis). Replace ***number*** variable with 0.

**sfc *number***—(TX Matrix Plus router only) (Optional) Display information about the SIBs on the TX Matrix Plus router (switch-fabric chassis). Replace ***number*** variable with 0.

**Required Privilege Level** view

**Related Documentation**

- [request chassis sib on page 303](#)
- [request chassis spmb restart on page 310](#)
- [show chassis spmb sibs on page 1208](#)

**List of Sample Output**

- [show chassis spmb on page 1200](#)
- [show chassis spmb \(MX2010 Router\) on page 1200](#)
- [show chassis spmb \(MX2020 Router\) on page 1201](#)
- [show chassis spmb \(MX2008 Router\) on page 1201](#)
- [show chassis spmb \(T4000 Router\) on page 1201](#)
- [show chassis spmb lcc \(TX Matrix Router\) on page 1201](#)
- [show chassis spmb scc \(TX Matrix Router\) on page 1202](#)
- [show chassis spmb \(T1600 Router\) on page 1202](#)
- [show chassis spmb sibs \(T1600 Router\) on page 1202](#)
- [show chassis spmb \(TX Matrix Plus Router\) on page 1202](#)
- [show chassis spmb lcc \(TX Matrix Plus Router\) on page 1204](#)
- [show chassis spmb scc \(TX Matrix Plus Router\) on page 1204](#)
- [show chassis spmb sibs \(TX Matrix Plus Router\) on page 1205](#)
- [show chassis spmb lcc \(TX Matrix Plus router with 3D SIBs\) on page 1206](#)
- [show chassis spmb sfc \(TX Matrix Plus router with 3D SIBs\) on page 1206](#)

**Output Fields** [Table 41 on page 1199](#) lists the output fields for the **show chassis spmb** command. Output fields are listed in the approximate order in which they appear.

*Table 41: show chassis spmb Output Fields*

Field Name	Field Description
Slot	SPMB slot number: 0 or 1.

Table 41: show chassis spmb Output Fields (continued)

Field Name	Field Description
<b>State</b>	SPMB status: <ul style="list-style-type: none"> <li>• <b>Online</b>—SPMB is operational and running.</li> <li>• <b>Offline</b>—SPMB is powered down.</li> </ul>
<b>Total CPU Utilization (%)</b>	Total percentage of CPU being used by the SPMB processor.
<b>Interrupt CPU Utilization (%)</b>	Of the total CPU being used by the SPMB processor, the percentage being used for interrupts.
<b>Memory Heap Utilization (%)</b>	Percentage of heap space (dynamic memory) being used by the FPC processor. If this number exceeds 80 percent, there may be a software problem (memory leak).
<b>Buffer Utilization (%)</b>	Percentage of buffer space being used by the SPMB processor for buffering internal messages.
<b>Start time</b>	Time at which the SPMB last came online.
<b>Uptime</b>	How long the SPMB has been up and running.

## Sample Output

### show chassis spmb

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization 1%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    40%
  Start time:          2001-08-27 14:05:04 PDT
  Uptime:              46 minutes, 36 seconds

```

### show chassis spmb (MX2010 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization 12%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 1%
  Buffer Utilization    22%
  Start time:          2012-10-04 15:34:29 PDT
  Uptime:              7 hours, 10 minutes, 15 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 1%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    22%

```

```

Start time:          2012-10-02 14:34:54 PDT
Uptime:              2 days, 8 hours, 9 minutes, 50 seconds

```

#### show chassis spmb (MX2020 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization 100%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 3%
  Buffer Utilization    22%
  Start time:          2012-10-03 14:58:26 PDT
  Uptime:              1 day, 12 hours, 16 minutes, 14 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    22%
  Start time:          2012-10-03 14:58:27 PDT
  Uptime:              1 day, 12 hours, 16 minutes, 13 seconds

```

#### show chassis spmb (MX2008 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Start time:          2017-05-04 02:53:36 PDT
  Uptime:              10 days, 7 hours, 1 minute, 14 seconds
Slot 1 information:
  State                Online - Standby
  Start time:          2017-05-04 02:53:36 PDT
  Uptime:              10 days, 7 hours, 1 minute, 14 seconds

```

#### show chassis spmb (T4000 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization 18%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    22%
  Start time:          2012-02-09 22:51:09 PST
  Uptime:              2 hours, 25 minutes, 45 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    22%
  Start time:          2012-02-09 22:51:10 PST
  Uptime:              2 hours, 25 minutes, 44 seconds

```

#### show chassis spmb lcc (TX Matrix Router)

```

user@host> show chassis spmb lcc 0

```

lcc0-re0:

```
-----
Slot 0 information:
  State                               Online
  Total CPU Utilization                0%
  Interrupt CPU Utilization            0%
  Memory Heap Utilization              0%
  Buffer Utilization                   42%
  Start time:                         2004-08-05 18:43:38 PDT
  Uptime:                             8 days, 55 minutes, 52 seconds
```

#### show chassis spmb scc (TX Matrix Router)

```
user@host> show chassis spmb scc
scc-re0:
-----
Slot 0 information:
  State                               Online
  Total CPU Utilization                1%
  Interrupt CPU Utilization            0%
  Memory Heap Utilization              0%
  Buffer Utilization                   42%
  Start time:                         2004-08-05 18:43:37 PDT
  Uptime:                             8 days, 1 hour, 6 minutes, 51 seconds
```

#### show chassis spmb (T1600 Router)

```
user@host> show chassis spmb
Slot 0 information:
  State                               Online
  Total CPU Utilization                2%
  Interrupt CPU Utilization            0%
  Memory Heap Utilization              0%
  Buffer Utilization                   24%
  Start time:                         2009-05-07 22:34:03 PDT
  Uptime:                             3 days, 4 hours, 14 minutes, 33 seconds
Slot 1 information:
  State                               Online - Standby
  Total CPU Utilization                0%
  Interrupt CPU Utilization            0%
  Memory Heap Utilization              0%
  Buffer Utilization                   24%
  Start time:                         2009-05-07 22:34:02 PDT
  Uptime:                             3 days, 4 hours, 14 minutes, 34 seconds
```

#### show chassis spmb sibs (T1600 Router)

```
user@host> show chassis spmb sibs
Slot  State                               Uptime
0      Check                             3 days, 4 hours, 11 minutes, 59 seconds
1      Disconnected                      3 days, 4 hours, 12 minutes, 36 seconds
2      Disconnected                      3 days, 4 hours, 12 minutes, 26 seconds
3      Disconnected                      3 days, 4 hours, 12 minutes, 17 seconds
4      Disconnected                      3 days, 4 hours, 12 minutes, 8 seconds
```

#### show chassis spmb (TX Matrix Plus Router)

```
user@host> show chassis spmb
sfc0-re0:
-----
```

```

Slot 0 information:
  State                Online
  Total CPU Utilization 84%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:20 PDT
  Uptime:              46 minutes, 6 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:20 PDT
  Uptime:              46 minutes, 6 seconds

```

```
lcc0-re1:
```

```

-----
Slot 0 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:09 PDT
  Uptime:              46 minutes, 24 seconds
Slot 1 information:
  State                Online
  Total CPU Utilization 5%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:08 PDT
  Uptime:              46 minutes, 25 seconds

```

```
lcc1-re1:
```

```

-----
Slot 0 information:
  State                Online - Standby
  Total CPU Utilization 1%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:09 PDT
  Uptime:              46 minutes, 24 seconds
Slot 1 information:
  State                Online
  Total CPU Utilization 5%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:10 PDT
  Uptime:              46 minutes, 23 seconds

```

```
lcc2-re1:
```

```

-----
Slot 0 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%

```

```

Memory Heap Utilization      0%
Buffer Utilization           24%
Start time:                  2009-05-11 01:25:08 PDT
Uptime:                      46 minutes, 25 seconds

Slot 1 information:
State                        Online
Total CPU Utilization        5%
Interrupt CPU Utilization    0%
Memory Heap Utilization      0%
Buffer Utilization           24%
Start time:                  2009-05-11 01:25:10 PDT
Uptime:                      46 minutes, 23 seconds

```

```
lcc3-re1:
```

```

-----
Slot 0 information:
State                        Online - Standby
Total CPU Utilization        1%
Interrupt CPU Utilization    0%
Memory Heap Utilization      0%
Buffer Utilization           24%
Start time:                  2009-05-11 01:25:10 PDT
Uptime:                      46 minutes, 23 seconds

Slot 1 information:
State                        Online
Total CPU Utilization        5%
Interrupt CPU Utilization    0%
Memory Heap Utilization      0%
Buffer Utilization           24%
Start time:                  2009-05-11 01:25:09 PDT
Uptime:                      46 minutes, 24 seconds

```

#### show chassis spmb lcc (TX Matrix Plus Router)

```
user@host> show chassis spmb lcc 2
lcc2-re1:
```

```

-----
Slot 0 information:
State                        Online - Standby
Total CPU Utilization        0%
Interrupt CPU Utilization    0%
Memory Heap Utilization      0%
Buffer Utilization           24%
Start time:                  2009-05-11 01:25:08 PDT
Uptime:                      45 minutes, 18 seconds

Slot 1 information:
State                        Online
Total CPU Utilization        6%
Interrupt CPU Utilization    0%
Memory Heap Utilization      0%
Buffer Utilization           24%
Start time:                  2009-05-11 01:25:10 PDT
Uptime:                      45 minutes, 16 seconds

```

#### show chassis spmb scc (TX Matrix Plus Router)

```
user@host> show chassis spmb sfc 0
sfc0-re0:
```

```

-----
Slot 0 information:

```

```

State                               Online
Total CPU Utilization               87%
Interrupt CPU Utilization           0%
Memory Heap Utilization             0%
Buffer Utilization                  24%
Start time:                         2009-05-11 01:25:20 PDT
Uptime:                             43 minutes, 32 seconds
Slot 1 information:
State                               Online - Standby
Total CPU Utilization               0%
Interrupt CPU Utilization           0%
Memory Heap Utilization             0%
Buffer Utilization                  24%
Start time:                         2009-05-11 01:25:20 PDT
Uptime:                             43 minutes, 32 seconds

```

### show chassis spmb sibs (TX Matrix Plus Router)

```

user@host> show chassis spmb sibs
sfc0-re0:

```

Slot	State	Type	Uptime
0	Online	SIB F13	1 hour, 18 minutes, 54 seconds
1	Online	SIB F13	1 hour, 18 minutes, 45 seconds
2	Invalid		
3	Online	SIB F13	1 hour, 20 minutes, 21 seconds
4	Online	SIB F13	1 hour, 20 minutes, 18 seconds
5	Invalid		
6	Online	SIB F13	1 hour, 19 minutes, 51 seconds
7	Fault	SIB F13	
8	Online	SIB F13	1 hour, 19 minutes, 17 seconds
9	Online	SIB F13	1 hour, 19 minutes, 13 seconds
10	Invalid		
11	Online	SIB F13	1 hour, 17 minutes, 54 seconds
12	Online	SIB F13	1 hour, 17 minutes, 51 seconds
13	Invalid		
14	Invalid		
15	Invalid		
0/0	Online	SIB F2S	1 hour, 18 minutes, 52 seconds
0/2	Online	SIB F2S	1 hour, 18 minutes, 51 seconds
0/4	Online	SIB F2S	1 hour, 18 minutes, 49 seconds
0/6	Online	SIB F2S	1 hour, 18 minutes, 48 seconds
1/0	Online	SIB F2S	1 hour, 20 minutes, 16 seconds
1/2	Online	SIB F2S	1 hour, 20 minutes, 15 seconds
1/4	Online	SIB F2S	1 hour, 20 minutes, 14 seconds
1/6	Online	SIB F2S	1 hour, 20 minutes, 13 seconds
2/0	Online	SIB F2S	1 hour, 19 minutes, 48 seconds
2/2	Online	SIB F2S	1 hour, 19 minutes, 47 seconds
2/4	Online	SIB F2S	1 hour, 19 minutes, 46 seconds
2/6	Online	SIB F2S	1 hour, 19 minutes, 44 seconds
3/0	Online	SIB F2S	1 hour, 19 minutes, 24 seconds
3/2	Online	SIB F2S	1 hour, 19 minutes, 22 seconds
3/4	Online	SIB F2S	1 hour, 19 minutes, 21 seconds
3/6	Online	SIB F2S	1 hour, 19 minutes, 20 seconds
4/0	Online	SIB F2S	1 hour, 18 minutes, 2 seconds
4/2	Online	SIB F2S	1 hour, 18 minutes
4/4	Online	SIB F2S	1 hour, 17 minutes, 58 seconds
4/6	Online	SIB F2S	1 hour, 17 minutes, 58 seconds

```

lcc0-re1:

```

Slot	State	Uptime
0	Online	1 hour, 18 minutes, 58 seconds
1	Online	1 hour, 20 minutes, 25 seconds
2	Fault	
3	Online	1 hour, 18 minutes, 30 seconds
4	Online	1 hour, 18 minutes, 28 seconds

lcc1-re1:

Slot	State	Uptime
0	Online	1 hour, 18 minutes, 58 seconds
1	Online	1 hour, 20 minutes, 26 seconds
2	Fault	
3	Online	1 hour, 18 minutes, 22 seconds
4	Online	1 hour, 18 minutes, 20 seconds

lcc2-re1:

Slot	State	Uptime
0	Online	1 hour, 18 minutes, 19 seconds
1	Online	1 hour, 20 minutes, 25 seconds
2	Fault	
3	Online	1 hour, 18 minutes, 17 seconds
4	Online	1 hour, 18 minutes, 15 seconds

lcc3-re1:

Slot	State	Uptime
0	Online	1 hour, 18 minutes, 27 seconds
1	Online	1 hour, 20 minutes, 24 seconds
2	Fault	
3	Online	1 hour, 18 minutes, 25 seconds
4	Online	1 hour, 18 minutes, 23 seconds

#### show chassis spmb lcc (TX Matrix Plus router with 3D SIBs)

user@host &gt; show chassis spmb lcc 0

lcc0-re1:

Slot 0 information:

State	Online - Standby
Total CPU Utilization	0%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	0%
Start time:	2013-02-08 00:57:20 PST
Uptime:	19 minutes, 43 seconds

Slot 1 information:

State	Online
Total CPU Utilization	0%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	22%
Start time:	2013-02-08 00:56:59 PST
Uptime:	20 minutes, 4 seconds

#### show chassis spmb sfc (TX Matrix Plus router with 3D SIBs)

user@host&gt; show chassis spmb sfc o



sfc0-re0:

-----  
Slot 0 information:

State	Online
Total CPU Utilization	0%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	0%
Start time:	2013-02-06 19:16:55 PST
Uptime:	1 day, 6 hours, 2 minutes, 59 seconds

Slot 1 information:

State	Online - Standby
Total CPU Utilization	0%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	0%
Start time:	2013-02-06 19:16:53 PST
Uptime:	1 day, 6 hours, 3 minutes, 1 second

## show chassis spmb sibs

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1208</a> <a href="#">Syntax (TX Matrix Router) on page 1208</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1208</a>
<b>Syntax</b>	show chassis spmb sibs
<b>Syntax (TX Matrix Router)</b>	show chassis spmb sibs <lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show chassis spmb sibs <lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	(T Series routers only) Display Switch Processor Mezzanine Board (SPMB) Switch Interface Board (SIB) status information.
<b>Options</b>	<p><b>none</b>—(TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display the SIB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display the SIB status for the TX Matrix Plus router and its attached routers.</p> <p><b>lcc <i>number</i></b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display SIB status information for a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display SIB status information for a specified router (line-card chassis) that is connected to a TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"><li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li><li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li><li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li><li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li></ul> <p><b>scc</b>—(TX Matrix router only) (Optional) Display SIB status information for the TX Matrix router (switch-card chassis).</p> <p><b>sfc</b>—(TX Matrix Plus router only) (Optional) Display SIB status information for the TX Matrix Plus router (or switch-fabric chassis).</p>

**Additional Information** On a T Series router, you can use either this command or the **show chassis sibs** command to produce the same output. The **show chassis sibs** command is supported on the M320 router and on the T Series routers.

**Required Privilege Level** view

**Related Documentation**

- [show chassis sibs on page 1185](#)
- [request chassis sib on page 303](#)
- [request chassis spmb restart on page 310](#)

**List of Sample Output**

- [show chassis spmb sibs \(T320 Router\) on page 1210](#)
- [show chassis-spmb-sibs \(T1600 Router\) on page 1210](#)
- [show chassis spmb sibs \(T4000 Router\) on page 1210](#)
- [show chassis spmb sibs \(TX Matrix Router\) on page 1211](#)
- [show chassis spmb sibs lcc \(TX Matrix Router\) on page 1211](#)
- [show chassis spmb sibs scc \(TX Matrix Router\) on page 1211](#)
- [show chassis spmb sibs \(TX Matrix Plus Router\) on page 1211](#)
- [show chassis spmb sibs sfc \(TX Matrix Plus Router\) on page 1212](#)

**Output Fields** Table 42 on page 1209 lists the output fields for the **show chassis spmb sibs** command. Output fields are listed in the approximate order in which they appear.

*Table 42: show chassis spmb sibs Output Fields*

Field Name	Field Description
Slot	<p>SIB slot number:</p> <ul style="list-style-type: none"> <li>• T640 router, T1600 router or TX Matrix router—0 through 4</li> <li>• TX Matrix Plus router: <ul style="list-style-type: none"> <li>• TXP-F13 SIB Slots—0 through 16</li> <li>• TXP-F2S SIB Slots —0 – 4/[0 2 4 6]</li> </ul> </li> <li>• T320 router—0 through 2</li> </ul>

Table 42: show chassis spmb sibs Output Fields (continued)

Field Name	Field Description
State	<p>SIB status:</p> <ul style="list-style-type: none"> <li>• <b>Disconnected</b>—SIBs on all T640 routers on the TX Matrix router (switch-card chassis) are in the <b>Disconnected</b> state, because a SIB on the SCC has gone offline. Likewise, SIBs on all T1600 or T4000 routers on the TX Matrix Plus router (or switch-fabric chassis) are in the <b>Disconnected</b> state, because a SIB on the SFC has gone offline.</li> <li>• <b>Online</b>—SPMB is operational and running.</li> <li>• <b>Offline</b>—SPMB is powered down.</li> <li>• <b>Spare</b>—SIB is redundant and will move to active state if one of the working SIBs fail to pass traffic.</li> <li>• <b>Empty</b>—No SPMB is present.</li> <li>• <b>Fault</b>—SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> <li>• On-board F-chip is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> </ul> </li> <li>• <b>Check</b>—SIB is in alarmed state where the SIB's plane is partially operational for the following reasons: <ul style="list-style-type: none"> <li>• SIB is not inserted properly.</li> <li>• Two or more links between the SIB and PFE fails.</li> </ul> </li> </ul>
Uptime	How long the SIB has been up and running.

## Sample Output

### show chassis spmb sibs (T320 Router)

```
user@host> show chassis spmb sibs
Slot  State
0      Spare
1      Online
2      Online
```

### show chassis-spmb-sibs (T1600 Router)

```
user@host> show chassis spmb sibs
Slot  State
0      Spare
1      Online
2      Empty
3      Online
4      Offline
```

### show chassis spmb sibs (T4000 Router)

```
user@host> show chassis spmb sibs
```

Slot	State	Uptime
0	Spare	
1	Online	2 hours, 28 minutes, 13 seconds
2	Online	2 hours, 27 minutes, 57 seconds
3	Online	2 hours, 27 minutes, 40 seconds
4	Online	2 hours, 27 minutes, 24 seconds

#### show chassis spmb sibs (TX Matrix Router)

```
user@host> show chassis spmb sibs
```

Slot	State
0	Online
1	Online
2	Empty
3	Online
4	Offline

#### show chassis spmb sibs lcc (TX Matrix Router)

```
user@host> show chassis spmb sibs lcc 0
lcc0-re0:
```

Slot	State	Uptime
0	Empty	
1	Empty	
2	Empty	
3	Disconnected	8 days, 48 minutes, 58 seconds
4	Online	8 days, 48 minutes, 57 seconds

#### show chassis spmb sibs scc (TX Matrix Router)

```
user@host> show chassis spmb sibs scc
scc-re0:
```

Slot	State	Uptime
0	Empty	
1	Empty	
2	Empty	
3	Offline	
4	Online	8 days, 54 minutes, 1 second

#### show chassis spmb sibs (TX Matrix Plus Router)

```
user@host> show chassis spmb sibs
sfc0-re0:
```

Slot	State	Type	Uptime
0	Online	SIB F13	1 hour, 52 minutes, 55 seconds
1	Empty		
2	Invalid		
3	Online	SIB F13	1 hour, 53 minutes, 3 seconds
4	Empty		
5	Invalid		
6	Empty		
7	Empty		
8	Empty		
9	Empty		
10	Invalid		
11	Empty		

```

12    Empty
13    Invalid
14    Invalid
15    Invalid
0/0   Online      SIB F2S      1 hour, 53 minutes, 2 seconds
0/2   Online      SIB F2S      1 hour, 53 minutes, 1 second
0/4   Online      SIB F2S      1 hour, 52 minutes, 59 seconds
0/6   Online      SIB F2S      1 hour, 52 minutes, 58 seconds
1/0   Online      SIB F2S      1 hour, 53 minutes, 10 seconds
1/2   Online      SIB F2S      1 hour, 53 minutes, 8 seconds
1/4   Online      SIB F2S      1 hour, 53 minutes, 7 seconds
1/6   Online      SIB F2S      1 hour, 53 minutes, 6 seconds
2/0   Empty
2/2   Empty
2/4   Empty
2/6   Empty
3/0   Empty
3/2   Empty
3/4   Empty
3/6   Empty
4/0   Empty
4/2   Empty
4/4   Empty
4/6   Empty

```

lcc0-re0:

```

-----
Slot  State      Uptime
0      Online      1 hour, 53 minutes, 1 second
1      Online      1 hour, 53 minutes, 3 seconds
2      Empty
3      Empty
4      Empty

```

lcc1-re1:

```

-----
Slot  State      Uptime
0      Online      1 hour, 47 minutes, 13 seconds
1      Online      1 hour, 47 minutes, 15 seconds
2      Empty
3      Empty
4      Empty

```

### show chassis spmb sibs sfc (TX Matrix Plus Router)

```

user@host> show chassis spmb sibs sfc 0
sfc0-re0:

```

-----

Slot 0 information:

```

State                               Online
Total CPU Utilization               16%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   24%
Start time:                         2009-06-17 20:59:47 PDT
Uptime:                             1 hour, 56 minutes, 30 seconds

```

Slot 1 information:

```

State                               Online - Standby
Total CPU Utilization               0%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%

```

Buffer Utilization	24%
Start time:	2009-06-17 20:59:48 PDT
Uptime:	1 hour, 56 minutes, 29 seconds





## CHAPTER 16

# Operational Commands: System Software-Specific

- request routing-engine login
- request support information
- request system logout
- request system partition hard-disk
- request system reboot
- request system snapshot
- request system software add
- request system software delete
- request system software rollback
- request system software validate
- show pfe lcc
- show pfe next-hop
- show pfe route
- show pfe statistics dma
- show pfe statistics error
- show pfe statistics ip
- show pfe statistics ip6
- show pfe statistics notification
- show pfe statistics traffic
- show pfe statistics traffic protocol cfm
- show pfe statistics traffic protocol bfd
- show pfe terse
- show system audit
- show system alarms
- show system boot-messages
- show system buffers

- `show system configuration archival`
- `show system configuration rescue`
- `show system connections`
- `show system commit`
- `show system commit revision`
- `show system core-dumps`
- `show system directory-usage`
- `request system halt`
- `show system memory`
- `show system processes`
- `show system queues`
- `show system reboot`
- `show system snapshot`
- `show system software`
- `show system statistics arp`
- `show system statistics clns`
- `show system statistics icmp`
- `show system statistics icmp6`
- `show system statistics igmp`
- `show system statistics ip`
- `show system statistics ip6`
- `show system statistics mpls`
- `show system statistics rdp`
- `show system statistics tcp`
- `show system statistics tnp`
- `show system statistics tudp`
- `show system statistics udp`
- `show system statistics vpls`
- `show system storage`
- `show system switchover`
- `show system rollback`
- `show system uptime`
- `show system users`
- `show system virtual-memory`
- `show version invoke-on`
- `request system storage cleanup`
- `restart`

## request routing-engine login

<b>List of Syntax</b>	<a href="#">Syntax on page 1217</a> <a href="#">Syntax (Root System Domain) on page 1217</a> <a href="#">Syntax (TX Matrix Router) on page 1217</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1217</a> <a href="#">Syntax (MX Series Router) on page 1217</a>
<b>Syntax</b>	request routing-engine login (backup   master   other-routing-engine   re0   re1)
<b>Syntax (Root System Domain)</b>	request routing-engine login (backup (psd <i>n</i>   rsd)   master (psd <i>n</i>   rsd)   other-routing-engine   re0 (psd <i>n</i>   rsd)   re1 (psd <i>n</i>   rsd))
<b>Syntax (TX Matrix Router)</b>	request routing-engine login (backup   master   other-routing-engine   re0   re1) <lcc <i>number</i> > <scc <i>number</i> >
<b>Syntax (TX Matrix Plus Router)</b>	request routing-engine login (backup   master   other-routing-engine   re0   re1) <lcc <i>number</i> > <sfc <i>number</i> >
<b>Syntax (MX Series Router)</b>	request routing-engine login (backup   master   other-routing-engine   re0   re1) <all-members> <local> <member <i>member-id</i> >
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>psd</b> and <b>rsd</b> options added in Junos OS Release 9.1. These options are available from the Root System Domain (RSD). An RSD is supported on a T320 router or T640 or T1600 router that is interconnected with the JCS1200 platform.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p>
<b>Description</b>	On a router with two Routing Engines, specify a tty connection for login.
<b>Options</b>	<p><b>backup</b>—Log in to the backup Routing Engine.</p> <p><b>lcc <i>number</i></b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, log in to a specific T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, log in to a specific router (or line-card chassis) that is connected to the TX Matrix router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> </ul>

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**master**—Log in to the master Routing Engine.

**other-routing-engine**—Log in to the other Routing Engine.

**psd *n***—(RSD only) Log in to the specified Protected System Domain (PSD). Replace *n* with a value from 1 to 31. A PSD is accessible from a T320 router or a T640 or T1600 router that is interconnected with the JCS1200 platform. When you log in to a PSD, you are required to provide user authentication.

**re0**—Log in to the Routing Engine in slot 0.

**re1**—Log in to the Routing Engine in slot 1.

**all-members**—(MX Series routers only) (Optional) Log in to all members of the Virtual Chassis configuration.

**local**—(MX Series routers only) (Optional) Log in to the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Log in to the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**rsd**—(RSD only) Log in to the RSD (as opposed to a PSD). A T320 router or a T640 or T1600 router that is interconnected with the JCS1200 platform can be configured as an RSD.

**sfc *number***—(TX Matrix Plus routers only) Log in to the specified Routing Engine on the TX Matrix Plus router (or switch-fabric chassis):

- **backup**—Log in to the backup Routing Engine.
- **master**—Log in to the master Routing Engine.
- **re0**—Log in to the Routing Engine in slot 0.
- **re1**—Log in to the Routing Engine in slot 1.

**Additional Information** For more information about PSDs, RSDs, and the JCS1200 platform, see the *Junos OS Protected System Domain Feature Guide for Routing Devices*.

**Required Privilege Level** maintenance

**List of Sample Output** [request routing-engine login other-routing-engine on page 1219](#)  
[request routing-engine login psd on page 1219](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request routing-engine login other-routing-engine

```
user@host> request routing-engine login other-routing-engine  
--- JUNOS 7.2-20050217.0 built 2005-02-17 08:12:50 UTC
```

### request routing-engine login psd

```
{master}  
user@host> request routing-engine login psd 1 re0  
login: user  
Password:  
  
--- JUNOS 9.1-20080321.0 built 2008-03-21 05:43:06 UTC  
% cli  
user@psd1>
```

## request support information

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1220</a> <a href="#">Syntax (SRX Series devices) on page 1220</a> <a href="#">Syntax (EX Series Switch and MX Series Router) on page 1220</a> <a href="#">Syntax (TX Matrix Router) on page 1220</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1220</a>
<b>Syntax</b>	request support information <brief>
<b>Syntax (SRX Series devices)</b>	request support information <brief> <secure-gateway>
<b>Syntax (EX Series Switch and MX Series Router)</b>	request support information <brief> <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	request support information <brief> <all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	request support information <brief> <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Option <b>brief</b> introduced in Junos OS Release 13.2. Option <b>secure-gateway</b> introduced in Junos OS Release 15.1X49-D110 for SRX5400, SRX5600, and SRX5800 devices.
<b>Description</b>	Display all configuration data for the system, including data hidden with the <b>apply-flags omit</b> command. Issue this command before contacting customer support, and then include the command output in your support request. Output from this command varies somewhat, depending on which platform you issue the command from. However, the command always executes a series of <b>show</b> commands, with the appropriate information for your device automatically included.
<b>Options</b>	<b>brief</b> —(Optional) Display brief information for the command output. Without this option, display of the output can take a long time to complete.  <b>all-chassis</b> —(TX Matrix and TX Matrix Plus routers) (Optional) Display system information for all chassis.

**all-lcc**—(TX Matrix and TX Matrix Plus routers) (Optional) On a TX Matrix router, display system information for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system information for all chassis for all T1600 or T4000 routers (or line-card chassis) connected to the TX Matrix Plus router.

**all-members**—(EX Series switches and MX Series routers) (Optional) Display system information for all members of the Virtual Chassis configuration.

**lcc *number***—(TX Matrix and TX Matrix Plus routers) (Optional) On a TX Matrix router, display system information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system storage information for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX Series switches and MX Series routers) (Optional) Display system information for the local Virtual Chassis member.

**member *member-id***—(EX Series switches and MX Series routers) (Optional) Display system information for the specified member of the Virtual Chassis configuration. On EX Series switches, replace *member-id* with a value appropriate for that Virtual Chassis configuration. On MX Series routers, replace *member-id* with a value of 0 or 1.

**scc**—(TX Matrix routers) (Optional) Display system information for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers) (Optional) Display system information for the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**secure-gateway**—(SRX5400, SRX5600, and SRX5800 devices) (Optional) Display system information for secure gateway deployment scenarios.

**node**—(SRX5400, SRX5600, and SRX5800 devices) (Optional) Display detailed system status report for all nodes or a specific node.

- ***node-id***—Display detailed system status report for a specific node. Replace *node-id* with a value of 0 or 1.
- **all**—Display detailed system status report for all nodes.

- **local**—Display detailed system status report for the local node.
- **primary**—Display detailed system status report for the primary node.

**Additional Information** The **show** commands issued as a result of this command vary depending on which platform you issue the command from. Output is always appropriate for the device. For example, [Table 43 on page 1222](#) lists the **show** commands that are called when you issue **request support information** on an MX Series router.

*Table 43: Sample show Commands Called by the request support information command on an MX Series Router*

show chassis alarms no-forwarding	show route summary
show chassis environment no-forwarding	show system boot-messages no-forwarding
show chassis firmware no-forwarding	show system buffer no-forwarding
show chassis fpc detail	show system commit
show chassis hardware detail no-forwarding	show system core-dumps no-forwarding
show chassis hardware extensive no-forwarding	show system processes extensive no-forwarding
show chassis routing-engine no-forwarding	show system queues no-forwarding
show configuration   except SECRET-DATA	show system statistics no-forwarding
show interfaces extensive no-forwarding	show system storage no-forwarding
show krt queue	show system uptime no-forwarding
show krt state	show system virtual-memory no-forwarding
show pfe statistics error	show version detail no-forwarding
show pfe statistics traffic	



**NOTE:** Show command **show interfaces extensive no-forwarding** is not supported for **request support information brief** command.

The **no-forwarding** option ensures that all mgd processes associated with the **show** command are properly halted if you break into the output (Ctrl+C) while the command is still running.





**NOTE:** The **no-forwarding** option ensures that all mgd processes associated with the **show** command are properly halted if you break into the output (Ctrl+C) while the command is still running.

Table 44 on page 1223 lists the **show** commands that are called when you issue **request support information** on an EX Series 9200 switch. The table does not include the **no-forwarding** option, which is used for purposes of the **request support information**, itself.

*Table 44: Sample show Commands Called by the request support information command on an EX Series 9200 Switch*

<code>show chassis alarms</code>	<code>show interfaces extensive</code>
<code>show chassis environment</code>	
<code>show chassis firmware</code>	<code>show pfe statistics traffic</code>
<code>show chassis fpcdetail</code>	<code>show spanning-tree bridge detail</code>
<code>show chassis hardware detail</code>	<code>show spanning-tree interface</code>
<code>show chassis routing-engine</code>	
<code>show configuration   except SECRET-DATA   display omit</code>	<code>show system boot-messages</code>
<code>show dhcp-security binding</code>	<code>show system queues</code>
<code>show dhcp-security ipv6 binding</code>	<code>show system processes extensive</code>
	<code>show system queues</code>
<code>show ethernet-switching interface detail</code>	<code>show system statistics</code>
<code>show ethernet-switching table</code>	<code>show vlans extensive</code>
	<code>show vrrp summary</code>

Table 45 on page 1223 lists the **show** commands that are called when you issue **request support information** on SRX Series devices.

*Table 45: Sample show Commands Called by the request support information command on SRX Series devices*

<code>show pfe statistics traffic</code>	<code>show interfaces queue</code>
<code>show chassis environment no-forwarding</code>	<code>show security monitoring fpc 0</code>
<code>show chassis fpc detail</code>	<code>show system license</code>

*Table 45: Sample show Commands Called by the request support information command on SRX Series devices (continued)*

show system storage no-forwarding	show security policies hit-count no-forwarding
show system virtual-memory no-forwarding	show security policies information no-forwarding
show system buffer no-forwarding	show security dns-cache
show system queues no-forwarding	show security flow statistics
show chassis hardware extensive no-forwarding	show security flow status
show krt queue	show security flow session summary no-forwarding
show route summary	show security utm anti-virus status



**NOTE:** Starting with Junos OS Release 15.1X49-D110, on SRX5400, SRX5600, and SRX5800 devices, a new option `secure-gateway` is added to the existing `request support information` command. This new option displays all the required information that is relevant for secure gateway deployment scenarios. In Junos OS Release 15.1X49-D100 and earlier, `request support information` displays the information about all features that might not be relevant for secure gateway deployments.

**Required Privilege Level** maintenance

**List of Sample Output** [request support information | save on page 1224](#)  
[request support information scc \(TX Matrix Router\) on page 1224](#)  
[request support information sfc \(TX Matrix Plus Router\) on page 1226](#)  
[request support information \(SRX Series device\) on page 1228](#)

**Output Fields** For information about output fields, see the description for the specific command—listed in the output— in which you are interested.

## Sample Output

### [request support information | save](#)

```
user@host> request support information | save hostA
Wrote 1143 lines of output to 'hostA'
user@host>
```

### [request support information scc \(TX Matrix Router\)](#)

```
user@host> request support information scc
```

```
user@host> show system uptime
```

```
scc-re0:
```

```
-----
Current time: 2004-09-15 00:49:06 PDT
System booted: 2004-09-14 12:53:26 PDT (11:55:40 ago)
Protocols started: 2004-09-14 12:54:19 PDT (11:54:47 ago)
Last configured: 2004-09-14 13:07:47 PDT (11:41:19 ago) by user
12:49AM PDT up 11:56, 3 users, load averages: 0.00, 0.02, 0.03
```

```
lcc0-re0:
```

```
-----
Current time: 2004-09-15 00:49:06 PDT
System booted: 2004-09-14 15:36:41 PDT (09:12:25 ago)
Last configured: 2004-09-14 15:38:06 PDT (09:11:00 ago) by root
12:49AM PDT up 9:12, 0 users, load averages: 0.13, 0.05, 0.02
```

```
lcc2-re0:
```

```
-----
Current time: 2004-09-15 00:49:06 PDT
System booted: 2004-09-14 15:36:47 PDT (09:12:19 ago)
Last configured: 2004-09-14 15:38:09 PDT (09:10:57 ago) by root
12:49AM PDT up 9:12, 0 users, load averages: 0.00, 0.00, 0.00
```

```
user@host> show version
```

```
scc-re0:
```

```
-----
Hostname: hostA
Model: TX Matrix
JUNOS Base OS boot [7.0I20040914_1707_mapte]
JUNOS Base OS Software Suite [7.0I20040907_1922_rtuplur]
JUNOS Kernel Software Suite [7.0I20040914_1707_mapte]
JUNOS Packet Forwarding Engine Support (T Series) [7.0I20040914_1707_mapte]
JUNOS Routing Software Suite [7.0I20040914_1707_mapte]
JUNOS Online Documentation [7.0I20040914_1707_mapte]
JUNOS Crypto Software Suite [7.0I20040914_1707_mapte]
JUNOS Support Tools Package [7.0-20040908.0]
```

```
lcc0-re0:
```

```
-----
Hostname: hostB
Model: t640
JUNOS Base OS boot [7.0I20040914_1707_mapte]
JUNOS Base OS Software Suite [7.0I20040907_1922_rtuplur]
JUNOS Kernel Software Suite [7.0I20040914_1707_mapte]
JUNOS Packet Forwarding Engine Support (T-Series) [7.0I20040914_1707_mapte]
JUNOS Routing Software Suite [7.0I20040914_1707_mapte]
JUNOS Online Documentation [7.0I20040914_1707_mapte]
JUNOS Crypto Software Suite [7.0I20040914_1707_mapte]
```

```
lcc2-re0:
```

```
-----
Hostname: dewey
Model: t640
JUNOS Base OS boot [7.0I20040914_1707_mapte]
JUNOS Base OS Software Suite [7.0I20040907_1922_rtuplur]
JUNOS Kernel Software Suite [7.0I20040914_1707_mapte]
```

```
JUNOS Packet Forwarding Engine Support (T-Series) [7.0I20040914_1707_mapte]
JUNOS Routing Software Suite [7.0I20040914_1707_mapte]
JUNOS Online Documentation [7.0I20040914_1707_mapte]
JUNOS Crypto Software Suite [7.0I20040914_1707_mapte]
...
```

### request support information sfc (TX Matrix Plus Router)

```
user@host> request support information sfc 0
sfc0-re0:
-----

root@host> show system uptime no-forwarding

Current time: 2009-05-25 03:43:28 PDT
System booted: 2009-05-25 01:15:04 PDT (02:28:24 ago)
Protocols started: 2009-05-25 01:16:01 PDT (02:27:27 ago)
Last configured: 2009-05-25 03:03:42 PDT (00:39:46 ago) by user
  3:43AM up 2:28, 7 users, load averages: 0.00, 0.00, 0.00

root@host> show version detail no-forwarding

Hostname: aj
Model: txp
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
...
root@host> show system core-dumps no-forwarding

-rw----- 1 root wheel 152223744 May 25 03:10 /var/crash/vmcore.0
-rw-r--r-- 1 bdeleon field 139417 May 22 10:17
/var/tmp/aj-core-apps-config-n-gres.txt
...
root@host> show chassis alarms no-forwarding

9 alarms currently active
Alarm time          Class Description
2009-05-25 01:27:08 PDT Minor LCC 0 Minor Errors
2009-05-25 01:27:08 PDT Minor Spare SIB F13 6 Fault
...
root@host> show chassis hardware detail no-forwarding

Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              REV 05   710-022574   JN112F007AHB   TXP
Midplane            REV 03   710-024027   DX0282         SFC Midplane
FPM Display         REV 03   710-024027   DX0282         TXP FPM Display
...
root@host> show system processes extensive no-forwarding

last pid: 6639; load averages: 0.00, 0.00, 0.00 up 0+02:28:54 03:43:28
161 processes: 5 running, 138 sleeping, 18 waiting

Mem: 236M Active, 227M Inact, 104M Wired, 392M Cache, 69M Buf, 2296M Free
Swap: 2048M Total, 2048M Free

PID USERNAME      THR PRI NICE  SIZE  RES STATE  TIME  WCPU COMMAND
 11 root           1  171  52    OK   12K RUN   143:00 96.78% idle
```

```

1530 root          1  96    0 38160K 24812K select  2:54  1.12% chassisd
1343 root          1  76    0    OK    12K      0:18  0.00% bcmLINK.0
1345 root          1  76    0    OK    12K      0:15  0.00% brq17: uhci1
uhci*
...

```

```
root@host> show pfe statistics error
```

Slot 4

SLCHIP Error statistics:

```

SLCHIP              0      1
-----
Lin XIF      :      0      0
Lin SRCTL    :      0      0
...

```

```
root@host>show pfe statistics traffic
```

Packet Forwarding Engine traffic statistics:

```

Input  packets:      2590754      0 pps
Output packets:      2640010      0 pps

```

Packet Forwarding Engine local traffic statistics:

```

Local packets input      :      2064527
Local packets output     :      2115925
Software input control plane drops :      0
Software input high drops :      0
Software input medium drops :      0
Software input low drops  :      0
Software output drops     :      0
Hardware input drops      :      0

```

Packet Forwarding Engine local protocol statistics:

```

HDLC keepalives      :      0
ATM OAM               :      0
Frame Relay LMI       :      0
PPP LCP/NCP           :      0
OSPF hello            :      20048
OSPF3 hello           :      109
RSVP hello             :      3485
LDP hello              :      7191
BFD                    :      0
IS-IS IIH              :      11318
LACP                   :      0
ARP                    :      629
ETHER OAM              :      930
Unknown                :      13212

```

Packet Forwarding Engine hardware discard statistics:

```

Timeout               :      0
Truncated key          :      0
Bits to test           :      0
Data error             :      0
Stack underflow        :      0
Stack overflow         :      0
Normal discard          :      18060
Extended discard       :      0
Invalid interface      :      0
Info cell drops        :      0
Fabric drops           :      0

```

Packet Forwarding Engine Input IPv4 Header Checksum Error and Output MTU Error statistics:

```

Input Checksum      :      0

```

```
Output MTU                :                0

root@host> show chassis routing-engine no-forwarding

Routing Engine status:
Slot 0:
  Current state            Master
  Election priority        Master (default)
  Temperature              32 degrees C / 89 degrees F
  CPU temperature          46 degrees C / 114 degrees F
  DRAM                    3327 MB
...
root@host> show chassis environment no-forwarding

Class Item                Status      Measurement
Temp PEM 0                OK        30 degrees C / 86 degrees F
...
root@host> show chassis firmware no-forwarding

Part                      Type      Version
Global FPC 4
Global FPC 6
Global FPC 7
...
root@host> show system boot-messages no-forwarding
...
```

#### request support information (SRX Series device)

```
user@host> request support information
root@host> show security dns-cache
DNS entry number: 0

root@host> show security utm web-filtering statistics

UTM web-filtering statistics:
Web-filtering sessions in total: 512000
Web-filtering sessions in use: 0
Fallback: log-and-permit block
  Default 0 0
  Timeout 0 0
  Connectivity 0 0
  Too-many-requests 0 0

root@host> show security utm session

UTM session info:
Maximum sessions: 256000
Total allocated sessions: 0
Total freed sessions: 0
Active sessions: 0

root@host> show system uptime no-forwarding

Current time: 2017-07-09 21:38:01 PDT
Time Source: LOCAL CLOCK
System booted: 2017-07-09 20:58:06 PDT (00:39:55 ago)
Protocols started: 2017-07-09 20:58:07 PDT (00:39:54 ago)
Last configured: 2017-06-30 08:56:45 PDT (1w2d 12:41 ago) by user
9:38PM up 40 mins, 1 user, load averages: 0.10, 0.07, 0.04
...
```



## request system logout

---

<b>Syntax</b>	<code>request system logout (pid <i>pid</i>   terminal <i>terminal</i>   user <i>username</i>)</code> <code>&lt;all&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Log out users from the router or switch and the configuration database. If a user held the <b>configure exclusive</b> lock, this command clears the exclusive lock.
<b>Options</b>	<b>all</b> —(Optional) Log out all sessions owned by a particular PID, terminal session, or user. (On a TX Matrix or TX Matrix Plus router, this command is broadcast to all chassis.)  <b>pid <i>pid</i></b> —Log out the user session using the specified management process identifier (PID). The PID type must be management process.  <b>terminal <i>terminal</i></b> —Log out the user for the specified terminal session.  <b>user <i>username</i></b> —Log out the specified user.
<b>Required Privilege Level</b>	configure
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <i>Log a User Out of the Router</i></li></ul>
<b>List of Sample Output</b>	<a href="#">request system logout on page 1230</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request system logout

```
user@host> request system logout user test all
Connection closed by foreign host.
```



## request system partition hard-disk

<b>List of Syntax</b>	<a href="#">Syntax on page 1231</a> <a href="#">Syntax (TX Matrix Router) on page 1231</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1231</a> <a href="#">Syntax (MX Series Router) on page 1231</a>
<b>Syntax</b>	request system partition hard-disk
<b>Syntax (TX Matrix Router)</b>	request system partition hard-disk <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	request system partition hard-disk <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (MX Series Router)</b>	request system partition hard-disk <all-members> <local> <member <i>member-id</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



**NOTE:** To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

<b>Description</b>	Set up the hard disk for partitioning. After this command is issued, the hard disk is partitioned the next time the system is rebooted. When the hard disk is partitioned, the contents of <b>/altroot</b> and <b>/altconfig</b> are saved and restored. All other data on the hard disk is at risk of being lost.
<b>Options</b>	<p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Schedule a partition of the hard disk for all routers in the chassis at its next reboot.</p> <p><b>all-lcc</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, schedule a partition of the hard disk on all T640 routers connected to the TX Matrix router at their next reboot. On a TX Matrix Plus router, schedule a partition of the hard disk on all connected LCCs.</p> <p><b>all-members</b>—(MX Series routers only) (Optional) Schedule a partition of the hard disk for all members of the Virtual Chassis configuration.</p>

**lcc number**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix Plus router, schedule a partition of the hard disk on a specific T640 router connected to the TX Matrix router. On a TX Matrix Plus router, schedule a partition of the hard disk on a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Schedule a partition of the hard disk for the local member of the Virtual Chassis.

**member member-id**—(MX Series routers only) (Optional) Schedule a partition of the hard disk for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**scc**—(TX Matrix routers only) (Optional) Schedule a partition of the hard disk on the T640 router connected to the TX Matrix router (or switch-card chassis).

**sfc number**—(TX Matrix Plus routers only) (Optional) Schedule a partition of the hard disk on the connected T1600 or T4000 LCCs connected to the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** To immediately partition the hard disk, use the **request system reboot** command. To cancel the partition request, use the **request system partition abort** command.

**Required Privilege Level** maintenance

**Related Documentation**

- *request system partition abort*
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [request system partition hard-disk on page 1233](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request system partition hard-disk

```
user@host> request system partition hard-disk
WARNING: The hard disk is about to be partitioned. The contents
WARNING: of /altroot and /altconfig will be saved and restored.
WARNING: All other data is at risk. This is the setup stage, the
WARNING: partition happens during the next reboot.

Setting up to partition the hard disk ...

WARNING: A REBOOT IS REQUIRED TO PARTITION THE HARD DISK. Use the
WARNING: 'request system reboot' command when you are ready to proceed
WARNING: with the partitioning. To abort the partition of the hard disk
WARNING: use the 'request system partition abort' command.
```

## request system reboot

---

**List of Syntax**    [Syntax on page 1234](#)  
                          [Syntax \(EX Series Switches\) on page 1234](#)  
                          [Syntax \(TX Matrix Router\) on page 1234](#)  
                          [Syntax \(TX Matrix Plus Router\) on page 1234](#)  
                          [Syntax \(MX Series Router\) on page 1234](#)

**Syntax**    request system reboot  
                  <at *time*>  
                  <both-routing-engines>  
                  <in *minutes*>  
                  <media (compact-flash | disk | removable-compact-flash | usb)>  
                  <message "*text*">  
                  <other-routing-engine>

**Syntax (EX Series Switches)**    request system reboot  
  <all-members>  
  <at *time*>  
  <both-routing-engines>  
  <in *minutes*>  
  <local>  
  <media (external | internal)>  
  <member *member-id*>  
  <message "*text*">  
  <other-routing-engine>  
  <slice *slice*>

**Syntax (TX Matrix Router)**    request system reboot  
  <all-chassis | all-lcc | lcc *number* | scc>  
  <at *time*>  
  <both-routing-engines>  
  <in *minutes*>  
  <media (compact-flash | disk)>  
  <message "*text*">  
  <other-routing-engine>

**Syntax (TX Matrix Plus Router)**    request system reboot  
  <all-chassis | all-lcc | lcc *number* | sfc *number*>  
  <at *time*>  
  <both-routing-engines>  
  <in *minutes*>  
  <media (compact-flash | disk)>  
  <message "*text*">  
  <other-routing-engine>  
  <partition (1 | 2 | alternate)>

**Syntax (MX Series Router)**    request system reboot  
  <all-members>  
  <at *time*>  
  <both-routing-engines>

```

<in minutes>
<local>
<media (external | internal)>
<member member-id>
<message "text">
<other-routing-engine>

```

**Release Information** Command introduced before Junos OS Release 7.4.  
Option **other-routing-engine** introduced in Junos OS Release 8.0.  
Command introduced in Junos OS Release 9.0 for EX Series switches.  
Option **sfc** introduced for the TX Matrix Plus router in Junos OS Release 9.6.  
Option **both-routing-engines** introduced in Junos OS Release 12.1.

**Description** Reboot the software.



**NOTE:** Starting with Junos OS Release 15.1F3, the statement **request system reboot** reboots only the guest operating system on the PTX5000 with RE-PTX-X8-64G and, MX240, MX480, and MX960 with RE-S-X6-64G.

Starting with Junos OS Release 15.1F5, the statement **request system reboot** reboots only the guest operating system on the MX2010, and MX2020 with REMX2K-X8-64G.



**NOTE:** Starting from Junos OS Release 17.2R1, PTX10008 routers do not support the **request system reboot** command to reboot the Junos OS software package or bundle on the router. Use the **request vmhost reboot** command instead. See *request vmhost reboot*.

**Options** **none**—Reboot the software immediately.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router or TX Matrix Plus router, reboot all routers connected to the TX Matrix or TX Matrix Plus router, respectively.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router or TX Matrix Plus router, reboot all line card chassis connected to the TX Matrix or TX Matrix Plus router, respectively.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Reboot the software on all members of the Virtual Chassis configuration.

**at time**—(Optional) Time at which to reboot the software, specified in one of the following ways:

- **now**—Stop or reboot the software immediately. This is the default.
- **+minutes**—Number of minutes from now to reboot the software.
- **yymmddhhmm**—Absolute time at which to reboot the software, specified as year, month, day, hour, and minute.
- **hh:mm**—Absolute time on the current day at which to stop the software, specified in 24-hour time.

**both-routing-engines**—(Optional) Reboot both Routing Engines at the same time.

**in minutes**—(Optional) Number of minutes from now to reboot the software. This option is an alias for the **at +minutes** option.

**lcc number**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Reboot the software on the local Virtual Chassis member.

**media (compact-flash | disk)**—(Optional) Boot medium for next boot.

**media (external | internal)**—(EX Series switches and MX Series routers only) (Optional) Reboot the boot media:

- **external**—Reboot the external mass storage device.
- **internal**—Reboot the internal flash device.

**member member-id**—(EX4200 switches and MX Series routers only) (Optional) Reboot the software on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**message "text"**—(Optional) Message to display to all system users before stopping or rebooting the software.

**other-routing-engine**—(Optional) Reboot the other Routing Engine from which the command is issued. For example, if you issue the command from the master Routing Engine, the backup Routing Engine is rebooted. Similarly, if you issue the command from the backup Routing Engine, the master Routing Engine is rebooted.

**partition**—(TX Matrix Plus routers only) (Optional) Reboot using the specified partition on the boot media. This option has the following suboptions:

- 1—Reboot from partition 1.
- 2—Reboot from partition 2.
- **alternate**—Reboot from the alternate partition.

**scc**—(TX Matrix routers only) (Optional) Reboot the Routing Engine on the TX Matrix switch-card chassis. If you issue the command from re0, re0 is rebooted. If you issue the command from re1, re1 is rebooted.

**sfc number**—(TX Matrix Plus routers only) (Optional) Reboot the Routing Engine on the TX Matrix Plus switch-fabric chassis. If you issue the command from re0, re0 is rebooted. If you issue the command from re1, re1 is rebooted. Replace *number* with 0.

**slice slice**—(EX Series switches only) (Optional) Reboot a partition on the boot media. This option has the following suboptions:

- 1—Power off partition 1.
- 2—Power off partition 2.
- **alternate**—Reboot from the alternate partition.

**Additional Information** Reboot requests are recorded in the system log files, which you can view with the **show log** command (see *show log*). Also, the names of any running processes that are scheduled to be shut down are changed. You can view the process names with the **show system processes** command (see *show system processes*).

On a TX Matrix or TX Matrix Plus router, if you issue the **request system reboot** command on the master Routing Engine, all the master Routing Engines connected to the routing matrix are rebooted. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are rebooted.



**NOTE:** Before issuing the **request system reboot** command on a TX Matrix Plus router with no options or the **all-chassis**, **all-lcc**, **lcc number**, or **sfc** options, verify that master Routing Engine for all routers in the routing matrix are in the same slot number. If the master Routing Engine for a line-card chassis is in a different slot number than the master Routing Engine for a TX Matrix Plus router, the line-card chassis might become logically disconnected from the routing matrix after the **request system reboot** command.



**NOTE:** To reboot a router that has two Routing Engines, reboot the backup Routing Engine (if you have upgraded it) first, and then reboot the master Routing Engine.

<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">clear system reboot on page 266</a></li><li>• <a href="#">request system halt on page 1403</a></li><li>• <a href="#">Routing Matrix with a TX Matrix Plus Router Solutions Page</a></li><li>• <a href="#">request vmhost reboot</a></li></ul>
<b>List of Sample Output</b>	<a href="#">request system reboot on page 1238</a> <a href="#">request system reboot (at 2300) on page 1238</a> <a href="#">request system reboot (in 2 Hours) on page 1238</a> <a href="#">request system reboot (Immediately) on page 1238</a> <a href="#">request system reboot (at 1:20 AM) on page 1239</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### `request system reboot`

```
user@host> request system reboot
Reboot the system ? [yes,no] (no)
```

### `request system reboot (at 2300)`

```
user@host> request system reboot at 2300 message ?Maintenance time!?
Reboot the system ? [yes,no] (no) yes

shutdown: [pid 186]
*** System shutdown message from root@test.example.net ***
System going down at 23:00
```

### `request system reboot (in 2 Hours)`

The following example, which assumes that the time is 5 PM (17:00), illustrates three different ways to request the system to reboot in two hours:

```
user@host> request system reboot at +120
user@host> request system reboot in 120
user@host> request system reboot at 19:00
```

### `request system reboot (Immediately)`

```
user@host> request system reboot at now
```



**request system reboot (at 1:20 AM)**

To reboot the system at 1:20 AM, enter the following command. Because 1:20 AM is the next day, you must specify the absolute time.

```
user@host> request system reboot at 06060120
request system reboot at 120
Reboot the system at 120? [yes,no] (no) yes
```

## request system snapshot

---

<b>List of Syntax</b>	<a href="#">Syntax (ACX Series Routers) on page 1240</a> <a href="#">Syntax (EX Series Switches; for EX4600, see QFX Series Syntax) on page 1240</a> <a href="#">Syntax (MX Series Routers) on page 1240</a> <a href="#">Syntax (PTX Series) on page 1240</a> <a href="#">Syntax (QFX Series, OCX1100, and EX4600) on page 1240</a> <a href="#">Syntax (TX Matrix Routers) on page 1240</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 1240</a>
<b>Syntax (ACX Series Routers)</b>	request system snapshot <media <i>type</i> > <partition>
<b>Syntax (EX Series Switches; for EX4600, see QFX Series Syntax)</b>	request system snapshot <all-members   local   member <i>member-id</i> > <media <i>type</i> > <partition> <re0   re1   routing-engine <i>routing-engine-id</i> > <slice alternate>
<b>Syntax (MX Series Routers)</b>	request system snapshot <all-members> <config-partition> <local> <member <i>member-id</i> > <media <i>usb-port-number</i> > <partition> <root-partition>
<b>Syntax (PTX Series)</b>	request system snapshot <partition>
<b>Syntax (QFX Series, OCX1100, and EX4600)</b>	request system snapshot <all-members   local   member <i>member-id</i> > <config-partition> <partition> <root-partition> <slice alternate>
<b>Syntax (TX Matrix Routers)</b>	request system snapshot <all-chassis   all-lcc   lcc <i>number</i>   scc> <config-partition> <partition> <root-partition>
<b>Syntax (TX Matrix Plus Routers)</b>	request system snapshot <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> > <config-partition> <partition>

<root-partition>

**Release Information** Command introduced before Junos OS Release 7.4.  
 Command introduced in Junos OS Release 10.0 for EX Series switches.  
 Command introduced in Junos OS Release 11.3 for the QFX Series.  
 Command introduced in Junos OS Release 12.2 for ACX Series routers.  
 Options <config-partition> and <root-partition> introduced in Junos OS Release 13.1 for M Series, MX Series, T Series, and TX Series routers.  
 Option **media usb-port-number** introduced in Junos OS Release 13.2 for MX104 routers.  
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.  
 Options <config-partition>, <root-partition>, and <slice> deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1



**NOTE:** To determine which platforms support Junos OS with upgraded FreeBSD, see [Feature Explorer](#) and enter one of the following:

- For non-virtualized, enter **freebsd** and select Junos kernel upgrade to FreeBSD 10+.
- For virtualized, enter **virtualization** and select Virtualization of the Routing Engine.

**Description**

- On the router, back up the currently running and active file system partitions to standby partitions that are not running. Specifically, the root file system (/) is backed up to /altroot, and /config is backed up to /altconfig. The root and /config file systems are on the router's flash drive, and the /altroot and /altconfig file systems are on the router's hard drive.
- On the switch, take a snapshot of the files currently used to run the switch—the complete contents of the root (/), /altroot, /config, /var, and /var-tmp directories, which include the running Junos OS, the active configuration, and log files.



**NOTE:** System snapshot is not supported on QFX10000 switches.



**CAUTION:** After you run the **request system snapshot** command, you cannot return to the previous version of the software, because the running and backup copies of the software are identical.



**NOTE:** Starting with Junos OS Release 15.1F3, the `request system snapshot` command creates a snapshot of the guest OS image only for the PTX5000 with RE-DUO-C2600-16G, and the MX240, MX480, and MX960 routers with RE-S-1800X4-32G-S.

Starting with Junos OS Release 15.1F5, the `request system snapshot` command creates a snapshot of the guest OS image only for the MX2010 and MX2020 routers with REMX2K-1800-32G-S.

On these routers, in order to create snapshot of the host OS image along with Junos OS image, use the `request vmhost snapshot` command.

---

**Options** The specific options available depend upon the router or switch:

**none**—Back up the currently running software as follows:

- On the router, back up the currently running and active file system partitions to standby partitions that are not running. Specifically, the root file system (/) is backed up to `/altroot`, and `/config` is backed up to `/altconfig`. The root and `/config` file systems are on the router's flash drive, and the `/altroot` and `/altconfig` file systems are on the router's hard drive.
- On the switch, take a snapshot of the files currently used to run the switch and copy them to the media that the switch did not boot from. If the switch is booted from internal media, the snapshot is copied to external (USB) media. If the switch is booted from external (USB) media, the snapshot is copied to internal media.
- If the snapshot destination is external media but a USB flash drive is not connected, an error message is displayed.
- If the automatic snapshot procedure is already in progress, the command returns the following error: **Snapshot already in progress. Cannot start manual snapshot.** For additional information about the automatic snapshot feature, see *Understanding Resilient Dual-Root Partitions on Switches*.

**all-chassis | all-lcc | lcc number** —(TX Matrix and TX Matrix Plus router only) (Optional)

- **all-chassis**—On a TX Matrix router, archive data and executable areas for all Routing Engines in the chassis. On a TX Matrix Plus router, archive data and executable areas for all Routing Engines in the chassis.
- **all-lcc**—On a TX Matrix router, archive data and executable areas for all T640 routers (or line-card chassis) connected to a TX Matrix router. On a TX Matrix Plus router, archive data and executable areas for all routers (or line-card chassis) connected to a TX Matrix Plus router.
- **lcc number**—On a TX Matrix router, archive data and executable areas for a specific T640 router (or line-card chassis) that is connected to a TX Matrix router. On a

TX Matrix Plus router, archive data and executable areas for a specific router (line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**all-members | local | member *member-id***—(EX Series Virtual Chassis, MX Series routers, QFX Series switches, QFabric System, and OCX1100 only) (Optional) Specify where to place the snapshot (archive data and executable areas) in a Virtual Chassis:

- **all-members**—Create a snapshot (archive data and executable areas) for all members of the Virtual Chassis.
- **local**—Create a snapshot (archive data and executable areas) on the member of the Virtual Chassis that you are currently logged into.
- **member *member-id***—Create a snapshot (archive data and executable areas) for the specified member of the Virtual Chassis.

**config-partition**—(EX Series Virtual Chassis, MX Series routers, QFX Series switches, QFabric System, OCX1100, and T and TX Series routers only) Create a snapshot of the configuration partition only and store it onto the default **/altconfig** on the hard disk device or an **/altconfig** on a USB device. Option deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



**NOTE:** To determine which platforms support Junos OS with upgraded FreeBSD, see [Feature Explorer](#) and enter one of the following:

- For non-virtualized, enter **freebsd** and select Junos kernel upgrade to FreeBSD 10+.
- For virtualized, enter **virtualization** and select Virtualization of the Routing Engine.

**media type**—(ACX Series, M320, T640, MX960 routers only) (Optional) Specify the boot device the software is copied to:

- **compact-flash**—Copy software to the primary compact flash drive.
- **external**—(Switches only) Copy software to an external mass storage device, such as a USB flash drive. If a USB drive is not connected, the switch displays an error message.
- **internal**—Copy software to an internal flash drive.
- **removable-compact-flash**—Copy software to the removable compact flash drive.
- **usb**—(ACX Series, M320, T640, MX960 routers only) Copy software to the device connected to the USB port.
- **usb0**—(MX104 routers only) Copy software to the device connected to the USB0 port.
- **usb1**—(MX104 routers only) Copy software to the device connected to the USB1 port.

**partition**—(Optional) Repartition the flash drive before a snapshot occurs. If the partition table on the flash drive is corrupted, the **request system snapshot** command fails and reports errors. The partition option is only supported for restoring the software image from the hard drive to the flash drive.

(Routers only) You cannot issue the request system snapshot command when you enable flash disk mirroring. We recommend that you disable flash disk mirroring when you upgrade or downgrade the software. For more information, see the *Junos OS Administration Library*.

(EX Series switches only) If the snapshot destination is the media that the switch did not boot from, you must use the **partition** option.

**re0 | re1 | routing-engine routing-engine-id**—(EX6200 and EX8200 switches only) Specify where to place the snapshot in a redundant Routing Engine configuration.

- **re0**—Create a snapshot on Routing Engine 0.
- **re1**—Create a snapshot on Routing Engine 1.
- **routing-engine routing-engine-id**—Create a snapshot on the specified Routing Engine.

**root-partition**—(M, MX, T, and TX Series routers; EX Series Virtual Chassis; QFX Series switches; QFabric System; and OCX1100 only) Create a snapshot of the root partition only and store it onto the default **/altroot** on the hard disk device or an **/altroot** on a USB device. Option deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



**NOTE:** To determine which platforms run Junos OS with Upgraded FreeBSD, see the information in *Release Information for Junos OS with Upgraded FreeBSD*.

**slice alternate**—(EX Series switches, EX Series Virtual Chassis, QFX Series switches, QFabric System, and OCX1100 only) (Optional) Take a snapshot of the active root partition and copy it to the alternate slice on the boot media.

Option deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



**NOTE:** To determine which platforms support Junos OS with upgraded FreeBSD, see [Feature Explorer](#) and enter one of the following:

- For non-virtualized, enter **freebsd** and select Junos kernel upgrade to FreeBSD 10+.
- For virtualized, enter **virtualization** and select **Virtualization of the Routing Engine**.

**scc**—(TX Matrix router only) (Optional) Archive data and executable areas for a TX Matrix router (or switch-card chassis).

**sfc number**—(TX Matrix Plus router only) (Optional) Archive data and executable areas for a TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

#### Additional Information

- (Routers only) Before upgrading the software on the router, when you have a known stable system, issue the **request system snapshot** command to back up the software, including the configuration, to the **/altroot** and **/altconfig** file systems. After you have upgraded the software on the router and are satisfied that the new packages are successfully installed and running, issue the **request system snapshot** command again to back up the new software to the **/altroot** and **/altconfig** file systems.
- (Routers only) You cannot issue the **request system snapshot** command when you enable flash disk mirroring. We recommend that you disable flash disk mirroring when you upgrade or downgrade the software. For more information, see the *Junos OS Administration Library*.
- (TX Matrix and TX Matrix Plus router only) On a routing matrix, if you issue the **request system snapshot** command on the master Routing Engine, all the master Routing Engines connected to the routing matrix are backed up. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are backed up.

**Required Privilege Level** view

**Related Documentation**

- *request system snapshot (Junos OS with Upgraded FreeBSD)*
- [show system snapshot on page 1476](#)
- *show system auto-snapshot*

**List of Sample Output**

- [request system snapshot \(Routers\) on page 1246](#)
- [request system snapshot \(EX Series Switches\) on page 1246](#)
- [request system snapshot partition \(EX4600, QFX Series, QFabric System, and OCX1100\) on page 1247](#)
- [request system snapshot \(When the Partition Flag Is On\) on page 1247](#)
- [request system snapshot \(MX104 Routers When Media Device is Missing\) on page 1247](#)
- [request system snapshot \(When Mirroring Is Enabled\) on page 1247](#)
- [request system snapshot all-lcc \(Routing Matrix\) on page 1247](#)
- [request system snapshot all-members \(Virtual Chassis\) on page 1247](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### [request system snapshot \(Routers\)](#)

```
user@host> request system snapshot
umount: /altroot: not currently mounted
Copying / to /altroot.. (this may take a few minutes)
umount: /altconfig: not currently mounted
Copying /config to /altconfig.. (this may take a few minutes)
```

```
The following filesystems were archived: / /config
```

### [request system snapshot \(EX Series Switches\)](#)

```
user@switch> request system snapshot partition
Clearing current label...
Partitioning external media (/dev/da1) ...
Partitions on snapshot:
```

Partition	Mountpoint	Size	Snapshot argument
s1a	/altroot	179M	none
s2a	/	180M	none
s3d	/var/tmp	361M	none
s3e	/var	121M	none
s4d	/config	60M	none

```
Copying '/dev/da0s1a' to '/dev/da1s1a' .. (this may take a few minutes)
Copying '/dev/da0s2a' to '/dev/da1s2a' .. (this may take a few minutes)
Copying '/dev/da0s3d' to '/dev/da1s3d' .. (this may take a few minutes)
Copying '/dev/da0s3e' to '/dev/da1s3e' .. (this may take a few minutes)
Copying '/dev/da0s4d' to '/dev/da1s4d' .. (this may take a few minutes)
The following filesystems were archived: /altroot / /var/tmp /var /config
```



**request system snapshot partition (EX4600, QFX Series, QFabric System, and OCX1100)**

```

user@switch> request system snapshot partition
Clearing current label...
Partitioning external media (da1) ...
Verifying compatibility of destination media partitions...
Running newfs (334MB) on external media / partition ...
Running newfs (404MB) on external media /config partition ...
Running newfs (222MB) on external media /var partition ...
Copying '/dev/da0s2a' to '/dev/da1s1a' .. (this may take a few minutes)
Copying '/dev/da0s3e' to '/dev/da1s3e' .. (this may take a few minutes)
Copying '/dev/da0s2f' to '/dev/da1s1f' .. (this may take a few minutes)
The following filesystems were archived: / /config /var

```

**request system snapshot (When the Partition Flag Is On)**

```

user@host> request system snapshot partition
Performing preliminary partition checks ...
Partitioning ad0 ...
umount: /altroot: not currently mounted
Copying / to /altroot.. (this may take a few minutes)

The following filesystems were archived: / /config

```

**request system snapshot (MX104 Routers When Media Device is Missing)**

```

user@host > request system snapshot media usb0
error: usb0 media missing or invalid

```

**request system snapshot (When Mirroring Is Enabled)**

```

user@host> request system snapshot
Snapshot is not possible since mirror-flash-on-disk is configured.

```

**request system snapshot all-lcc (Routing Matrix)**

```

user@host> request system snapshot all-lcc
lcc0-re0:
-----
Copying '/' to '/altroot' .. (this may take a few minutes)
Copying '/config' to '/altconfig' .. (this may take a few minutes)
The following filesystems were archived: / /config

lcc2-re0:
-----
Copying '/' to '/altroot' .. (this may take a few minutes)
Copying '/config' to '/altconfig' .. (this may take a few minutes)
The following filesystems were archived: / /config

```

**request system snapshot all-members (Virtual Chassis)**

```

user@switch> request system snapshot all-members media internal
fpc0:
-----
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /

fpc1:
-----

```

```
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /
```

```
fpc2:
```

```
-----
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /
```

```
fpc3:
```

```
-----
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /
```

```
fpc4:
```

```
-----
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /
```

```
fpc5:
```

```
-----
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /
```

## request system software add

**List of Syntax**    [Syntax on page 1249](#)  
                          [Syntax \(EX Series Switches\) on page 1249](#)  
                          [Syntax \(TX Matrix Router\) on page 1249](#)  
                          [Syntax \(TX Matrix Plus Router\) on page 1250](#)  
                          [Syntax \(MX Series Router\) on page 1250](#)  
                          [Syntax \(QFX Series\) on page 1250](#)  
                          [Syntax \(OCX Series\) on page 1251](#)

**Syntax**    `request system software add package-name`  
                  `<best-effort-load>`  
                  `<delay-restart>`  
                  `<device-alias alias-name>`  
                  `<force>`  
                  `<no-copy>`  
                  `<no-validate>`  
                  `<re0 | re1>`  
                  `<reboot>`  
                  `<satellite slot-id>`  
                  `<set [package-name1 package-name2]>`  
                  `<unlink>`  
                  `<upgrade-group [all | upgrade-group-name]>`  
                  `<upgrade-with-config>`  
                  `<satellite slot-id>`  
                  `<validate>`  
                  `<version version-string>`

**Syntax (EX Series Switches)**    `request system software add package-name`  
                  `<best-effort-load>`  
                  `<delay-restart>`  
                  `<force>`  
                  `<no-copy>`  
                  `<no-validate>`  
                  `<re0 | re1>`  
                  `<reboot>`  
                  `<set [package-name1 package-name2]>`  
                  `<upgrade-with-config>`  
                  `<validate>`  
                  `<validate-on-host hostname>`  
                  `<validate-on-routing-engine routing-engine>`

**Syntax (TX Matrix Router)**    `request system software add package-name`  
                  `<best-effort-load>`  
                  `<delay-restart>`  
                  `<force>`  
                  `<lcc number | scc>`  
                  `<no-copy>`  
                  `<no-validate>`  
                  `<re0 | re1>`  
                  `<reboot>`  
                  `<set [package-name1 package-name2]>`

<unlink>  
<upgrade-with-config>  
<validate>  
<validate-on-host *hostname*>  
<validate-on-routing-engine *routing-engine*>

**Syntax (TX Matrix Plus Router)** request system software add *package-name*  
<best-effort-load>  
<delay-restart>  
<force>  
<lcc *number* | sfc *number*>  
<no-copy>  
<no-validate>  
<re0 | re1>  
<reboot>  
<set [*package-name1* *package-name2*]>  
<unlink>  
<upgrade-with-config>  
<validate>  
<validate-on-host *hostname*>  
<validate-on-routing-engine *routing-engine*>

**Syntax (MX Series Router)** request system software add *package-name*  
<best-effort-load>  
<delay-restart>  
<device-alias *alias-name*>  
<force>  
<member *member-id*>  
<no-copy>  
<no-validate>  
<re0 | re1>  
<reboot>  
<satellite *slot-id*>  
<set [*package-name1* *package-name2*]>  
<upgrade-group [all | *upgrade-group-name*]>  
<unlink>  
<upgrade-with-config>  
<validate>  
<version *version-string*>  
<validate-on-host *hostname*>  
<validate-on-routing-engine *routing-engine*>

**Syntax (QFX Series)** request system software add *package-name*  
<best-effort-load>  
<component all>  
<delay-restart>  
<force>  
<force-host>  
<no-copy>  
<partition>  
<reboot>  
<unlink>  
<upgrade-with-config>

**Syntax (OCX Series)** request system software add *package-name*  
 <best-effort-load>  
 <delay-restart>  
 <force>  
 <force-host>  
 <no-copy>  
 <no-validate>  
 <reboot>  
 <unlink>  
 <upgrade-with-config>  
 <validate>

**Release Information** Command introduced before Junos OS Release 7.4.  
**best-effort-load** and **unlink** options added in Junos OS Release 7.4.  
 Command introduced in Junos OS Release 9.0 for EX Series switches.  
**sfc** option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.  
 Command introduced in Junos OS Release 11.1 for the QFX Series.  
**set [package-name1 package-name2]** option added in Junos OS Release 11.1 for EX Series switches. Added in Junos OS Release 12.2 for M Series, MX Series, and T Series routers.



**NOTE:** On EX Series switches, the **set [package-name1 package-name2]** option allows you to install only two software packages on a mixed EX4200 and EX4500 Virtual Chassis, whereas, on M Series, MX Series, and T Series routers, the **set [package-name1 package-name2 package-name3]** option allows you to install multiple software packages and software add-on packages at the same time.

**upgrade-with-config** and **upgrade-with-config-format format** options added in Junos OS Release 12.3 for M Series routers, MX Series routers, and T Series routers, EX Series Ethernet switches, and QFX Series devices.

Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

**device-alias**, **satellite**, **upgrade-group**, and **version** options introduced in Junos OS Release 14.2R3 for Junos Fusion.

**validate-on-host** and **validate-on-routing-engine** options added in Junos OS Release 15.1F3 for PTX5000 routers and MX240, MX480, and MX960 routers.

**upgrade-with-config-format format** option deleted in Junos OS Release 16.1 for M Series routers, MX Series routers, and T Series routers, EX Series Ethernet switches, and QFX Series devices.

#### Description



**NOTE:** We recommend that you always download the software image to **/var/tmp** only. On EX Series and QFX Series switches, you must use the **/var/tmp** directory. Other directories are not supported.

Install a software package or bundle on the router or switch.

For information on valid filename and URL formats, see *Format for Specifying Filenames and URLs in Junos OS CLI Commands*.



**CAUTION:** Any configuration changes performed after inputting the `request system software add` command will be lost when the system reboots with an upgraded version of Junos OS.



**NOTE:** Starting from Junos OS Release 17.2R1, PTX10008 routers do not support the `request system software add` command. Starting from Junos OS Release 17.4R1, PTX10016 routers do not support the `request system software add` command. Use the `request vmhost software add` command instead of the `request system software add` command on the PTX10008 and PTX10016 routers to install or upgrade the Junos OS software package or bundle on the router. See *request vmhost software add*.



**NOTE:** Starting from Junos OS Release 18.1R1, MX10003 routers do not support the `request system software add` command. Use the `request vmhost software add` command instead of the `request system software add` command on the MX10003 routers to install or upgrade the Junos OS software package or bundle on the router. See *request vmhost software add*.



**NOTE:** When graceful Routing Engine switchover (GRES) is enabled on a device, you must perform a unified ISSU operation to update the software running on the device. With GRES enabled, if you attempt to perform a software upgrade by entering the `request system software add package-name` command, an error message is displayed stating that only in-service-software-upgrades are supported when GRES is configured. In such a case, you must either remove the GRES configuration before you attempt the upgrade or perform a unified ISSU.



**NOTE:** Starting with Junos OS Release 15.1F3, the statement `request system software add` installs a software package for the guest OS only for the PTX5000 router with RE-DUO-C2600-16G, and for MX240, MX480, and MX960 routers with RE-S-1800X4-32G-S.

Starting with Junos OS Release 15.1F5, the statement `request system software add` installs a software package for the guest OS only for the MX2010 and MX2020 routers with REMX2K-1800-32G-S.

On these routers, in order to install both Junos software and host software packages, use the `request vmhost software add` command.

**Options** *package-name*—Location from which the software package or bundle is to be installed. For example:

- */var/tmp/package-name*—For a software package or bundle that is being installed from a local directory on the router or switch.
- *protocol://hostname/pathname/package-name*—For a software package or bundle that is to be downloaded and installed from a remote location. Replace *protocol* with one of the following:
  - **ftp**—File Transfer Protocol.  
Use *ftp://hostname/pathname/package-name*. To specify authentication credentials, use *ftp://<username>:<password>@hostname/pathname/package-name*. To have the system prompt you for the password, specify **prompt** in place of the password. If a password is required, and you do not specify the password or **prompt**, an error message is displayed.
  - **http**—Hypertext Transfer Protocol.  
Use *http://hostname/pathname/package-name*. To specify authentication credentials, use *http://<username>:<password>@hostname/pathname/package-name*. If a password is required and you omit it, you are prompted for it.
  - **scp**—Secure copy (not available for limited editions).  
Use *scp://hostname/pathname/package-name*. To specify authentication credentials, use *scp://<username>:<password>@hostname/pathname/package-name*.



---

**NOTE:**

- The *pathname* in the protocol is the relative path to the user's home directory on the remote system and not the root directory.
  - Do not use the `scp` protocol in the `request system software add` command to download and install a software package or bundle from a remote location. The previous statement does not apply to the QFabric switch. The software upgrade is handled by the management process (`mgd`), which does not support `scp`.  
Use the `file copy` command to copy the software package or bundle from the remote location to the `/var/tmp` directory on the hard disk:  
`file copy scp://source/package-name /var/tmp`  
Then install the software package or bundle using the `request system software add` command:  
`request system software add /var/tmp/package-name`
- 

**best-effort-load**—(Optional) Activate a partial load and treat parsing errors as warnings instead of errors.

**component all**—(QFabric systems only) (Optional) Install software package on all of the QFabric components.

**delay-restart**—(Optional) Install a software package or bundle, but do not restart software processes.

**device-alias *alias-name***—(Junos Fusion only) (Optional) Install the satellite software package onto the specified satellite device using the satellite device's alias name.

**force**—(Optional) Force the addition of the software package or bundle (ignore warnings).

**force-host**—(Optional) Force the addition of host software package or bundle (ignore warnings) on the QFX5100 device.

**lcc *number*** —(TX Matrix routers and TX Matrix Plus routers only) (Optional) In a routing matrix based on the TX Matrix router, install a software package or bundle on a T640 router that is connected to the TX Matrix router. In a routing matrix based on the TX Matrix Plus router, install a software package or bundle on a router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.



- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**member *member-id***—(MX Series routers only) (Optional) Install a software package on the specified Virtual Chassis member. Replace *member-id* with a value of 0 or 1.

**partition**—(QFX3500 switches only) (Optional) Format and repartition the media before installation.

**satellite *slot-id***—(Junos Fusion only) (Optional) Install the satellite software package onto the specified satellite device using the satellite devices FPC slot identifier.

**scc**—(TX Matrix routers only) (Optional) Install a software package or bundle on a Routing Engine on a TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Install a software package or bundle on a Routing Engine on a TX Matrix Plus router. Replace *number* with 0.

**no-copy**—(Optional) Install a software package or bundle, but do not save copies of the package or bundle files.

**no-validate**—(Optional) When loading a software package or bundle with a different release, suppress the default behavior of the **validate** option.



**NOTE:** Software packages from unidentified providers cannot be loaded. To authorize providers, include the **provider-id** statement at the **[edit system extensions provider]** hierarchy level.

**re0 | re1**—(Optional) On routers or switches that support dual or redundant Routing Engines, load a software package or bundle on the Routing Engine in slot 0 (re0) or the Routing Engine in slot 1 (re1).

**reboot**—(Optional) After adding the software package or bundle, reboot the system. On a QFabric switch, the software installation is not complete until you reboot the component for which you have installed the software.

**set [*package-name1 package-name2*]**—(Mixed EX4200 and EX4500 Virtual Chassis, M Series, MX Series, and T Series routers only) (Optional) Install multiple packages at same time:

- In the case of mixed EX4200 and EX4500 Virtual Chassis, install two software packages—a package for an EX4200 switch and the same release of the package for an EX4500 switch—to upgrade all member switches in a mixed EX4200 and EX4500 Virtual Chassis.

- In the case of M Series, MX Series, and T Series routers, install multiple (two or more) software packages and software add-on packages at the same time. The variable **package-name** can either be a list of installation packages, each separated by a blank space, or the full URL to the directory or tar file containing the list of installation packages.

In each case, **installation-package** can either be a list of installation packages, each separated by a blank space, or the full URL to the directory or tar file containing the list of installation packages.

Use the **request system software add set** command to retain any SDK configuration by installing the SDK add-on packages along with the core Junos OS installation package.

**unlink**—(Optional) On M Series, T Series, and MX Series routers, use the unlink option to remove the software package from this directory after a successful upgrade is completed.

**upgrade-group [ all | upgrade-group-name ]**—(Junos Fusion only) (Required to configure a Junos Fusion using autoconversion or manual conversion) Associate a satellite software image with a satellite software upgrade group. The satellite software package is associated with the specified satellite software upgrade group using the *upgrade-group-name*, or for all satellite software upgrade groups in a Junos Fusion when the all keyword is specified.

A satellite software upgrade group is a group of satellite devices in a Junos Fusion that are designated to upgrade to the same satellite software version using the same satellite software package. See *Understanding Software in a Junos Fusion Provider Edge*, *Understanding Software in a Junos Fusion Enterprise*, and *Managing Satellite Software Upgrade Groups in a Junos Fusion*.

**upgrade-with-config**—(Optional) Install one or more configuration files.



**NOTE:** Configuration files specified with this option must have the extension **.text** or **.xml** and have the extension specified. Using the extension **.txt** will not work.

---

**validate**—(Optional) Validate the software package or bundle against the current configuration as a prerequisite to adding the software package or bundle. This is the default behavior when the software package or bundle being added is a different release.



**NOTE:** The `validate` option only works on systems that do not have graceful-switchover (GRES) enabled. To use the `validate` option on a system with GRES, either disable GRES for the duration of the installation, or install using the command `request system software in-service-upgrade`, which requires nonstop active routing (NSR) to be enabled when using GRES.

**validate-on-host *hostname***—(Optional) Validate the software package by comparing it to the running configuration on a remote Junos OS host. Specify a host, replacing *hostname* with the remote hostname. You can optionally provide the username that will be used to log in to the remote host by specifying the hostname in the format `user@hostname`.

**validate-on-routing-engine *routing-engine***—(Optional) Validate the software bundle or package by comparing it to the running configuration on a Junos OS Routing Engine on the same chassis. Specify a Routing Engine, replacing *routing-engine* with the routing engine name.

#### Additional Information

Before upgrading the software on the router or switch, when you have a known stable system, issue the `request system snapshot` command to back up the software, including the configuration, to the `/altroot` and `/altconfig` file systems. After you have upgraded the software on the router or switch and are satisfied that the new package or bundle is successfully installed and running, issue the `request system snapshot` command again to back up the new software to the `/altroot` and `/altconfig` file systems.



**NOTE:** The `request system snapshot` command is currently not supported on the QFabric system. Also, you cannot add or install multiple packages on a QFabric system.

After you run the `request system snapshot` command, you cannot return to the previous version of the software because the running and backup copies of the software are identical.

If you are upgrading more than one package at the same time, delete the operating system package, `jkernl`, last. Add the operating system package, `jkernl`, first and the routing software package, `jroute`, last. If you are upgrading all packages at once, delete and add them in the following order:

```
user@host> request system software add /var/tmp/jbase
user@host> request system software add /var/tmp/jkernl
user@host> request system software add /var/tmp/jpfe
user@host> request system software add /var/tmp/jdocs
user@host> request system software add /var/tmp/jroute
user@host> request system software add /var/tmp/jcrypto
```

By default, when you issue the **request system software add *package-name*** command on a TX Matrix master Routing Engine, all the T640 master Routing Engines that are connected to it are upgraded to the same version of software. If you issue the same command on the TX Matrix backup Routing Engine, all the T640 backup Routing Engines that are connected to it are upgraded to the same version of software.

Likewise, when you issue the **request system software add *package-name*** command on a TX Matrix Plus master Routing Engine, all the T1600 or T4000 master Routing Engines that are connected to it are upgraded to the same version of software. If you issue the same command on the TX Matrix Plus backup Routing Engine, all the T1600 or T4000 backup Routing Engines that are connected to it are upgraded to the same version of software.

When you install a software package and request a system reboot or install a package that requires rebuilding the Junos OS schema, such as an OpenConfig package, devices that use the ephemeral configuration database delete all ephemeral configuration data in the process of rebooting the system or rebuilding the schema. To restore the ephemeral configuration data, you must load and commit the data to the ephemeral database again.

**Required Privilege Level**

maintenance

**Related Documentation**

- *Format for Specifying Filenames and URLs in Junos OS CLI Commands*
- [request system software delete on page 1263](#)
- [request system software rollback on page 1267](#)
- [request system storage cleanup on page 1682](#)
- *Installing Software Packages on QFX Devices*
- *Upgrading Software on a QFabric System*
- *Managing Satellite Software Upgrade Groups in a Junos Fusion*
- *request system software add (Maintenance)*
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

[request system software add validate on page 1259](#)  
[request system software add /var/tmp/ no-validate on page 1259](#)  
[request system software add no-copy no-validate reboot on page 1260](#)  
[request system software add validate-on-host on page 1260](#)  
[request system software add \(Mixed EX4200 and EX4500 Virtual Chassis\) on page 1261](#)  
[request system software add component all \(QFabric Systems\) on page 1262](#)  
[request system software add upgrade-group \(Junos Fusion\) on page 1262](#)

**Output Fields**

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request system software add validate

```

user@host> request system software add validate /var/tmp/jinstall-7.2R1.7-domestic-signed.tgz
Checking compatibility with configuration
Initializing...
Using jbase-7.1R2.2
Using /var/tmp/jinstall-7.2R1.7-domestic-signed.tgz
Verified jinstall-7.2R1.7-domestic.tgz signed by PackageProduction_7_2_0
Using /var/validate/tmp/jinstall-signed/jinstall-7.2R1.7-domestic.tgz
Using /var/validate/tmp/jinstall/jbundle-7.2R1.7-domestic.tgz
Checking jbundle requirements on /
Using /var/validate/tmp/jbundle/jbase-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jkernel-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jcrypto-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jpfe-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jdocs-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jroute-7.2R1.7.tgz
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded
Validating against /config/rescue.conf.gz
mgd: commit complete
Validation succeeded
Installing package '/var/tmp/jinstall-7.2R1.7-domestic-signed.tgz' ...
Verified jinstall-7.2R1.7-domestic.tgz signed by PackageProduction_7_2_0
Adding jinstall...

WARNING: This package will load JUNOS 7.2R1.7 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.

Saving the config files ...
Installing the bootstrap installer ...

WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
WARNING: command as soon as this operation completes.

Saving package file in /var/sw/pkg/jinstall-7.2R1.7-domestic-signed.tgz ...
Saving state for rollback ...

```

### request system software add /var/tmp/ no-validate

```

user@host> request system software add no-validate
/var/tmp/junos-install-mx-x86-32-15.1R1.9.tgz
Installing package '/var/tmp/junos-install-mx-x86-32-15.1R1.9.tgz' ...
Verified manifest signed by PackageProductionEc_2015
Verified manifest signed by PackageProductionRSA_2015
Verified contents.iso
Verified issu-indb.tgz
Verified junos-x86-32.tgz
Verified kernel

```

```

Verified metatags
Verified package.xml
Verified pkgtools.tgz
camcontrol: not found
camcontrol: not found
Verified manifest signed by PackageProductionEc_2015
Saving the config files ...
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Saving package file in
/var/sw/pkg/junos-install-x86-32-domestic-20150618.043753_builder_junos_151_r1.tgz
...
Saving state for rollback ...

```

### request system software add no-copy no-validate reboot

```

user@host> request system software add no-copy no-validate junos-install-srx-x86-64-17.3R1.tgz
reboot
Verified junos-install-srx-x86-64-17.3R1 signed by PackageProductionEc_2017 method
ECDSA256+SHA256
Verified manifest signed by PackageProductionEc_2017 method ECDSA256+SHA256
Checking PIC combinations
Verified fips-mode signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding fips-mode-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jail-runtime signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jail-runtime-x86-32-20170725.352915_builder_stable_10 ...
Verified jdocs signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jdocs-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jfirmware signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jfirmware-x86-32-17.3R1 ...
Verified jpfe-X signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-X-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-X960 signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-X960-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-common signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-common-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-fips signed by PackageProductionEc_2017 method ECDSA256+SHA256
Verified jpfe-wrlinux signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-wrlinux-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jsd-jet-1 signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jsd-x86-32-17.3R1-jet-1 ...

```

### request system software add validate-on-host

```

user@host> request system software add validate-on-host user@xyz
:/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz
user@host> request system software add validate-on-host user@xyz
:/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz
Extracting JUNOS version from package...
Connecting to remote host xyz...
Password:
Sending configuration to xyz...
Validating configuration on xyz...
PACKAGETYPE: not found
Checking compatibility with configuration
Initializing...
Using jbase-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jruntime-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015

```

```

Using jkernel-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jroute-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jcrypto-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jweb-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using /var/packages/jtools-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using /var/tmp/config.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: warning: schema: init: 'logical-systems-vlans' contains-node 'juniper-config
  vlans': not found
mgd: commit complete
Validation succeeded
Installing package
'/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz' ...
Verified jinstall-15.1-20150516_ib_15_2_psd.0-domestic.tgz signed by
PackageDevelopmentEc_2015
Adding jinstall...

WARNING:    The software that is being installed has limited support.
WARNING:    Run 'file show /etc/notices/unsupported.txt' for details.


WARNING:    This package will load JUNOS 15.1-20150516_ib_15_2_psd.0 software.
WARNING:    It will save JUNOS configuration files, and SSH keys
WARNING:    (if configured), but erase all other files and information
WARNING:    stored on this machine. It will attempt to preserve dumps
WARNING:    and log files, but this can not be guaranteed. This is the
WARNING:    pre-installation stage and all the software is loaded when
WARNING:    you reboot the system.

Saving the config files ...
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...

WARNING:    A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING:    'request system reboot' command when software installation is
WARNING:    complete. To abort the installation, do not reboot your system,
WARNING:    instead use the 'request system software delete jinstall'
WARNING:    command as soon as this operation completes.

Saving package file in
/var/sw/pkg/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz ...
Saving state for rollback ...

```

## Sample Output

### request system software add (Mixed EX4200 and EX4500 Virtual Chassis)

```

user@switch> request system software add set
[/var/tmp/jinstall-ex-4200-11.1R1.1-domestic-signed.tgz
/var/tmp/jinstall-ex-4500-11.1R1.1-domestic-signed.tgz]
...

```

#### request system software add component all (QFabric Systems)

```
user@switch> request system software add /pbdata/packages/jinstall-qfabric-12.2X50-D1.3.rpm  
component all  
...
```

#### request system software add upgrade-group (Junos Fusion)

```
user@aggregation-device> request system software add /var/tmp/satellite-3.0R1.1-signed.tgz  
upgrade-group group1
```



## request system software delete

**List of Syntax**    [Syntax on page 1263](#)  
                           [Syntax \(TX Matrix Router\) on page 1263](#)  
                           [Syntax \(TX Matrix Plus Router\) on page 1263](#)

**Syntax**    request system software delete *software-package*  
                   <force>  
                   <reboot>  
                   <set [*package-name package-name*]>  
                   <upgrade-group [all |*upgrade-group-name*]>  
                   <version *version-string*>

**Syntax (TX Matrix Router)**    request system software delete *software-package*  
   <force>  
   <lcc *number* | scc>  
   <reboot>  
   <set [*package-name package-name*]>

**Syntax (TX Matrix Plus Router)**    request system software delete *software-package*  
   <force>  
   <lcc *number* | sfc *number*>  
   <reboot>  
   <set [*package-name package-name*]>

**Release Information**    Command introduced before Junos OS Release 7.4.  
                                   Command introduced in Junos OS Release 9.0 for EX Series switches.  
                                   **sfc** option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.  
                                   Command introduced in Junos OS Release 11.1 for the QFX Series.  
                                   **set [*package-name package-name*]** option added in Junos OS Release 12.2 for M Series, MX Series, and T Series routers.  
                                   **reboot** option introduced in Junos OS Release 12.3.  
                                   Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.  
                                   **upgrade-group**, and **version** options introduced in Junos OS Release 14.2R3 for Junos Fusion.

**Description**    Remove a software package or bundle from the router or switch.



**CAUTION:** Before removing a software package or bundle, make sure that you have already placed the new software package or bundle that you intend to load onto the router or switch.

**Options**    ***software-package***—Software package or bundle name. You can delete any or all of the following software bundles or packages:

- **jbase**—(Optional) Junos base software suite
- **jcrypto**—(Optional, in domestic version only) Junos security software
- **jdocs**—(Optional) Junos online documentation file
- **jkernel**—(Optional) Junos kernel software suite
- **jpfe**—(Optional) Junos Packet Forwarding Engine support
- **jroute**—(Optional) Junos routing software suite
- **junos**—(Optional) Junos base software



**NOTE:** On EX Series switches, some of the package names are different than those listed. To see the list of packages that you can delete on an EX Series switch, enter the command **show system software**.

**force**—(Optional) Ignore warnings and force removal of the software.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) In a routing matrix, delete a software package or bundle on a T640 router indicated by **lcc *number*** that is connected to the TX Matrix router. In a routing matrix, delete a software package or bundle on a router indicated by **lcc *number*** that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**re0 | re1**—(Optional) On routers or switches that support dual or redundant Routing Engines, delete a software package or bundle on the Routing Engine in slot 0 (re0) or the Routing Engine in slot 1 (re1).

**reboot**—As of Junos OS 12.3 and greater, automatically reboot upon completing the **request system software delete** command.

**scc**—(TX Matrix routers only) (Optional) Remove an extension or upgrade package from the TX Matrix router (or switch-card chassis).

**set** [*package-name package-name*]**—**(M Series, MX Series, and T Series routers only) (Optional) Install multiple software packages or software add-on packages at the same time.

**sfc number****—**(TX Matrix Plus routers only) (Optional) Remove an extension or upgrade package from the TX Matrix Plus router. Replace *number* with 0.

**upgrade-group** [ **all** | *upgrade-group-name* ]**—**(Junos Fusion only) Delete the satellite software image association with the specified satellite software upgrade group.

A satellite software upgrade group is a group of satellite devices in the same Junos Fusion that are designated to upgrade to the same satellite software version using the same satellite software package.

**version version-string****—**(Junos Fusion only) (Optional) Delete a satellite software package association with a satellite software upgrade group by selecting the satellite software package's version.

**Additional Information** Before upgrading the software on the router or switch, when you have a known stable system, issue the **request system snapshot** command to back up the software, including the configuration, to the /altroot and /altconfig file systems (on routers) or the /, /altroot, /config, /var, and /var/tmp file systems (on switches). After you have upgraded the software on the router or switch and are satisfied that the new packages are successfully installed and running, issue the **request system snapshot** command again to back up the new software to the /altroot and /altconfig file systems (on routers) or the /, /altroot, /config, /var, and /var/tmp file systems (on switches). After you run the **request system snapshot** command, you cannot return to the previous version of the software, because the running and backup copies of the software are identical.

When you delete a software package and request a system reboot or delete a package that requires rebuilding the Junos OS schema, such as an OpenConfig package, devices that use the ephemeral configuration database delete all ephemeral configuration data in the process of rebooting the system or rebuilding the schema. To restore the ephemeral configuration data, you must load and commit the data to the ephemeral database again.

**Required Privilege Level** maintenance

**Related Documentation**

- [request system software add on page 1249](#)
- [request system software rollback on page 1267](#)
- [request system software validate on page 1272](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [request system software delete jdocs on page 1266](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request system software delete jdocs

The following example displays the system software packages before and after the **jdocs** package is deleted through the **request system software delete** command:

```
user@host> show system software
Information for jbase:
```

```
Comment:
JUNOS Base OS Software Suite [7.2R1.7]
```

```
Information for jcrypto:
```

```
Comment:
JUNOS Crypto Software Suite [7.2R1.7]
```

```
Information for jdocs:
```

```
Comment:
JUNOS Online Documentation [7.2R1.7]
```

```
Information for jkernel:
```

```
Comment:
JUNOS Kernel Software Suite [7.2R1.7]
```

```
...
```

```
user@host> request system software delete jdocs
Removing package 'jdocs' ...
```

```
user@host> show system software
Information for jbase:
```

```
Comment:
JUNOS Base OS Software Suite [7.2R1.7]
```

```
Information for jcrypto:
```

```
Comment:
JUNOS Crypto Software Suite [7.2R1.7]
```

```
Information for jkernel:
```

```
Comment:
JUNOS Kernel Software Suite [7.2R1.7]
```

```
...
```

## request system software rollback

<b>List of Syntax</b>	<a href="#">Syntax on page 1267</a> <a href="#">Syntax (EX Series Switches) on page 1267</a> <a href="#">Syntax (TX Matrix Router) on page 1267</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1267</a> <a href="#">Syntax (MX Series Router) on page 1267</a>
<b>Syntax</b>	request system software rollback
<b>Syntax (EX Series Switches)</b>	request system software rollback <all-members> <local> <member <i>member-id</i> > <reboot>
<b>Syntax (TX Matrix Router)</b>	request system software rollback <lcc <i>number</i>   scc> <reboot>
<b>Syntax (TX Matrix Plus Router)</b>	request system software rollback <lcc <i>number</i>   sfc <i>number</i> > <reboot>
<b>Syntax (MX Series Router)</b>	request system software rollback <all-members> <device-alias <i>alias-name</i> > <local> <member <i>member-id</i> > <reboot> <satellite <i>slot-id</i> > <upgrade-group [all   <i>upgrade-group-name</i> ]>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced in Junos OS Release 9.6 for the TX Matrix Plus router. Command introduced in Junos OS Release 11.1 for the QFX Series. Command behavior changed in Junos OS Release 12.1. <b>reboot</b> option introduced in Junos OS Release 12.3. <b>device-alias</b> , <b>satellite</b> , and <b>upgrade-group</b> options introduced in Junos OS Release 14.2R3 for Junos Fusion. <b>force</b> option deprecated in Junos OS Release 15.1 for Junos OS with Upgraded FreeBSD.



**NOTE:** To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

**Description** This command reverts to the last successfully installed package before the **request system software (add | delete)** command. It uses the copy stored in the `/var/sw/pkg` directory.

*Additional Information*

- On Junos Fusion, the **request system software rollback** command can be used to roll back the version of satellite software associated with a satellite software upgrade group. Rolling back the version of satellite software associated with a satellite software upgrade group triggers a satellite software upgrade.
- On M Series and T Series routers, if **request system software add <jinstall> reboot** was used for the previous installation, then **request system software rollback** has no effect. In this case, use **jinstall** to reinstall the required package.
- On M Series and T Series routers, if **request system software add <sdk1>** was used for the previous installation, then **request system software rollback** removes the last installed SDK package (**sdk1** in this example).
- On SRX Series devices with dual root systems, when **request system software rollback** is run, the system switches to the alternate root. Each root can have a different version of Junos OS. Roll back takes each root back to the previously installed image.
- On QFX3500 and QFX3600 devices in a mixed Virtual Chassis, when the **request system software rollback** command is issued, the system does not rollback to the image stored in the alternate partition.
- On QFX5100 switches, the **reboot** option has been removed. To reboot the switch after a software rollback, issue the **request system reboot** command as a separate, secondary command.

**Options** **all-members**—(EX4200 switches and MX Series routers only) (Optional) Attempt to roll back to the previous set of packages on all members of the Virtual Chassis configuration.

**device-alias *alias-name***—(Junos Fusion only) (Optional) Rollback the satellite software package onto the specified satellite device using the satellite devices FPC slot identifier.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, attempt to roll back to the previous set of packages on a T640 router connected to the TX Matrix router. On a TX Matrix Plus router, attempt to roll back to the previous set of packages on a connected router connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Attempt to roll back to the previous set of packages on the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Attempt to roll back to the previous set of packages on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**none**—For all versions of Junos OS up to and including Junos OS 11.4, revert to the set of software as of the last successful **request system software add**. As of Junos OS 12.1 and later, revert to the last known good state before the most recent **request system software (add | delete)** command.

**reboot**—For Junos OS 12.3 and later, the system reboots automatically to complete the rollback.

**satellite *slot-id***—(Junos Fusion only) (Optional) Roll back the satellite software package onto the specified satellite device using the satellite devices FPC slot identifier.

**scc**—(TX Matrix routers only) (Optional) Attempt to roll back to the previous set of packages on the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Attempt to roll back to the previous set of packages on the TX Matrix Plus router. Replace *number* with 0.

**upgrade-group [ all | *upgrade-group-name*]**—(Junos Fusion only) Roll back the satellite software image associated with the specified satellite software upgrade group, or for all satellite software upgrade groups in the Junos Fusion when **all** is entered.

**Required Privilege Level**

maintenance

**Related Documentation**

- *request system software abort*
- [request system software add on page 1249](#)
- [request system software delete on page 1263](#)
- [request system software validate on page 1272](#)
- *request system configuration rescue delete*
- *request system configuration rescue save*
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [request system software rollback on page 1271](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.



## Sample Output

### request system software rollback

```

user@host> request system software rollback
Verified SHA1 checksum of ./jbase-7.2R1.7.tgz
Verified SHA1 checksum of ./jdocs-7.2R1.7.tgz
Verified SHA1 checksum of ./jroute-7.2R1.7.tgz
Installing package './jbase-7.2R1.7.tgz' ...
Available space: 35495 require: 7335
Installing package './jdocs-7.2R1.7.tgz' ...
Available space: 35339 require: 3497
Installing package './jroute-7.2R1.7.tgz' ...
Available space: 35238 require: 6976
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Reloading /config/juniper.conf.gz ...
Activating /config/juniper.conf.gz ...
mgd: commit complete
Restarting mgd ...
Restarting aprobed ...
Restarting apsd ...
Restarting cosd ...
Restarting fsad ...
Restarting fud ...
Restarting gcdrd ...
Restarting ilmid ...
Restarting irsd ...
Restarting l2tpd ...
Restarting mib2d ...
Restarting nasd ...
Restarting pppoed ...
Restarting rdd ...
Restarting rmopd ...
Restarting rtspd ...
Restarting sampled ...
Restarting serviced ...
Restarting snmpd ...
Restarting spd ...
Restarting vrrpd ...

WARNING: cli has been replaced by an updated version:
CLI release 7.2R1.7 built by builder on 2005-04-22 02:03:44 UTC
Restart cli using the new version ? [yes,no] (yes) yes

Restarting cli ...
user@host

```

## request system software validate

---

List of Syntax	<a href="#">Syntax on page 1272</a>
	<a href="#">Syntax (TX Matrix Router) on page 1272</a>
	<a href="#">Syntax (TX Matrix Plus Router) on page 1272</a>
	<a href="#">Syntax (MX Series Router) on page 1272</a>
Syntax	<pre>request system software validate <i>package-name</i> &lt;on (host <i>host</i> &lt;username <i>username</i>&gt;   routing-engine <i>routing-engine</i>)&gt; &lt;set [<i>package-name package-name</i>]&gt; &lt;upgrade-with-config&gt; &lt;upgrade-with-config-format <i>format</i>&gt;</pre>
Syntax (TX Matrix Router)	<pre>request system software validate <i>package-name</i> &lt;lcc <i>number</i>   scc&gt; &lt;on (host <i>host</i> &lt;username <i>username</i>&gt;   routing-engine <i>routing-engine</i>)&gt; &lt;set [<i>package-name package-name</i>]&gt; &lt;upgrade-with-config&gt; &lt;upgrade-with-config-format <i>format</i>&gt;</pre>
Syntax (TX Matrix Plus Router)	<pre>request system software validate <i>package-name</i> &lt;lcc <i>number</i>   sfc <i>number</i>&gt; &lt;on (host <i>host</i> &lt;username <i>username</i>&gt;   routing-engine <i>routing-engine</i>)&gt; &lt;set [<i>package-name package-name</i>]&gt; &lt;upgrade-with-config&gt; &lt;upgrade-with-config-format <i>format</i>&gt;</pre>
Syntax (MX Series Router)	<pre>request system software validate &lt;<i>package-name</i>&gt; &lt;member <i>member-id</i>&gt; &lt;on (host <i>host</i> &lt;username <i>username</i>&gt;   routing-engine <i>routing-engine</i>)&gt; &lt;set [<i>package-name package-name</i>]&gt; &lt;upgrade-with-config&gt; &lt;upgrade-with-config-format <i>format</i>&gt;</pre>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p><b>set [<i>package-name package-name</i>]</b> option added in Junos OS Release 12.2 for M Series, MX Series, T Series routers.</p> <p><b>upgrade-with-config</b> and <b>upgrade-with-config-format <i>format</i></b> options added in Junos OS Release 12.3 for M Series routers, MX Series routers, and T Series routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p><b>on (host <i>host</i> &lt;username <i>username</i>&gt;   routing-engine <i>routing-engine</i>)</b> option introduced in Junos OS Release 13.3, Junos OS Release 14.1, and Junos OS Release 15.1.</p> <p>Command introduced in Junos OS Release 17.4 for EX Series switches.</p>
Description	Validate candidate software against the current configuration of the router, the switch, or a remote host.

**Options** **lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, validate the software bundle or package on a specific T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, validate the software bundle or package for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**on (host *host* <username *username*> | routing-engine *routing-engine*)**—(Optional) Validate the software bundle or package by comparing it to the running configuration on a remote host or Routing Engine. Specify either a host, replacing *host* with the remote hostname, or a Routing Engine, replacing *routing-engine* with the Routing Engine name. If you specify a remote host, you can optionally provide the username to be used to log in to the remote host.

**member *member-id***—(MX Series routers only) (Optional) Validate the software bundle or package on the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

***package-name***—Name of the software bundle or package to test.

**scc**—(TX Matrix routers only) (Optional) Validate the software bundle or package for the TX Matrix router (or switch-card chassis).

**set [*package-name package-name*]**—(M Series, MX Series, T Series routers) (Optional) Install multiple software packages or software add-on packages at the same time.

**sfc *number***—(TX Matrix Plus routers only) (Optional) Validate the software bundle or package for the TX Matrix Plus router.

**upgrade-with-config**—(Optional) Install one or more configuration files.

**upgrade-with-config-format *format***—(Optional) Specify the configuration file format, **text** or **xml**. The default format is **text**.



**NOTE:** The `upgrade-with-config` and `upgrade-with-config-format` options are only available locally on the router or switch. In a routing matrix, the configuration is applied only to the local router and is not propagated to other routers.

The options are validated during the validation process and applied to the router or switch during the upgrade process. If the upgrade process is successful, the options are removed from the configuration. If the upgrade process fails, the configuration file is renamed with the `.failed` suffix.

**Additional Information** By default, when you issue the `request system software validate` command on a TX Matrix master Routing Engine, all the T640 master Routing Engines that are connected to it are validated. If you issue the same command on the TX Matrix backup Routing Engine, all the T640 backup Routing Engines that are connected to it are upgraded to the same version of software.

Likewise, if you issue the `request system software validate` command on a TX Matrix Plus master Routing Engine, all the T1600 or T4000 master Routing Engines that are connected to it are validated. If you issue the same command on a TX Matrix Plus backup Routing Engine, all the T1600 or T4000 backup Routing Engines that are connected to it are upgraded to the same version of software.

**Required Privilege Level** maintenance

**Related Documentation**

- [request system software abort](#)
- [request system software add on page 1249](#)
- [request system software delete on page 1263](#)
- [request system software rollback on page 1267](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [request system software validate \(Successful Case\) on page 1274](#)  
[request system software validate \(Failure Case\) on page 1275](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### `request system software validate (Successful Case)`

```
user@host> request system software validate /var/sw/pkg/jbundle-5.3I20020124_0520_sjg.tgz
```

```

Checking compatibility with configuration
Initializing...
Using /packages/jbase-5.3I20020122_1901_sjg
Using /var/sw/pkg/jbundle-5.3I20020124_0520_sjg.tgz
Using /var/chroot/var/tmp/jbundle/jbase-5.3I20020124_0520_sjg.tgz
Using /var/chroot/var/tmp/jbundle/jkernel-5.3I20020124_0520_sjg.tgz
Using /var/chroot/var/tmp/jbundle/jcrypto-5.3I20020124_0520_sjg.tgz
Using /var/chroot/var/tmp/jbundle/jpfe-5.3I20020124_0520_sjg.tgz
Using /var/chroot/var/tmp/jbundle/jdocs-5.3I20020124_0520_sjg.tgz
Using /var/chroot/var/tmp/jbundle/jroute-5.3I20020124_0520_sjg.tgz
Validating against /config/juniper.conf.gz
mgd: commit complete

WARNING: cli has been replaced by an updated version:
CLI release 5.3I0 built by sjg on 2002-01-24 05:23:53 UTC
Restart cli using the new version ? [yes,no] (yes)

```

#### request system software validate (Failure Case)

```

user@host> request system software validate 6.3/
Pushing bundle to lcc0-re0
error: Failed to transfer package to lcc0-re0

user@host> request system software validate test
Pushing bundle to lcc0-re0
Pushing bundle to lcc2-re0

lcc0-re0:
gzip: stdin: not in gzip format
tar: child returned status 1
ERROR: Not a valid package: /var/tmp/test

```

## show pfe lcc

---

**Syntax (TX Matrix and TX Matrix Plus Routers)**    `show pfe lcc number`

**Release Information**    Command introduced before Junos OS Release 7.4.

**Description**    (TX Matrix and TX Matrix Plus router only) On a TX Matrix router, display Packet Forwarding Engine status and statistics for the T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display Packet Forwarding Engine status and statistics for the T1600 or T4000 router (or line-card chassis) that is connected to a TX Matrix Plus router.

**Options**    **lcc *number***—On a TX Matrix router, display Packet Forwarding Engine status and statistics for the specified T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display Packet Forwarding Engine status and statistics for the specified router (or line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level**    admin

**List of Sample Output**    [show pfe lcc on page 1276](#)

### Sample Output

#### show pfe lcc

```
user@host> show pfe lcc 0
LCC 0 status:
  Slot:                Present
  State:               Online
  Last State Change:   2005-03-10 19:31:50 PST
  Uptime (total):      1d 14:20
  Failures:            23
  Pending:             0
```

```

Peer message type receive qualifiers:
Message Type      Receive Qualifier
-----
TTP               All detail
IFD               All detail
IFL               All detail
Nexthop           All
COS               All
Route             All
SW Firewall       All
HW Firewall       All
PFE Statistics    All
PIC Statistics     All
Sampling          All detail
Monitoring        All detail
ASP               All detail
L2TP              All detail
Collector         All detail

```

PFE listener statistics:

```

Open:             25
Close:            23
Sleep:            0
Wakeup:           0
Resync Request:   0
Resync Done:      2
Resync Fail:      0
Resync Time:      0

```

PFE IPC statistics:

type	TX Messages	RX messages
Header	0	0
Test	0	0
Interface	163	2923
Chassis	0	0
Boot	0	0
Next-hop	15	0
Jtree	0	0
Cprod	0	0
Route	100	0
Pfe	5369	3072
Dfw	11	0
Mastership	0	0
Sampling	0	0
GUCP	0	0
CoS	20	0
GCCP	0	0
GHCP	0	0
IRSD	0	0
Monitoring	0	0
RE	3	6930
PIC	0	0
ASP cfg	0	0
ASP cmd	0	0
L2TP cfg	0	0
Collector	0	0
PIC state	4	0

PFE socket-buffer mbuf depth:

bucket	count
-----	-----
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0

PFE socket-buffer bytes pending transmit:

bucket	count
-----	-----
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0



## show pfe next-hop

**List of Syntax**    [Syntax on page 1279](#)  
                          [Syntax \(TX Matrix and TX Matrix Plus Routers\) on page 1279](#)

**Syntax**    show pfe next-hop  
                  <interface *interface-name*>

**Syntax (TX Matrix and TX Matrix Plus Routers)**    show pfe next-hop  
                          <fpc *slot*>  
                          <interface *interface-name*>  
                          <lcc *number*>

**Release Information**    Command introduced before Junos OS Release 7.4.  
                          Command introduced in Junos OS Release 9.0 for EX Series switches.  
                          Command introduced in Junos OS Release 11.1 for the QFX Series.  
                          Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

**Description**    Display Packet Forwarding Engine next-hop information.

**Options**    **none**—Display all Packet Forwarding Engine next-hop information.

**fpc *slot***—(TX Matrix and TX Matrix Plus routers only) (Optional) Show the next hops for a Flexible PIC Concentrator (FPC) slot.

- On a TX Matrix router, if you specify the number of a T640 router by using the **lcc *number*** option (the recommended method), replace ***slot*** with a value from **0** through **7**. Otherwise, replace ***slot*** with a value from **0** through **31**.
- On a TX Matrix Plus router, if you specify the number of a T1600 router by using the **lcc *number*** option (the recommended method), replace ***slot*** with a value from **0** through **7**. Otherwise, replace ***slot*** with a value from **0** through **31**.
- On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 router by using the **lcc *number*** option (the recommended method), replace ***slot*** with a value from **0** through **7**. Otherwise, replace ***slot*** with a value from **0** through **63**.

For example, the following commands have the same result:

```
user@host> show pfe next-hop fpc 1 lcc 1
user@host> show pfe next-hop fpc 9
```

**interface *interface-name***—(Optional) Display the Packet Forwarding Engine next-hop interface.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display Packet Forwarding Engine next-hop interface for a specific T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router,

display Packet Forwarding Engine next-hop interface for the router (or line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level**    admin

- Related Documentation**
- [Routing Matrix with TXP-T1600 Configuration on page 11](#)
  - [Routing Matrix with TXP-T1600-3D Configuration on page 14](#)
  - [Routing Matrix with TXP-T4000-3D Configuration on page 18](#)
  - [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)

**List of Sample Output**    [show pfe next-hop on page 1281](#)  
[show pfe next-hop fpc \(TX Matrix Router\) on page 1281](#)  
[show pfe next-hop fpc \(TX Matrix Plus Router\) on page 1282](#)

**Output Fields** Table 46 on page 1281 lists the output fields for the **show pfe next-hop** command. Output fields are listed in the approximate order in which they appear.

Table 46: *show pfe next-hop* Output Fields

Field Name	Field Description
ID	The next-hop ID for the entry.
Type	The next-hop type for the entry.
Interface	The interface to which the next-hop entry is assigned.
Protocol	The protocol type for the next-hop entry.
Encap	Encapsulation type for the next-hop entry.
Next Hop Addr	Next-hop address for the next-hop entry.
MTU	MTU value for the nexthop entry.

## Sample Output

### show pfe next-hop

```

user@host> show pfe next-hop
Nexthop Info:
  ID      Type      Interface  Protocol  Encap  Next Hop Addr  MTU
  ---
  4       Mcast    -          IPv4      -      0.0.0.0        0
  5       Bcast    -          IPv4      -      -              0
  7       Discard   -          IPv4      -      -              0
  8       MDiscard  -          IPv4      -      -              0
  9       Reject    -          IPv4      -      -              0
  13      Local     -          IPv4      -      192.168.4.60   0
  14      Resolve  fxp0.0     IPv4      Unspecified -          0
  17      Local     -          IPv4      -      127.0.0.1      0
  18      Unicast   fxp0.0     IPv4      Unspecified 192.168.4.254  0
  21      Local     -          IPv4      -      11.1.0.1       0
  22      Unicast   at-0/1/0.0 IPv4      ATM SNAP 11.1.0.2       4482
  ...

```

### show pfe next-hop fpc (TX Matrix Router)

```

user@host> show pfe next-hop fpc 1
Slot 1
Nexthop Info:
  ID      Type      Interface  Next Hop Addr  Protocol  Encap  MTU
  ---
  5       Mcast    -          default        IPv4      -      0
  6       Bcast    -          -              IPv4      -      0
  8       Discard  -          -              IPv4      -      0
  9       MDiscard  -          -              IPv4      -      0
  13      Mcast    -          default        IPV6      -      0
  17      MDiscard  -          -              IPV6      -      0
  18      Reject    -          -              IPV6      -      0

```

24	Discard	-	-	None	-	0
68	Local	-	192.168.66.113	IPv4	-	0
69	Resolve	fxp0.0	-	IPv4	Unspecified	0
70	Unicast	fxp0.0	192.168.71.254	IPv4	Unspecified	0
256	Local	-	10.71.71.1	IPv4	-	0
257	Local	-	127.0.0.1	IPv4	-	0
258	Mcast.local..1	default		IPv4	Unspecified	0
259	Bcast.local..1	-		IPv4	Unspecified	0
261	Discard.local..1	-		IPv4	Unspecified	0
262	MDiscard.local..1	-		IPv4	Unspecified	0
269	Mcast.local..1	default		IPv6	Unspecified	0
271	Discard.local..1	-		IPv6	Unspecified	0
...						

### show pfe next-hop fpc (TX Matrix Plus Router)

```
user@host> show pfe next-hop fpc 0
```

Slot 0

ID	Type	Interface	Next Hop Addr	Protocol	Encap	MTU
-----						
31	Mcast	-	default	IPv4	-	0
32	Bcast	-	-	IPv4	-	0
34	Discard	-	-	IPv4	-	0
35	MDiscard	-	-	IPv4	-	0
36	Reject	-	-	IPv4	-	0
39	Mcast	-	default	IPv6	-	0
42	Discard	-	-	IPv6	-	0
43	MDiscard	-	-	IPv6	-	0
44	Reject	-	-	IPv6	-	0
49	Receive	-	-	MPLS	-	0
50	Discard	-	-	MPLS	-	0
111	Mcast	.local..1	default	IPv4	Unspecified	0
112	Bcast	.local..1	-	IPv4	Unspecified	0
114	Discard	.local..1	-	IPv4	Unspecified	0
115	MDiscard	.local..1	-	IPv4	Unspecified	0
116	Reject	.local..1	-	IPv4	Unspecified	0
119	Mcast	.local..1	default	IPv6	Unspecified	0
122	Discard	.local..1	-	IPv6	Unspecified	0
123	MDiscard	.local..1	-	IPv6	Unspecified	0
124	Reject	.local..1	-	IPv6	Unspecified	0
191	Mcast	.local..2	default	IPv4	Unspecified	0
192	Bcast	.local..2	-	IPv4	Unspecified	0
194	Discard	.local..2	-	IPv4	Unspecified	0
195	MDiscard	.local..2	-	IPv4	Unspecified	0
196	Reject	.local..2	-	IPv4	Unspecified	0
322	Local	-	10.1.0.5	IPv4	-	0
323	Resolve	bcm0.0	-	IPv4	Unspecified	0
326	Local	-	129.0.0.5	IPv4	-	0
327	Resolve	bcm0.0	-	IPv4	Unspecified	0
328	Local	-	fe80::201:ff:fe01:5	IPv6	-	0
329	Receive	bcm0.0	ff02::1:ff01:5	IPv6	Unspecified	0
330	Receive	bcm0.0	fe80::	IPv6	Unspecified	0
331	Resolve	bcm0.0	-	IPv6	Unspecified	0
332	Local	-	fec0::a:1:0:5	IPv6	-	0
333	Receive	bcm0.0	ff02::1:ff00:5	IPv6	Unspecified	0
334	Receive	bcm0.0	fec0::	IPv6	Unspecified	0
335	Resolve	bcm0.0	-	IPv6	Unspecified	0
348	Local	-	192.168.178.4	IPv4	-	0

349	Resolve	em0.0	-	IPv4	Unspecified	0
350	Unicast	em0.0	192.168.178.126	IPv4	Unspecified	0
357	Local	-	fe80::201:1ff:fe01:5	IPv6	-	0
512	Local	-	10.255.178.11	IPv4	-	0
513	Local	-	127.0.0.1	IPv4	-	0
515	Local	-	abcd::10:255:178:11	IPv6	-	0
516	Local	-	fe80::200:ff:fe00:0	IPv6	-	0
517	Local	-	127.0.0.1	IPv4	-	0
518	Bcast	.local..3	default	IPv4	Unspecified	0
519	Bcast	.local..3	-	IPv4	Unspecified	0
521	Discard	.local..3	-	IPv4	Unspecified	0
522	MDiscard	.local..3	-	IPv4	Unspecified	0
523	Reject	.local..3	-	IPv4	Unspecified	0
531	Mcast	.local..3	default	IPv6	Unspecified	0
533	Discard	.local..3	-	IPv6	Unspecified	0
534	MDiscard	.local..3	-	IPv6	Unspecified	0
535	Reject	.local..3	-	IPv6	Unspecified	0
539	Mgroup	-	-	IPv4	-	0
540	Bcast	ge-15/0/3.0	-	IPv4	Ethernet	0
541	Receive	ge-15/0/3.0	14.2.1.0	IPv4	Ethernet	0
542	Local	-	14.2.1.1	IPv4	-	0
543	Resolve	ge-15/0/3.0	-	IPv4	Ethernet	0
544	Bcast	ge-31/0/4.0	-	IPv4	Ethernet	0
545	Receive	ge-31/0/4.0	14.1.1.0	IPv4	Ethernet	0
546	Local	-	14.1.1.1	IPv4	-	0
547	Resolve	ge-31/0/4.0	-	IPv4	Ethernet	0
548	Unicast	ge-31/0/4.0	14.1.1.2	IPv4	Ethernet	0
549	Unicast	ge-15/0/3.0	14.2.1.2	IPv4	Ethernet	0
550	Bcast	ae1.0	-	IPv4	Ethernet	0
551	Receive	ae1.0	11.1.1.0	IPv4	Ethernet	0
552	Local	-	11.1.1.1	IPv4	-	0
553	Resolve	ae1.0	-	IPv4	Ethernet	0
554	Aggreg.	ae1.0	-	IPv4	Ethernet	0
555	Unicast	ge-23/0/8.0	11.1.1.2	IPv4	Ethernet	0
556	Unicast	ge-7/0/9.0	11.1.1.2	IPv4	Ethernet	0
557	Aggreg.	ae1.0	-	MPLS	Ethernet	0
558	Unicast	ge-23/0/8.0	-	MPLS	Ethernet	0
559	Unicast	ge-7/0/9.0	-	MPLS	Ethernet	0
560	Aggreg.	ae1.0	-	MPLS	Ethernet	0
561	Unicast	ge-23/0/8.0	-	MPLS	Ethernet	0
562	Unicast	ge-7/0/9.0	-	MPLS	Ethernet	0

## show pfe route

<b>List of Syntax</b>	<a href="#">Syntax on page 1284</a> <a href="#">Syntax (EX Series Switches) on page 1284</a> <a href="#">Syntax (QFX Series) on page 1284</a> <a href="#">Syntax (MX Series) on page 1284</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 1284</a>
<b>Syntax</b>	<pre>show pfe route &lt;&lt;inet6   ip   iso&gt; &lt;prefix prefix&gt;   &lt;table &lt;table-name&gt; &lt;index index&gt; &lt;prefix prefix&gt;&gt;&gt; &lt;mpls&gt; &lt;summary&gt;</pre>
<b>Syntax (EX Series Switches)</b>	<pre>show pfe route &lt;&lt;inet6   ip&gt; &lt;prefix prefix&gt;   &lt;table &lt;table-name&gt; &lt;index index&gt; &lt;prefix prefix&gt;&gt;&gt; &lt;mpls&gt; &lt;summary&gt;</pre>
<b>Syntax (QFX Series)</b>	<pre>show pfe route &lt;&lt;inet6   ip&gt; &lt;prefix prefix&gt;   &lt;table &lt;table-name&gt; &lt;index index&gt; &lt;prefix prefix&gt;&gt;&gt; &lt;hw (host   lpm   multicast)&gt;&gt; &lt;&lt;clnp&gt; &lt;prefix prefix&gt;   &lt;table &lt;table-name&gt; &lt;index index&gt; &lt;prefix prefix&gt;&gt;&gt; &lt;mpls&gt; &lt;summary&gt; &lt;hw&gt;</pre>
<b>Syntax (MX Series)</b>	<pre>show pfe route &lt;&lt;inet6   ip&gt; &lt;prefix prefix&gt;   &lt;table &lt;table-name&gt; &lt;index index&gt; &lt;prefix prefix&gt;&gt;&gt; &lt;dhcp&gt; &lt;mpls&gt; &lt;summary&gt;</pre>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	<pre>show pfe route &lt;fpc slot&gt; &lt;&lt;inet6   ip   iso&gt; &lt;prefix prefix&gt;   &lt;table &lt;table-name&gt; &lt;index index&gt; &lt;prefix prefix&gt;&gt;&gt; &lt;lcc number&gt; &lt;mpls&gt; &lt;summary&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 13.3 for the MX Series.</p> <p>Command option <b>hw</b> introduced in Junos OS Release 14.1X53-D10 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
<b>Description</b>	<p>Display the routes in the Packet Forwarding Engine forwarding table. The Packet Forwarding Engine forwards packets between input and output interfaces.</p>



**NOTE:** The Routing Engine maintains a master copy of the forwarding table. It copies the forwarding table to the Packet Forwarding Engine, which is the part of the router or switch responsible for forwarding packets. To display the routes in the Routing Engine forwarding table, use the **show route forwarding table** command. For more information, see the [CLI Explorer](#).

**Options** **none**—Display all Packet Forwarding Engine forwarding table information.

**clnp**—(Optional) Show International Standards Organization (ISO) connectionless-mode network protocol (CLNP) route table information.

**dhcp**—(Optional) Display Packet Forwarding Engine DHCP-Snooping route table information.

**fpc slot**—(TX Matrix and TX Matrix Plus routers only) (Optional) Show the next hops for a Flexible PIC Concentrator (FPC) slot.

- On a TX Matrix router, if you specify the number of a T640 router by using the **lcc number** option (the recommended method), replace **slot** with a value from 0 through 7. Otherwise, replace **slot** with a value from 0 through 31.
- On a TX Matrix Plus router, if you specify the number of a T1600 router by using the **lcc number** option (the recommended method), replace **slot** with a value from 0 through 7. Otherwise, replace **slot** with a value from 0 through 31.
- On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 router by using the **lcc number** option (the recommended method), replace **slot** with a value from 0 through 7. Otherwise, replace **slot** with a value from 0 through 63.

For example, the following commands have the same result:

```
user@host> show pfe route fpc 1 lcc 1
user@host> show pfe route fpc 9
```

**host**—(QFX standalone switches, pure mode QFX5100-only VCF and VC, and pure mode QFX3500-only VC) (Optional) Display host routes installed in the on-chip hardware table.

**hw**—(QFX standalone switches, pure mode QFX5100-only VCF and VC, and pure mode QFX3500-only VC) (Optional) Display routes installed in the on-chip hardware table (as opposed to displaying routes from the routing table and the PFE forwarding table before they are installed in the hardware).

**index index**—(Optional) Display table index.

**inet6**—(Optional) Display Packet Forwarding Engine IPv6 routes.

**ip**—(Optional) Display Packet Forwarding Engine IPv4 routes.

**iso** —(Optional) Display ISO version routing tables.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, the slot number of the T640 router (or line-card chassis) that houses the FPC. On a TX Matrix Plus router, the slot number of the router (line-card chassis) that houses the FPC.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**lpm**—(QFX standalone switches, pure mode QFX5100-only VCF and VC, and pure mode QFX3500-only VC) (Optional) Display longest prefix match (LPM) routes installed in the on-chip hardware table.

**mpls**—(Optional) Display Packet Forwarding Engine MPLS information.

**multicast**—(QFX standalone switches, pure mode QFX5100-only VCF and VC, and pure mode QFX3500-only VC) (Optional) Display multicast routes installed in the on-chip hardware table.

**prefix *prefix***—(Optional) IPv4 or IPv6 prefix for which to show table entries.

**summary**—(Optional) Display summary of Packet Forwarding Engine information.

**table <*table-name*>**—(Optional) Display table information.

**Required Privilege Level**

admin

**Related Documentation**

- [Routing Matrix with TXP-T1600 Configuration on page 11](#)
- [Routing Matrix with TXP-T1600-3D Configuration on page 14](#)
- [Routing Matrix with TXP-T4000-3D Configuration on page 18](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)

**List of Sample Output**

[show pfe route ip on page 1288](#)  
[show pfe route iso on page 1288](#)  
[show pfe route lcc summary \(TX Matrix Router\) on page 1289](#)



[show pfe route lcc summary \(TX Matrix Plus Router\) on page 1290](#)

[show pfe route summary \(MX Series Router\) on page 1291](#)

[show pfe route summary hw \(QFX Series, EX4600 Switches, OCX Series\) on page 1292](#)

[show pfe route ip hw host \(QFX Series\) on page 1292](#)

**Output Fields** Table 47 on page 1287 lists the output fields for the **show pfe route** command. Output fields are listed in the approximate order in which they appear.

*Table 47: show pfe route Output Fields*

Field Name	Field Description
<b>Destination</b>	Destination address for the entry.
<b>NH IP Addr</b>	Next-hop IP address for the entry.
<b>Type</b>	Next-hop type for the entry
<b>NH ID</b>	Next-hop ID for the entry
<b>Encap</b>	Encapsulation type for the next-hop entry.
<b>Interface</b>	Interface to which the next-hop entry is assigned.

Table 48 on page 1287 lists the output fields for the QFX Series **show pfe route** hardware table (**hw**) commands. Output fields are listed in the approximate order in which they appear.

*Table 48: QFX Series, EX4600 switches, and OCX Series show pfe route Hardware Table Output Fields*

Field Name	Field Description
<b>Max</b>	Maximum routing entries per route type.
<b>Used</b>	Number of routing entries consumed per route type.
<b>Free</b>	Number of unused routing entries per route type.
<b>% Free</b>	Percentage of unused routing entries per route type.
<b>Rtt</b>	Internal routing engine index number of the route table.
<b>VRF</b>	Internal hardware index number for the corresponding route table.
<b>Destination</b>	Destination address for the entry.
<b>Type</b>	( <b>show pfe route summary hw</b> )—Route type for the entry: IPv4 or IPv6 route, and host, LPM, or multicast route.  ( <b>show pfe route (ip   inet6) hw</b> )—Next-hop type for the entry.
<b>NH ID</b>	Next-hop ID for the entry

Table 48: QFX Series, EX4600 switches, and OCX Series show pfe route Hardware Table Output Fields (continued)

Field Name	Field Description
Interface	Interface to which the next-hop entry is assigned.
HW NH-ID	Internal hardware index number of the next-hop.
Src-MAC-Address	Source MAC address.
Port	Port number.
Dst-MAC-Address	Destination MAC address.
VLAN	ID of the multicast group VLAN.
GROUP	Internal hardware index number of the multicast group next-hop.
CLASS	Internal class number of the multicast group.

## Sample Output

### show pfe route ip

```
user@host> show pfe route ip
```

```
IPv4 Route Table 0, default.0, 0x0:
Destination          NH IP Addr      Type      NH ID Interface
-----
default              127.0.0.1       Discard    8
127.0.0.1            127.0.0.1       Local     256
172.16/12            192.168.71.254  Unicast   68 fxp0.0
192.168.0/18         192.168.71.254  Unicast   68 fxp0.0
192.168.40/22        192.168.71.254  Unicast   68 fxp0.0
192.168.64/18        192.168.71.254  Unicast   68 fxp0.0
192.168.64/21        192.168.71.254  Resolve   67 fxp0.0
192.168.71.249       192.168.71.249  Local     66
192.168.220.0/30     192.168.220.0  Resolve   303 fe-0/0/0.0
192.168.220.0       192.168.220.0  Receive   301 fe-0/0/0.0
224.0.0.1            192.168.220.0  Mcast     5
255.255.255.255     192.168.220.0  Bcast     6

...
```

### show pfe route iso

```
user@host# show pfe route iso
```

```
CLNS Route Table 0, CLNP.0, 0x0:
Destination          Type      NH ID Interface
-----
default              Reject    60
47.0005.80ff.f800.0000.0108.0001.0102.5508.2159/152 Local    514
49.0001.00a0.c96b.c491/72 Local     536
```

## show pfe route lcc summary (TX Matrix Router)

```
user@host> show pfe route lcc 2 summary
```

```
Slot 0
```

```
IPv4 Route Tables:
Index      Routes      Size(b)
-----
Default    43           3081
1          4            281
```

```
MPLS Route Tables:
Index      Routes      Size(b)
-----
Default    1            68
```

```
IPv6 Route Tables:
Index      Routes      Size(b)
-----
Default    9            717
1          5            389
```

```
Slot 1
```

```
IPv4 Route Tables:
Index      Routes      Size(b)
-----
Default    43           3081
1          4            281
```

```
MPLS Route Tables:
Index      Routes      Size(b)
-----
Default    1            68
```

```
IPv6 Route Tables:
Index      Routes      Size(b)
-----
Default    9            717
1          5            389
```

```
Slot 16
```

```
IPv4 Route Tables:
Index      Routes      Size(b)
-----
Default    41           2938
1          4            281
```

```
MPLS Route Tables:
Index      Routes      Size(b)
-----
Default    1            68
```

```
IPv6 Route Tables:
Index      Routes      Size(b)
-----
Default    9            717
```

1 5 389

Slot 17

IPv4 Route Tables:

Index	Routes	Size(b)
-----	-----	-----
Default	41	2938
1	4	281

MPLS Route Tables:

Index	Routes	Size(b)
-----	-----	-----
Default	1	68

IPv6 Route Tables:

Index	Routes	Size(b)
-----	-----	-----
Default	9	717
1	5	389

#### show pfe route lcc summary (TX Matrix Plus Router)

user@host> show pfe route lcc 2 summary

Slot 0

IPv4 Route Tables:

Index	Routes	Size(b)
-----	-----	-----
Default	25	2266
1	9	815
2	6	545
3	5	453
4	15	1371
5	5	453
6	13	1187

MPLS Route Tables:

Index	Routes	Size(b)
-----	-----	-----
Default	1	88
4	5	452

IPv6 Route Tables:

Index	Routes	Size(b)
-----	-----	-----
Default	7	697
1	13	1305
3	4	385
4	4	385
5	4	385
6	18	1833

Slot 6

IPv4 Route Tables:

Index	Routes	Size(b)
-------	--------	---------

```

-----
Default      25      2266
1            9       815
2            6       545
3            5       453
4           15      1371
5            5       453
6           13      1187

```

```

MPLS Route Tables:
Index      Routes      Size(b)
-----
Default    1         88
4          5        452

```

```

IPv6 Route Tables:
Index      Routes      Size(b)
-----
Default    7         697
1          13        1305
3           4         385
4           4         385
5           4         385
6          18        1833
...

```

#### show pfe route summary (MX Series Router)

```
user@host> show pfe route summary
```

```
Slot 0
```

```

DHCP-Snooping Route Tables:
Index      Routes      Size(b)
-----
Default    1         144

```

```

IPv4 Route Tables:
Index      Routes      Size(b)
-----
Default    25      2266
1            9       815
2            6       545
3            5       453
4           15      1371
5            5       453
6           13      1187

```

```

MPLS Route Tables:
Index      Routes      Size(b)
-----
Default    1         88
4          5        452

```

```

IPv6 Route Tables:
Index      Routes      Size(b)
-----
Default    7         697
1          13        1305
3           4         385

```

```

4           4           385
5           4           385
6          18          1833

```

```
...
```

#### show pfe route summary hw (QFX Series, EX4600 Switches, OCX Series)

```

user@switch> show pfe route summary hw
Slot 0
Unit: 0
Profile active: 12-profile-three
Type          Max      Used      Free      % free
-----
IPv4 Host      8192      103      8073      98.55
IPv4 LPM      16384       9     16369      99.91
IPv4 Mcast     4096       2     4037      98.56

IPv6 Host      4096       6     4037      98.56
IPv6 LPM(< 64) 8192       3     8185      99.91
IPv6 LPM(> 64) 256       1     255      99.61
IPv6 Mcast     2048       0     2019      98.58

```

#### show pfe route ip hw host (QFX Series)

```

user@switch> show pfe route ip hw host
Slot 0
Unit: 0
IPv4 Host entries present: 103
Rtt  VRF  Destination                                     Type  NH-ID  Interface
      HW NH-ID Src-MAC-Address      Port Dst-MAC-Address
-----
4    3    255.255.255.255                                     Bcast  1695   .local.    .4
ifl 550 100003 00:00:00:01:02:03 127 00:00:00:01:02:03
0    1    200.1.1.42                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.56                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.61                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    11.1.1.2                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.73                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.76                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.18                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.5                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.23                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    101.1.1.255                                     Bcast  1664   ae0        .0
ifl 544 100003 00:00:00:01:02:03 127 00:00:00:01:02:03
0    1    200.1.1.40                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23
0    1    200.1.1.58                                     Unicast 1743   et-0/1/1   .0
ifl 559 100268 84:18:88:de:96:fd 53 00:00:00:21:12:23. . .
. . .

```



show pfe statistics dma

List of Syntax	<a href="#">Syntax on page 1294</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 1294</a>
Syntax	show pfe statistics dma
Syntax (TX Matrix and TX Matrix Plus Routers)	show pfe statistics dma <fpc <i>slot</i> > <lcc <i>number</i> >
Release Information	Command introduced before Junos OS Release 7.4.
Description	Display Packet Forwarding Engine direct memory access (DMA) statistics.
Options	<p><b>none</b>—Display all Packet Forwarding Engine direct memory access statistics.</p> <p><b>fpc <i>slot</i></b>—(TX Matrix and TX Matrix Plus routers only) (Optional) Display statistics for a Flexible PIC Concentrator (FPC) slot.</p> <ul style="list-style-type: none"> <li>On a TX Matrix router, if you specify the number of a T640 router by using the <b>lcc <i>number</i></b> option (the recommended method), replace <b><i>slot</i></b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b><i>slot</i></b> with a value from <b>0</b> through <b>31</b>.</li> <li>On a TX Matrix Plus router, if you specify the number of a T1600 router by using the <b>lcc <i>number</i></b> option (the recommended method), replace <b><i>slot</i></b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b><i>slot</i></b> with a value from <b>0</b> through <b>31</b>.</li> <li>On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 router by using the <b>lcc <i>number</i></b> option (the recommended method), replace <b><i>slot</i></b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b><i>slot</i></b> with a value from <b>0</b> through <b>63</b>.</li> </ul> <p>For example, the following commands have the same result:</p> <pre> user@host&gt; show pfe statistics dma fpc 1 lcc 1 user@host&gt; show pfe statistics dma fpc 9 </pre> <p><b>lcc <i>number</i></b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display statistics for a specific T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display statistics for a specific router (or line-card chassis) that is connected to a TX Matrix router.</p>



Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level** admin

**Related Documentation**

- [Routing Matrix with TXP-T1600 Configuration on page 11](#)
- [Routing Matrix with TXP-T1600-3D Configuration on page 14](#)
- [Routing Matrix with TXP-T4000-3D Configuration on page 18](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)

**List of Sample Output** [show pfe statistics dma on page 1296](#)  
[show pfe statistics dma lcc on page 1296](#)

**Output Fields** [Table 49 on page 1295](#) lists the output fields for the **show pfe ssb** command. Output fields are listed in the approximate order in which they appear.

*Table 49: show pfe statistics dma Output Fields*

Field Name	Field Description
<b>DMA Statistics</b>	Information about Packet Forwarding Engine direct memory access statistics: <ul style="list-style-type: none"> <li>• <b>Name</b>—DMA statistics entry name.               <ul style="list-style-type: none"> <li>• <b>Requests</b>—Number of requests.</li> <li>• <b>Completed</b>—Number of completed requests.</li> <li>• <b>Failed</b>—Number of failed requests.</li> <li>• <b>Packet Read</b>—DMA packet read statistics.</li> <li>• <b>Packet Write</b>—DMA physical read statistics.</li> <li>• <b>Physical Write</b>—DMA physical write statistics.</li> </ul> </li> </ul>

Table 49: show pfe statistics dma Output Fields (continued)

Field Name	Field Description
<b>DMA Errors</b>	<p>Information about Packet Forwarding Engine direct memory access error statistics:</p> <ul style="list-style-type: none"> <li>• <b>Name</b>—DMA error statistics entry name. <ul style="list-style-type: none"> <li>• <b>Write 0</b>—Write 0 statistics.</li> <li>• <b>Completed</b>—Number of completed requests.</li> <li>• <b>Write 1</b>—Write 1 statistics.</li> <li>• <b>Read 0</b>—Read 0 statistics.</li> <li>• <b>Read 1</b>—Read 1 statistics.</li> <li>• <b>Illegal Bank</b>—DMA error statistics due to illegal bank.</li> <li>• <b>Address Range</b>—DMA error statistics due to address range.</li> <li>• <b>ECC Error</b>—DMA error statistics due to ECC errors.</li> <li>• <b>PCI Retries</b>—DMA error statistics due to PCI retries.</li> <li>• <b>PCI Error</b>—DMA error statistics due to PCI error.</li> </ul> </li> </ul>
<b>DMA Requests</b>	<p>Information about Packet Forwarding Engine direct memory access requests:</p> <ul style="list-style-type: none"> <li>• <b>Requests available</b>—DMA statistics of requests available.</li> <li>• <b>Requests used</b>—DMA statistics of requests used.</li> </ul>

## Sample Output

### show pfe statistics dma

```

user@host> show pfe statistics dma
DMA Statistics:
      Name      Requests    Completed    Failed
-----
Packet Read      905119      905119         0
Packet Write     943761      943761         0
Physical Read         0         0         0
Physical Write        0         0         0

DMA Errors:
      Name      Write 0    Write 1    Read 0    Read 1
-----
Illegal Bank         0         0         0         0
Address Range         0         0         0         0
ECC Error             0         0         0         0
PCI Retries           0         0         0         0
PCI Error             0         0         0         0

DMA Requests:
Requests available: 256, Requests used: 0

```

### show pfe statistics dma lcc

```

user@host> show pfe statistics dma lcc 2

Slot 0

DMA Statistics:

```

Name	Requests	Completed	Failed
-----	-----	-----	-----
Packet Read	10718	10718	0
Packet Write	9935	9935	0

## DMA Errors:

Name	Write 0	Write 1	Read 0	Read 1
-----	-----	-----	-----	-----
Illegal Bank	0	0		
Address Range	0	0		
ECC Error	0	0		

## DMA Requests:

Requests available: 768, Requests used: 0

## DMA Statistics:

Name	Requests	Completed	Failed
-----	-----	-----	-----
Packet Read	0	0	0
Packet Write	0	0	0

## DMA Errors:

Name	Write 0	Write 1	Read 0	Read 1
-----	-----	-----	-----	-----
Illegal Bank	0	0		
Address Range	0	0		
ECC Error	0	0		

## DMA Requests:

Requests available: 768, Requests used: 0

## Slot 1

## DMA Statistics:

Name	Requests	Completed	Failed
-----	-----	-----	-----
Packet Read	2	2	0
Packet Write	10154	10154	0

## DMA Errors:

Name	Write 0	Write 1	Read 0	Read 1
-----	-----	-----	-----	-----
Illegal Bank	0	0		
Address Range	0	0		
ECC Error	0	0		

## DMA Requests:

Requests available: 768, Requests used: 0

## Slot 16

## DMA Statistics:

Name	Requests	Completed	Failed
-----	-----	-----	-----
Packet Read	0	0	0

Packet Write	0	0	0
--------------	---	---	---

## DMA Errors:

Name	Write 0	Write 1	Read 0	Read 1
-----	-----	-----	-----	-----
Illegal Bank	0	0		
Address Range	0	0		
ECC Error	0	0		

## DMA Requests:

Requests available: 768, Requests used: 0

## DMA Statistics:

Name	Requests	Completed	Failed
-----	-----	-----	-----
Packet Read	0	0	0
Packet Write	0	0	0

## DMA Errors:

Name	Write 0	Write 1	Read 0	Read 1
-----	-----	-----	-----	-----
Illegal Bank	0	0		
Address Range	0	0		
ECC Error	0	0		

## DMA Requests:

Requests available: 768, Requests used: 0

## Slot 17

## DMA Statistics:

Name	Requests	Completed	Failed
-----	-----	-----	-----
Packet Read	0	0	0
Packet Write	0	0	0

## DMA Errors:

Name	Write 0	Write 1	Read 0	Read 1
-----	-----	-----	-----	-----
Illegal Bank	0	0		
Address Range	0	0		
ECC Error	0	0		

## DMA Requests:

Requests available: 768, Requests used: 0

## show pfe statistics error

<b>List of Syntax</b>	<a href="#">Syntax on page 1299</a> <a href="#">Syntax (EX Series Switch) on page 1299</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 1299</a> <a href="#">Syntax (PTX Series) on page 1299</a>
<b>Syntax</b>	show pfe statistics error
<b>Syntax (EX Series Switch)</b>	show pfe statistics error <fpc slot>
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	show pfe statistics error <fpc slot> <lcc number>
<b>Syntax (PTX Series)</b>	show pfe statistics error
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 12.2 for EX Series switches.
<b>Description</b>	Display Packet Forwarding Engine error statistics. For EX Series switches, the <b>show pfe statistics error</b> command is supported only on EX8200 switches.
<b>Options</b>	<p><b>none</b>—Display all Packet Forwarding Engine error statistics.</p> <p><b>fpc slot</b>—(TX Matrix and TX Matrix Plus routers, and EX Series switches only) (Optional) Display error statistics for a Flexible PIC Concentrator (FPC) slot.</p> <p>On a TX Matrix router, if you specify the number of a T640 router by using the <b>lcc number</b> option (the recommended method), replace <b>slot</b> with a value from 0 through 7. Otherwise, replace <b>slot</b> with a value from 0 through 31. On a TX Matrix Plus router, if you specify the number of a T1600 router by using the <b>lcc number</b> option (the recommended method), replace <b>slot</b> with a value from 0 through 7. Otherwise, replace <b>slot</b> with a value from 0 through 31. For example, the following commands have the same result:</p> <pre> user@host&gt; show pfe statistics error fpc 1 lcc 1 user@host&gt; show pfe statistics error fpc 9 </pre> <p><b>lcc number</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display error statistics for a specific T640 router (or line-card chassis) that is connected to a TX Matrix. On a TX Matrix Plus router, display error statistics for a specific router (or line-card chassis) that is connected to a TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level**

admin

**Related Documentation**

- [show pfe statistics traffic on page 1318](#)
- [show pfe statistics bridge](#)

**List of Sample Output**

[show pfe statistics error on page 1301](#)  
[show pfe statistics error \(PTX Series\) on page 1301](#)  
[show pfe statistics error lcc \(Routing Matrix\) on page 1302](#)  
[show pfe statistics error fpc on page 1303](#)  
[show pfe statistics error \(EX8200 Switch\) on page 1303](#)  
[show pfe statistics error \(EX9200 Switch\) on page 1304](#)  
[show pfe statistics error fpc 2 \(EX8200 Switch\) on page 1304](#)

**Output Fields**

[Table 50 on page 1300](#) lists the output fields for the **show pfe statistics error** command for EX8200 switches only. Output fields are listed in the approximate order in which they appear.

*Table 50: show pfe statistics error Output Fields*

Field Name	Field Description
Memory Type	Memory types for which parity and error correction code (ECC) errors are displayed: <ul style="list-style-type: none"> <li>• <b>Ingress DSU</b> — Ingress data service unit (DSU)</li> <li>• <b>Egress DSU</b> — Egress DSU</li> <li>• <b>CSU0</b> — Channel service unit (CSU) 0</li> <li>• <b>LPM0</b> — Longest prefix match (LPM) 0</li> </ul>
Parity errors	Number of parity error packets for different types of memory.
ECC errors	Number of ECC errors for different types of memory.

## Sample Output

### show pfe statistics error

```

user@host> show pfe statistics error
PFE error statistics:
      C chip    A1 chip    A2 chip
-----
      0          0          0  scan fail
      0          0        N/A  A1<->C FCS error
      0        N/A          0  A2<->C FCS error
      N/A          0          0  A<->B FCS error
B chip slots:
      0          1          2          3
-----
      0          0          0          0  scan fail
      0          0          0          0  A1->B FCS error
      0          0          0          0  A2->B FCS error
      0          0          0          0  correctable ECC error
      0          0          0          0  uncorrectable ECC error
      0          0          0          0  multiple ECC errors
      0          0          0          0  B->HS link error
      0          0          0          0  A1->Bm error
      0          0          0          0  A2->Bo error
      0          0          0          0  write buffer overflow
      0          0          0          0  Bo FIFO sync error
      0          0          0          0  Bo FIFO size error
      0          0          0          0  Bo stream stuck error
      0          0          0          0  Bo SRAM parity error
      4          5          6          7
-----
      0          0          0          0  scan fail
      0          0          0          0  A1->B FCS error
      0          0          0          0  A2->B FCS error
      0          0          0          0  correctable ECC error
      0          0          0          0  uncorrectable ECC error
      0          0          0          0  multiple ECC errors
      0          0          0          0  B->HS link error
      0          0          0          0  A1->Bm error
      0          0          0          0  A2->Bo error
      0          0          0          0  write buffer overflow
      0          0          0          0  Bo FIFO sync error
      0          0          0          0  Bo FIFO size error
      0          0          0          0  Bo stream stuck error
      0          0          0          0  Bo SRAM parity error

```

### show pfe statistics error (PTX Series)

```

user@host> show pfe statistics error
Slot 0

pic slot 0 port iq_disable_drop counts:
  port 0:          0;  port 1:          0;  port 2:          0;
  port 3:          0;  port 4:          0;  port 5:          0;  port 6:          0;
  port 7:          0;  port 8:          0;  port 9:          0;  port10:         0;
  port11:          0;  port12:         0;  port13:         0;  port14:         0;
  port15:          0;

```

```

    port16:          0;  port17:          0;  port18:          0;
    port19:          0;
    port20:          0;  port21:          0;  port22:          0;
    port23:          0;

    pic slot 1 port iq_disable_drop counts:
    port 0:          0;  port 1:          0;  port 2:          59150;
    port 3:          5797;
    port 4:          0;  port 5:          0;  port 6:          0;
    port 7:          0;
    port 8:          0;  port 9:          0;  port10:          0;
    port11:          0;
    port12:          0;  port13:          0;  port14:          0;
    port15:          0;
    port16:          0;  port17:          0;  port18:          0;
    port19:          0;
    port20:          0;  port21:          0;  port22:          0;
    port23:          0;

    CCL Errors:
    -----
    ***** No errors *****
    TLChip Errors:
    -----
    TLChip 0
    IGP up stream err: 0
    TLChip 1
    IGP up stream err: 0
    TLChip 2
    IGP up stream err: 0
    TLChip 3
    IGP up stream err: 0

```

### show pfe statistics error lcc (Routing Matrix)

```
user@host> show pfe statistics error lcc 2
```

Slot 0

LCHIP Error statistics:

LCHIP	0	1	2	3
Lin PIF:	0	0	0	0
Lin SRCTL:	0	0	0	0
Lout NLIF:	0	0	0	0
Lout DESRD:	0	0	0	0
Lout HDRF:	0	0	0	0

HSL Map for PFE complex 0 (Top):

Index	HST Name	----	Index	HSR Name	Errors
=====	=====		=====	=====	=====
***** No errors on this PFE *****					

HSL Map for PFE complex 1 (Bottom):

Index	HST Name	----	Index	HSR Name	Errors
=====	=====		=====	=====	=====



```

***** No errors on this PFE *****

Slot 1

LCHIP Error statistics:

LCHIP              0      1      2      3
-----
Lin PIF:           0      0      0      0
Lin SRCTL:          0      0      0      0
Lout NLIF:          0      0      0      0
Lout DESRD:         0      0      0      0
Lout HDRF:          0      0      0      0

HSL Map for PFE complex 1 (Bottom):

Index   HST Name                      ----> Index   HSR Name                      Errors
=====
***** No errors on this PFE *****

```

### show pfe statistics error fpc

```

user@host> show pfe statistics error fpc 1

Slot 1

ICHIP Error statistics:

ICHIP              0      1      2      3
-----
SPI4 Sink(Rx):     0      0      0      0
SPI4 Src(Tx):       0      0      0      0
Iwi SPI Total:      0      0      0      0
Iwi PIF:            0      0      0      0
Iwo DESRD:          0      0      0      0
Iwo HDRF:            0      0      0      0
Ipktwr Drops:       0      0      0      0
f_burst_fc Drops:   0      0      0      0
f_burst_nfc Drops:  0      0      0      0
f_rord_fc Drops:    0      0      0      0
f_rord_nfc Drops:   0      0      0      0
HSL2 Errors:
-----
***** No errors on this PFE *****

```

### show pfe statistics error (EX8200 Switch)

```

user@switch> show pfe statistics error
FPC: 0
PFE: 0
Memory type          Parity errors          ECC errors
-----
Ingress DSU           0                      0
Egress DSU            0                      0
CSU0                  0                      0
LPM0                  0                      0
LPM1                  0                      0
LPM2                  0                      0
CSU1                  0                      0

```

```

PFE: 1
Memory type      Parity errors    ECC errors
Ingress DSU      0                0
Egress DSU       0                0
CSU0             0                0
LPM0             0                0
LPM1             0                0
LPM2             0                0
CSU1             0                0

FPC: 1
PFE: 0
Memory type      Parity errors    ECC errors
Ingress DSU      0                0
Egress DSU       0                0
CSU0             0                0
LPM0             0                0
LPM1             0                0
LPM2             0                0
CSU1             0                0

PFE: 1
Memory type      Parity errors    ECC errors
Ingress DSU      0                0
Egress DSU       0                0
CSU0             0                0
LPM0             0                0
LPM1             0                0
LPM2             0                0
CSU1             0                0

```

#### show pfe statistics error (EX9200 Switch)

```

user@switch> show pfe statistics error
Slot 3
HSL2 Errors:
***** No errors on this PFE *****
LU Chip 0
LUCHIP(0) ISTAT PIO Errors:
None recorded.
LU Chip 1
LUCHIP(4) ISTAT PIO Errors:
None recorded.
LU Chip 2
LUCHIP(8) ISTAT PIO Errors:
None recorded.
LU Chip 3
LUCHIP(12) ISTAT PIO Errors:
None recorded.

```

#### show pfe statistics error fpc 2 (EX8200 Switch)

```

user@switch> show pfe statistics error fpc 2
FPC: 2
PFE: 0
Memory type      Parity errors    ECC errors
Ingress DSU      0                0
Egress DSU       0                0
CSU0             0                0
LPM0             0                0
LPM1             0                0
LPM2             0                0

```

CSU1	0	0
PFE: 1		
Memory type	Parity errors	ECC errors
Ingress DSU	0	0
Egress DSU	0	0
CSU0	0	0
LPM0	0	0
LPM1	0	0
LPM2	0	0
CSU1	0	0

## show pfe statistics ip

---

**List of Syntax**    [Syntax on page 1306](#)  
                         [Syntax \(TX Matrix and TX Matrix Plus Routers\) on page 1306](#)

**Syntax**    `show pfe statistics ip`  
                 `<icmp | options>`

**Syntax (TX Matrix and TX Matrix Plus Routers)**    `show pfe statistics ip`  
   `<fpc slot>`  
   `<icmp | options>`  
   `<lcc number>`

**Release Information**    Command introduced before Junos OS Release 7.4.  
                                 Command introduced in Junos OS Release 9.0 for EX Series switches.

**Description**    Display IPv4 Packet Forwarding Engine statistics.

**Options**    **none**—Display all IPv4 Packet Forward Engine statistics.

**fpc slot**—(TX Matrix and TX Matrix Plus routers only) (Optional) Display statistics for a Flexible PIC Concentrator (FPC) slot.

- On a TX Matrix router, if you specify the number of a T640 router by using the **lcc number** option (the recommended method), replace **slot** with a value from **0** through **7**. Otherwise, replace **slot** with a value from **0** through **31**.
- On a TX Matrix Plus router, if you specify the number of a T1600 router by using the **lcc number** option (the recommended method), replace **slot** with a value from **0** through **7**. Otherwise, replace **slot** with a value from **0** through **31**.
- On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 router by using the **lcc number** option (the recommended method), replace **slot** with a value from **0** through **7**. Otherwise, replace **slot** with a value from **0** through **63**.

For example, the following commands have the same result:

```
user@host> show pfe statistics ip fpc 1 lcc 1
user@host> show pfe statistics ip fpc 9
```

**icmp**—(Optional) Display Packet Forwarding Engine IP ICMP statistics.

**lcc number**—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display error statistics for a specific T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display error statistics for a specified router (or line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**options**—(Optional) Display Packet Forwarding Engine IP options statistics.



**NOTE:** On M and T series routers, firewall filters cannot count **ip-options** packets on a per option type and per interface basis. A limited work around for this limitation is to use this **show pfe statistics ip options** command.

<b>Required Privilege Level</b>	admin
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">Routing Matrix with TXP-T1600 Configuration on page 11</a></li> <li>• <a href="#">Routing Matrix with TXP-T1600-3D Configuration on page 14</a></li> <li>• <a href="#">Routing Matrix with TXP-T4000-3D Configuration on page 18</a></li> <li>• <a href="#">Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show pfe statistics ip icmp on page 1308</a> <a href="#">show pfe statistics ip options on page 1309</a>
<b>Output Fields</b>	<a href="#">Table 51 on page 1308</a> lists the output fields for the <b>show pfe statistics ip</b> command. Output fields are listed in the approximate order in which they appear.

Table 51: show pfe statistics ip Output Fields

Field Name	Field Description
ICMP Statistics	<p>ICMP statistics, including the following:</p> <ul style="list-style-type: none"> <li><b>requests</b>—Number of ICMP notifications sent to the PFE. If a throttler is configured, the number of notifications might not reflect all requests made. (See the <b>throttled icmps</b> field description.)</li> <li><b>network unreachable</b>—When route lookups fail, ICMP packets are sent to the source. These packets are ICMP TypeDestination Unreachable (3) and ICMP Code=Network Unreachable (0).</li> <li><b>ttl expired</b>—Number of notifications processed as a result of time-to-live (TTL) expiration packets.</li> <li><b>ttl captured</b>—Number of TTL expired packets sent by PFE interfaces to the Routing Engine.</li> <li><b>redirects</b>—Number of ICMP errors sent with Type=Redirect (5).</li> <li><b>mtu exceeded</b>—Number of ICMP errors sent with Type=Source Quench (4).</li> <li><b>icmp/option handoffs</b>—Number of packets that the PFE hardware requests the PFE software to process.</li> </ul>
ICMP errors	<p>ICMP errors, including the following:</p> <ul style="list-style-type: none"> <li><b>unknown unreachable</b>—Unknown code (greater than 16) found for an unknown unreachable type ICMP error.</li> <li><b>unsupported ICMP type</b>—Any ICMP type other than UNREACH, REDIRECT, TIME_EXCEED, and PARAM_PROB.</li> <li><b>unprocessed redirects</b>—When trying to find the neighbor to send redirects to, the PFE could not find the next-hop information.</li> <li><b>invalid ICMP type</b>—Any ICMP type other than UNREACH, REDIRECT, TIME_EXCEED, and PARAM_PROB.</li> <li><b>invalid protocol</b>—An incorrect protocol was detected by the ICMP processor.</li> <li><b>bad input interface ifl</b>—The PFE software cannot map the interface index supplied by the chips to a proper data structure in the microkernel.</li> <li><b>throttled icmps</b>—Number of requests dropped because of rate limiting by the PFE.</li> <li><b>runts</b>—Number of packets for which the IP header length is less than the minimum length that is supported.</li> </ul>
ICMP Discards	<p>ICMP discard statistics, including the following:</p> <ul style="list-style-type: none"> <li><b>multicasts</b>—ICMP packets are not sent for link-layer multicast packets. These are counted as invalid source addresses (not a unicast address or all zeros).</li> <li><b>bad source addresses</b>—ICMP packets were received from an invalid source address (not a unicast address or all zeros).</li> <li><b>bad dest addresses</b>—ICMP packets were sent to an invalid destination address (not a unicast address or all zeros).</li> <li><b>IP fragments</b>—ICMP responses are sent only for the first fragments. The rest do not receive a response. This is the count for ICMP requests that receive no response.</li> <li><b>ICMP errors</b>—Number of ICMP error packets.</li> </ul>

## Sample Output

### show pfe statistics ip icmp

```

user@host> show pfe statistics ip icmp
ICMP Statistics:
    0 requests
    0 network unreachable

```

```

0 ttl expired
0 ttl captured
0 redirects
0 mtu exceeded
0 icmp/option handoffs
ICMP Errors:
0 unknown unreachable
0 unsupported ICMP type
0 unprocessed redirects
0 invalid ICMP type
0 invalid protocol
0 bad input interface
0 throttled icmps
0 runts
ICMP Discards:
0 multicasts
0 bad source addresses
0 bad dest addresses
0 IP fragments
0 ICMP errors

```

#### show pfe statistics ip options

```

user@host> show pfe statistics ip options
IP Option Values:
  LSRR/SSRR forwarding enabled
IP Option Statistics:
  0 loose source routes
  0 strict source routes
  0 record routes
  889382 router alerts
  0 other options
IP Option Errors:
  0 runts
  2 bad versions
  0 runt header lengths
  0 giant header lengths
  0 null frames
  0 bad option lengths
  0 duplicate options
  0 bad option pointers
  0 source route frames dropped
  188 frames queued
  1126 frames dropped

```

## show pfe statistics ip6

---

**List of Syntax**    [Syntax on page 1310](#)  
                         [Syntax \(TX Matrix and TX Matrix Plus Routers\) on page 1310](#)

**Syntax**    `show pfe statistics ip6`  
                 `<icmp>`

**Syntax (TX Matrix and TX Matrix Plus Routers)**    `show pfe statistics ip6`  
   `<fpc slot>`  
   `<icmp>`  
   `< lcc number>`

**Release Information**    Command introduced before Junos OS Release 7.4.  
                                 Command introduced in Junos OS Release 9.0 for EX Series switches.

**Description**    Display Packet Forwarding Engine IPv6 statistics.

**Options**    **none**—Display all Packet Forwarding Engine IPv6 statistics.

**fpc slot**—(TX Matrix and TX Matrix Plus router only) (Optional) Display statistics for a Flexible PIC Concentrator slot.

- On a TX Matrix router, if you specify the number of a T640 router by using the **lcc number** option (the recommended method), replace **slot** with a value from **0** through **7**. Otherwise, replace **slot** with a value from **0** through **31**.
- On a TX Matrix Plus router, if you specify the number of a T1600 router by using the **lcc number** option (the recommended method), replace **slot** with a value from **0** through **7**. Otherwise, replace **slot** with a value from **0** through **31**.
- On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 router by using the **lcc number** option (the recommended method), replace **slot** with a value from **0** through **7**. Otherwise, replace **slot** with a value from **0** through **63**.

For example, the following commands have the same result:

```
user@host> show pfe statistics ip6 fpc 1 lcc 1
user@host> show pfe statistics ip6 fpc 9
```

**icmp**—(Optional) Display Packet Forwarding Engine IP ICMP statistics.

**lcc number**—(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix router, display statistics for a specific T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display statistics for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.



Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level** admin

**Related Documentation**

- [Routing Matrix with TXP-T1600 Configuration on page 11](#)
- [Routing Matrix with TXP-T1600-3D Configuration on page 14](#)
- [Routing Matrix with TXP-T4000-3D Configuration on page 18](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)

**List of Sample Output** [show pfe statistics ip6 icmp on page 1312](#)  
[show pfe statistics ip6 lcc on page 1313](#)

**Output Fields** [Table 52 on page 1311](#) lists the output fields for the **show pfe statistics ip6** command. Output fields are listed in the approximate order in which they appear.

*Table 52: show pfe statistics ip6 Output Fields*

Field Name	Field Description
ICMP6 Statistics	<p>ICMP6 statistics, including the following:</p> <ul style="list-style-type: none"> <li>• <b>requests</b>—Number of ICMP notifications sent to the PFE. If a throttler is configured, the number of notifications might not reflect all requests made. (See the <b>throttled icmps</b> field description.)</li> <li>• <b>network unreachable</b>—When route lookups fail, ICMP packets are sent to the source. These packets are ICMP Type= Destination Unreachable (3) and ICMP Code= Network Unreachable (0).</li> <li>• <b>ttl expired</b>—Number of notifications processed as a result of time-to-live (TTL) expiration packets.</li> <li>• <b>ttl captured</b>—Number of TTL expired packets sent by PFE interfaces to the Routing Engine.</li> <li>• <b>redirects</b>—Number of ICMP errors sent with Type=Redirect (5).</li> <li>• <b>mtu exceeded</b>—Number of ICMP errors sent with Type=Source Quench (4).</li> <li>• <b>icmp/option handoffs</b>—Number of packets that the PFE hardware requests the PFE software to process.</li> </ul>

Table 52: show pfe statistics ip6 Output Fields (continued)

Field Name	Field Description
ICMP6 errors	<p>ICMP6 errors, including the following:</p> <ul style="list-style-type: none"> <li>• <b>unknown unreachable</b>—Unknown code (greater than 16) found for an unknown unreachable type ICMP error.</li> <li>• <b>unsupported ICMP type</b>—Any ICMP type other than UNREACH, REDIRECT, TIME_EXCEED, and PARAM_PROB.</li> <li>• <b>unprocessed redirects</b>—When trying to find the neighbor to send redirects to, the PFE could not find the next-hop information.</li> <li>• <b>invalid ICMP type</b>—Any ICMP type other than UNREACH, REDIRECT, TIME_EXCEED, and PARAM_PROB.</li> <li>• <b>invalid protocol</b>—An incorrect protocol was detected by the ICMP processor.</li> <li>• <b>bad input interface if1</b>—The PFE software cannot map the interface index supplied by the chips to a proper data structure in the microkernel.</li> <li>• <b>throttled icmps</b>—Number of requests dropped because of rate limiting by the PFE.</li> <li>• <b>runts</b>—Number of packets for which the IP header length is less than the minimum length that is supported.</li> </ul>
ICMP6 Discards	<p>ICMP6 discard statistics, including the following:</p> <ul style="list-style-type: none"> <li>• <b>multicasts</b>—ICMP packets are not sent for link-layer multicast packets. These are counted as invalid source addresses (not a unicast address or all zeros).</li> <li>• <b>bad source addresses</b>—ICMP packets were received from an invalid source address (not a unicast address or all zeros).</li> <li>• <b>bad dest addresses</b>—ICMP packets were sent to an invalid destination address (not a unicast address or all zeros).</li> <li>• <b>IP fragments</b>—ICMP responses are sent only for the first fragments. The rest do not receive a response. This is the count for ICMP requests that receive no response.</li> <li>• <b>ICMP errors</b>—Number of ICMP error packets.</li> </ul>

## Sample Output

### show pfe statistics ip6 icmp

```

user@host> show pfe statistics ip6 icmp
ICMP6 Statistics:
    0 requests
    0 network unreachable
    0 ttl expired
    0 ttl captured
    0 redirects
    0 mtu exceeded
    0 icmp/option handoffs
ICMP6 Errors:
    0 unknown unreachable
    0 unsupported ICMP type
    0 unprocessed redirects
    0 invalid ICMP type
    0 invalid protocol
    0 bad input interface
    0 throttled icmps
    0 runts
ICMP6 Discards:

```

```
0 multicasts
0 bad source addresses
0 bad dest addresses
0 IP fragments
0 ICMP errors
```

### show pfe statistics ip6 lcc

```
user@host> show pfe statistics ip6 lcc 0 fpc 0
sfc0-re0:
```

#### ----- ICMP Statistics:

```
0 requests
0 network unreachable
0 ttl expired
0 ttl captured
0 redirects
0 mtu exceeded
0 icmp/option handoffs
```

#### ICMP Errors:

```
0 unknown unreachable
0 unsupported ICMP type
0 unprocessed redirects
0 invalid ICMP type
0 invalid protocol
0 bad input interface
0 throttled icmps
0 runts
```

#### ICMP Discards:

```
0 multicasts
0 bad source addresses
0 bad dest addresses
0 IP fragments
0 ICMP errors
```

show pfe statistics notification

<b>List of Syntax</b>	<a href="#">Syntax on page 1314</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Routers) on page 1314</a>
<b>Syntax</b>	show pfe statistics notification
<b>Syntax (TX Matrix and TX Matrix Plus Routers)</b>	show pfe statistics notification <fpc slot> <lcc number>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display Packet Forwarding Engine notification statistics.
<b>Options</b>	<p><b>none</b>—(TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display statistics about the Packet Forwarding Engine notification on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display statistics about the Packet Forwarding Engine notification on the TX Matrix Plus router and its attached routers.</p> <p><b>fpc slot</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) Display notification for a Flexible PIC Concentrator (FPC) slot.:</p> <ul style="list-style-type: none"> <li>On a TX Matrix router, if you specify the number of a T640 router by using the <b>lcc number</b> option (the recommended method), replace <b>slot</b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b>slot</b> with a value from <b>0</b> through <b>31</b>.</li> <li>On a TX Matrix Plus router, if you specify the number of a T1600 router by using the <b>lcc number</b> option (the recommended method), replace <b>slot</b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b>slot</b> with a value from <b>0</b> through <b>31</b>.</li> <li>On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 router by using the <b>lcc number</b> option (the recommended method), replace <b>slot</b> with a value from <b>0</b> through <b>7</b>. Otherwise, replace <b>slot</b> with a value from <b>0</b> through <b>63</b>.</li> </ul> <p>For example, the following commands have the same result:</p> <pre> user@host&gt; show pfe statistics notification fpc 1 lcc 1 user@host&gt; show pfe statistics notification fpc 9 </pre> <p><b>lcc number</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display notification for a specific T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display notification for a specific router (or line-card chassis) that is connected to a TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**Required Privilege Level** admin

**Related Documentation**

- [Routing Matrix with TXP-T1600 Configuration on page 11](#)
- [Routing Matrix with TXP-T1600-3D Configuration on page 14](#)
- [Routing Matrix with TXP-T4000-3D Configuration on page 18](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)

**List of Sample Output** [show pfe statistics notification on page 1316](#)  
[show pfe statistics notification lcc on page 1316](#)

**Output Fields** [Table 53 on page 1315](#) lists the output fields for the **show pfe statistics notification** command. Output fields are listed in the approximate order in which they appear.

*Table 53: show pfe statistics notification Output Fields*

Field Name	Field Description
PFE Notification statistics	<p>Information about Packet Forwarding Engine notification statistics:</p> <ul style="list-style-type: none"> <li>• <b>parsed</b>—Number of notifications parsed. <ul style="list-style-type: none"> <li>• <b>aged</b>—Number of notifications aged.</li> <li>• <b>corrupt</b>—Number of notifications corrupted.</li> <li>• <b>illegal</b>—Number of notifications illegal.</li> <li>• <b>sample</b>—Number of notifications sampled.</li> <li>• <b>giants</b>—Number of notifications giants.</li> <li>• <b>transit options/ttl-exceeded</b>—Number of notifications with transit options/ttl-exceeded.</li> </ul> </li> </ul>

Table 53: show pfe statistics notification Output Fields (continued)

Field Name	Field Description
PFE Notification Type statistics	<p>Information about Packet Forwarding Engine notification statistics:</p> <ul style="list-style-type: none"> <li>• <b>Parsed</b>—Notification type parsed. <ul style="list-style-type: none"> <li>• <b>Input</b>—Notification type input.</li> <li>• <b>Failed</b>—Notification type failed.</li> <li>• <b>Ignored</b>—Notification type ignored.</li> <li>• <b>Illegal</b>—Notification type illegal.</li> <li>• <b>Unclass</b>—Notification type unclass.</li> <li>• <b>Option</b>—Notification type option.</li> <li>• <b>Next-Hop</b>—Notification type next-hop.</li> <li>• <b>Discard</b>—Notification type discard.</li> <li>• <b>Sample</b>—Notification type sample.</li> <li>• <b>Redirect</b>—Notification type redirect.</li> <li>• <b>DontFrag</b>—Notification type DontFrag.</li> <li>• <b>CfDF</b>—Notification type CFDF.</li> </ul> </li> </ul>

## Sample Output

### show pfe statistics notification

```

user@host> show pfe statistics notification
PFE Notification statistics:
  2453 parsed
    0 aged
    0 corrupt
    0 illegal
    0 sample
    0 giants
    0 transit options/ttl-exceeded

PFE Notification Type statistics:
Parsed      Input      Failed      Ignored
Illegal      0           0           0           0
Unclass     1733        1733        0           0
Option       0           0           0           0
Next-Hop     720         720         0           0
Discard       0           0           0           0
Sample       0           0           0           0
Redirect     0           0           0           0
DontFrag     0           0           0           0
CfDF         0           0           0           0

```

### show pfe statistics notification lcc

```

user@host> show pfe statistics notification lcc 0

Slot 0

PFE Notification statistics:
  1252 parsed
    0 aged

```

```

0 corrupt
0 illegal
0 sample
0 giants
0 transit options/ttl-exceeded
0 transit options/ttl-exceeded errors
0 svc options sent to ASP
0 svc options sent to RE
0 post svc options sent out
121 options or ttl expired (not RE-destined)

```

PFE Notification Type statistics:

	Parsed	Input	Failed	Ignored
Illegal	0	0	0	0
Unclass	695	695	0	0
Option	30	30	0	0
Next-Hop	527	527	0	0
Discard	0	0	0	0
Sample	0	0	0	0
Redirect	0	0	0	0
DontFrag	0	0	0	0
CfDF	0	0	0	0
Poison	0	0	0	0

Slot 1

PFE Notification statistics:

```

0 parsed
0 aged

```

...

## show pfe statistics traffic

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1318</a> <a href="#">Syntax (EX Series Switches) on page 1318</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Router) on page 1318</a> <a href="#">Syntax (MX Series Routers) on page 1318</a> <a href="#">Syntax (PTX Series Routers) on page 1318</a>
<b>Syntax</b>	<code>show pfe statistics traffic</code> <code>&lt;detail&gt;</code> <code>&lt;fpc slot&gt;</code>
<b>Syntax (EX Series Switches)</b>	<code>show pfe statistics traffic</code> <code>&lt;voq &lt;fpc slot&gt;&gt;</code>
<b>Syntax (TX Matrix and TX Matrix Plus Router)</b>	<code>show pfe statistics traffic</code> <code>&lt;fpc slot&gt;</code> <code>&lt; lcc number&gt;</code>
<b>Syntax (MX Series Routers)</b>	<code>show pfe statistics traffic</code> <code>&lt;detail&gt;</code> <code>&lt;fpc slot&gt;</code> <code>&lt;pfe id&gt;</code>
<b>Syntax (PTX Series Routers)</b>	<code>show pfe statistics traffic</code> <code>&lt;fpc slot&gt;</code> <code>&lt;pfe id&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 12.2 for EX Series switches.
<b>Description</b>	Display Packet Forwarding Engine traffic statistics.





**NOTE:** If a PTX Series Packet Transport Router deployed as provider edge (PE) router or a QFX10000 switch is configured for ultimate-hop popping, the packets undergo label de-encapsulation before they are forwarded to the destination. As a result, the output of the `show pfe statistics traffic` command shows extra packets. Because the packets undergoing UHP need to be looped, the output of the `show pfe statistics traffic` command shows extra packets.

Also, packet replication and multicast lookups while forwarding multicast traffic can cause packets to recirculate through PFEs multiple times. As a result, displayed values for packet counts from the `show pfe statistics traffic` command might also show higher numbers than expected for Input packets and Output packets fields when multicast traffic is present. When Multicast-only Fast Reroute (MoFRR) is enabled, this behavior might be even more noticeable because MoFRR maintains primary and backup multicast streams. (See *Understanding Multicast-Only Fast Reroute* or *Understanding Multicast-Only Fast Reroute on Switches* for details on MoFRR.)

**Options** **none**—Display statistics about PFE traffic. On the TX Matrix router, display statistics about PFE traffic for all its attached T640 routers. On the TX Matrix Plus router, display statistics about PFE traffic for all its attached routers

**detail**—(MX Series routers only) (Optional) Display detailed statistics at the PFE level.

**fpc slot**—(T Series, M320 routers, MX Series routers, and PTX Series routers only) (Optional) Display statistics for a Flexible PIC Concentrator (FPC) slot.

- On a TX Matrix router, if you specify the number of a T640 router by using the `lcc number` option (the recommended method), replace **slot** with a value from 0 through 7. Otherwise, replace **slot** with a value from 0 through 31.
- On a TX Matrix Plus router, if you specify the number of a T1600 router by using the `lcc number` option (the recommended method), replace **slot** with a value from 0 through 7. Otherwise, replace **slot** with a value from 0 through 31.
- On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 router by using the `lcc number` option (the recommended method), replace **slot** with a value from 0 through 7. Otherwise, replace **slot** with a value from 0 through 63.

For example, the following commands have the same result:

```
user@host> show pfe statistics traffic fpc 1 lcc 1
user@host> show pfe statistics traffic fpc 9
```

**pfe number**—(PTX Series and MX Series routers only) (Optional) On a router, display statistics for a specific packet forwarding engine.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display statistics for a specific T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display statistics for a specific router (or line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**voq <fpc slot>**—(EX8200 switches and EX8200 Virtual Chassis only) (Optional) Display statistics for virtual output queue (VOQ) drops for all FPC slots or for a particular FPC slot. See *EX8208 Switch Hardware and CLI Terminology Mapping* or *EX8216 Switch Hardware and CLI Terminology Mapping*.

**Required Privilege Level**

admin

**Related Documentation**

- [show pfe statistics bridge](#)
- [show pfe statistics error on page 1299](#)
- [Routing Matrix with TXP-T1600 Configuration on page 11](#)
- [Routing Matrix with TXP-T1600-3D Configuration on page 14](#)
- [Routing Matrix with TXP-T4000-3D Configuration on page 18](#)
- [Routing Matrix with a TXP-Mixed-LCC-3D Configuration on page 22](#)

**List of Sample Output**

[show pfe statistics traffic on page 1322](#)  
[show pfe statistics traffic detail on page 1323](#)  
[show pfe statistics traffic \(QFX Series\) on page 1324](#)  
[show pfe statistics traffic \(PTX Series\) on page 1325](#)  
[show pfe statistics traffic \(EX9200 Switch\) on page 1325](#)  
[show pfe statistics traffic voq \(EX8200 Switch\) on page 1326](#)  
[show pfe statistics traffic voq \(EX8200 Virtual Chassis\) on page 1327](#)  
[show pfe statistics traffic voq fpc 2 \(EX8200 Switch and EX8200 Virtual Chassis\) on page 1328](#)

**Output Fields**

[Table 54 on page 1321](#) lists the output fields for the **show pfe statistics traffic** command. Output fields are listed in the approximate order in which they appear.

Table 54: show pfe statistics traffic Output Fields

Field Name	Field Description
<b>Packet Forwarding Engine Details</b>	Information about individual Packet Forwarding Engine.
<b>Packet Forwarding Engine Traffic statistics</b>	Information about Packet Forwarding Engine traffic: <ul style="list-style-type: none"> <li>• <b>Input Packets</b>—Number and rate of incoming packets.</li> <li>• <b>Output Packets</b>—Number and rate of outgoing packets.</li> <li>• <b>Fabric Input packets</b>—(MX Series routers only) Number and rate of incoming fabric packets.</li> <li>• <b>Fabric Output packets</b>—(MX Series routers only) Number and rate of outgoing fabric packets.</li> </ul>
<b>Packet Forwarding Engine Local Traffic statistics</b>	Information about Packet Forwarding Engine local traffic: <ul style="list-style-type: none"> <li>• <b>Local packets input</b>—Number of incoming packets from the local network.</li> <li>• <b>Local packets output</b>—Number of outgoing packets dispatched to a host in the local network.</li> <li>• <b>Software input high drops</b>—Number of incoming software packets of high-priority, dropped during transmission.</li> <li>• <b>Software input medium drops</b>—Number of incoming software packets of medium-priority, dropped during transmission.</li> <li>• <b>Software input low drops</b>—Number of incoming software packets of low-priority, dropped during transmission.</li> <li>• <b>Software output drops</b>—Number of outgoing software packets that were dropped during transmission.</li> <li>• <b>Hardware input drops</b>—Number of incoming hardware packets that were dropped during transmission.</li> </ul>
<b>Packet Forwarding Engine Local Protocol statistics</b>	Information about the Packet Forwarding Engine Local Protocol: <ul style="list-style-type: none"> <li>• <b>HDLC keepalives</b>—Number of HDLC keepalive packets.</li> <li>• <b>ATM OAM</b>—Number of Asynchronous Transfer Mode (ATM) Operation, Administration, and Maintenance (OAM) packets.</li> <li>• <b>Frame Relay LMI</b>—Number of Frame Relay Local Management Interface (LMI) packets.</li> <li>• <b>PPP LCP/NCP</b>—Number of Point-to-Point Protocol (PPP) Link Control Protocol (LCP) or Network Control Protocol (NCP) packets.</li> <li>• <b>OSPF hello</b>—Number of Open Shortest Path First (OSPF) hello packets.</li> <li>• <b>OSPF3 hello</b>—Number of Open Shortest Path First version 3 (OSPFv3) hello packets.</li> <li>• <b>RSVP hello</b>—Number of Reservation Setup Protocol (RSVP) hello packets.</li> <li>• <b>LDP hello</b>—Number of Label Distribution Protocol (LDP) hello packets.</li> <li>• <b>BFD</b>—Number of Bidirectional Forwarding Detection Protocol (BFD) hello packets.</li> <li>• <b>IS-IS IIH</b>—Number of Intermediate System-to-Intermediate System Hello (IIH) packets.</li> <li>• <b>LACP</b>—Number of Link Aggregation Control Protocol (LACP) packets.</li> <li>• <b>ARP</b>—Number of Address Resolution Protocol (ARP) packets.</li> <li>• <b>ETHER OAM</b>—Number of Ethernet OAM packets.</li> <li>• <b>Unknown</b>—Number of unknown packets not matching any of the packet types listed above.</li> </ul>

Table 54: show pfe statistics traffic Output Fields (continued)

Field Name	Field Description
Packet Forwarding Engine Hardware Discard statistics	<p>Information about Packet Forwarding Engine hardware discards:</p> <ul style="list-style-type: none"> <li><b>Timeout</b>—Number of packets discarded because of timeouts.</li> <li><b>Truncated key</b>—Number of packets discarded because of truncated keys.</li> <li><b>Bits to test</b>—Number of bits to test.</li> <li><b>Data error</b>—Number of packets discarded because of data errors.</li> <li><b>TCP header length error</b>—Number of packets discarded because of an illegal TCP header length.</li> </ul> <p><b>NOTE:</b> The <b>TCP header length error</b> field is only supported by QFX 10000 switches and PTX Series routers.</p> <ul style="list-style-type: none"> <li><b>Stack underflow</b>—Number of packets discarded because of stack underflows.</li> <li><b>Stack overflow</b>—Number of packets discarded because of stack overflows.</li> <li><b>Normal discard</b>—Number of packets discarded because of discard routes. Packets are dropped silently without being further processed by the host. Normal discards are reported when packets match a firewall filter term that has an action of discard or when the final result of the route look-up is a next hop of discard.</li> <li><b>Extended discard</b>—Number of packets discarded because of illegal next hops. Packets are dropped silently but are also sent to the Routing Engine for further processing. Extended discards are reported when packets match a firewall filter term that has an action of discard and an additional action that requires Routing Engine processing, such as log, count, sample, or syslog.</li> <li><b>Invalid interface</b>—Number of packets discarded because of invalid incoming interfaces.</li> <li><b>Info cell drops</b>—Number of information cell drops.</li> <li><b>Fabric drops</b>—Number of fabric drops.</li> </ul>
VOQ unit	(EX8200 Switch and EX8200 Virtual Chassis) Information about VOQ. A Packet Forwarding Engine supports two VOQ counter sets.
Tail drops	(EX8200 Switch and EX8200 Virtual Chassis) Number of descriptors or buffers dropped by the VOQ to avoid tail-drop congestion.
Drops due to ECC error	(EX8200 Switch and EX8200 Virtual Chassis) Number of descriptors or buffers dropped by the VOQ because of error correction code (ECC) failure.
Drops due to device disabled	(EX8200 Switch and EX8200 Virtual Chassis) Number of descriptors or buffers dropped by the VOQ because of device-enabled filtering.
Packet forwarding engine traffic statistics	For every CPU PIC, a PC interface is created which is a PIC peer interface. The PC interface is used to fetch the boot string from the routing engine while the PIC boot up in an idle situation is used to send keep alive or health idle situation status which is treated as control traffic.

## Sample Output

### show pfe statistics traffic

```

user@host> show pfe statistics traffic
Packet Forwarding Engine traffic statistics:
  Input  packets:          102682          5 pps
  Output packets:           58033          4 pps
  Fabric Input packets:           0          0 pps

```

```

    Fabric Output packets:          0          0 pps
Packet Forwarding Engine local traffic statistics:
  Local packets input              :          44628
  Local packets output             :          46146
  Software input control plane drops :           0
  Software input high drops        :           0
  Software input medium drops      :           0
  Software input low drops         :           0
  Software output drops            :           0
  Hardware input drops             :           0
Packet Forwarding Engine local protocol statistics:
  HDLC keepalives                  :           0
  ATM OAM                          :           0
  Frame Relay LMI                  :           0
  PPP LCP/NCP                      :          5597
  OSPF hello                       :          3195
  OSPF3 hello                      :           0
  RSVP hello                      :           0
  LDP hello                       :          7478
  BFD                             :           0
  IS-IS IIH                       :           0
  LACP                            :           0
  ARP                             :           0
  ETHER OAM                       :           0
  Unknown                         :           8
Packet Forwarding Engine hardware discard statistics:
  Timeout                         :           0
  Truncated key                   :           0
  Bits to test                    :           0
  Data error                      :           0
  TCP header length error         :           0
  Stack underflow                 :           0
  Stack overflow                  :           0
  Normal discard                  :           0
  Extended discard                :           0
  Invalid interface               :           0
  Info cell drops                 :           39
  Fabric drops                    :           0
Packet Forwarding Engine Input IPv4 Header Checksum Error and Output MTU Error
statistics:
  Input Checksum                  :           0
  Output MTU                      :           0

```

### show pfe statistics traffic detail

```

user@host> show pfe statistics traffic detail fpc 4 pfe 0
Packet Forwarding Engine Details:
  fpc:          4
  pfe:          0
Packet Forwarding Engine traffic statistics:
  Input  packets:          34          2 pps
  Output packets:          34          2 pps
  Fabric Input packets:     0          0 pps
  Fabric Output packets:    0          0 pps
Packet Forwarding Engine hardware discard statistics:
  Timeout                         :           0
  Truncated key                   :           0
  Bits to test                    :           0
  Data error                      :           0
  TCP header length error         :           0
  Stack underflow                 :           0

```

```

Stack overflow           :           0
Normal discard          :          93
Extended discard        :           0
Invalid interface       :           0
Info cell drops         :           0
Fabric drops            :           0
Packet Forwarding Engine Input IPv4 Header Checksum Error and Output MTU Error
statistics:
Input Checksum          :           0
Output MTU              :           0

```

### show pfe statistics traffic (QFX Series)

```
user@switch> show pfe statistics traffic
```

```

Packet Forwarding Engine traffic statistics:
Input packets:          32506084318          6755499 pps
Output packets:         24379384332          5065669 pps
Fabric Input :           0                  0 pps
Fabric Output :          0                  0 pps
Packet Forwarding Engine local traffic statistics:
Local packets input      :                  1
Local packets output     :                  4
Software input control plane drops :          0
Software input high drops :          0
Software input medium drops :          0
Software input low drops :          0
Software output drops    :          0
Hardware input drops     :          0
Packet Forwarding Engine local protocol statistics:
HDLC keepalives         :          0
ATM OAM                  :          0
Frame Relay LMI         :          0
PPP LCP/NCP             :          0
OSPF hello              :          0
OSPF3 hello             :          0
RSVP hello              :          0
LDP hello               :          0
BFD                     :          0
IS-IS IIH               :          0
LACP                    :          0
ARP                     :          1
ETHER OAM               :          0
Unknown                 :          0
Packet Forwarding Engine hardware discard statistics:
Timeout                 :          0
Truncated key           :          0
Bits to test            :          0
Data error              :          0
TCP header length error :          0
Stack underflow         :          0
Stack overflow          :          0
Normal discard          :          0
Extended discard        :          12189898299
Invalid interface       :          0
Info cell drops         :          0
Fabric drops            :          0
Packet Forwarding Engine Input IPv4 Header Checksum Error and Output MTU Error
statistics:
Input Checksum          :          0
Output MTU              :          0

```

**show pfe statistics traffic (PTX Series)**

In the example below, packets that are received from the core links at the rate of 77929 pps are forwarded to another FPC which is hosting CE facing links. Of these packets, 40007 pps that need to undergo UHP are looped back for label de-capsulation. Both input and output packet counters and pps counters get skewed because of this.

```
user@switch> show pfe statistics traffic fpc 12
```

```
Packet Forwarding Engine traffic statistics:
  Input  packets:      158515931      117936 pps
  Output packets:      52849412      40007 pps
Packet Forwarding Engine local traffic statistics:
  Local packets input      :      7752
  Local packets output     :      7784
  Software input control plane drops :      0
  Software input high drops :      0
  Software input medium drops :      0
  Software input low drops  :      0
  Software output drops     :      0
  Hardware input drops      :      0
Packet Forwarding Engine local protocol statistics:
  HDLC keepalives          :      0
  ATM OAM                   :      0
  Frame Relay LMI          :      0
  PPP LCP/NCP              :      0
  OSPF hello                :      776
  OSPF3 hello              :      0
  RSVP hello               :      754
  LDP hello                 :     1652
  BFD                       :      0
  IS-IS IIH                 :      0
  LACP                      :      0
  ARP                      :      6
  ETHER OAM                 :      0
  Unknown                   :      0
Packet Forwarding Engine hardware discard statistics:
  Timeout                   :      0
  Truncated key             :      0
  Bits to test              :      0
  Data error                :      0
  TCP header length error   :      0
  Stack underflow           :      0
  Stack overflow            :      0
  Normal discard            :      0
  Extended discard          :      0
  Invalid interface         :      0
  Info cell drops           :      0
  Fabric drops              :      0
Packet Forwarding Engine Input IPv4 Header Checksum Error and Output MTU Error
statistics:
  Input Checksum            :      0
  Output MTU                :      0
```

**show pfe statistics traffic (EX9200 Switch)**

```
user@switch> show pfe statistics traffic
```

```
Packet Forwarding Engine traffic statistics:
  Input  packets:      8014      0 pps
```

```

Output packets:                124                0 pps

Packet Forwarding Engine local traffic statistics:
  Local packets input           :                0
  Local packets output          :               124
  Software input control plane drops :            0
  Software input high drops      :            0
  Software input medium drops    :            0
  Software input low drops       :            0
  Software output drops          :            0
  Hardware input drops           :            0
Packet Forwarding Engine local protocol statistics:
  HDLC keepalives               :            0
  ATM OAM                       :            0
  Frame Relay LMI               :            0
  PPP LCP/NCP                   :            0
  OSPF hello                    :            0
  OSPF3 hello                   :            0
  RSVP hello                    :            0
  LDP hello                     :            0
  BFD                           :            0
  IS-IS IIH                     :            0
  LACP                          :            0
  ARP                           :            0
  ETHER OAM                     :            0
  Unknown                       :           252
Packet Forwarding Engine hardware discard statistics:
  Timeout                       :            0
  Truncated key                 :            0
  Bits to test                  :            0
  Data error                    :            0
  Stack underflow               :            0
  Stack overflow                :            0
  Normal discard                 :           8008
  Extended discard              :            0
  Invalid interface             :            0
  Info cell drops               :            0
  Fabric drops                  :             7
Packet Forwarding Engine Input IPv4 Header Checksum Error and Output MTU Error
statistics:
  Input Checksum                 :            0
  Output MTU                     :            0

```

### show pfe statistics traffic voq (EX8200 Switch)

```

user@switch> show pfe statistics traffic voq
FPC: 0
  PFE: 0
    VOQ unit:                0                1
    Tail drops                :                0
    Drops due to ECC error    :                0
    Drops due to device disabled :            0
  PFE: 1
    VOQ unit:                0                1
    Tail drops                :                0
    Drops due to ECC error    :                0
    Drops due to device disabled :            0
FPC: 1
  PFE: 0
    VOQ unit:                0                1
    Tail drops                :                0

```



```

Drops due to ECC error      :      0      0
Drops due to device disabled :      0      0
PFE: 1
  VOQ unit:                  0      1
  Tail drops                  :      0      0
  Drops due to ECC error      :      0      0
  Drops due to device disabled :      0      0

```

### show pfe statistics traffic voq (EX8200 Virtual Chassis)

```

user@switch> show pfe statistics traffic voq
FPC: 1
  PFE: 0
    VOQ unit:                  0
  1
    Tail drops                  :      0
  0
    Drops due to ECC error      :      0
  0
    Drops due to device disabled :      0
  0
  PFE: 1
    VOQ unit:                  0
  1
    Tail drops                  :      0
  0
    Drops due to ECC error      :      0
  0
    Drops due to device disabled :      0
  0

FPC: 3
  PFE: 0
    VOQ unit:                  0
  1
    Tail drops                  :      0
  0
    Drops due to ECC error      :      0
  0
    Drops due to device disabled :      0
  0
  PFE: 1
    VOQ unit:                  0
  1
    Tail drops                  :      0
  0
    Drops due to ECC error      :      0
  0
    Drops due to device disabled :      0
  0

FPC: 16
  PFE: 0
    VOQ unit:                  0
  1
    Tail drops                  :      0
  0
    Drops due to ECC error      :      0
  0
    Drops due to device disabled :      0
  0

```

```

PFE: 1
  VOQ unit:                                0
1      Tail drops                          :    0
0      Drops due to ECC error              :    0
0      Drops due to device disabled       :    0
0

```

#### show pfe statistics traffic voq fpc 2 (EX8200 Switch and EX8200 Virtual Chassis)

```
user@switch> show pfe statistics traffic voq fpc 2
```

```
FPC: 2
```

```
PFE: 0
```

```

  VOQ unit:                                0          1
    Tail drops                          :    0          0
    Drops due to ECC error              :    0          0
    Drops due to device disabled       :    0          0

```

```
PFE: 1
```

```

  VOQ unit:                                0          1
    Tail drops                          :    0          0
    Drops due to ECC error              :    0          0
    Drops due to device disabled       :    0          0

```

## show pfe statistics traffic protocol cfm

<b>List of Syntax</b>	<a href="#">Syntax on page 1329</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Router) on page 1329</a>
<b>Syntax</b>	<pre>show pfe statistics traffic protocol cfm &lt;fpc slot &gt;</pre>
<b>Syntax (TX Matrix and TX Matrix Plus Router)</b>	<pre>show pfe statistics traffic protocol cfm &lt;fpc slot &gt; &lt;lcc number&gt;</pre>
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Display Packet Forwarding Engine traffic protocol statistics for connectivity fault management (CFM).
<b>Options</b>	<p><b>None</b>—Display all PFE traffic protocol CFM statistics.</p> <p><b>fpc slot</b>—(M320 and MX960 routers, and T Series routers only) (Optional) Display statistics for a Flexible PIC Concentrator (FPC) slot.</p> <p><b>user@host&gt; show pfe statistics traffic protocol cfm fpc 1</b></p> <p><b>lcc number</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display statistics for a specific T640 router (or line-card chassis) that is connected to a TX Matrix routers. On a TX Matrix Plus router, display statistics for a specific router (or line-card chassis) that is connected to a TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul> <p><b>user@host&gt; show pfe statistics traffic protocol cfm fpc 1 lcc 1</b></p>
<b>Required Privilege Level</b>	admin
<b>List of Sample Output</b>	<a href="#">show pfe statistics traffic protocol cfm on page 1330</a>

**Output Fields** [Table 55 on page 1330](#) lists the output fields for the **show pfe statistics traffic protocol cfm** command. Output fields are listed in the approximate order in which they appear.

*Table 55: show pfe statistics traffic protocol cfm Output Fields*

Field Name	Field Description
Packets transmitted	Number of packets transmitted.
Packets failed to transmit	Number of packets that were not transmitted.
Packets received	Number of packets received.
Packets sent to RE	Number of packets sent to the Routing Engine.
Packets absorbed	Number of packets absorbed.
Packets with invalid length	Number of packets with invalid length.
Packets with sequence number	Number of packets with a sequence number.
Packets dropped (Invalid)	Number of invalid packets dropped.

## Sample Output

### show pfe statistics traffic protocol cfm

```
user@host> show pfe statistics traffic protocol cfm
```

```
CFM protocol statistics:
  Packets transmitted      : 0
  Packets failed to transmit : 0
  Packets received         : 0
  Packets send to RE       : 0
  Packets absorbed         : 0
  Packets with invalid length : 0
  Packets with sequence number : 0
  Packets dropped (Invalid) : 0
```

## show pfe statistics traffic protocol bfd

<b>List of Syntax</b>	<a href="#">Syntax on page 1331</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Router) on page 1331</a>
<b>Syntax</b>	<pre>show pfe statistics traffic protocol bfd &lt;fpc slot&gt;</pre>
<b>Syntax (TX Matrix and TX Matrix Plus Router)</b>	<pre>show pfe statistics traffic protocol bfd &lt;fpc slot&gt; &lt;lcc number&gt;</pre>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	Display Packet Forwarding Engine traffic protocol statistics for Bidirectional Forwarding Detection hello packets.
<b>Options</b>	<p><b>None</b>—Display all Packet Forwarding Engine traffic protocol BFD statistics.</p> <p><b>fpc slot</b>—(M320 and MX960 routers, and T Series routers only) (Optional) Display statistics for a Flexible PIC Concentrator (FPC) slot.</p> <pre>user@host&gt; show pfe statistics traffic protocol bfd fpc 1</pre> <p><b>lcc number</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display statistics for a specific T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display statistics for a specific router (or line-card chassis) that is connected to a TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul> <pre>user@host&gt; show pfe statistics traffic protocol bfd fpc 1 lcc 1</pre>
<b>Required Privilege Level</b>	admin
<b>List of Sample Output</b>	<a href="#">show pfe statistics traffic protocol bfd on page 1333</a>

**Output Fields** [Table 56 on page 1332](#) lists the output fields for the **show pfe statistics traffic protocol bfd** command. Output fields are listed in the approximate order in which they appear.

*Table 56: show pfe statistics traffic protocol bfd Output Fields*

Field Name	Field Description
Packets with invalid interface	Number of packets discarded because of invalid interface.
Packets with invalid address family	Number of packets discarded because of invalid address family.
Packets with bad IP checksum	Number of packets discarded because of bad IP checksum.
Packets with bad IP options	Number of packets discarded because of bad IP options.
Packets with bad IP length	Number of packets discarded because of bad IP length.
Packets with bad udp checksum	Number of packets discarded because of bad UDP checksum.
Packets with bad udp length	Number of packets discarded because of bad UDP length.
Packets with bad udp ports	Number of packets discarded because of bad UDP ports.
Packets with no logical interface	(T640 and M20 routers only) Number of packets discarded because of nonavailability of logical interface.
Packets with prefix length mismatch	(T640 and M20 routers only) Number of packets discarded because of prefix length mismatch.
Packets received	Number of packets received.
Packets absorbed	Number of packets absorbed.
Packets failed to transmit	Number of packets discarded because of transmission failure.
Packets receive failures	Number of packet receive failures.
Packets allocation failures	Number of packet allocation failures.

## Sample Output

### show pfe statistics traffic protocol bfd

```
user@host> show pfe statistics traffic protocol bfd
```

```
BFD protocol statistics:
Packets with invalid interface      : 0
Packets with invalid address family : 0
Packets with bad IP checksum        : 0
Packets with bad IP options         : 0
Packets with bad IP length          : 0
Packets with bad udp checksum       : 0
Packets with bad udp length         : 0
Packets with bad udp ports          : 0
Packets with no logical interface   : 0
Packets with prefix length mismatch : 0
Packets received                    : 0
Packets absorbed                    : 0
Packets failed to transmit          : 0
Packets receive failures            : 0
Packets allocation failures         : 0
```

show pfe terse

List of Syntax	<a href="#">Syntax on page 1334</a> <a href="#">Syntax (TX Matrix and TX Matrix Plus Router) on page 1334</a> <a href="#">Syntax (MX Series Router) on page 1334</a>
Syntax	show pfe terse
Syntax (TX Matrix and TX Matrix Plus Router)	show pfe terse <lcc <i>number</i>   scc> <sfc <i>number</i> >
Syntax (MX Series Router)	show pfe terse <all-members> <local> <member <i>member-id</i> >
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
Description	Display Packet Forwarding Engine status information.
Options	<b>none</b> —Display brief information about the Packet Forwarding Engine.  <b>all-members</b> —(MX Series routers only) (Optional) Display Packet Forwarding Engine status information for all members in the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display Packet Forwarding Engine information for a T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display Packet Forwarding Engine information for the router (or line-card chassis) that is connected to a TX Matrix Plus router.  Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"><li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li><li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li><li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li><li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li></ul>



**local**—(MX Series routers only) (Optional) Display Packet Forwarding Engine status information for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display Packet Forwarding Engine status information for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**scc**—(TX Matrix routers only) (Optional) Display Packet Forwarding Engine information for the TX Matrix router (or switch-card chassis).

**sfc**—(TX Matrix Plus routers only) (Optional) Display Packet Forwarding Engine information for the TX Matrix Plus router (or switch-fabric chassis).

**Required Privilege Level** admin

**List of Sample Output** [show pfe terse \(TX Matrix Router\) on page 1335](#)  
[show pfe terse \(TX Matrix Plus Router\) on page 1335](#)  
[show pfe terse sfc \(TX Matrix Plus Router\) on page 1335](#)

## Sample Output

### show pfe terse (TX Matrix Router)

```
user@host> show pfe terse
Slot Type Slot State Flags Uptime
0 SFM Present Online 0x0bf 01:25:42
2 SFM Present Online 0x0bf 01:25:40
0 FPC Present Online 0x102 01:25:57
1 FPC Present Online 0x102 01:25:55
2 FPC Present Online 0x102 01:25:53
```

### show pfe terse (TX Matrix Plus Router)

```
user@host> show pfe terse
sfc0-re0:
-----
Slot Type Slot State Uptime
0 LCC Present Online 2d 05:26

lcc0-re0:
-----
Slot Type Slot State Uptime
0 GFPC Present Online 2d 05:25
1 GFPC Present Online 2d 05:25
```

### show pfe terse sfc (TX Matrix Plus Router)

```
user@host> show pfe terse sfc 0
sfc0-re0:
-----
Slot Type Slot State Uptime
0 LCC Present Online 2d 05:25
```

## show system audit

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1336</a> <a href="#">Syntax (EX Series Switch and MX Series Router) on page 1336</a> <a href="#">Syntax (TX Matrix Router) on page 1336</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1336</a> <a href="#">Syntax (QFX Series) on page 1336</a> <a href="#">Syntax (OCX Series) on page 1336</a>
<b>Syntax</b>	show system audit <root-only>
<b>Syntax (EX Series Switch and MX Series Router)</b>	show system audit <all-members> <local> <member <i>member-id</i> > <root-only>
<b>Syntax (TX Matrix Router)</b>	show system audit <all-lcc   lcc <i>number</i>   scc> <root-only>
<b>Syntax (TX Matrix Plus Router)</b>	show system audit <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> > <root-only>
<b>Syntax (QFX Series)</b>	show system audit <infrastructure <i>name</i>   interconnect-device <i>name</i>   node-group <i>name</i>   root-only>
<b>Syntax (OCX Series)</b>	show system audit <root-only>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Display the state and checksum values for file systems.
<b>Options</b>	<b>none</b> —Display the state and checksum values for all file systems.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display file system MD5 hash and permissions information for all of the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display file system MD5 hash and permissions information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display file system

MD5 hash and permissions information for all T1600 or T4000 routers connected to the TX Matrix Plus router.

**all-members**—(EX4200 switch, QFX Series, and MX Series routers only) (Optional) Display file system MD5 hash and permissions information on all members of the Virtual Chassis configuration.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display file system MD5 hash and permissions information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display file system MD5 hash and permissions information for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**infrastructure *name***—(QFabric systems only) (Optional) Display file system MD5 hash and permissions information for a fabric control Routing Engine or a fabric control Routing Engine.

**interconnect-device *name***—(QFabric systems only) (Optional) Display file system MD5 hash and permissions information for the Interconnect device.

**local**—(EX4200 switch, QFX Series, and MX Series routers only) (Optional) Display file system MD5 hash and permissions information on the local Virtual Chassis member.

**member *member-id***—(EX4200 switch, QFX Series, and MX Series routers only) (Optional) Display file system MD5 hash and permissions information on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Display file system MD5 hash and permissions information for the Node group

**root-only**—(Optional) Check only the root (/) file system. On a QFabric system, you can check the root (/) file system on the infrastructure (fabric manager Routing Engine and fabric control Routing Engine), Interconnect device, or Node group.

**scc**—(TX Matrix routers only) (Optional) Display file system MD5 hash and permissions information for the TX Matrix router (or switch-card chassis).

**sfc number**—(TX Matrix Plus routers only) (Optional) Display file system MD5 hash and permissions information for the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**Additional Information** To redirect the output to a file, issue the following command:

```
ssh device-name 'show system audit root-only' > output-file
```

If you save the output of the **show system audit root-only** command to a file, you can compare it to subsequent output from the command to determine whether anything has changed.

By default, when you issue the **show system audit** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** admin

**List of Sample Output** [show system audit root-only on page 1338](#)  
[show system audit lcc \(TX Matrix Router\) on page 1339](#)  
[show system audit lcc \(TX Matrix Plus Router\) on page 1341](#)  
[show system audit root-only \(QFX3500 Switch\) on page 1342](#)

## Sample Output

### show system audit root-only

```
user@host> show system audit root-only
#          user: root
#          machine: host
#          tree: /
date: Fri Feb 11 21:21:46 2000

# .
/set type=file uid=0 gid=0 mode=0755 nlink=1
.          type=dir nlink=23 size=1024 time=950252640.0
.cshrc     uid=3 gid=7 mode=0644 size=177 time=939182975.0 \
           md5digest=f414e06fea6bd646244b98e13d6e6226
.kernel.jkernel.backup \
           mode=0744 size=1934552 time=944688902.0 \
           md5digest=2c343cf0bd9fea8f04f78604feed7aa4
.profile   uid=3 gid=7 mode=0644 nlink=2 size=173 time=939182975.0 \
           md5digest=55a1e3c6c67789c9d3a1cce1ea39f670
COPYRIGHT  uid=3 gid=7 mode=0444 size=3425 time=939182975.0 \
           md5digest=7df8bc77dcee71382ea73eb0ec6a9243
boot.config mode=0644 size=3 time=945902618.0 \
           md5digest=93d722493ed38477338a1405d7dcbb40
boot.help  uid=3 gid=7 mode=0444 size=411 time=939182876.0 \
           md5digest=9b7126385734bcae753f4179ab59d8e5
compat     type=link mode=0777 size=11 time=915149058.0 \
           link=/usr/compat
```

```

kernel      mode=0444 size=1947607 time=950230892.0 \
             md5digest=1a2a8aff2fec678a918ba0d6bf063980
kernel.avr  uid=1112 size=1947642 time=950252597.0 \
             md5digest=82e1637682d58ec28964dfee7fccb62e
kernel.config \
             mode=0644 size=0 time=915149058.0 \
             md5digest=d41d8cd98f00b204e9800998ecf8427e
sys         type=link mode=0777 size=11 time=915149029.0 \
             link=usr/src/sys

```

### show system audit lcc (TX Matrix Router)

```

user@host> show system audit lcc 2
lcc2-re0:
-----
#          user: root
#          machine: test-lcc2
#          tree: /
#          date: Mon Sep 13 11:55:33 2004

# .
/set type=file uid=0 gid=0 mode=0555 nlink=1 flags=none
.      type=dir nlink=20 size=512 time=1094982121.0
  COPYRIGHT mode=0644 size=4735 time=986012708.0 \
            md5digest=78396df1404ad742e6eb1be28f0cd63b
    kernel  type=link mode=0700 size=17 time=1090266262.0 \
            link=/packages/jkernel

# ./altconfig
altconfig  type=dir nlink=2 size=512 time=1089801320.0
# ./altconfig
..

# ./altroot
altroot    type=dir nlink=2 size=512 time=1089801320.0
# ./altroot
..

# ./b
b          type=dir mode=0755 nlink=2 size=512 time=1093961429.0
# ./b
..

# ./bin
/set type=file uid=0 gid=0 mode=0700 nlink=1 flags=none
bin        type=dir mode=0755 nlink=2 size=512 time=1089843059.0
  [        type=link size=28 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/test
  cat      type=link size=27 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/cat
  chmod    type=link size=29 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/chmod
  cp       type=link size=26 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/cp
  csh      type=link size=27 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/csh
  date     type=link size=28 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/date
  dd       type=link size=26 time=1090266270.0 \

```

```

link=/packages/mnt/jbase/bin/dd
df      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/df
echo    type=link size=28 time=1090266270.0 \
link=/packages/mnt/jbase/bin/echo
ed      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/ed
expr    type=link size=28 time=1090266270.0 \
link=/packages/mnt/jbase/bin/expr
hostname type=link size=32 time=1090266270.0 \
link=/packages/mnt/jbase/bin/hostname
kill    type=link size=28 time=1090266270.0 \
link=/packages/mnt/jbase/bin/kill
ln      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/ln
ls      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/ls
mkdir   type=link size=29 time=1090266270.0 \
link=/packages/mnt/jbase/bin/mkdir
mv      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/mv
ps      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/ps
pwd     type=link size=27 time=1090266270.0 \
link=/packages/mnt/jbase/bin/pwd
rcp     type=link size=27 time=1090266270.0 \
link=/packages/mnt/jbase/bin/rcp
red     type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/ed
rm      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/rm
rmdir   type=link size=29 time=1090266270.0 \
link=/packages/mnt/jbase/bin/rmdir
sh      type=link size=26 time=1090266270.0 \
link=/packages/mnt/jbase/bin/sh
sleep   type=link size=29 time=1090266270.0 \
link=/packages/mnt/jbase/bin/sleep
stty    type=link size=28 time=1090266270.0 \
link=/packages/mnt/jbase/bin/stty
sync    type=link size=28 time=1090266270.0 \
link=/packages/mnt/jbase/bin/sync
tcsh    type=link size=27 time=1090266270.0 \
link=/packages/mnt/jbase/bin/csh
test    type=link size=28 time=1090266270.0 \
link=/packages/mnt/jbase/bin/test
# ./bin
..

# ./boot
/set type=file uid=0 gid=0 mode=0444 nlink=1 flags=none
boot    type=dir mode=0555 nlink=3 size=512 time=1095069935.0
boot0   size=512 time=1094978286.0 \
md5digest=6f780822dd4ae482a20462b66e542cca
boot1   mode=0555 size=512 time=1094978294.0 \
md5digest=8d112b09df342cd0b60fdb9bdcde8e07
boot2   mode=0555 size=7680 time=1094978294.0 \
md5digest=28eb58c4068c6b85717e1484f9e028e4
cdboot  mode=0555 size=165888 time=1094978298.0 \
md5digest=1474c6b800dfc82ba552d7c36116d07d
kgzldr.o size=5996 time=1094982121.0 \

```

```

loader      md5digest=c53dc948eb07e2ea4eb0413e4c4634a3
            mode=0555 size=163840 time=1094978298.0 \
loader.4th  md5digest=82d9dc2d31033476bfb61bb7264c4fed
            size=9237 time=986013631.0 \
            md5digest=43144391465ad50267d31e0a320be1de
...

```

### show system audit lcc (TX Matrix Plus Router)

```
user@host> show system audit all-chassis
```

```
sfc0-re0:
```

```

-----
#          user: root
#          machine: test
#          tree: /
#          date: Mon May 18 00:13:16 2009

# .
/set type=file uid=0 gid=0 mode=0755 nlink=1 flags=none
.
  COPYRIGHT  type=dir nlink=23 size=512 time=1242347096.0
             mode=0644 size=6196 time=1168587741.0 \
             md5digest=bbad415e1c29bbdd9b383537100412c
  kernel     type=link size=17 time=1242347011.0 link=/packages/jkernel
  staging     type=link mode=0777 size=8 time=1242346935.0 link=/var/tmp

# ./snap
.snap        type=dir mode=0775 nlink=2 size=512 time=1242346922.0
# ./snap
..

# ./altconfig
altconfig    type=dir mode=0500 nlink=2 size=512 time=1242319843.0
# ./altconfig
..

# ./altroot
altroot      type=dir mode=0500 nlink=2 size=512 time=1242319843.0
# ./altroot
..

# ./bin
bin          type=dir nlink=2 size=512 time=1242346944.0
  \133       type=link size=28 time=1242346942.0 \
             link=/packages/mnt/jbase/bin/test
  cat        type=link size=27 time=1242346941.0 \
             link=/packages/mnt/jbase/bin/cat
  chflags    type=link size=31 time=1242346941.0 \
             link=/packages/mnt/jbase/bin/chflags
  chmod      type=link size=29 time=1242346941.0 \
             link=/packages/mnt/jbase/bin/chmod
  cp         type=link size=26 time=1242346941.0 \
             link=/packages/mnt/jbase/bin/cp
  csh        type=link size=27 time=1242346941.0 \
             link=/packages/mnt/jbase/bin/csh
  date       type=link size=28 time=1242346941.0 \
             link=/packages/mnt/jbase/bin/date
  dd         type=link size=26 time=1242346941.0 \

```

```

df          link=/packages/mnt/jbase/bin/dd
            type=link size=26 time=1242346941.0 \
echo        link=/packages/mnt/jbase/bin/df
            type=link size=28 time=1242346941.0 \
ed          link=/packages/mnt/jbase/bin/echo
            type=link size=26 time=1242346941.0 \
expr        link=/packages/mnt/jbase/bin/ed
            type=link size=28 time=1242346941.0 \
hostname    link=/packages/mnt/jbase/bin/expr
            type=link size=32 time=1242346941.0 \
kill        link=/packages/mnt/jbase/bin/hostname
            type=link size=28 time=1242346941.0 \
ln          link=/packages/mnt/jbase/bin/kill
            type=link size=26 time=1242346941.0 \
ls          link=/packages/mnt/jbase/bin/ln
            type=link size=26 time=1242346941.0 \
mkdir       link=/packages/mnt/jbase/bin/ls
            type=link size=29 time=1242346941.0 \
mv          link=/packages/mnt/jbase/bin/mkdir
            type=link size=26 time=1242346941.0 \
pax         link=/packages/mnt/jbase/bin/mv
            type=link size=27 time=1242346944.0 \
ps          link=/packages/mnt/jbase/bin/pax
            type=link size=26 time=1242346941.0 \
pwd         link=/packages/mnt/jbase/bin/ps
            type=link size=27 time=1242346941.0 \
rcp         link=/packages/mnt/jbase/bin/pwd
            type=link size=27 time=1242346942.0 \
red         link=/packages/mnt/jbase/bin/rcp
            type=link size=26 time=1242346941.0 \
rm          link=/packages/mnt/jbase/bin/red
            type=link size=26 time=1242346942.0 \
rmdir       link=/packages/mnt/jbase/bin/rm
            type=link size=29 time=1242346942.0 \
sh          link=/packages/mnt/jbase/bin/rmdir
            type=link size=26 time=1242346942.0 \
sleep       link=/packages/mnt/jbase/bin/sh
            type=link size=29 time=1242346942.0 \
stty        link=/packages/mnt/jbase/bin/sleep
            type=link size=28 time=1242346942.0 \
sync        link=/packages/mnt/jbase/bin/stty
            type=link size=28 time=1242346942.0 \
tcsh        link=/packages/mnt/jbase/bin/sync
            type=link size=27 time=1242346941.0 \
test        link=/packages/mnt/jbase/bin/tcsh
            type=link size=28 time=1242346942.0 \
            link=/packages/mnt/jbase/bin/test
# ./bin
...
```

#### show system audit root-only (QFX3500 Switch)

```

user@switch> show system audit root-only
#          user: root
#          machine: test
#          tree: /
date: Fri Feb 11 21:21:46 2000

# .
/set type=file uid=0 gid=0 mode=0755 nlink=1
.          type=dir nlink=23 size=1024 time=950252640.0
```



```

.cshrc      uid=3 gid=7 mode=0644 size=177 time=939182975.0 \
            md5digest=f414e06fea6bd646244b98e13d6e6226
.kernel.jkernel.backup \
            mode=0744 size=1934552 time=944688902.0 \
            md5digest=2c343cf0bd9fea8f04f78604feed7aa4
.profile    uid=3 gid=7 mode=0644 nlink=2 size=173 time=939182975.0 \
            md5digest=55a1e3c6c67789c9d3a1cce1ea39f670
COPYRIGHT   uid=3 gid=7 mode=0444 size=3425 time=939182975.0 \
            md5digest=7df8bc77dcee71382ea73eb0ec6a9243
boot.config mode=0644 size=3 time=945902618.0 \
            md5digest=93d722493ed38477338a1405d7dcbb40
boot.help   uid=3 gid=7 mode=0444 size=411 time=939182876.0 \
            md5digest=9b7126385734bcae753f4179ab59d8e5
compat      type=link mode=0777 size=11 time=915149058.0 \
            link=/usr/compat
kernel      mode=0444 size=1947607 time=950230892.0 \
            md5digest=1a2a8aff2fec678a918ba0d6bf063980
kernel.avr   uid=1112 size=1947642 time=950252597.0 \
            md5digest=82e1637682d58ec28964dfec7fccb62e
kernel.config \
            mode=0644 size=0 time=915149058.0 \
            md5digest=d41d8cd98f00b204e9800998ecf8427e
sys         type=link mode=0777 size=11 time=915149029.0 \
            link=usr/src/sys

```

## show system alarms

---

**Syntax**    show system alarms

**Release Information**    Command introduced before Junos OS Release 7.4.  
Command introduced in Junos OS Release 9.0 for EX Series switches.  
Command introduced in Junos OS Release 11.1 for the QFX Series.  
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

**Description**    Display active system alarms.

**Options**    This command has no options.

**Additional Information**    System alarms are preset. You cannot modify them, although you can configure them to appear automatically in the J-Web user interface or CLI. They include a *configuration* alarm that appears when no rescue configuration alarm is set and a *license* alarm that appears when a software feature is configured and no valid license is configured for the feature. You can also determine when a license will expire from syslog messages that appear starting from four weeks before expiry of the license. On EX6200 switches, an alarm can be triggered by an internal link error.

The logic for multiple feature licenses is based on the highest validity among the licenses. Also, for capacity non-cumulative, exclusive type licenses (such as for scale), the logic is based on the highest validity of the license.



**NOTE:** As of Junos OS Release 17.3R1, the logic for multiple capacity type licenses and when their expiry raises alarms was changed. Before, the behavior had alarms and syslog messages for expiring licenses raised based on the highest validity, which would mislead users in the case of a license expiring earlier than the highest validity license. The newer behavior has the about-to-expire logic based on the first expiring license.

---

For more information about system alarms, see the *Junos OS Administration Library*.

In Junos OS release 11.1 and later, alarms for fans also show the slot number of the malfunctioning fans in the CLI output.

Starting with Junos OS Release 13.2, you can view degraded fabric alarms on a routing matrix based on TX Matrix Plus router with 3D SIBs. The alarm indicates that the source FPC is running with a degraded fabric condition. This alarm is an early warning of a possible fabric black-hole condition. When the degraded fabric alarm is raised on the source FPC, you can take remedial action to avoid a fabric black-hole condition. The degraded fabric alarm is raised on the source FPC if both the following conditions are met:

- The active Packet Forwarding Engine destinations are reachable on one or no active switching planes.

- At least one of the inactive switching planes has a fault that causes the destination Packet Forwarding Engine to become unreachable.

**Required Privilege Level** view

**Related Documentation** • [show chassis alarms on page 315](#)

**List of Sample Output** [show system alarms on page 1345](#)  
[show system alarms \(Fan Tray\) on page 1345](#)  
[show system alarms \(QFX Series and OCX Series\) on page 1345](#)  
[show system alarms \(EX6200\) on page 1346](#)  
[show system alarms \(TX Matrix Plus router with 3D SIBs\) on page 1346](#)

**Output Fields** Table 57 on page 1345 lists the output fields for the **show system alarms** command. Output fields are listed in the approximate order in which they appear.

*Table 57: show system alarms Output Fields*

Field Name	Field Description
Alarm time	Date and time the alarm was first recorded.
Class	Severity class for this alarm: <b>Minor</b> or <b>Major</b> .
Description	Information about the alarm.

## Sample Output

### show system alarms

```
user@host> show system alarms
2 alarms currently active
Alarm time           Class    Description
2005-02-24 17:29:34 UTC  Minor    IPsec VPN tunneling usage requires a
license
2005-02-24 17:29:34 UTC  Minor    Rescue configuration is not sent
```

### show system alarms (Fan Tray)

```
user@host> show system alarms
4 alarms currently active
Alarm time           Class    Description
2010-11-11 20:27:38 UTC  Major    Side Fan Tray 7 Failure
2010-11-11 20:27:13 UTC  Minor    Side Fan Tray 7 Overspeed
2010-11-11 20:27:13 UTC  Major    Side Fan Tray 5 Failure
2010-11-11 20:27:13 UTC  Major    Side Fan Tray 0 Failure
```

### show system alarms (QFX Series and OCX Series)

```
user@switch> show system alarms
```

```
2 alarms currently active
Alarm time Class Description
2005-02-24 17:29:34 UTC Minor Rescue configuration is not sent
```

#### show system alarms (EX6200)

```
user@switch> show system alarms
2 alarms currently active
Alarm time      Class  Description
2013-04-05 16:51:41 PDT  Major  FPC 8 internal link errors detected
2013-04-04 18:05:35 PDT  Minor  Rescue configuration is not set
```

#### show system alarms (TX Matrix Plus router with 3D SIBs)

```
user@router> show system alarms

sfc0-re0:
-----
2 alarms currently active
Alarm time      Class  Description
2013-05-08 18:13:58 UTC  Major  LCC 0 Major Errors
2013-05-08 17:48:46 UTC  Major  LCC 7 Major Errors

lcc0-re1:
-----
1 alarm currently active
Alarm time      Class  Description
2013-05-08 18:19:24 UTC  Major  FPC 1 degraded fabric condition detected

lcc7-re0:
-----
1 alarm currently active
Alarm time      Class  Description
2013-05-08 18:19:24 UTC  Major  FPC 7 degraded fabric condition detected
```

## show system boot-messages

<b>List of Syntax</b>	<a href="#">Syntax on page 1347</a> <a href="#">Syntax (EX Series Switches) on page 1347</a> <a href="#">Syntax (TX Matrix Router) on page 1347</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1347</a> <a href="#">Syntax (MX Series Router) on page 1347</a> <a href="#">Syntax (QFX Series) on page 1347</a>
<b>Syntax</b>	show system boot-messages
<b>Syntax (EX Series Switches)</b>	show system boot-messages <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system boot-messages <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system boot-messages <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (MX Series Router)</b>	show system boot-messages <all-members> <local> <member <i>member-id</i> >
<b>Syntax (QFX Series)</b>	show system boot-messages infrastructure <i>name</i>   interconnect-device <i>name</i>   node-group <i>name</i>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Display initial messages generated by the system kernel upon startup. These messages are the contents of <code>/var/run/dmesg.boot</code> .
<b>Options</b>	<b>none</b> —Display all boot time messages.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display boot time messages for all of the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display boot time messages for all T640 routers connected to a TX Matrix

router. On a TX Matrix Plus router, display boot time messages for all connected T1600 or T4000 LCCs.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Display boot time messages on all members of the Virtual Chassis configuration.

**infrastructure *name***—(QFabric systems only) (Optional) Display boot time messages on the fabric control Routing Engine or fabric manager Routing engines.

**interconnect-device *name***—(QFabric systems only) (Optional) Display boot time messages on the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display boot time messages for a specific T640 router connected to a TX Matrix router. On a TX Matrix Plus router, display boot time messages for a specific router connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Display boot time messages on the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Display boot time messages on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Display boot time messages on the Node group.

**scc**—(TX Matrix routers only) (Optional) Display boot time messages for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display boot time messages for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system boot-messages** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix

or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level**

view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

[show system boot-messages \(TX Matrix Router\) on page 1349](#)  
[show system boot-messages lcc \(TX Matrix Router\) on page 1350](#)  
[show system boot-messages \(TX Matrix Plus Router\) on page 1351](#)  
[show system boot-messages \(QFX3500 Switch\) on page 1351](#)

## Sample Output

### show system boot-messages (TX Matrix Router)

```
user@host> show system boot-messages
Copyright (c) 1992-1998 FreeBSD Inc.
Copyright (c) 1996-2000 Juniper Networks, Inc.
All rights reserved.
Copyright (c) 1982, 1986, 1989, 1991, 1993
    The Regents of the University of California. All rights reserved.

JUNOS 4.1-20000216-Zf8469 #0: 2000-02-16 12:57:28 UTC
  tlim@device1.example.com:/p/build/20000216-0905/4.1/release_kernel/sys/compile/GENERIC
CPU: Pentium Pro (332.55-MHz 686-class CPU)
  Origin = "GenuineIntel" Id = 0x66a Stepping=10
  Features=0x183f9ff<FPU,VME,DE,PSE,TSC,MSR,PAE,MCE,CX8,SEP,MTRR,PGE,MCA,CMOV,<b
16>,<b17>,MMX,<b24>>
Teknor CPU Card Recognized
real memory = 805306368 (786432K bytes)
avail memory = 786280448 (767852K bytes)
Probing for devices on PCI bus 0:
chip0 <generic PCI bridge (vendor=8086 device=7192 subclass=0)> rev 3 class 6000
0 on pci0:0:0
chip1 <Intel 82371AB PCI-ISA bridge> rev 1 class 60100 on pci0:7:0
chip2 <Intel 82371AB IDE interface> rev 1 class 10180 on pci0:7:1
chip3 <Intel 82371AB USB interface> rev 1 class c0300 int d irq 11 on pci0:7:2
smb0 <Intel 82371AB SMB controller> rev 1 class 68000 on pci0:7:3
pcic0 <TI PCI-1131 PCI-CardBus Bridge> rev 1 class 60700 int a irq 15 on pci0:13
:0
TI1131 PCI Config Reg: [pci only][FUNC0 pci int]
pcic1 <TI PCI-1131 PCI-CardBus Bridge> rev 1 class 60700 int b irq 12 on pci0:13
:1
TI1131 PCI Config Reg: [pci only][FUNC1 pci int]
fxp0 <Intel EtherExpress Pro 10/100B Ethernet> rev 8 class 20000 int a irq 12 on

pci0:16:0
chip4 <generic PCI bridge (vendor=1011 device=0022 subclass=4)> rev 4 class 6040
0 on pci0:17:0
fxp1 <Intel EtherExpress Pro 10/100B Ethernet> rev 8 class 20000 int a irq 10 on

pci0:19:0
Probing for devices on PCI bus 1:
```

```

mcs0 <Miscellaneous Control Subsystem> rev 12 class ff0000 int a irq 12 on pci1:
13:0
fxp2 <Intel EtherExpress Pro 10/100B Ethernet> rev 8 class 20000 int a irq 10 on

pci1:14:0
Probing for devices on the ISA bus:
sc0 at 0x60-0x6f irq 1 on motherboard
sc0: EGA color <16 virtual consoles, flags=0x0>
ed0 not found at 0x300
ed1 not found at 0x280
ed2 not found at 0x340
psm0 not found at 0x60
sio0 at 0x3f8-0x3ff irq 4 flags 0x20010 on isa
sio0: type 16550A, console
sio1 at 0x3e8-0x3ef irq 5 flags 0x20000 on isa
sio1: type 16550A
sio2 at 0x2f8-0x2ff irq 3 flags 0x20000 on isa
sio2: type 16550A
pcic0 at 0x3e0-0x3e1 on isa
PC-Card ctlr(0) TI PCI-1131 [CardBus bridge mode] (5 mem & 2 I/O windows)
pcic0: slot 0 controller I/O address 0x3e0
npx0 flags 0x1 on motherboard
npx0: INT 16 interface
fdc0: direction bit not set
fdc0: cmd 3 failed at out byte 1 of 3
fdc0 not found at 0x3f0
wdc0 at 0x1f0-0x1f7 irq 14 on isa
wdc0: unit 0 (wd0): <SunDisk SQFXB-80>, single-sector-i/o
wd0: 76MB (156672 sectors), 612 cyls, 8 heads, 32 S/T, 512 B/S
wdc0: unit 1 (wd1): <IBM-DCXA-210000>
wd1: 8063MB (16514064 sectors), 16383 cyls, 16 heads, 63 S/T, 512 B/S
wdc1 not found at 0x170
wdc2 not found at 0x180
ep0 not found at 0x300
fxp0: Ethernet address 00:a0:a5:12:05:5a
fxp1: Ethernet address 00:a0:a5:12:05:59
fxp2: Ethernet address 02:00:00:00:00:01
swapon: adding /dev/wd1s1b as swap device
Automatic reboot in progress...
/dev/rwd0s1a: clean, 16599 free (95 frags, 2063 blocks, 0.1% fragmentation)
/dev/rwd0s1e: clean, 9233 free (9 frags, 1153 blocks, 0.1% fragmentation)
/dev/rwd0s1a: clean, 16599 free (95 frags, 2063 blocks, 0.1% fragmentation)
/dev/rwd1s1f: clean, 4301055 free (335 frags, 537590 blocks, 0.0% fragmentation)

```

### show system boot-messages lcc (TX Matrix Router)

```

user@host> show system boot-messages lcc 2
lcc2-re0:
-----
Copyright (c) 1996-2001, Juniper Networks, Inc.
All rights reserved.
Copyright (c) 1992-2001 The FreeBSD Project.
Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
The Regents of the University of California. All rights reserved.
JUNOS 7.0-20040912.0 #0: 2004-09-12 09:16:32 UTC

builder@device1.example.com:/build/benten-b/7.0/20040912.0/obj-i386/sys/compile/JUNIPER
Timecounter "i8254" frequency 1193182 Hz
Timecounter "TSC" frequency 601368936 Hz
CPU: Pentium III/Pentium III Xeon/Celeron (601.37-MHz 686-class CPU)
Origin = "GenuineIntel" Id = 0x68a Stepping = 10

```



```

Features=0x387f9ff<FPU,WE,DE,PSE,TSC,MSR,PAE,MCE,CX8,SEP,MTRR,PGE,MCA,CMOV,PAT,PSE36,PN,MMX,FXSR,SSE>
real memory = 2147467264 (2097136K bytes)
sio0: gdb debugging port
avail memory = 2084040704 (2035196K bytes)
Preloaded elf kernel "kernel" at 0xc06d9000.
DEVFS: ready for devices
Pentium Pro MTRR support enabled
md0: Malloc disk
DRAM Data Integrity Mode: ECC Mode with h/w scrubbing
npx0: <math processor> on motherboard
npx0: INT 16 interface
pcib0: <ServerWorks NB6635 3.0LE host to PCI bridge> on motherboard
pci0: <PCI bus> on pcib0
pcic-pci0: <TI PCI-1410 PCI-CardBus Bridge> irq 15 at device 1.0 on pci0
pcic-pci0: TI12XX PCI Config Reg: [pwr save][pci only]
fxp0: <Intel Embedded 10/100 Ethernet> port 0x1000-0x103f mem
0xfb800000-0xfb81ffff,0xfb820000-0xfb820fff irq 9 at device 3.0 on pci0
fxp1: <Intel Embedded 10/100 Ethernet> port 0x1040-0x107f mem
0xfb840000-0xfb85ffff,0xfb821000-0xfb821fff irq 11 at device 4.0 on pci0
...

```

#### show system boot-messages (TX Matrix Plus Router)

```

user@host> show system boot-messages
sfc0-re0:
-----
Copyright (c) 1996-2009, Juniper Networks, Inc.
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Copyright (c) 1992-2006 The FreeBSD Project.
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JUNOS 9.6B3.3 #0: 2009-06-17 19:52:08 UTC

builder@device1.example.com:/volume/build/junos/9.6/release/9.6B3.3/obj-i386/bsd/sys/compile/JUNIPER
MPTable: Timecounter "i8254" frequency 1193182 Hz quality 0 CPU: Intel(R) Xeon(R)
CPU          L5238 @ 2.66GHz (2660.01-MHz 686-class CPU)   Origin =
"GenuineIntel" Id = 0x1067a Stepping = 10   Features=0xbfebfbff
...
lcc1-re0:
-----
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JUNOS 9.6-20090617.0 #0: 2009-06-17 04:15:14 UTC

builder@device1.example.com:/volume/build/junos/9.6/production/20090617.0/obj-i386/bsd/sys/compile/JUNIPER
Timecounter "i8254" frequency 1193182 Hz quality 0
CPU: Intel(R) Xeon(R) CPU          @ 1.86GHz (1862.01-MHz 686-class CPU)

Origin = "GenuineIntel" Id = 0x1067a Stepping = 10
Features=0xbfebfbff
...

```

#### show system boot-messages (QFX3500 Switch)

```

user@switch> show sytem boot-messages

```

```
getmemsize: msgbufp[size=32768] = 0x81d07fe4
```

```
System physical memory distribution:
```

```
-----
Total physical memory: 4160749568 (3968 MB)
Physical memory used: 3472883712 (3312 MB)
Physical memory allocated to kernel: 2130706432 (2032 MB)
Physical memory allocated to user BTLB: 1342177280 (1280 MB)
-----
```

```
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```
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```

```
JUNOS 11.1I #0: 2010-09-17 19:18:07 UTC
```

```
ssiano@device1.example.com:/c/ssiano/DEV_QFX_SI_BRANCH/03/20100917.399988/  
obj-xlr/bsd/sys/compile/JUNIPER-DCTOR
```

```
WARNING: debug.mpsafenet forced to 0 as ipsec requires Giant
```

```
JUNOS 11.1I #0: 2010-09-17 19:18:07 UTC
```

```
ssiano@device1.example.com:/c/ssiano/DEV_QFX_SI_BRANCH/03/20100917.399988/  
obj-xlr/bsd/sys/compile/JUNIPER-DCTOR
```

```
real memory = 3472883712 (3312MB)
```

```
avail memory = 1708171264 (1629MB)
```

```
cpuid: 0, btlb_cpumap:0xffffffff8
```

```
FreeBSD/SMP: Multiprocessor System Detected: 12 CPUs
```

```
ETHERNET SOCKET BRIDGE initialising
```

```
Initializing QFX platform properties ..
```

```
cpu0 on motherboard
```

```
: RMI's XLR CPU Rev. 0.3 with no FPU implemented
```

```
L1 Cache: I size 32kb(32 line), D size 32kb(32 line), eight way.
```

```
L2 Cache: Size 1024kb, eight way
```

```
pic_lbus0: <XLR Local Bus>
```

```
pic_lbus0: <XLR Local Bus> on motherboard
```

```
Enter qfx control ethernet probe addr:0xc5eeec00
```

```
gmac4: <XLR GMAC GE Ethernet> on pic_lbus0
```

```
me0: Ethernet address 00:1d:b5:f7:68:40
```

```
Enter qfx control ethernet probe addr:0xc5eeeb40
```

```
gmac5: <XLR GMAC GE Ethernet> on pic_lbus0
```

```
me1: Ethernet address 00:1d:b5:f7:68:41
```

```
Enter qfx control ethernet probe addr:0xc5eeea80
```

```
gmac6: <XLR GMAC GE Ethernet> on pic_lbus0
```

```
me1: Ethernet address 00:1d:b5:f7:68:42
```

```
sio0 on pic_lbus0
```

```
Entering sioattach
```

```
sio0: type 16550A, console
```

```
xls_setup_intr: skip irq 3, xlr regs are set up somewhere else.
```

```
gblmem0 on pic_lbus0
```

```
ehci0: <RMI XLS USB 2.0 controller> on pic_lbus0
```

```
ehci_bus_attach: allocated resource. tag=1, base=bef24000
```

```
xls_ehci_init: endian hardware swapping NOT enabled.
```

```
usb0: EHCI version 1.0
```

```
usb0 on ehci0
```

```
usb0: USB revision 2.0
```

```
uhub0: vendor 0x0000 EHCI root hub, class 9/0, rev 2.00/1.00, addr 1
```

```
uhub0: 2 ports with 2 removable, self powered
```

```
umass0: USB USBFlashDrive, rev 2.00/11.00, addr 2
```

```
pcib0: PCIe link 0 up
```

```
pcib0: PCIe link 2 up
```

```
pcib0: PCIe link 3 up
```

```
pcib0: <XLS PCI Host Controller> on pic_lbus0
```

```

pci0: <PCI bus> on pcib0
pcib1: <PCI-PCI bridge> at device 0.0 on pci0
pci1: <PCI bus> on pcib1
pci1: <network, ethernet> at device 0.0 (no driver attached)
pcib2: <PCI-PCI bridge> at device 1.0 on pci0
pcib3: <PCI-PCI bridge> at device 2.0 on pci0
pci2: <PCI bus> on pcib3
pci2: <network, ethernet> at device 0.0 (no driver attached)
pcib4: <PCI-PCI bridge> at device 3.0 on pci0
pci3: <PCI bus> on pcib4
pci3: <network, ethernet> at device 0.0 (no driver attached)
cfi device address space at 0xbc000000
cfi0: <AMD/Fujitsu - 8MB> on pic_lbus0
cfi device address space at 0xbc000000
i2c0: <I2C bus controller> on pic_lbus0
i2c1: <I2C bus controller> on pic_lbus0
qfx_fmn0 on pic_lbus0
pool offset 1503776768
xlr_lbus0: <XLR Local Bus Controller> on motherboard
qfx_bcpld_probe[124]
qfx_bcpld_probe[138]: dev_type=0x0
qfx_bcpld_probe[124]
qfx_bcpld0: QFX BCPLD probe success
qfx_bcpld0qfx_bcpld_attach[174]
qfx_bcpld_attach[207] : bus_space_tag=0x0, bus_space_handle=0xbd900000
qfx_bcpld_probe[124]
qfx_bcpld1: QFX BCPLD probe success
qfx_bcpld1qfx_bcpld_attach[174]
tor_bcpld_slave_attach[1245] : bus_space_tag=0x0, bus_space_handle=0xbda00000
Initializing product: 96 ..
bmeb: bmeb_lib_init done 0xc60a5000, addr 0x809c99a0
bme0:Virtual BME driver initializing
Timecounter "mips" frequency 1200000000 Hz quality 0
Timecounter "xlr_pic_timer" frequency 66666666 Hz quality 1
Timecounters tick every 1.000 msec
Loading the NETPFE fc module
IPsec: Initialized Security Association Processing.
SMP: AP CPU #3 Launched!
SMP: AP CPU #1 Launched!
SMP: AP CPU #2 Launched!
SMP: AP CPU #4 Launched!
SMP: AP CPU #5 Launched!
SMP: AP CPU #7 Launched!
SMP: AP CPU #6 Launched!
SMP: AP CPU #11 Launched!
SMP: AP CPU #10 Launched!
SMP: AP CPU #9 Launched!
SMP: AP CPU #8 Launched!
da0 at umass-sim0 bus 0 target 0 lun 0
da0: <USB USBFlashDrive 1100> Removable Direct Access SCSI-0 device
da0: 40.000MB/s transfers
da0: 3920MB (8028160 512 byte sectors: 255H 63S/T 499C)
Trying to mount root from ufs:/dev/da0s1a

```

## show system buffers

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1354</a> <a href="#">Syntax (EX Series) on page 1354</a> <a href="#">Syntax (TX Matrix Router) on page 1354</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1354</a> <a href="#">Syntax (MX Series Router) on page 1354</a> <a href="#">Syntax (QFX Series) on page 1354</a>
<b>Syntax</b>	show system buffers
<b>Syntax (EX Series)</b>	show system buffers <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system buffers <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system buffers <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (MX Series Router)</b>	show system buffers <all-members> <local> <member <i>member-id</i> >
<b>Syntax (QFX Series)</b>	show system buffers <infrastructure <i>name</i>   interconnect-device <i>name</i>   node-group <i>name</i>   root-only (infrastructure <i>name</i>   interconnect-device <i>name</i>   node-group <i>name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Display information about the buffer pool that the Routing Engine uses for local traffic. Local traffic is the routing and management traffic that is exchanged between the Routing Engine and the Packet Forwarding Engine within the router or switch, as well as the routing and management traffic from IP (that is, from OSPF, BGP, SNMP, ping operations, and so on).
<b>Options</b>	<b>none</b> —Show all buffer statistics.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show buffer statistics for all T640 routers connected to the TX Matrix router.

On a TX Matrix Plus router, show buffer statistics for all routers connected to the TX Matrix Plus router.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Show buffer statistics for all of the chassis.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Show buffer statistics for all members of the Virtual Chassis configuration.

**infrastructure *name***—(QFabric systems only) (Optional) Show buffer statistics for a fabric control Routing Engine or a fabric control Routing Engine.

**interconnect-device *name***—(QFabric systems only) (Optional) Show buffer statistics for the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show buffer statistics for a specific T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, show buffer statistics for a specific router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Show buffer statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Show buffer statistics for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Show buffer statistics for the Node group

**sfc**—(TX Matrix Plus routers only) (Optional) Show buffer statistics for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system buffers** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise,

if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

A special type of memory buffer called a *cluster* is 2 KB in size. For more information, see *The Design and Implementation of the 4.4BSD Operation System* by McKusic, Bostic, Karels, and Quarterman.

**Required Privilege Level**

view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

[show system buffers on page 1357](#)  
[show system buffers scc \(TX Matrix Router\) on page 1358](#)  
[show system buffers sfc \(TX Matrix Plus Router\) on page 1358](#)  
[show system buffers all-chassis \(TX Matrix Plus Router\) on page 1358](#)  
[show system buffers node-group \(QFabric System\) on page 1359](#)

**Output Fields**

[Table 58 on page 1357](#) describes the output fields for the **show system buffers** command. Output fields are listed in the approximate order in which they appear.

Table 58: show system buffers Output Fields

Field Name	Field Description
<b>mbufs in use</b>	Memory buffers (mbufs) are 128-byte buffers that are used for various purposes inside the kernel. Each memory buffer has a type, and the output itemizes the amount allocated for each type. Types with no memory buffers allocated are not displayed.
<b>mbufs allocated to packet headers</b>	Number of memory buffers currently holding packet headers
<b>mbufs allocated to control blocks</b>	Number of memory buffers currently holding the state for sockets.
<b>mbufs allocated to send data</b>	Number of memory buffers currently holding socket send data.
<b>mbufs allocated to pfe refill data</b>	Number of memory buffers currently holding Packet Forwarding Engine refill data.
<b>mbufs allocated to fxp data</b>	Number of memory buffers currently holding fxp data.
<b>mbufs allocated to socket names and addresses</b>	Number of memory buffers currently holding addresses for sockets.
<b>mbuf clusters in use</b>	Allocation statistics for memory buffer clusters.
<b>allocated to network</b>	Total amount of memory in use by the networking and interprocess communication (IPC) code.
<b>requests for memory denied</b>	Number of times a memory allocation request within the IPC and networking code failed.
<b>requests for memory delayed</b>	Number of times a memory allocation request within the IPC and networking code was postponed.
<b>calls to protocol drain routines</b>	Number of times a memory allocation request within the IPC and networking code triggered a memory reclamation attempt.

## Sample Output

### show system buffers

```

user@host> show system buffers
397/893/1290 mbufs in use (current/cache/total)
395/331/726/30000 mbuf clusters in use (current/cache/total/max)
384/256 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
889K/885K/1774K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)

```

```
0/5/1024 sfbufs in use (current/peak/max)
0 requests for sfbufs denied
0 requests for sfbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines
```

#### show system buffers scc (TX Matrix Router)

```
user@host> show system buffers scc
213 mbufs in use:
    11 mbufs allocated to packet headers
    26 mbufs allocated to socket names and addresses
    2 mbufs allocated to socket options
    17 mbufs allocated to socket send data
    2 mbufs allocated to pfe data
    155 mbufs allocated to fxp data (rx)
    511 mbufs allocated to <mbuf type 86>
    256 mbufs allocated to <mbuf type 92>
924/1162 mbuf clusters in use
2788 Kbytes allocated to network (75% in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
```

#### show system buffers sfc (TX Matrix Plus Router)

```
user@host> show system buffers sfc 0

sfc0-re0:
-----
4363/2807/7170 mbufs in use (current/cache/total)
4358/1968/6326/30000 mbuf clusters in use (current/cache/total/max)
256/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
9806K/4637K/14444K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/10/1024 sfbufs in use (current/peak/max)
0 requests for sfbufs denied
0 requests for sfbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines
```

#### show system buffers all-chassis (TX Matrix Plus Router)

```
user@host> show system buffers all-chassis

sfc0-re0:
-----
4363/2807/7170 mbufs in use (current/cache/total)
4358/1968/6326/30000 mbuf clusters in use (current/cache/total/max)
256/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
9806K/4637K/14444K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
```



```

0/10/1024 sfbufs in use (current/peak/max)
0 requests for sfbufs denied
0 requests for sfbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

```
lcc0-re0:
```

```

-----
772/2558/3330 mbufs in use (current/cache/total)
772/598/1370/30000 mbuf clusters in use (current/cache/total/max)
768/512 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1737K/1835K/3572K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sfbufs in use (current/peak/max)
0 requests for sfbufs denied
0 requests for sfbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

```
lcc1-re0:
```

```

-----
773/2437/3210 mbufs in use (current/cache/total)
773/453/1226/30000 mbuf clusters in use (current/cache/total/max)
768/384 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1739K/1515K/3254K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/7/1024 sfbufs in use (current/peak/max)
0 requests for sfbufs denied
0 requests for sfbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

```
lcc2-re0:
```

```

-----
816/2514/3330 mbufs in use (current/cache/total)
816/554/1370/30000 mbuf clusters in use (current/cache/total/max)
768/512 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1836K/1736K/3572K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sfbufs in use (current/peak/max)
0 requests for sfbufs denied
0 requests for sfbufs delayed
0 requests for I/O initiated by sendfile

```

### show system buffers node-group (QFabric System)

```

user@switch> show system buffers node-group node1
node-group node1:

```

```
2/2698/2700 mbufs in use (current/cache/total)
2/1520/1522/30000 mbuf clusters in use (current/cache/total/max)
0/1280 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
4K/3714K/3719K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/6/6656 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines
```

re0:

```
-----
516/639/1155 mbufs in use (current/cache/total)
515/147/662/30000 mbuf clusters in use (current/cache/total/max)
512/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1159K/453K/1612K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines
```

re1:

```
-----
519/771/1290 mbufs in use (current/cache/total)
518/176/694/30000 mbuf clusters in use (current/cache/total/max)
512/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1165K/544K/1710K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines
```

## show system configuration archival

**Syntax**    show system configuration archival

**Release Information**    Introduced in Junos OS Release 7.6.  
                                  Command introduced in Junos OS Release 9.0 for EX Series switches.  
                                  Command introduced in Junos OS Release 11.1 for the QFX Series.  
                                  Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

**Description**    Display directory and number of files queued for archival transfer.



**NOTE:** The [edit system configuration] hierarchy is not available on QFabric systems.

**Options**    This command has no options.

**Required Privilege Level**    maintenance

**List of Sample Output**    [show system configuration archival on page 1361](#)

### Sample Output

show system configuration archival

```
user@host> show system configuration archival

/var/transfer/config/:
total 8
```

## show system configuration rescue

**Syntax** show system configuration rescue

**Release Information** Command introduced before Junos OS Release 7.4.  
 Command introduced in Junos OS Release 9.0 for EX Series switches.  
 Command introduced in Junos OS Release 11.1 for the QFX Series.  
 Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.

**Description** Display a rescue configuration, if one exists.



**NOTE:** The [edit system configuration] hierarchy is not available on QFabric systems.

**Options** This command has no options.

**Required Privilege Level** maintenance

**Related Documentation** • [show system configuration archival on page 1361](#)

**List of Sample Output** [show system configuration rescue on page 1362](#)

### Sample Output

#### show system configuration rescue

```
user@switch> show system configuration rescue
version "7.3"; groups {
  global {
    system {
      host-name router1;
      domain-name customer.net;
      domain-search [ customer.net ];
      backup-router 192.0.2.0;
      name-server {
        192.0.2.11;
        192.0.2.101;
        192.0.2.100;
        192.0.2.10;
      }
    }
  }
  login {
    user user1 {
      uid 928;
      class ;
      shell csh;
      authentication {
        encrypted-password "$ABC123"; ## SECRET-DATA
      }
    }
  }
}
```

```
        }  
    }  
    services {  
        ftp;  
        rlogin;  
        rsh;  
        telnet;  
    }  
}  
.....
```

## show system connections

---

**List of Syntax**    [Syntax on page 1364](#)  
                          [Syntax \(EX Series\) on page 1364](#)  
                          [Syntax \(TX Matrix Router\) on page 1364](#)  
                          [Syntax \(TX Matrix Plus Router\) on page 1364](#)  
                          [Syntax \(MX Series Router\) on page 1364](#)  
                          [Syntax \(QFX Series\) on page 1364](#)  
                          [Syntax \(OCX Series\) on page 1365](#)

**Syntax**    `show system connections`  
              `<extensive>`  
              `<all-chassis | all-lcc | lcc number | scc>`  
              `<inet | inet6>`  
              `<show-routing-instances>`

**Syntax (EX Series)**    `show system connections`  
                          `<extensive>`  
                          `<all-members>`  
                          `<inet | inet6>`  
                          `<local>`  
                          `<member member-id>`  
                          `<show-routing-instances>`

**Syntax (TX Matrix Router)**    `show system connections`  
                                  `<extensive>`  
                                  `<all-chassis | all-lcc | lcc number | scc>`  
                                  `<inet | inet6>`  
                                  `<show-routing-instances>`

**Syntax (TX Matrix Plus Router)**    `show system connections`  
                                  `<extensive>`  
                                  `<all-chassis | all-lcc | lcc number | sfc number>`  
                                  `<inet | inet6>`  
                                  `<show-routing-instances>`

**Syntax (MX Series Router)**    `show system connections`  
                                  `<extensive>`  
                                  `<all-members>`  
                                  `<inet | inet6>`  
                                  `<local>`  
                                  `<member member-id>`  
                                  `<show-routing-instances>`

**Syntax (QFX Series)**    `show system connections`  
                          `<extensive>`  
                          `<inet>`  
                          `<infrastructure name>`  
                          `<interconnect-device name>`  
                          `<node-group name>`

<show-routing-instances>

**Syntax (OCX Series)** show system connections  
 <extensive>  
 <inet>  
 <show-routing-instances>

**Release Information** Command introduced before Junos OS Release 7.4.  
 Command introduced in Junos OS Release 9.0 for EX Series switches.  
**sfc** option introduced for the TX Matrix Plus router in Junos OS Release 9.6.  
 Command introduced in Junos OS Release 11.1 for the QFX Series.  
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

**Description** Display information about the active IP sockets on the Routing Engine. Use this command to verify which servers are active on a system and what connections are currently in progress.

**Options** **none**—Display information about all active IP sockets on the Routing Engine.

**extensive**—(Optional) Display exhaustive system process information, which, for TCP connections, includes the TCP control block. This option is useful for debugging TCP connections.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system connection activity for all the routers in the chassis.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system connection activity for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system connection activity for all connected T1600 or T4000 LCCs

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for all members of the Virtual Chassis configuration.

**inet | inet6**—(Optional) Display IPv4 connections or IPv6 connections, respectively.

**infrastructure *name***—(QFabric systems only) (Optional) Display system connection activity for the fabric control Routing Engines or fabric manager Routing Engines.

**interconnect-device *name***—(QFabric systems only) (Optional) Display system connection activity for the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system connection activity for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system connection activity for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Display system connection activity for the Node group.

**scc**—(TX Matrix routers only) (Optional) Display system connection activity for the TX Matrix router (or switch-card chassis).

**sfc**—(TX Matrix routers only) (Optional) Display system connection activity for the TX Matrix Plus router.

**show-routing-instances**—(Optional) Display routing instances.

**Additional Information** By default, when you issue the **show system connections** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system connections on page 1367](#)  
[show system connections extensive on page 1368](#)  
[show system connections lcc \(TX Matrix Router\) on page 1369](#)  
[show system connections show-routing-instances on page 1369](#)



[show system connections \(TX Matrix Plus Router\) on page 1370](#)

[show system connections sfc \(TX Matrix Plus Router\) on page 1373](#)

[show system connections show-routing-instances \(TX Matrix Plus Router\) on page 1375](#)

**Output Fields** Table 59 on page 1367 describes the output fields for the **show system connections** command. Output fields are listed in the approximate order in which they appear.

*Table 59: show system connections Output Fields*

Field Name	Field Description
<b>Proto</b>	Protocol of the socket: <b>IP</b> , <b>TCP</b> , or <b>UDP</b> for IPv4 or IPv6.
<b>Recv-Q</b>	Number of input packets received by the protocol and waiting to be processed by the application.
<b>Send-Q</b>	Number of output packets sent by the application and waiting to be processed by the protocol.
<b>Local Address</b>	Local address and port of the socket, separated by a period. An asterisk (*) indicates that the bound address is the wildcard address. Server sockets typically have the wildcard address and a well-known port bound to them.
<b>Foreign Address</b>	Foreign address and port of the socket, separated by a period. An asterisk (*) indicates that the address or port is a wildcard.
<b>Routing Instance</b>	(Displayed only when the <b>show-routing-instance</b> option is used.) Routing instances associated with active IP sockets on the Routing Engine.
<b>(state)</b>	For TCP, the protocol state of the socket.

## Sample Output

### show system connections

```

user@host> show system connections
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address          Foreign Address         (state)
tcp    0      2 192.0.2.16.513         192.0.2.254.894        ESTABLISHED
tcp    0      0 192.0.2.16.513         192.0.2.195.945        ESTABLISHED
tcp    0      0 *.23                   *.*                      LISTEN
tcp    0      0 *.22                   *.*                      LISTEN
tcp    0      0 *.513                  *.*                      LISTEN
tcp00 *.514                *.*                      LISTEN
tcp 0 0*.21                   *.*                      LISTEN
tcp00 *.79                *.*                      LISTEN
tcp 00 *.1023                *.*                      LISTEN
tcp 00 *.111                 *.*                      LISTEN
udp00192.192.0.2.1634    192.0.2.249.2049
udp00192.192.0.2.1627    192.0.2.254.2049
udp00192.192.0.2.1371    192.0.2.195.2049
udp00*.*                *.*
udp00*.9999              *.*

```

```

udp00 *.161      *.*
udp00192.192.0.2.1039  192.0.2.16.1023
udp00192.192.0.2.1038  192.0.2.16.1023
udp 00 192.0.2.16.1037  192.0.2.16.1023
udp00 192.0.2.16.1036  192.0.2.16.1023
udp00*.1022      *.*
udp00*.1023      *.*
udp00*.111       *.*
udp00*.          *.*

```

### show system connections extensive

```
user@host> show system connections extensive
```

```

Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address Foreign Address
      (state)
tcp4      0      6 192.0.2.15.23 192.0.2.138.3013
      ESTABLISHED
      sndsbcc:          6 sndsbmbcnt:          256 sndsbmbmax:          272000
      sndsblowat:      2048 sndsbhiwat:          34000
      rcvsbcc:          0 rcvsbmbcnt:          0 rcvsbmbmax:          533120
      rcvsblowat:      1 rcvsbhiwat:          66640
      proc id:          0 proc name:
      iss: 2566994072 sndup: 2566994491
      snduna: 2566994491 sndnxt: 2566994494 sndwnd:          64094
      sndmax: 2566994494 sndcwnd:          6589 sndsssthresh:          2720
      irs: 236981199 rcvup: 236981325
      rcvnxt: 236981327 rcvadv: 237046862 rcvwnd:          66640
      rtt: 140058623 srtt:          15519 rttv:          908
      rxtcur:          1200 rxtshift:          0 rtseq: 2566994491
      rttmin:          1000 mss:          1360
      flags: SACK_PERMIT [0x2000200]
tcp4      0      0 10.255.165.93.179
10.255.165.203.65141 ESTABLISHED
      sndsbcc:          0 sndsbmbcnt:          0 sndsbmbmax:          131072
      sndsblowat:      2048 sndsbhiwat:          16384
      rcvsbcc:          0 rcvsbmbcnt:          0 rcvsbmbmax:          131072
      rcvsblowat:      1 rcvsbhiwat:          16384
      proc id:          0 proc name:
      iss: 2555961065 sndup: 2555995917
      snduna: 2555995917 sndnxt: 2555995917 sndwnd:          16384
      sndmax: 2555995917 sndcwnd:          1000 sndsssthresh: 1073725440
      irs: 2123825753 rcvup: 2123860681
      rcvnxt: 2123860681 rcvadv: 2123877065 rcvwnd:          16384
      rtt:          0 srtt:          3309 rttv:          72
      rxtcur:          1200 rxtshift:          0 rtseq: 2555995898
      rttmin:          1000 mss:          500
      flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x3e0]
tcp4      0      0 10.255.165.93.179
10.255.165.93.179 ESTABLISHED
      sndsbcc:          0 sndsbmbcnt:          0 sndsbmbmax:          131072
      sndsblowat:      2048 sndsbhiwat:          16384
      rcvsbcc:          0 rcvsbmbcnt:          0 rcvsbmbmax:          131072
      rcvsblowat:      1 rcvsbhiwat:          16384
      proc id:          5022 proc name: rpd
      iss: 2123825753 sndup: 2123860662
      snduna: 2123860681 sndnxt: 2123860681 sndwnd:          16384
      sndmax: 2123860681 sndcwnd:          1000 sndsssthresh: 1073725440
      irs: 2555961065 rcvup: 2555995917
      rcvnxt: 2555995917 rcvadv: 2556012301 rcvwnd:          16384

```

```

      rtt:          0      srtt:          3279      rttv:          22
    rxtcur:        1200    rxtshift:        0      rtseq: 2123860662
    rttmin:        1000    mss:           500
    flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x100003e0]
tcp4      0      0 10.255.165.203.179
10.255.165.113.52404 ESTABLISHED
    sndsbcc:        0    sndsbmbcnt:        0    sndsbmbmax:    131072
    sndsblowat:     2048    sndsbhiwat:     16384
    rcvsbcc:        0    rcvsbmbcnt:        0    rcvsbmbmax:    131072
    rcvsblowat:     1    rcvsbhiwat:     16384
    proc id:        0    proc name:
      iss: 1109297190    sndup: 1109332099
    snduna: 1109332118    sndnxt: 1109332118    sndwnd:    16384
    sndmax: 1109332118    sndcwnd:    1000    sndssthresh: 1073725440
    irs: 1476831634    rcvup: 1476866449
    rcvnxt: 1476866449    rcvadv: 1476882833    rcvwnd:    16384
    rtt:          0      srtt:          3235      rttv:          18
    rxtcur:        1200    rxtshift:        0      rtseq: 1109332099
    rttmin:        1000    mss:           500
    flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x3e0]

```

### show system connections lcc (TX Matrix Router)

```
user@host> show system connections lcc 2
```

```
lcc2-re0:
```

```

-----
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address      Foreign Address    (state)
tcp4      0      0 192.0.2.131.1342  192.0.2.130.23    ESTABLISHED
tcp4      0      0 192.0.2.131.2059  192.0.2.130.23    ESTABLISHED
tcp4      0      0 192.0.2.131.4571  192.0.2.130.23    ESTABLISHED
tcp4      0      0 192.0.2.131.2496  192.0.2.130.23    ESTABLISHED
tcp4      0      0 *.3221            *.*                LISTEN
tcp4      0      0 *.23              *.*                LISTEN
tcp4      0      0 *.22              *.*                LISTEN
tcp4      0      0 *.514             *.*                LISTEN
tcp4      0      0 *.513             *.*                LISTEN
tcp4      0      0 *.21              *.*                LISTEN
tcp4      0      0 *.79              *.*                LISTEN
tcp4      0      0 *.6234            *.*                LISTEN
udp4      0      0 *.514             *.*
udp4      0      0 *.6333            *.*
```

### show system connections show-routing-instances

```

user@host> show system connections show-routing-instances
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address      Foreign Address    Routing Instance
(state)
tcp4      0      0 192.0.2.204.23    192.0.2.19.4267    default
ESTABLISHED
tcp4      0      0 192.0.2.204.58540 10.209.7.138.23    default
ESTABLISHED
tcp4      0      0 192.0.2.204.23    192.0.2.19.1098    default
ESTABLISHED
tcp4      0      0 192.0.2.1.57668    192.0.2.1.179      default
ESTABLISHED
tcp4      0      0 192.0.2.1.179      192.0.2.1.49209    default
ESTABLISHED

```

```

tcp4      0      0 192.0.2.1.6234      192.0.2.17.1024
__juniper_private1__ ESTABLISHED
tcp4      0      0 192.0.2.4.9000      192.0.24.59103
__juniper_private1__ ESTABLISHED
tcp4      0      0 1192.0.2.4.59103    192.0.2.4.9000
__juniper_private1__ ESTABLISHED
tcp4      0      0 *.32012             *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.9000              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.33007             *.*
__juniper_private2__ LISTEN
tcp46     0      0 *.179               *.*
LISTEN
tcp4      0      0 *.179               *.*
LISTEN
tcp4      0      0 *.6154              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6153              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.7000              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6152              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6156              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.33005             *.*
__juniper_private2__ LISTEN
tcp4      0      0 *.31343             *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.31341             *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.32003             *.*
__juniper_private2__ LISTEN
tcp4      0      0 *.666               *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.38                *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.3221              *.*
LISTEN

```

default

default

default

### show system connections (TX Matrix Plus Router)

```

user@host> show system connections
sfc0-re0:
-
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address           Foreign Address
      (state)
tcp4      0      3 192.0.2.11.23           192.0.2.19.3565
      ESTABLISHED
tcp4      0      0 192.0.2.11.23           192.0.2.204.62719
      ESTABLISHED
tcp4      0      0 192.0.2.11.23           1192.0.2.199.51255
      ESTABLISHED
tcp4      0      0 1192.0.2.11.23          1192.0.2.227.42860
      ESTABLISHED
tcp4      0      0 *.6156                  *.*
      LISTEN
tcp4      0      0 192.0.2.4.32012         192.0.2.5.58935
      ESTABLISHED

```

tcp4	0	0	*.32012		*.*
				LISTEN	
tcp4	0	0	*.33007		*.*
				LISTEN	
tcp4	0	0	*.666		*.*
				LISTEN	
tcp4	0	0	192.0.2.4.6161		192.0.2.5.62026
				ESTABLISHED	
tcp4	0	0	*.33005		*.*
				LISTEN	
tcp4	0	0	192.0.2.4.9000		192.0.2.4.51611
				ESTABLISHED	
tcp4	0	0	192.0.2.4.51611		192.0.2.4.9000
				ESTABLISHED	
tcp4	0	0	*.6151		*.*
				LISTEN	
tcp4	0	0	*.6154		*.*
				LISTEN	
tcp4	0	0	*.6153		*.*
				LISTEN	
tcp4	0	0	*.31343		*.*
				LISTEN	
tcp4	0	0	*.31341		*.*
				LISTEN	
tcp4	0	0	*.9000		*.*
				LISTEN	
tcp4	0	0	*.6152		*.*
				LISTEN	
tcp4	0	0	*.32003		*.*
				LISTEN	
tcp4	0	0	*.33009		*.*
				LISTEN	
tcp4	0	0	*.3221		*.*
				LISTEN	
tcp4	0	0	*.23		*.*
				LISTEN	
tcp4	0	0	*.22		*.*
				LISTEN	
tcp4	0	0	*.514		*.*
				LISTEN	
tcp4	0	0	*.513		*.*
				LISTEN	
tcp4	0	0	*.21		*.*
				LISTEN	
tcp4	0	0	*.79		*.*
				LISTEN	
tcp4	0	0	*.514		*.*
				LISTEN	
tcp4	0	0	*.513		*.*
				LISTEN	
tcp4	0	0	*.6234		*.*
				LISTEN	
udp4	0	0	192.0.2.1.123		*.*
udp4	0	0	10.255.178.11.123		*.*
udp4	0	0	*.123		*.*
udp46	0	0	*.514		*.*
udp4	0	0	*.514		*.*
udp46	0	0	*.62027		*.*
udp4	0	0	*.59363		*.*
udp4	0	0	*.31342		*.*
udp46	0	0	*.161		*.*

```

udp4      0      0 *.161      *.*
udp4      0      0 *.31340    *.*
udp4      0      0 *.31340    *.*
udp46     0      0 *.49152    *.*
udp46     0      0 *.4784     *.*
udp46     0      0 *.3784     *.*
udp4      0      0 *.49152    *.*
udp4      0      0 *.4784     *.*
udp4      0      0 *.3784     *.*
udp4      0      0 *.6333     *.*
ip4       0      0 *.*        *.*
ip4       0      0 *.*        *.*

```

lcc0-re0:

-

Active Internet connections (including servers)

Proto	Recv-Q	Send-Q	Local Address	(state)	Foreign Address
tcp4	0	0	192.0.2.3.23	ESTABLISHED	192.0.2.227.50399
tcp4	0	0	*.6234	LISTEN	*.*
tcp4	0	0	*.7000	LISTEN	*.*
tcp4	0	0	*.9000	LISTEN	*.*
tcp4	0	0	*.33009	LISTEN	*.*
tcp4	0	0	*.3221	LISTEN	*.*
tcp4	0	0	*.23	LISTEN	*.*
tcp4	0	0	*.22	LISTEN	*.*
tcp4	0	0	*.514	LISTEN	*.*
tcp4	0	0	*.513	LISTEN	*.*
tcp4	0	0	*.21	LISTEN	*.*
tcp4	0	0	*.79	LISTEN	*.*
tcp4	0	0	*.514	LISTEN	*.*
tcp4	0	0	*.513	LISTEN	*.*
udp46	0	0	*.514		*.*
udp4	0	0	*.514		*.*
udp46	0	0	*.59924		*.*
udp4	0	0	*.59412		*.*
udp46	0	0	*.161		*.*
udp4	0	0	*.161		*.*
udp4	0	0	*.31342		*.*
udp4	0	0	*.6333		*.*

lcc1-re0:

-

Active Internet connections (including servers)

Proto	Recv-Q	Send-Q	Local Address	(state)	Foreign Address
tcp4	0	0	*.6234		*.*

```

tcp4      0      0 *.7000    LISTEN      *. *
tcp4      0      0 *.9000    LISTEN      *. *
tcp4      0      0 *.3221    LISTEN      *. *
tcp4      0      0 *.23      LISTEN      *. *
tcp4      0      0 *.22      LISTEN      *. *
tcp4      0      0 *.514     LISTEN      *. *
tcp4      0      0 *.513     LISTEN      *. *
tcp4      0      0 *.21      LISTEN      *. *
tcp4      0      0 *.79      LISTEN      *. *
tcp4      0      0 *.514     LISTEN      *. *
tcp4      0      0 *.513     LISTEN      *. *
tcp4      0      0 *.33009   LISTEN      *. *
udp46     0      0 *.514     LISTEN      *. *
udp4      0      0 *.514     LISTEN      *. *
udp46     0      0 *.59924   LISTEN      *. *
udp4      0      0 *.59412   LISTEN      *. *
udp4      0      0 *.31342   LISTEN      *. *
udp46     0      0 *.161     LISTEN      *. *
udp4      0      0 *.161     LISTEN      *. *
udp4      0      0 *.6333    LISTEN      *. *

```

```
lcc2-re0:
```

```
-
```

```
Active Internet connections (including servers)
```

Proto	Recv-Q	Send-Q	Local Address	Foreign Address
			(state)	
tcp4	0	0	*.6234	*. *
			LISTEN	
tcp4	0	0	*.7000	*. *
			LISTEN	
tcp4	0	0	*.9000	*. *
			LISTEN	
tcp4	0	0	*.33009	*. *
			LISTEN	
tcp4	0	0	*.3221	*. *
			LISTEN	
tcp4	0	0	*.23	*. *
			LISTEN	
tcp4	0	0	*.22	*. *
			LISTEN	
tcp4	0	0	*.514	*. *
...				

### show system connections sfc (TX Matrix Plus Router)

```
user@host> show system connections sfc 0
```

```
sfc0-re0:
```

```
-
```

Active Internet connections (including servers)					Foreign Address
Proto	Recv-Q	Send-Q	Local Address	(state)	
tcp4	0	0	192.0.2.4.514		192.0.2.4.952
				TIME_WAIT	
tcp4	0	0	1192.0.2.4.514		192.0.2.4.694
				TIME_WAIT	
tcp4	0	0	192.0.2.4.514		192.0.2.4.860
				TIME_WAIT	
tcp4	0	0	192.0.2.4.514		192.0.2.4.716
				TIME_WAIT	
tcp4	0	0	192.0.2.4.996		192.0.2.4.514
				TIME_WAIT	
tcp4	0	0	192.0.2.4.798		192.0.2.4.514
				TIME_WAIT	
tcp4	0	0	192.0.2.4.995		192.0.2.4.514
				TIME_WAIT	
tcp4	0	0	192.0.2.4.895		192.0.2.4.514
				TIME_WAIT	
tcp4	0	0	192.0.2.11.21		192.0.2.64662
				TIME_WAIT	
tcp4	0	0	192.0.2.178.11.21		
192.0.2.204.51612				TIME_WAIT	
tcp4	0	0	*.6156		*.*
				LISTEN	
tcp4	0	0	*.9000		*.*
				LISTEN	
tcp4	0	0	*.666		*.*
				LISTEN	
tcp4	0	2	192.0.2.11.23		192.0.2.19.3565
				ESTABLISHED	
tcp4	0	0	192.0.2.11.23		192.0.2.204.62719
				ESTABLISHED	
tcp4	0	0	192.0.2.11.23		192.0.2.199.51255
				ESTABLISHED	
tcp4	0	0	192.0.2.11.23		1192.0.227.42860
				ESTABLISHED	
tcp4	0	0	192.0.2.4.32012		192.0.2.5.58935
				ESTABLISHED	
tcp4	0	0	*.32012		*.*
				LISTEN	
tcp4	0	0	*.33007		*.*
				LISTEN	
tcp4	0	1432	192.0.2.4.6161		192.0.2.5.62026
				ESTABLISHED	
tcp4	0	0	*.33005		*.*
				LISTEN	
tcp4	0	0	192.0.2.4.9000		192.0.2.4.51611
				FIN_WAIT_2	
tcp4	0	0	192.0.2.4.51611		192.0.2.4.9000
				CLOSE_WAIT	
tcp4	0	0	*.6151		*.*
				LISTEN	
tcp4	0	0	*.6154		*.*
				LISTEN	
tcp4	0	0	*.6153		*.*
				LISTEN	
tcp4	0	0	*.31343		*.*
				LISTEN	
tcp4	0	0	*.31341		*.*
				LISTEN	



```

tcp4      0      0 *.6152          LISTEN          *.*
tcp4      0      0 *.32003         LISTEN          *.*
tcp4      0      0 *.33009         LISTEN          *.*
tcp4      0      0 *.3221          LISTEN          *.*
tcp4      0      0 *.23            LISTEN          *.*
tcp4      0      0 *.22            LISTEN          *.*
tcp4      0      0 *.514           LISTEN          *.*
tcp4      0      0 *.513           LISTEN          *.*
tcp4      0      0 *.21            LISTEN          *.*
tcp4      0      0 *.79            LISTEN          *.*
tcp4      0      0 *.514           LISTEN          *.*
tcp4      0      0 *.513           LISTEN          *.*
tcp4      0      0 *.6234          LISTEN          *.*
udp4      0      0 127.0.0.1.123   *.*
udp4      0      0 10.255.178.11.123 *.*
udp4      0      0 *.123           *.*
udp46     0      0 *.514           *.*
udp4      0      0 *.514           *.*
udp46     0      0 *.50895         *.*
udp4      0      0 *.50794         *.*
udp4      0      0 *.31342         *.*
udp46     0      0 *.161           *.*
udp4      0      0 *.161           *.*
udp4      0      0 *.31340         *.*
udp4      0      0 *.31340         *.*
udp46     0      0 *.49152         *.*
udp46     0      0 *.4784          *.*
udp46     0      0 *.3784          *.*
udp4      0      0 *.49152         *.*
udp4      0      0 *.4784          *.*
udp4      0      0 *.3784          *.*
udp4      0      0 *.6333          *.*
ip4       104    0 *.*             *.*
ip4       0      0 *.*             *.*
ip4       0      0 *.*             *.*

```

#### show system connections show-routing-instances (TX Matrix Plus Router)

```

user@host> show system connections show-routing-instances
sfc0-re0:
-
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address           Routing Instance      (state) Foreign Address
tcp4      0      0 *.6152                  __juniper_private1__ LISTEN                *.*
tcp4      0      0 *.9000                  __juniper_private1__ LISTEN                *.*

```

tcp4	0	0	*.666			*.*
				__juniper_private1__	LISTEN	
tcp4	0	2	192.168.178.11.23			
172.17.28.19.3565				default		ESTABLISHED
tcp4	0	0	192.168.178.11.23			
172.17.28.204.62719				default		ESTABLISHED
tcp4	0	0	192.168.178.11.23			
192.168.69.199.51255				default		ESTABLISHED
tcp4	0	0	192.168.178.11.23			
172.24.26.227.42860				default		ESTABLISHED
tcp4	0	0	162.0.0.4.32012			162.0.0.5.58935
				__juniper_private1__	ESTABLISHED	
tcp4	0	0	*.32012			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.33007			*.*
				__juniper_private2__	LISTEN	
tcp4	0	0	162.0.0.4.6161			162.0.0.5.62026
				__juniper_private1__	ESTABLISHED	
tcp4	0	0	*.33005			*.*
				__juniper_private2__	LISTEN	
tcp4	0	0	162.0.0.4.9000			162.0.0.4.51611
				__juniper_private1__	FIN_WAIT_2	
tcp4	0	0	162.0.0.4.51611			162.0.0.4.9000
				__juniper_private1__	CLOSE_WAIT	
tcp4	0	0	*.6151			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.6154			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.6153			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.31343			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.31341			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.6152			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.32003			*.*
				__juniper_private2__	LISTEN	
tcp4	0	0	*.33009			*.*
				__juniper_private2__	LISTEN	
tcp4	0	0	*.3221			*.*
				default	LISTEN	
tcp4	0	0	*.23			*.*
				default	LISTEN	
tcp4	0	0	*.22			*.*
				default	LISTEN	
tcp4	0	0	*.514			*.*
				default	LISTEN	
tcp4	0	0	*.513			*.*
				default	LISTEN	
tcp4	0	0	*.21			*.*
				default	LISTEN	
tcp4	0	0	*.79			*.*
				default	LISTEN	
tcp4	0	0	*.514			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.513			*.*
				__juniper_private1__	LISTEN	
tcp4	0	0	*.6234			*.*
				__juniper_private1__	LISTEN	
udp4	0	0	127.0.0.1.123			*.*

```

                                default
udp4      0      0 10.255.178.11.123             *. *
                                default
udp4      0      0 *.123                         *. *
                                default
udp46     0      0 *.514                         *. *
                                default
udp4      0      0 *.514                         *. *
                                default
udp46     0      0 *.50895                       *. *
                                default
udp4      0      0 *.50794                       *. *
                                default
udp4      0      0 *.31342                       *. *
                                __juniper_private1__
udp46     0      0 *.161                         *. *
                                default
udp4      0      0 *.161                         *. *
                                default
udp4      0      0 *.31340                       *. *
                                __juniper_private2__
udp4      0      0 *.31340                       *. *
                                __juniper_private1__
udp46     0      0 *.49152                       *. *
                                default
udp46     0      0 *.4784                        *. *
                                default
udp46     0      0 *.3784                        *. *
                                default
udp4      0      0 *.49152                       *. *
                                default
udp4      0      0 *.4784                        *. *
                                default
udp4      0      0 *.3784                        *. *
                                default
udp4      0      0 *.6333                        *. *
                                __juniper_private1__
ip4       0      0 *. *                          *. *
                                default
ip4       0      0 *. *                          *. *
                                default
ip4       0      0 *. *                          *. *
                                default

```

lcc0-re0:

-

```

Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address           Routing Instance      (state)      Foreign Address
tcp4      0      0 *.7000                  __juniper_private1__ LISTEN        *. *
tcp4      0      0 192.0.2.3.23            default               ESTABLISHED  192.0.2.227.50399
tcp4      0      0 *.6234                  __juniper_private1__ LISTEN        *. *
tcp4      0      0 *.9000                  __juniper_private1__ LISTEN        *. *
tcp4      0      0 *.33009                 __juniper_private2__ LISTEN        *. *
tcp4      0      0 *.3221                  default              LISTEN        *. *

```

tcp4	0	0	*.23	default	LISTEN	*.*
tcp4	0	0	*.22	default	LISTEN	*.*
tcp4	0	0	*.514	default	LISTEN	*.*
tcp4	0	0	*.513	default	LISTEN	*.*
tcp4	0	0	*.21	default	LISTEN	*.*
tcp4	0	0	*.79	default	LISTEN	*.*
tcp4	0	0	*.514	__juniper_private1__	LISTEN	*.*
tcp4	0	0	*.513	__juniper_private1__	LISTEN	*.*
udp46	0	0	*.514	default		*.*
udp4	0	0	*.514	default		*.*
udp46	0	0	*.59924	default		*.*
udp4	0	0	*.59412	default		*.*
udp46	0	0	*.161	default		*.*
udp4	0	0	*.161	default		*.*
udp4	0	0	*.31342	__juniper_private1__		*.*
udp4	0	0	*.6333	__juniper_private1__		*.*

lcc1-re0:

-

Active Internet connections (including servers) (including routing-instances)

Proto	Recv-Q	Send-Q	Local Address	Routing Instance	(state)	Foreign Address
tcp4	0	0	*.7000			*.*
tcp4	0	0	*.6234	__juniper_private1__	LISTEN	*.*
tcp4	0	0	*.9000	__juniper_private1__	LISTEN	*.*
tcp4	0	0	*.3221	__juniper_private1__	LISTEN	*.*
tcp4	0	0	*.23	default	LISTEN	*.*
tcp4	0	0	*.22	default	LISTEN	*.*
tcp4	0	0	*.514	default	LISTEN	*.*
tcp4	0	0	*.513	default	LISTEN	*.*
tcp4	0	0	*.21	default	LISTEN	*.*
tcp4	0	0	*.79	default	LISTEN	*.*
tcp4	0	0	*.514	__juniper_private1__	LISTEN	*.*
tcp4	0	0	*.513			*.*

```

tcp4      0      0 *.33009    __juniper_private1__ LISTEN      *.*
udp46     0      0 *.514      __juniper_private2__ LISTEN      *.*
udp4      0      0 *.514      default      *.*
udp46     0      0 *.59924    default      *.*
udp4      0      0 *.59412    default      *.*
udp4      0      0 *.31342    default      *.*
udp46     0      0 *.161      __juniper_private1__ *.*
udp4      0      0 *.161      default      *.*
udp4      0      0 *.6333     default      *.*
           __juniper_private1__

lcc2-re0:
-
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address           Routing Instance      (state)      Foreign Address
tcp4      0      0 *.7000     __juniper_private1__ LISTEN          *.*
tcp4      0      0 *.6234     __juniper_private1__ LISTEN          *.*
tcp4      0      0 *.9000     __juniper_private1__ LISTEN          *.*
tcp4      0      0 *.33009    __juniper_private1__ LISTEN          *.*
tcp4      0      0 *.3221     __juniper_private2__ LISTEN          *.*
tcp4      0      0 *.23       default          LISTEN          *.*
tcp4      0      0 *.22       default          LISTEN          *.*
tcp4      0      0 *.514      default          LISTEN          *.*
tcp4      0      0 *.513      default          LISTEN          *.*
tcp4      0      0 *.21       default          LISTEN          *.*
tcp4      0      0 *.79       default          LISTEN          *.*
tcp4      0      0 *.514      __juniper_private1__ LISTEN          *.*
tcp4      0      0 *.513      __juniper_private1__ LISTEN          *.*
udp46     0      0 *.514      default          *.*
udp4      0      0 *.514      default          *.*
udp4      0      0 *.31342    __juniper_private1__ *.*
udp46     0      0 *.62103    default          *.*
udp4      0      0 *.59924    default          *.*

```

```

udp46      0      0 *.161
default
udp4        0      0 *.161
default
udp4        0      0 *.6333
__juniper_private1__

lcc3-re0:
-
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address           Routing Instance      (state)      Foreign Address
tcp4        0      0 *.7000                 __juniper_private1__ LISTEN        *.
tcp4        0      0 *.6234                 __juniper_private1__ LISTEN        *.
tcp4        0      0 *.9000                 __juniper_private1__ LISTEN        *.
tcp4        0      0 *.33009                __juniper_private2__ LISTEN        *.
tcp4        0      0 *.3221                 default            LISTEN        *.
tcp4        0      0 *.23                   default            LISTEN        *.
tcp4        0      0 *.22                   default            LISTEN        *.
tcp4        0      0 *.514                  default            LISTEN        *.
tcp4        0      0 *.513                  default            LISTEN        *.
tcp4        0      0 *.21                   default            LISTEN        *.
tcp4        0      0 *.79                   default            LISTEN        *.
tcp4        0      0 *.514                  __juniper_private1__ LISTEN        *.
tcp4        0      0 *.513                  __juniper_private1__ LISTEN        *.
udp46       0      0 *.514                  default            *.
udp4        0      0 *.514                  default            *.
udp46       0      0 *.62103                default            *.
udp4        0      0 *.59924                default            *.
udp4        0      0 *.31342                __juniper_private1__ *.
udp46       0      0 *.161                  default            *.
udp4        0      0 *.161                  default            *.
udp4        0      0 *.6333                 __juniper_private1__ *.

```

## show system commit


<b>Syntax</b>	show system commit <revision> <server>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Option <b>server</b> introduced in Junos OS Release 12.1 for the PTX Series router.</p> <p>Option <b>revision</b> introduced in Junos OS Release 14.1.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p>
<b>Description</b>	Display the system commit history and any pending commit operation.
<b>Options</b>	<p><b>none</b>—Display the last 50 commit operations listed, most recent to first.</p> <p><b>revision</b>—(Optional) Display the revision number of the active configuration of the Routing Engine(s).</p> <p><b>server</b>— (Optional) Display commit server status.</p>
<div>  <p><b>NOTE:</b> By default, the status of the commit server is “Not running”. The commit server starts running only when a commit job is added to the batch.</p> </div>	
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear system commit</a></li> <li>• <a href="#">show system commit revision on page 1384</a></li> </ul>
<b>List of Sample Output</b>	<p><a href="#">show system commit on page 1383</a></p> <p><a href="#">show system commit (At a Particular Time) on page 1383</a></p> <p><a href="#">show system commit (At the Next Reboot) on page 1383</a></p> <p><a href="#">show system commit (Rollback Pending) on page 1383</a></p> <p><a href="#">show system commit (QFX Series) on page 1383</a></p>
<b>Output Fields</b>	<p><a href="#">Table 60 on page 1382</a> describes the output fields for the <b>show system commit</b> command. Output fields are listed in the approximate order in which they appear.</p>

Table 60: show system commit Output Fields

Field Name	Field Description	Level of Output
<b>&lt;number&gt;</b>	Displays the last 50 commit operations listed, most recent to first. The identifier <b>&lt;number&gt;</b> designates a configuration created for recovery using the <b>request system configuration rescue save</b> command.	<b>none</b>
<b>&lt;time-stamp&gt;</b>	Date and time of the commit operation.	<b>none</b>
<b>&lt;root&gt;/&lt;username&gt;</b>	User who executed the commit operation.	<b>none</b>
<b>&lt;method&gt;</b>	Method used to execute the commit operation: <ul style="list-style-type: none"> <li>• <b>CLI</b>—CLI interactive user performed the commit operation.</li> <li>• <b>Junos XML protocol</b>—Junos XML protocol client performed the commit operation.</li> <li>• <b>synchronize</b>—The <b>commit synchronize</b> command was performed on the other Routing Engine.</li> <li>• <b>snmp</b>—An SNMP <b>set</b> request caused the commit operation.</li> <li>• <b>button</b>—A button on the router or switch was pressed to commit a rescue configuration for recovery.</li> <li>• <b>autoinstall</b>—A configuration obtained through autoinstallation was committed.</li> <li>• <b>other</b>—When there is no login name associated with the session, the values for user and client default to root and other. For example, during a reboot after package installation, mgd commits the configuration as a system commit, and there is no login associated with the commit.</li> </ul>	<b>none</b>



## Sample Output

### show system commit

```
user@host> show system commit
0   2003-07-28 19:14:04 PDT by root via other
1   2003-07-25 22:01:36 PDT by user via cli
2   2003-07-25 22:01:32 PDT by user via cli
3   2003-07-25 21:30:13 PDT by root via button
4   2003-07-25 13:46:48 PDT by user via cli
5   2003-07-25 05:33:21 PDT by root via autoinstall
...
rescue 2002-05-10 15:32:03 PDT by root via other
```

### show system commit (At a Particular Time)

```
user@host> show system commit
commit requested by root via cli at Tue May  7 15:59:00 2002
```

### show system commit (At the Next Reboot)

```
user@host> show system commit
commit requested by root via cli at reboot
```

### show system commit (Rollback Pending)

```
user@host> show system commit
0 2005-01-05 15:00:37 PST by root via cli commit confirmed, rollback in 3mins
```

### show system commit (QFX Series)

```
user@switch> show system commit
0 2011-11-25 19:17:49 PST by root via cli
```

## show system commit revision

<b>Syntax</b>	show system commit revision <brief   detail>
<b>Release Information</b>	Command introduced in Junos OS Release 14.1.
<b>Description</b>	Display the revision number of the active configuration of the Routing Engine(s).
<b>Options</b>	<b>none</b> —Display the revision number of the active configuration of the Routing Engine(s). <b>brief   detail</b> —(Optional) Display the specified level of output.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show system commit on page 1381</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show system commit revision on page 1384</a> <a href="#">show system commit revision detail on page 1384</a>
<b>Output Fields</b>	<a href="#">Table 61 on page 1384</a> describes the output fields for the <b>show system commit revision</b> command. Output fields are listed in the approximate order in which they appear.

*Table 61: show system commit revision Output Fields*

Field Name	Field Description	Level of Output
Revision	Display the revision number of the active configuration of the Routing Engine(s).	All levels
User	User who executed the commit operation.	detail
Client	Display the Client server name.	detail
Time	Date and time of the commit operation.	detail

## Sample Output

### show system commit revision

```
user@host> show system commit revision
Revision: re0-1384090137-1
```

### show system commit revision detail

```
root@host> show system commit revision detail
```

Revision: re0-1384090137-1  
User : root  
Client : other  
Time : 2013-10-29 16:43:47 PDT

## show system core-dumps

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1386</a> <a href="#">Syntax (EX Series Switches) on page 1386</a> <a href="#">Syntax (TX Matrix Router) on page 1386</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1386</a> <a href="#">Syntax (QFX Series and OCX Series) on page 1386</a>
<b>Syntax</b>	<code>show system core-dumps</code> <code>&lt;re0&gt;</code> <code>&lt;re1&gt;</code> <code>&lt;routing-engine&gt;</code> <code>&lt;satellite [<i>fpc-slot-id</i>   <i>device-alias alias-name</i>]&gt;</code>
<b>Syntax (EX Series Switches)</b>	<code>show system core-dumps</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>show system core-dumps</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show system core-dumps</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</code>
<b>Syntax (QFX Series and OCX Series)</b>	<code>show system core-dumps</code> <code>&lt;component (<i>UUID</i>   <i>serial number</i>   all)&gt;</code> <code>&lt;display-period (<i>hours</i>   <i>minutes</i>   <i>seconds</i>)&gt;</code> <code>&lt;display-order&gt;</code> <code>&lt;kernel-crashinfo component (<i>UUID</i>   <i>serial number</i>)&gt;</code> <code>&lt;repository (core   log)&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 8.5. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced in Junos OS Release 9.6 for the TX Matrix Plus router. Command introduced in Junos OS Release 11.1 for the QFX Series. <b>re0</b> , <b>re1</b> , and <b>routing-engine</b> options introduced for dual Routing Engines in Junos OS Release 13.1. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. <b>satellite</b> option introduced in Junos OS Release 14.2R3. <b>core-file-info</b> option is deprecated in Junos OS Release 16.1R3.
<b>Description</b>	Show core files on all routers or switches running Junos OS. You can use the <b>show system core-dumps</b> command to show a list of system core files created when the router or switch has failed. This command can be useful for diagnostic purposes. Each list item includes the file permissions, number of links, owner, group, size, modification date, and path and filename. If dual Routing Engines are present, you can view core-dump files for either routing engine or both routing engines together. On a QFabric system, you can view

core-dump files on individual QFabric system devices as well as on the entire QFabric system.

**Options** **none**—Display a list of all existing core-dump files.



**NOTE:** If dual Routing Engines are present, then only the core-dump files for the active Routing Engine are listed.

**all-chassis**—(TX Matrix and TX Matrix Plus routers only) (Optional) On a routing matrix based on a TX Matrix router, display system core files for the TX Matrix router switch-card chassis [SCC] and all the T640 routers [LCCs] connected to the TX Matrix router.

On a routing matrix based on a TX Matrix Plus router, display system core files for the TX Matrix Plus router (switch-fabric chassis [SFC]) and all the T1600 routers [LCCs] connected to the TX Matrix Plus router.

**<all-lcc | lcc number>**—(TX Matrix and TX Matrix Plus routers only) (Optional) On a routing matrix based on the TX Matrix router, display core dump files for all T640 routers (line-card chassis [LCCs]) or a specific T640 router [LCC] connected to the TX Matrix router.

On a routing matrix based on the TX Matrix Plus router, display logging information for all T1600 routers (line-card chassis [LCCs]) or a specific T1600 router (LCC) connected to the TX Matrix Plus router. When using the **lcc number** option, replace **number** with a value from 0 through 3.



**NOTE:** The **all-chassis** option displays system core files for the SCC or SFC and the LCCs connected to the SCC or SFC in the routing matrix while the **all-lcc** option only displays system core files for the LCCs in the routing matrix.

**all-members**—(EX4200 switches) (Optional) Display system core files on all members of the Virtual Chassis configuration.

**component (UUID | serial number | all)**—(QFabric systems only) (Optional) Display a list of core-dump files located on individual QFabric system device or on the entire QFabric system.

**display-order (timestamp-sort | alphanumeric-sort)**—(QFabric systems only) (Optional) Display list of debug artifacts generated within the specified period—for example, within the last hour, within the last 20 minutes, or within the last 32 seconds—or according to their filename.

**display-period** (*hours | minutes | seconds*)—(QFabric systems only) (Optional) Display core-dump files generated within the specified period—for example, within the last hour, within the last 20 minutes, or within the last 32 seconds.

**kernel-crashinfo component** (*UUID | serial number*)—(QFabric systems only) (Optional) Display kernel crash information from the EEPROM on a QFabric system device.

**local**—(EX4200 switches only) (Optional) Display system core files on the local Virtual Chassis member.

**member** *member-id*—(EX4200 switches only) (Optional) Display system core files on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**re0**—(Dual Routing Engines only) Display the core-dump files on re0.

**re1**—(Dual Routing Engines only) Display the coredump files on re1.

**repository** (*core | log*)—(QFabric systems only) (Optional) Specify either the core or log repository in which to view core-dump files.

**routing-engine** (*backup | both | local | master | other*)—(Dual routing engines only) Display a list of core-dump files for either the backup, local, master, or other routing engine or both routing engines.

**satellite** [*fpc-slot-id | device-alias alias-name*]—(Junos Fusion only) (Optional) Display system core files for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

**scc**—(TX Matrix routers only) (Optional) Display system core files on the TX Matrix router (or switch-card chassis).

**sfc**—(TX Matrix Plus routers only) (Optional) Display system core files on the TX Matrix Plus router (or switch-fabric chassis).

**Required Privilege Level**

view

**List of Sample Output**

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**Output Fields** Table 62 on page 1389 describes the output fields for the **show system core-dumps** command. Output fields are listed in the approximate order in which they appear.

*Table 62: show system core-dumps Output Fields*

Field Name	Field Description
<i>Permissions</i>	Read/write permissions for the file named.
<i>Links</i>	Number of links to the file.
<i>Owner</i>	Name of the file owner.
<i>Group</i>	Name of the group with file access.
<i>File size</i>	File size in bytes.
<i>Modified</i>	Last file modification date and time.
<i>Path/filename</i>	File path where the file resides and the filename.  (MX Series routers only) When you display the core files for an MX Series Virtual Chassis, the <b>show system core-dumps</b> command does not display information about files pertaining to the relayd process.
<b>Repository scope:</b>	Repository where core-dump files and log files are stored. The core-dump files are located in the <b>core</b> repository, and the log files are located in the <b>log</b> repository. The default <b>Repository scope</b> is shared since both the <b>core</b> and <b>log</b> repositories are shared by all of the QFabric system devices.
<b>Repository head:</b>	Path to the top-level repository location.
<b>Repository name:</b>	Name of the repository: <b>core</b> or <b>log</b> .
<b>List of nodes for core repository:</b>	List of core-dump files associated with a particular QFabric system device located in the core repository.
<b>Node Group</b>	Name of the QFabric system device.
<b>Node Identifier</b>	UUID or serial number of the QFabric system device.
<b>Num</b>	Number of core-dump and log files.
<b>Model</b>	Model number of the QFabric system device.
<b>Usage</b>	Usage of the repository in megabytes.
<b>Total usage of core repository:</b>	Total usage of core-dump files associated with a particular QFabric system device located in the core repository. Usage is specified in megabytes and as a percentage.

Table 62: show system core-dumps Output Fields (continued)

Field Name	Field Description
<b>Total usage of log repository:</b>	Total usage of log files associated with a particular QFabric system device located in the log repository. Usage is specified in megabytes and as a percentage.
<b>List of nodes for core repository:</b>	List of core-dump files associated with a particular QFabric system device located in the core repository.
<b>List of nodes for log repository:</b>	List of log files associated with a particular QFabric system device located in the log repository.
<b>Filename</b>	Name of the core-dump file.
<b>Date</b>	Last core-dump file modification date and time.
<b>Size</b>	Size of the core-dump file.
<b>Core filename</b>	Filename of the core-dump file.
<b>Process name</b>	Name of the process that is generating a core-dump file or log file.
<b>Release</b>	Junos OS release.
<b>Build server</b>	Junos OS build server.
<b>Build date</b>	Junos OS build date.
<b>Stack trace</b>	Stack trace of the core-dump file.

## Sample Output

### show system core-dumps

This example shows the command output if core files exist.

```
user@host> show system core-dumps
-rw----- 1 root wheel 268369920 Jun 18 17:59 /var/crash/vmcore.0
-rw-rw---- 1 root field 3371008 Jun 18 17:53 /var/tmp/rpd.core.0
-rw-r--r-- 1 root wheel 27775914 Jun 18 17:59 /var/crash/kernel.0
```

### show system core-dumps

This example shows the command output if core files do not exist.

```
user@host> show system core-dumps
/var/crash/*core*: No such file or directory
/var/tmp/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory
```



**show system core-dumps routing-engine both**

This example shows the command output if dual Routing Engines are present.

```

user@host> show system core-dumps routing-engine both
re0:
-----
/var/crash/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory

/var/tmp/cores:
total blocks: 496776
-rw-rw---- 1 root field 11910589 Nov 8 13:20 chassisd.core.0.201311081320
...

-rw-rw---- 1 root field 11737227 Oct 28 14:21
rpd.core-tarball.4.tgz.201310281421.3458162
total files: 10

re1:
-----
/var/crash/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory

/var/tmp/cores:
total blocks: 3178420
-rw-rw---- 1 root field 19039721 Nov 8 14:29
chassisd.core.0.201311081429.3485600.gz
-rw-rw---- 1 root field 19039793 Nov 8 14:37
chassisd.core.1.201311081437.3485599.gz
..

-rw-rw---- 1 root field 11710113 Oct 17 15:26
rpd.core-tarball.1.1.tgz.201310171526.3430028

```

**show system core-dumps (TX Matrix Plus Router)**

```

user@host> show system core-dumps
sfc0-re0:
-----
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory

/var/crash/cores:
total 8

/var/tmp/cores:
total 1627592
-rw-r--r-- 1 root field 535346090 May 15 07:36
rpd.core-tarball.0.090515.0736.tgz
-rw-r--r-- 1 root field 105632057 May 15 07:37
rpd.core-tarball.1.090515.0737.tgz
-rw-r--r-- 1 root field 101981681 May 15 07:38
rpd.core-tarball.2.090515.0738.tgz
-rw-r--r-- 1 root field 85854573 May 15 07:40
rpd.core-tarball.3.090515.0740.tgz
-rw-r--r-- 1 root field 4157845 May 15 08:18
rpd.core-tarball.4.090515.0818.tgz

```

lcc0-re0:

-----  
/var/crash/kernel.\*: No such file or directory  
/tftpboot/corefiles/\*core\*: No such file or directory

/var/crash/cores:  
total 8

/var/tmp/cores:  
total 12

lcc1-re0:

-----  
/var/crash/kernel.\*: No such file or directory  
/tftpboot/corefiles/\*core\*: No such file or directory

/var/crash/cores:  
total 8

/var/tmp/cores:  
total 10024

-rw-r--r-- 1 root field 1875794 Apr 22 15:47  
chassisd.core-tarball.0.090422.1547.tgz  
-rw-r--r-- 1 root field 1894183 Apr 22 19:02  
chassisd.core-tarball.0.090422.1902.tgz  
-rw-r--r-- 1 root field 1290240 Apr 26 16:01 ksyncd\_1558.core.0.090426.1601

lcc2-re0:

-----  
/var/crash/kernel.\*: No such file or directory  
/tftpboot/corefiles/\*core\*: No such file or directory

/var/crash/cores:  
total 21124008

-rw-r--r-- 1 root wheel 1022376528 May 2 06:43  
core-LCC2-EGFPC7.core.0.090502.0643  
-rw-r--r-- 1 root wheel 1022376528 May 2 08:13  
core-LCC2-EGFPC7.core.0.090502.0813  
-rw-r--r-- 1 root wheel 1022376544 May 5 06:15  
core-LCC2-EGFPC7.core.0.090505.0615  
-rw-r--r-- 1 root wheel 1022376544 May 6 10:59  
core-LCC2-EGFPC7.core.0.090506.1059  
-rw-r--r-- 1 root wheel 1022376528 May 2 06:58  
core-LCC2-EGFPC7.core.1.090502.0658  
-rw-r--r-- 1 root wheel 754271232 May 5 06:33  
core-LCC2-EGFPC7.core.1.090505.0633  
-rw-r--r-- 1 root wheel 264897536 May 6 11:12  
core-LCC2-EGFPC7.core.1.090506.1112  
-rw-r--r-- 1 root wheel 1022376528 May 2 07:22  
core-LCC2-EGFPC7.core.2.090502.0722  
-rw-r--r-- 1 root wheel 163633152 May 5 06:52  
core-LCC2-EGFPC7.core.2.090505.0652  
-rw-r--r-- 1 root wheel 171312128 May 6 12:13  
core-LCC2-EGFPC7.core.2.090506.1213  
-rw-r--r-- 1 root wheel 1022376528 May 2 07:39  
core-LCC2-EGFPC7.core.3.090502.0739  
-rw-r--r-- 1 root wheel 1022376528 May 2 07:55  
core-LCC2-EGFPC7.core.4.090502.0755  
-rw-r--r-- 1 root wheel 427277312 May 7 04:47  
core-LCC2-STFPC4.core.0.090507.0447

```

-rw-r--r-- 1 root wheel 419609600 May 7 04:47
core-LCC2-STFPC5.core.0.090507.0447
-rw-r--r-- 1 root wheel 432356352 May 7 04:47
core-LCC2-STFPC6.core.0.090507.0447

/var/tmp/cores:
total 2568
-rw-r--r-- 1 root field 1290240 May 14 14:26 ksyncd_1540.core.0.090514.1426
...

```

### show system core-dumps (QFX3500 Switch)

```

user@switch> show system core-dumps
/var/crash/*core*: No such file or directory
-rw-rw---- 1 root field 1545143 Jun 4 2012 /var/tmp/pafxpc.core.0.gz
-rw-rw---- 1 root field 1545146 Jun 4 2012 /var/tmp/pafxpc.core.1.gz
-rw-rw---- 1 root field 1545141 Jun 4 2012 /var/tmp/pafxpc.core.2.gz
-rw-rw---- 1 root field 1545146 Jun 4 2012 /var/tmp/pafxpc.core.3.gz
-rw-rw---- 1 root field 1545142 Jun 5 2012 /var/tmp/pafxpc.core.4.gz
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory
total 5

```

### show system core-dumps (QFabric Systems)

```

user@switch> show system core-dumps
Repository scope: shared
Repository head: /pbdata/export
List of nodes for core repository: /pbdata/export/rdumps/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	OM
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	0	fx-jvre	OM
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	0	fx-jvre	OM
NW-NG-0	BBAK0394	0	qfx3500	OM
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	0	fx-jvre	OM
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	0	fx-jvre	OM
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	0	fx-jvre	OM
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	0	fx-jvre	OM
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YW3803	0	qfxc08-3008	OM
IC-WS001	WS001/YN5999	0	qfxc08-3008	OM
node-device1	BBAK0372	0	qfx3500	OM
node-device1	EE3093	0	qfx3500	OM

Total usage of core repository: 0M of 70000M (0.0%)

```

List of nodes for log repository: /pbdata/export/rlogs/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	OM
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	1	fx-jvre	OM
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	1	fx-jvre	OM
NW-NG-0	BBAK0394	1	qfx3500	OM
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	1	fx-jvre	OM
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	3	fx-jvre	OM
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	1	fx-jvre	OM
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	1	fx-jvre	OM
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YN5999	1	qfxc08-3008	OM

```

IC-WS001          WS001/YW3803          1    qfxc08-3008    OM
node-device1      BBAK0372              1    qfx3500        OM
node-device1      EE3093                1    qfx3500        OM
Total usage of log repository:OM of 70000M (0.0%)

```

### show system core-dumps component serial number display-order alphanumeric-sort repository core (QFabric Systems)

```

user@switch> show system core-dumps component BBAK8891 display-order alphanumeric-sort
repository core
Repository scope: shared
Repository head: /pbdata/export
Repository name: core
List of core dumps for component BBAK8891
Repository location: /pbdata/export/rdumps/BBAK8891
Filename                                     Date                                     Size
-----
eswd.core.0.1361.11172011214257.gz          Nov 17 21:43:10 2011          4779553
eswd.core.1.80267.11172011214514.gz          Nov 17 21:45:19 2011          3541648
eswd.core.2.80682.11172011214535.gz          Nov 17 21:45:43 2011          2156683
vccpd.core.0.1195.11182011151131.gz          Nov 18 15:11:35 2011          375617
Number of core dumps in repository:4

```

### show system core-dumps display-period (QFabric Systems)

```

user@switch> show system core-dumps display-period 24h
show system core-dumps display-period 24h
Repository scope: shared
Repository head: /pbdata/export
List of core dumps at repository: /pbdata/export/rdumps
Delta timespec: Last 24h
Component: BBAK8273
Filename                                     Size                                     Date
-----
vccpd.core.0.1195.11182011151131.gz          Nov 18 15:11:35 2011          375794
Component: cedb7b0e-0025-11e1-9a5f-00e081c52990
Filename                                     Size                                     Date
-----
vccpd.core.0.1461.11182011151131.gz          Nov 18 15:11:31 2011          120951
Component: ee19c4f8-0025-11e1-aef6-00e081c52990
Filename                                     Size                                     Date
-----
vccpd.core.0.1462.11182011151131.gz          Nov 18 15:11:31 2011          109420
Component: BBAK8281
Filename                                     Size                                     Date
-----
vccpd.core.0.1196.11182011151131.gz          Nov 18 15:11:36 2011          375373
Component: BBAK8891
Filename                                     Size                                     Date
-----
vccpd.core.0.1195.11182011151131.gz          Nov 18 15:11:35 2011          375617
Component: BBAK8276
Filename                                     Size                                     Date
-----
vccpd.core.0.1196.11182011151131.gz          Nov 18 15:11:35 2011          375350
Component: BBAK8868
Filename                                     Size                                     Date
-----
vccpd.core.0.1196.11182011151130.gz          Nov 18 15:11:34 2011          376211
Component: BBAK8835

```

Filename	Size	Date
vccpd.core.0.1195.11182011151130.gz Component: BBAK8283	Nov 18 15:11:35 2011	375700
Filename	Size	Date
vccpd.core.0.1195.11182011151131.gz Component: YW3781/YW3781	Nov 18 15:11:36 2011	368298
Filename	Size	Date
vccpd.core.0.1220.11182011151131.gz Component: 09726be2-0026-11e1-82d9-00e081c52990	Nov 18 15:11:38 2011	380002
Filename	Size	Date
vccpd.core.0.1461.11182011151130.gz Component: BBAK8309	Nov 18 15:11:31 2011	119965
Filename	Size	Date
vccpd.core.0.1196.11182011151131.gz Component: 303d476a-0026-11e1-abf4-00e081c52990	Nov 18 15:11:36 2011	378930
Filename	Size	Date
vccpd.core.0.1460.11182011151131.gz Component: YW3798/YW3798	Nov 18 15:11:31 2011	118385
Filename	Size	Date
vccpd.core.0.1219.11182011151131.gz List of log dumps at repository: /pbdata/export/rlogs Delta timespec: Last 24h Component: BBAK8273	Nov 18 15:11:36 2011	380455
Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz Component: cedb7b0e-0025-11e1-9a5f-00e081c52990	Nov 18 15:11:39 2011	20415
Filename	Size	Date
vccpd.tarball.0.1461.11182011151131.tgz Component: ee19c4f8-0025-11e1-aef6-00e081c52990	Nov 18 15:11:33 2011	19651
Filename	Size	Date
vccpd.tarball.0.1462.11182011151133.tgz Component: BBAK8281	Nov 18 15:11:36 2011	24650
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz Component: BBAK8891	Nov 18 15:11:41 2011	19445
Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz Component: BBAK8276	Nov 18 15:11:41 2011	21916
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz Component: BBAK8868	Nov 18 15:11:39 2011	20461
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz Component: BBAK8835	Nov 18 15:11:41 2011	21924
Filename	Size	Date
vccpd.tarball.0.1195.11182011151137.tgz	Nov 18 15:11:39 2011	19424

Component: BBAK8283				
Filename	Size	Date		
vccpd.tarball.0.1195.11182011151138.tgz	Nov 18 15:11:42 2011	31186		
Component: YW3781/YW3781				
Filename	Size	Date		
vccpd.tarball.0.1220.11182011151141.tgz	Nov 18 15:11:45 2011	27565		
Component: 09726be2-0026-11e1-82d9-00e081c52990				
Filename	Size	Date		
vccpd.tarball.0.1461.11182011151130.tgz	Nov 18 15:11:34 2011	19613		
Component: BBAK8309				
Filename	Size	Date		
vccpd.tarball.0.1196.11182011151138.tgz	Nov 18 15:11:46 2011	50362		
Component: 303d476a-0026-11e1-abf4-00e081c52990				
Filename	Size	Date		
vccpd.tarball.0.1460.11182011151133.tgz	Nov 18 15:11:33 2011	19360		
Component: YW3798/YW3798				
Filename	Size	Date		
vccpd.tarball.0.1219.11182011151140.tgz	Nov 18 15:11:49 2011	24473		

#### show system core-dumps kernel-crashinfo component serial number (QFabric Systems)

```

user@switch> show system core-dumps kernel-crashinfo component A0001/YA0197
Node: A0001/YA0197

Information about previous kernel crash:

-- Kernel panic data --

Panic string: kdb_sysctl_panic
System uptime: 3 day 20 hr 59 min 40 sec Kernel crash time: 2011-11-15 Wed 15:25:17
Kernel build linkstamp: JUNOS 11.3I #0: 2011-11-10 20:42:27 UTC

-- Stacktrace of panicing context --
Processor 1 (crash monarch):
savectx+0x0 (c9552800,80214efc,802a7fbc,c88ad05c) ra 801b93a8 sz 0
kdm_kcore_save_crashinfo+0x254 (c9552800,0,802a7fbc,c88ad05c) ra 801b9f44 sz 784
kdm_kcore_kern_panic_event_handler+0x4b0 (c9552800,0,802a7fbc,c88ad05c) ra
8022a9b8 sz 88
panic+0x1d0 (c9552800,0,4,77fed534) ra 802540c0 sz 56
kdb_sysctl_panic+0x70 (c9552800,0,4,77fed534) ra 80237e58 sz 40 sysctl_root+0x12c
(c9552800,0,4,e8bc5cf8) ra 80238e50 sz 48
userland_sysctl+0x164 (c9552800,0,4,e8bc5cf8) ra 8023956c sz 104
__sysctl+0xe4 (c9552800,0,4,e8bc5cf8) ra 806d62e8 sz 160
trap+0xe1c (c9552800,0,4,e8bc5cf8) ra 80896e68 sz 128
MipsUserGenException+0x1a4 (c9552800,0,4,405cd12c) ra 0 sz 0
pid 82340, process: sysctl

Processor 0:
restoreintr+0x14 (1,81bca820,3,0) ra 806cdc3c sz 0
spinlock_exit+0x30 (1,81bca820,3,0) ra 8025d354 sz 24
sleepq_release+0x64 (1,81bca820,3,0) ra 8025e670 sz 24
sleepq_timeout+0x224 (1,81bca820,3,0) ra 80240294 sz 48
softclock+0x434 (1,81bca820,3,0) ra 802067f8 sz 80
ithread_loop+0x244 (1,81bca820,3,0) ra 80200e28 sz 64 fork_exit+0xc0
(1,81bca820,3,0) ra 80897c28 sz 48

```

```

MipsNMIException+0x34 (1,81bca820,3,0) ra 0 sz 0
pid 82340, process: sysctl

Processor 2:
cpu_idle+0x20 (80960000,51bbc,2031df,81bca1b8) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2031df,81bca1b8) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2031df,81bca1b8) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2031df,81bca1b8) ra 0 sz 0
pid 82340, process: sysctl

Processor 3:
cpu_idle+0x20 (80960000,51bbc,2038df,81bca300) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2038df,81bca300) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2038df,81bca300) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2038df,81bca300) ra 0 sz 0
pid 82340, process: sysctl

Processor 4:
cpu_idle+0x20 (80960000,51bbc,2037df,81bca448) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2037df,81bca448) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2037df,81bca448) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2037df,81bca448) ra 0 sz 0
pid 82340, process: sysctl

Processor 5:
restoreintr+0x14 (1,51bbc,203edf,81bca590) ra 806cdc3c sz 0
spinlock_exit+0x30 (1,51bbc,203edf,81bca590) ra 80204a34 sz 24 idle_proc+0x21c
(1,51bbc,203edf,81bca590) ra 80200e28 sz 56 fork_exit+0xc0
(1,51bbc,203edf,81bca590) ra 80897c28 sz 48
MipsNMIException+0x34 (1,51bbc,203edf,81bca590) ra 0 sz 0
pid 82340, process: sysctl

Processor 6:
cpu_idle+0x20 (80960000,51bbc,205cdf,81bca6d8) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,205cdf,81bca6d8) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,205cdf,81bca6d8) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,205cdf,81bca6d8) ra 0 sz 0
pid 82340, process: sysctl

Processor 7:
lockmgr+0x5ac (c97e8484,c8dd9800,0,c8dd9800) ra 8c11c81c sz 48
sal_sem_take+0x134 (c97e8484,c8dd9800,0,c8dd9800) ra 8c351108 sz 56
_bcm_esw_linkscan_thread+0x45c (c97e8484,c8dd9800,0,c8dd9800) ra 8c11cdb4 sz 104
sal_thread_start_wrap+0x74 (c97e8484,c8dd9800,0,c8dd9800) ra 80200e28 sz 32
fork_exit+0xc0 (c97e8484,c8dd9800,0,c8dd9800) ra 80897c28 sz 48
MipsNMIException+0x34 (c97e8484,c8dd9800,0,c8dd9800) ra 0 sz 0
pid 82340, process: sysctl
-- End of stacktrace --

```

### show system core-dumps repository core (QFabric Systems)

```

user@switch> show system core-dumps repository core
Repository scope: shared
Repository head: /pbdata/export
Repository name: core
List of nodes for core repository: /pbdata/export/rdumps/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	0M
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	0	fx-jvve	0M
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	0	fx-jvve	0M

NW-NG-0	BBAK0394	0	qfx3500	0M
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	0	fx-jvre	0M
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	0	fx-jvre	0M
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	0	fx-jvre	0M
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	0	fx-jvre	0M
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YW3803	0	qfxc08-3008	0M
IC-WS001	WS001/YN5999	0	qfxc08-3008	0M
node-device1	BBAK0372	0	qfx3500	0M
node-device1	EE3093	0	qfx3500	0M

Total usage of core repository: 0M of 70000M (0.0%)

#### show system core-dumps repository log (QFabric Systems)

```

user@switch> show system core-dumps repository log
Repository scope: shared
Repository head: /pbdata/export
Repository name: log
List of nodes for log repository: /pbdata/export/rlogs/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	0M
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	1	fx-jvre	0M
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	1	fx-jvre	0M
NW-NG-0	BBAK0394	1	qfx3500	0M
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	1	fx-jvre	0M
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	3	fx-jvre	0M
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	1	fx-jvre	0M
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	1	fx-jvre	0M
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YN5999	1	qfxc08-3008	0M
IC-WS001	WS001/YW3803	1	qfxc08-3008	0M
node-device1	BBAK0372	1	qfx3500	0M
node-device1	EE3093	1	qfx3500	0M

Total usage of log repository: 0M of 70000M (0.0%)



## show system directory-usage

<b>List of Syntax</b>	<a href="#">Syntax on page 1399</a> <a href="#">Syntax (EX Series) on page 1399</a> <a href="#">Syntax (TX Matrix Router) on page 1399</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1399</a> <a href="#">Syntax (MX Series Router) on page 1399</a> <a href="#">Syntax (QFX Series and OCX Series) on page 1399</a>
<b>Syntax</b>	<pre>show system directory-usage &lt;depth <i>number</i>&gt; &lt;path&gt;</pre>
<b>Syntax (EX Series)</b>	<pre>show system directory-usage &lt;all-members&gt; &lt;depth <i>number</i>&gt; &lt;local&gt; &lt;member <i>member-id</i>&gt; &lt;path&gt;</pre>
<b>Syntax (TX Matrix Router)</b>	<pre>show system directory-usage &lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt; &lt;depth <i>number</i>&gt; &lt;path&gt;</pre>
<b>Syntax (TX Matrix Plus Router)</b>	<pre>show system directory-usage &lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt; &lt;depth <i>number</i>&gt; &lt;path&gt;</pre>
<b>Syntax (MX Series Router)</b>	<pre>show system directory-usage &lt;all-members&gt; &lt;depth <i>number</i>&gt; &lt;local&gt; &lt;member <i>member-id</i>&gt; &lt;path&gt;</pre>
<b>Syntax (QFX Series and OCX Series)</b>	<pre>show system directory-usage &lt;depth <i>number</i>&gt; &lt;path&gt; &lt;infrastructure <i>name</i>&gt; &lt;interconnect-device <i>name</i>&gt; &lt;node-group <i>name</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>

**Description** Display directory usage information.

**Options** **none**—Display all directory usage information.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display directory usage information about all the T640 routers (in a routing matrix based on a TX Matrix router). Display directory usage information about all the T1600 or T4000 routers (in a routing matrix based on a TX Matrix Plus router) in the chassis.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display directory information for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display directory information for all connected T1600 or T4000 LCCs.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Display directory information for all members of the Virtual Chassis configuration.

**depth *number***—(Optional) Depth of the directory to traverse. This option is useful when you want to limit the output shown for a large file system.

**infrastructure *name***— (QFabric systems only) (Optional) Display directory information for the fabric control Routing Engines and fabric manager Routing Engines.

**interconnect-device *name***— (QFabric systems only) (Optional) Display directory information for the Interconnect device.

**node-group *name***— (QFabric systems only) (Optional) Display directory information for the Node group.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display directory information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display directory information for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Display directory information for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Display directory information for the specified member of the Virtual Chassis configuration.

For EX4200 switches, replace **member-id** with a value from 0 through 9. For an MX Series Virtual Chassis, replace **member-id** with a value of 0 or 1.

**path**—(Optional) Path or root directory to traverse.

**scc**—(TX Matrix router only) (Optional) Display directory information for the TX Matrix router (or switch-card chassis).

**sfc number**—(TX Matrix Plus routers only) (Optional) Display directory information for the TX Matrix Plus router. Replace **number** with 0.

**Required Privilege Level** view

**Related Documentation** • [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system directory-usage scc \(TX Matrix Router\) on page 1402](#)  
[show system directory-usage sfc \(TX Matrix Plus Router\) on page 1402](#)  
[show system directory-usage \(QFX Series and OCX Series\) on page 1402](#)

**Output Fields** [Table 63 on page 1401](#) describes the output fields for the **show system directory-usage** command. Output fields are listed in the approximate order in which they appear.

*Table 63: show system directory-usage Output Fields*

Field Name	Field Description
<b>bytes</b>	Number of bytes used by files in a directory.
<b>directory-name</b>	Name of the directory.

## Sample Output

### show system directory-usage scc (TX Matrix Router)

```
user@host> show system directory-usage /var/tmp scc
/var/tmp
1.0K    /var/tmp/vi.recover
2.0K    /var/tmp/instmp.tPMk8u
1.0K    /var/tmp/install
        /var/tmp/instmp.GUMpur
4.8M    /var/tmp/instmp.GUMpur/packages
6.4M    /var/tmp/troy1
297M    /var/tmp/dsw
        /var/tmp/pkg_tmp.2073
83K     /var/tmp/pkg_tmp.2073/bin
        /var/tmp/instmp.oMIDb1
89K     /var/tmp/instmp.oMIDb1/bin
        /var/tmp/instmp.byhMjR
4.6M    /var/tmp/instmp.byhMjR/packages
        /var/tmp/instmp.6fqHf3
1.7M    /var/tmp/instmp.6fqHf3/packages
        /var/tmp/instmp.mljECe
4.6M    /var/tmp/instmp.mljECe/packages
```

### show system directory-usage sfc (TX Matrix Plus Router)

```
user@switch> show system directory-usage /var/tmp sfc 0
sfc0-re0:
-----
        /var/tmp
46K     /var/tmp/gres-tp
        /var/tmp/sec-download
2.0K    /var/tmp/sec-download/sub-download
2.0K    /var/tmp/vi.recover
2.0K    /var/tmp/install
795M    /var/tmp/cores
766K    /var/tmp/pr440594
```

### show system directory-usage (QFX Series and OCX Series)

```
user@switch> show system directory-usage
/var/tmp
30K     /var/tmp/gres-tp
2.0K    /var/tmp/rtsdb
2.0K    /var/tmp/vi.recover
2.0K    /var/tmp/install
2.0K    /var/tmp/pics
```

## request system halt

**List of Syntax**    [Syntax on page 1403](#)  
                           [Syntax \(EX Series Switches\) on page 1403](#)  
                           [Syntax \(PTX Series\) on page 1403](#)  
                           [Syntax \(TX Matrix Router\) on page 1403](#)  
                           [Syntax \(TX Matrix Plus Router\) on page 1404](#)  
                           [Syntax \(MX Series Router\) on page 1404](#)  
                           [Syntax \(QFX Series\) on page 1404](#)

**Syntax**    request system halt  
                   <at *time*>  
                   <backup-routing-engine>  
                   <both-routing-engines>  
                   <other-routing-engine>  
                   <in *minutes*>  
                   <media (compact-flash | disk | removable-compact-flash | usb)>  
                   <message "*text*">

**Syntax (EX Series Switches)**    request system halt  
   <all-members>  
   <at *time*>  
   <backup-routing-engine>  
   <both-routing-engines>  
   <in *minutes*>  
   <local>  
   <media (external | internal)>  
   <member *member-id*>  
   <message "*text*">  
   <other-routing-engine>  
   <slice *slice*>

**Syntax (PTX Series)**    request system halt  
                                   <at *time*>  
                                   <backup-routing-engine>  
                                   <both-routing-engines>  
                                   <other-routing-engine>  
                                   <in *minutes*>  
                                   <media (compact-flash | disk)>  
                                   <message "*text*">

**Syntax (TX Matrix Router)**    request system halt  
                                   <all-lcc | lcc *number* | scc>  
                                   <at *time*>  
                                   <backup-routing-engine>  
                                   <both-routing-engines>  
                                   <other-routing-engine>  
                                   <in *minutes*>  
                                   <media (compact-flash | disk)>  
                                   <message "*text*">

Syntax (TX Matrix Plus Router)	<pre>request system halt &lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt; &lt;at <i>time</i>&gt; &lt;backup-routing-engine&gt; &lt;both-routing-engines&gt; &lt;other-routing-engine&gt; &lt;in <i>minutes</i>&gt; &lt;media (compact-flash   disk)&gt; &lt;message "<i>text</i>"&gt;</pre>
Syntax (MX Series Router)	<pre>request system halt &lt;all-members&gt; &lt;at <i>time</i>&gt; &lt;backup-routing-engine&gt; &lt;both-routing-engines&gt; &lt;in <i>minutes</i>&gt; &lt;local&gt; &lt;media (external   internal)&gt; &lt;member <i>member-id</i>&gt; &lt;message "<i>text</i>"&gt; &lt;other-routing-engine&gt;</pre>
Syntax (QFX Series)	<pre>request system halt &lt;all-members&gt; &lt;at <i>time</i>&gt; &lt;both-routing-engines&gt; &lt;director-device <i>director-device-id</i>&gt; &lt;in <i>minutes</i>&gt; &lt;local&gt; &lt;media &gt; &lt;member <i>member-id</i>&gt; &lt;message "<i>text</i>"&gt; &lt;other-routing-engine&gt; &lt;slice <i>slice</i>&gt;</pre>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>other-routing-engine</b> option introduced in Junos OS Release 8.0.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p><b>director-device</b> option introduced for QFabric systems in Junos OS Release 12.2.</p> <p><b>backup-routing-engine</b> option introduced in Junos OS Release 13.1.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
Description	Stop the router or switch software.



**NOTE:** When you issue this command on an individual component—for example, a Node device—in a QFabric system, you will receive a warning that says “Hardware-based members will halt, Virtual Junos Routing Engines will reboot.” If you want to halt only one member of a Node group, issue this command with the `member` option on the Node device CLI, because you cannot issue this command from the QFabric CLI. Also, issuing this command might cause traffic loss on an individual component.

When you issue this command on a QFX5100 switch, you are not prompted to reboot. You must power cycle the switch to reboot.



**NOTE:** For the routers with the Routing Engines RE-S-2x00x6, RE-PTX-2x00x8, and RE-S-2x00x8, this command is deprecated and might be removed completely in a future release.

On these routers, this command is replaced with the `request vmhost halt` command which provides similar functionality.

**Options** **none**—Stop the router or switch software immediately.

**all-chassis**—(TX Matrix and TX Matrix Plus routers only) (Optional) Halt all chassis.

**all-lcc**—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, halt all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, halt all T1600 routers (or line-card chassis) connected to the TX Matrix Plus router.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Halt all members of the Virtual Chassis configuration.

**at time** —(Optional) Time at which to stop the software, specified in one of the following ways:

- **now**—Stop the software immediately. This is the default.
- **+minutes**—Number of minutes from now to stop the software.
- **yymmddhhmm**—Absolute time at which to stop the software, specified as year, month, day, hour, and minute.
- **hh:mm**—Absolute time on the current day at which to stop the software.

**backup-routing-engine**—(Optional) Halt the backup Routing Engine. This command halts the backup Routing Engine, regardless from which Routing Engine the command is executed. For example, if you issue the command from the master Routing Engine,

the backup Routing Engine is halted. If you issue the command from the backup Routing Engine, the backup Routing Engine is halted.

**both-routing-engines**—(Optional) Halt both Routing Engines at the same time.

**director-device *director-device-id***—(QFabric systems only) Halt a specific Director device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, halt a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, halt a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Halt the local Virtual Chassis member.

**in *minutes***—(Optional) Number of minutes from now to stop the software. This option is an alias for the at *+minutes* option.

**media (compact-flash | disk)**—(Optional) Boot medium for the next boot.

**media (external | internal)**—(EX Series and QFX Series switches and MX Series routers only) (Optional) Halt the boot media:

- **external**—Halt the external mass storage device.
- **internal**—Halt the internal flash device.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Halt the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**message "*text*"**—(Optional) Message to display to all system users before stopping the software.

**other-routing-engine**—(Optional) Halt the other Routing Engine from which the command is issued. For example, if you issue the command from the master Routing Engine, the backup Routing Engine is halted. Similarly, if you issue the command from the backup Routing Engine, the master Routing Engine is halted.



**scc**—(TX Matrix routers only) (Optional) Halt the TX Matrix router (or switch-card chassis).

**sfc number**—(TX Matrix Plus routers only) (Optional) Halt the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**slice slice**—(EX Series and QFX Series switches only) (Optional) Halt a partition on the boot media. This option has the following suboptions:

- 1—Halt partition 1.
- 2—Halt partition 2.
- **alternate**—Reboot from the alternate partition.

**Additional Information** On the M7i router, the **request system halt** command does not immediately power down the Packet Forwarding Engine. The power-down process can take as long as 5 minutes.

On a TX Matrix router and TX Matrix Plus router if you issue the **request system halt** command on the master Routing Engine, all the master Routing Engines connected to the routing matrix are halted. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are halted.



**NOTE:** If you have a router or switch with two Routing Engines and you want to shut the power off to the router or switch or remove a Routing Engine, you must first halt the backup Routing Engine (if it has been upgraded), and then halt the master Routing Engine. To halt a Routing Engine, issue the **request system halt** command. You can also halt both Routing Engines at the same time by issuing the **request system halt both-routing-engines** command.

**Required Privilege Level** maintenance

**Related Documentation**

- [clear system reboot on page 266](#)
- *request system power-off*
- *request vmhost halt*
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

[request system halt on page 1408](#)  
[request system halt \(In 2 Hours\) on page 1408](#)  
[request system halt \(Immediately\) on page 1408](#)  
[request system halt \(At 1:20 AM\) on page 1408](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request system halt

```
user@host> request system halt
Halt the system ? [yes,no] (no) yes

*** FINAL System shutdown message from root@section2 ***
System going down IMMEDIATELY
Terminated
...
syncing disks... 11 8 done
The operating system has halted.
Please press any key to reboot.
```

### request system halt (In 2 Hours)

The following example, which assumes that the time is 5 PM (1700), illustrates three different ways to request that the system stop 2 hours from now:

```
user@host> request system halt at +120
user@host> request system halt in 120
user@host> request system halt at 19:00
```

### request system halt (Immediately)

```
user@host> request system halt at now
```

### request system halt (At 1:20 AM)

To stop the system at 1:20 AM, enter the following command. Because 1:20 AM is the next day, you must specify the absolute time.

```
user@host> request system halt at yymmdd120
request system halt at 120
Halt the system at 120? [yes,no] (no) yes
```

## show system memory

<b>List of Syntax</b>	<a href="#">Syntax on page 1409</a> <a href="#">Syntax (EX Series Switches) on page 1409</a> <a href="#">Syntax (MX Series Routers) on page 1409</a> <a href="#">Syntax (TX Matrix Routers) on page 1409</a> <a href="#">Syntax (TX Matrix Plus Routers) on page 1409</a> <a href="#">Syntax (QFX Series) on page 1409</a>
<b>Syntax</b>	show system memory
<b>Syntax (EX Series Switches)</b>	show system memory <all-members> <local> <member <i>member-id</i> >
<b>Syntax (MX Series Routers)</b>	show system memory <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Routers)</b>	show system memory <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Routers)</b>	show system memory <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (QFX Series)</b>	show system memory <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-group <i>name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 12.1.
<b>Description</b>	Display system-wide memory distribution and usage including the Junos OS kernel, software processes, and memory disks. Use the <b>show system memory</b> command for troubleshooting with Juniper Networks Customer Support.
<b>Options</b>	<p><b>none</b>—Display the Junos OS system memory distribution and usage information.</p> <p><b>all-chassis</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) Display system memory distribution and usage information for all chassis.</p> <p><b>all-lcc</b>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system memory distribution and usage information for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display the system memory distribution and usage information for all T1600 routers (or line-card chassis) connected to the TX Matrix Plus router.</p>

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Display system memory distribution and usage information for all members of the Virtual Chassis configuration.

**infrastructure *name***—(QFabric switches only) (Optional) Display system memory distribution and usage information for the fabric control Routing Engine and fabric manager Routing Engine.

**interconnect-device *name***—(QFabric switches only) (Optional) Display system memory distribution and usage information for the Interconnect device.

**lcc *number***—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system memory distribution and usage information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system memory distribution and usage information for a specific T1600 router that is connected to the TX Matrix Plus router. Replace ***number*** with a value from 0 through 3.

**local**—(EX4200 switches and MX Series routers only) (Optional) Display system memory distribution and usage information for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Display system memory distribution and usage information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace ***member-id*** with a value from 0 through 9. For an MX Series Virtual Chassis, replace ***member-id*** with a value of 0 or 1.

**node-group *name***—(QFabric switches only) (Optional) Display system memory distribution and usage information for the Node group.

**scc**—(TX Matrix routers only) (Optional) Display system memory distribution and usage information for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system memory distribution and usage information for the TX Matrix Plus router (or switch-fabric chassis). Replace ***number*** with 0.

**Additional Information** By default, when you issue the **show system memory** command on a TX Matrix or TX Matrix Plus master Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on a TX Matrix router) or T1600 (in a routing matrix based on a TX Matrix Plus router) master Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on a TX Matrix router) or T1600 (in a routing matrix based on a TX Matrix Plus router) backup Routing Engines that are connected to it.

**Required Privilege Level** view

**List of Sample Output** [show system memory on page 1411](#)

[show system memory scc \(TX Matrix Routers\) on page 1412](#)

[show system memory sfc \(TX Matrix Plus Routers\) on page 1413](#)

[show system memory | display xml on page 1414](#)

[show system memory | display xml \(QFX Series\) on page 1433](#)

**Output Fields** Table 64 on page 1411 lists the output fields for the **show system memory** command. Output fields are listed in the approximate order in which they appear.

*Table 64: show system memory Output Fields*

Field Name	Field Description
System memory usage distribution	<p>Amount of memory used by the system, represented in kilobytes and as a percentage of the total memory.</p> <ul style="list-style-type: none"> <li>Total memory—Actual memory available to the system at the time of system initialization.</li> <li>Reserved memory—Amount of total memory reserved for the system at the time of system initialization, but not managed by virtual memory sub-system.</li> <li>Wired memory—Amount of total memory wired in the system that never paged out.</li> <li>Active memory—Amount of total memory actively in use.</li> <li>Inactive—Amount of total memory in use, but not referenced recently.</li> <li>Cache—Amount of total memory almost available for allocation.</li> <li>Free—Amount of total memory available for allocation.</li> </ul>
Memory disk resident memory	Memory used by the memory disks, but not accounted for in the kernel map. For example, swap-based memory disk.
VM-Kbytes	Virtual memory used as per all virtual mappings in the kernel or process map and percentage thereof based on maximum addressable virtual memory as per any kernel, system, architecture, or resource limits.
Resident	Real memory used as per actual resident pages of all mappings in the kernel or process map and percentage thereof based on the total real memory available in the system.
Map-name	Name of the map.
PID	Process ID.
Process-name	<p>Name of the process.</p> <p>(MX Series routers only) When you display the memory usage for an MX Series Virtual Chassis, the <b>show system memory</b> command does not display information pertaining to the relayd (/usr/sbin/relayd) process.</p>

## Sample Output

**show system memory**

```
user@host> show system memory
```

```

System memory usage distribution:
  Total memory: 1035552 Kbytes (100%)
  Reserved memory: 18684 Kbytes ( 1%)
  Wired memory: 526072 Kbytes ( 50%)
  Active memory: 154792 Kbytes ( 14%)
  Inactive memory: 64664 Kbytes ( 6%)
  Cache memory: 69840 Kbytes ( 6%)
  Free memory: 200688 Kbytes ( 19%)
Memory disk resident memory: 19016 Kbytes
VM-Kbytes( % ) Resident( % ) Map-name
570580(54.36) 92704(08.95) kernel
Pid VM-Kbytes( % ) Resident( % ) Process-name
1451 4756(00.15) 1000(00.09) /sbin/pmap
1411 727012(23.14) 18008(01.73) mgd: (mgd) (root)/dev/ttyd0
---(more)---

```

### show system memory scc (TX Matrix Routers)

```

user@host> show system memory scc
scc-re0:
-----
System memory usage distribution:
  Total memory: 3657172 Kbytes (100%)
  Reserved memory: 64848 Kbytes ( 1%)
  Wired memory: 95432 Kbytes ( 2%)
  Active memory: 225940 Kbytes ( 6%)
  Inactive memory: 70664 Kbytes ( 1%)
  Cache memory: 833104 Kbytes ( 22%)
  Free memory: 2366344 Kbytes ( 64%)
Memory disk resident memory: 72488 Kbytes
VM-Kbytes( % ) Resident( % ) Map-name
980928(93.45) 180732(00.00) kernel
Pid VM-Kbytes( % ) Resident( % ) Process-name
29709 4776(00.15) 1132(00.00) /sbin/pmap
29707 727220(23.14) 20552(00.00) mgd: (mgd) (root)
29520 727248(23.14) 20832(00.00) mgd: (mgd) (user)/dev/ttyd0
29519 18148(00.57) 12616(00.00) cli
29509 3824(00.12) 2552(00.00) -csh
29498 2104(00.06) 1684(00.00) login [pam]
29497 1960(00.06) 1364(00.00) telnetd
1546 772688(24.59) 7412(00.00) /usr/sbin/mib2d
1525 729752(23.22) 3688(00.00) /usr/sbin/smid
1524 721116(22.95) 2404(00.00) /usr/sbin/relayd
1522 723448(23.02) 2336(00.00) /usr/sbin/stats-agentd
1521 721268(22.95) 2596(00.00) /usr/sbin/irsd
1520 733124(23.33) 6816(00.00) /usr/sbin/dfwd
1519 773156(24.61) 6176(00.00) /usr/sbin/pfed
1519 773156(24.61) 6176(00.00) /usr/sbin/pfed
1518 783036(24.92) 23364(00.00) /usr/sbin/snmpd
1517 728292(23.18) 5100(00.00) /sbin/dcd
1516 770780(24.53) 4916(00.00) /usr/sbin/smihelperd
1515 721136(22.95) 2460(00.00) /usr/sbin/mspd
1514 763520(24.30) 3932(00.00) /usr/sbin/pkid
1513 722756(23.00) 3044(00.00) /usr/sbin/sendd
1512 721232(22.95) 2308(00.00) /usr/sbin/mplsoamd
1511 725744(23.10) 4092(00.00) /usr/sbin/cfmd
1510 721412(22.96) 2732(00.00) /usr/sbin/lfmd
1509 721268(22.95) 2632(00.00) /usr/sbin/oamd
1508 768312(24.45) 5708(00.00) /usr/sbin/l2cpd
1507 775556(24.68) 8400(00.00) /usr/sbin/dfcd
1506 721508(22.96) 2800(00.00) /usr/sbin/pppd

```

```

1505    723452(23.02)    2916(00.00) /usr/sbin/rdd
1504    721196(22.95)    2544(00.00) /usr/sbin/fsad
1503      3288(00.10)    1532(00.00) /usr/sbin/rtsdpd
1502    721336(22.96)    2680(00.00) /usr/sbin/lmpd
1501    766528(24.39)    5128(00.00) /usr/sbin/cosd
1500    763380(24.29)    3988(00.00) /usr/sbin/rmopd
1499    762484(24.27)    3352(00.00) /usr/sbin/apsd
1498    767244(24.42)    4924(00.00) /usr/sbin/l2ald
1497    781340(24.87)   10268(00.00) /usr/sbin/rpd
1496         0(00.00)         0(00.00) peer proxy
1495    2348(00.07)    2240(00.00) /usr/sbin/xntpd
1484         0(00.00)         0(00.00) peer proxy
1466    1772(00.05)    1156(00.00) /usr/libexec/getty
---(more)---

```

### show system memory sfc (TX Matrix Plus Routers)

```

user@host> show system-memory sfc 0
sfc0-re0:

```

#### System memory usage distribution:

```

Total memory: 3394000 Kbytes (100%)
Reserved memory: 60216 Kbytes ( 1%)
Wired memory: 85160 Kbytes ( 2%)
Active memory: 264484 Kbytes ( 7%)
Inactive memory: 72644 Kbytes ( 2%)
Cache memory: 1203868 Kbytes ( 35%)
Free memory: 1706752 Kbytes ( 50%)

```

```
Memory disk resident memory: 72564 Kbytes
```

```
VM-Kbytes( % ) Resident( % ) Map-name
```

```

980864(93.45) 171684(00.00) kernel
Pid  VM-Kbytes( % ) Resident( % ) Process-name
16415 4808(00.15) 1164(00.00) /sbin/pmap
16413 727308(23.15) 20736(00.00) mgd: (mgd) (root)
16358 727336(23.15) 21036(00.00) mgd: (mgd) (user)/dev/ttypl
16357 18320(00.58) 12752(00.00) cli
16356 3832(00.12) 2592(00.00) -csh
16331 2104(00.06) 1684(00.00) login [pam]
16330 1960(00.06) 1388(00.00) telnetd
15396 1764(00.05) 1144(00.00) /usr/libexec/getty
13624 0(00.00) 0(00.00) peer proxy
8719 730052(23.23) 4120(00.00) /usr/sbin/bdbrepd
8621 0(00.00) 0(00.00) jsr_kkcm
7786 1596(00.05) 840(00.00) tail
7677 3988(00.12) 2668(00.00) -csh
7667 2116(00.06) 1612(00.00) login [pam]
7666 1956(00.06) 1368(00.00) telnetd
7455 736588(23.44) 30892(00.00) mgd: (mgd) (root)/dev/ttyd0
7454 18308(00.58) 12344(00.00) cli
7410 3936(00.12) 2688(00.00) -csh
1625 0(00.00) 0(00.00) peer proxy
1612 0(00.00) 0(00.00) peer proxy
1560 729840(23.23) 3804(00.00) /usr/sbin/smid
1559 723484(23.02) 2304(00.00) /usr/sbin/stats-agentd
1558 721144(22.95) 2352(00.00) /usr/sbin/relayd
1557 721320(22.96) 2716(00.00) /usr/sbin/irsd
1556 731768(23.29) 4896(00.00) /usr/sbin/smihelperd
1555 721904(22.97) 3228(00.00) /usr/sbin/mspd
1554 724504(23.06) 3864(00.00) /usr/sbin/pkid
1552 722788(23.00) 3044(00.00) /usr/sbin/sendd
1551 721256(22.95) 2244(00.00) /usr/sbin/implsoamd

```

```

1550    725880(23.10)    4288(00.00) /usr/sbin/cfmd
1549    721532(22.96)    2728(00.00) /usr/sbin/lfmd
1548    721300(22.95)    2500(00.00) /usr/sbin/oamd
1547    729232(23.21)    5648(00.00) /usr/sbin/l2cpd
1546    736544(23.44)    8324(00.00) /usr/sbin/dfcd
1545    721552(22.96)    2820(00.00) /usr/sbin/pppd
1544    723500(23.02)    2948(00.00) /usr/sbin/rdd
1543    721260(22.95)    2688(00.00) /usr/sbin/fsad
1542      3312(00.10)    1520(00.00) /usr/sbin/rtspd
1536    721460(22.96)    2776(00.00) /usr/sbin/lmpd
1535    727792(23.16)    5576(00.00) /usr/sbin/cosd
1534    724468(23.06)    4020(00.00) /usr/sbin/rmopd
---(more)---

```

### show system memory | display xml

```

user@host> show system-memory | display xml
<rpc-reply xmlns:junos="http://xml.juniper.net/junos/12.1D0/junos">
  <system-memory-information>
    <system-memory-summary-information>
      <system-memory-total>3657172</system-memory-total>
      <system-memory-total-percent>100</system-memory-total-percent>
      <system-memory-reserved> 64848</system-memory-reserved>
      <system-memory-reserved-percent> 1</system-memory-reserved-percent>

      <system-memory-wired> 481988</system-memory-wired>
      <system-memory-wired-percent> 13</system-memory-wired-percent>
      <system-memory-active>1329648</system-memory-active>
      <system-memory-active-percent> 36</system-memory-active-percent>
      <system-memory-inactive> 444196</system-memory-inactive>
      <system-memory-inactive-percent> 12</system-memory-inactive-percent>

      <system-memory-cache> 709908</system-memory-cache>
      <system-memory-cache-percent> 19</system-memory-cache-percent>
      <system-memory-free> 625604</system-memory-free>
      <system-memory-free-percent> 17</system-memory-free-percent>
    </system-memory-summary-information>
    <memory-disk-resident-information>
      <resident-memory> 104028</resident-memory>
    </memory-disk-resident-information>
    <pmap-terse-information
xmlns="http://xml.juniper.net/junos/12.1D0/junos-pmap">
      <pmap-terse-summary junos:style="pmap-map-terse-summary">
        <map-name>kernel</map-name>
        <size>985708</size>
        <size-percent>93.91</size-percent>
        <resident>565600</resident>
        <resident-percent>00.00</resident-percent>
      </pmap-terse-summary>
    </pmap-terse-information>
    <pmap-terse-information
xmlns="http://xml.juniper.net/junos/12.1D0/junos-pmap">
      <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>16688</pid>
        <process-name>/sbin/pmap</process-name>
        <size>4796</size>
        <size-percent>00.15</size-percent>
        <resident>1152</resident>
        <resident-percent>00.00</resident-percent>
      </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">

```



```

    <pid>16636</pid>
    <process-name>mgd: (mgd) (user)/dev/tty0</process-name>
    <size>727396</size>
    <size-percent>23.15</size-percent>
    <resident>21080</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>16635</pid>
    <process-name>cli</process-name>
    <size>18308</size>
    <size-percent>00.58</size-percent>
    <resident>12888</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>16621</pid>
    <process-name>-su</process-name>
    <size>4012</size>
    <size-percent>00.12</size-percent>
    <resident>2836</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>16620</pid>
    <process-name>su</process-name>
    <size>1932</size>
    <size-percent>00.06</size-percent>
    <resident>1328</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>16619</pid>
    <process-name>-csh</process-name>
    <size>3920</size>
    <size-percent>00.12</size-percent>
    <resident>2688</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>16618</pid>
    <process-name>login [pam]</process-name>
    <size>2104</size>
    <size-percent>00.06</size-percent>
    <resident>1684</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>16617</pid>
    <process-name>telnetd</process-name>
    <size>1960</size>
    <size-percent>00.06</size-percent>
    <resident>1388</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>15887</pid>
    <process-name>/usr/sbin/rpd</process-name>
    <size>1086396</size>
    <size-percent>34.58</size-percent>
    <resident>337424</resident>

```

```
<resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1571</pid>
  <process-name>peer proxy</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1567</pid>
  <process-name>peer proxy</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1566</pid>
  <process-name>peer proxy</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1565</pid>
  <process-name>peer proxy</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1564</pid>
  <process-name>peer proxy</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1563</pid>
  <process-name>peer proxy</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1543</pid>
  <process-name>/usr/sbin/dfwd</process-name>
  <size>929844</size>
  <size-percent>29.59</size-percent>
  <resident>183884</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1542</pid>
  <process-name>/usr/sbin/irsd</process-name>
```

```

    <size>721364</size>
    <size-percent>22.96</size-percent>
    <resident>2760</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>1541</pid>
    <process-name>/usr/sbin/smid</process-name>
    <size>742292</size>
    <size-percent>23.62</size-percent>
    <resident>5572</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>1540</pid>
    <process-name>/usr/sbin/relayd</process-name>
    <size>721228</size>
    <size-percent>22.95</size-percent>
    <resident>2484</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>1539</pid>
    <process-name>/usr/sbin/stats-agentd</process-name>
    <size>723484</size>
    <size-percent>23.02</size-percent>
    <resident>2316</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>1538</pid>
    <process-name>/usr/sbin/mib2d</process-name>
    <size>972596</size>
    <size-percent>30.95</size-percent>
    <resident>185108</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>1537</pid>
    <process-name>/usr/sbin/snmpd</process-name>
    <size>740164</size>
    <size-percent>23.55</size-percent>
    <resident>19620</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>1536</pid>
    <process-name>/sbin/dcd</process-name>
    <size>901156</size>
    <size-percent>28.68</size-percent>
    <resident>158284</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>1535</pid>
    <process-name>/usr/sbin/mcsnoopd</process-name>
    <size>753612</size>
    <size-percent>23.98</size-percent>
    <resident>33364</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>

```

```
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1534</pid>
  <process-name>/usr/sbin/smihelperd</process-name>
  <size>744208</size>
  <size-percent>23.68</size-percent>
  <resident>4864</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1533</pid>
  <process-name>/usr/sbin/mspd</process-name>
  <size>721244</size>
  <size-percent>22.95</size-percent>
  <resident>2620</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1532</pid>
  <process-name>/usr/sbin/pkid</process-name>
  <size>724580</size>
  <size-percent>23.06</size-percent>
  <resident>4004</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1531</pid>
  <process-name>/usr/sbin/jddosd</process-name>
  <size>727212</size>
  <size-percent>23.14</size-percent>
  <resident>5472</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1531</pid>
  <process-name>/usr/sbin/jddosd</process-name>
  <size>727212</size>
  <size-percent>23.14</size-percent>
  <resident>5472</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1531</pid>
  <process-name>/usr/sbin/jddosd</process-name>
  <size>727212</size>
  <size-percent>23.14</size-percent>
  <resident>5472</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1525</pid>
  <process-name>/usr/sbin/iccpd</process-name>
  <size>721036</size>
  <size-percent>22.95</size-percent>
  <resident>2256</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>1524</pid>
  <process-name>/usr/sbin/sendd</process-name>
  <size>722864</size>
  <size-percent>23.00</size-percent>
```

```

        <resident>3124</resident>
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        <resident>2396</resident>
        <resident-percent>00.00</resident-percent>
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        <resident>30644</resident>
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    <pmap-terse-summary junos:style="pmap-process-terse-summary">
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        <resident>3036</resident>
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        <resident>2740</resident>
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        <resident>8300</resident>
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<resident-percent>00.00</resident-percent>
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  <size-percent>22.95</size-percent>
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  <size>3312</size>
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  <resident>1520</resident>
  <resident-percent>00.00</resident-percent>
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  <process-name>/usr/sbin/lmpd</process-name>
  <size>721540</size>
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  <resident>2936</resident>
  <resident-percent>00.00</resident-percent>
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  <process-name>/usr/sbin/cosd</process-name>
  <size>848668</size>
  <size-percent>27.01</size-percent>
  <resident>107800</resident>
  <resident-percent>00.00</resident-percent>
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<pmap-terse-summary junos:style="pmap-process-terse-summary">
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  <process-name>/usr/sbin/rmopd</process-name>
  <size>737332</size>
  <size-percent>23.46</size-percent>
  <resident>17012</resident>
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  <process-name>/usr/sbin/sampled</process-name>
  <size>745864</size>
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  <resident>26328</resident>
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  <size>723540</size>
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  <process-name>/usr/sbin/l2ald</process-name>
  <size>770032</size>
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  <resident>48108</resident>
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  <process-name>/usr/sbin/xntpd</process-name>
  <size>2480</size>
  <size-percent>00.07</size-percent>
  <resident>2356</resident>
  <resident-percent>00.00</resident-percent>
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  <process-name>/usr/sbin/pfed</process-name>
  <size>779232</size>
  <size-percent>24.80</size-percent>
  <resident>9688</resident>
  <resident-percent>00.00</resident-percent>
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<pmap-terse-summary junos:style="pmap-process-terse-summary">
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  <size>779232</size>
  <size-percent>24.80</size-percent>
  <resident>9688</resident>
  <resident-percent>00.00</resident-percent>
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  <resident>1132</resident>
  <resident-percent>00.00</resident-percent>
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  <size>720940</size>

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  <size-percent>24.13</size-percent>
  <resident>6088</resident>
  <resident-percent>00.00</resident-percent>
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  <size>726068</size>
  <size-percent>23.11</size-percent>
  <resident>4580</resident>
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</pmap-terse-summary>
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  <size>843652</size>
  <size-percent>26.85</size-percent>
  <resident>56936</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
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  <pid>1471</pid>
  <process-name>/usr/sbin/clksyncd</process-name>
  <size>723972</size>
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  <resident>3624</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
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  <resident>3900</resident>
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    <pid>1462</pid>
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    <resident>796</resident>
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    <resident>1440</resident>
    <resident-percent>00.00</resident-percent>
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    <size>727352</size>
    <size-percent>23.15</size-percent>
    <resident>20300</resident>
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    <size-percent>23.00</size-percent>
    <resident>2272</resident>
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  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
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    <process-name>/usr/sbin/chassisd</process-name>
    <size>836388</size>
    <size-percent>26.62</size-percent>
    <resident>17296</resident>
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  <pmap-terse-summary junos:style="pmap-process-terse-summary">
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    <process-name>/usr/sbin/chassisd</process-name>
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    <resident>17296</resident>
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  </pmap-terse-summary>
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        <resident>1200</resident>
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        <process-name>/sbin/watchdog</process-name>
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        <resident>744</resident>
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    <size>721604</size>
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    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>41</pid>
        <process-name>cb_poll</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>40</pid>

```

```
<process-name>kern_pir_proc</process-name>
<size>0</size>
<size-percent>00.00</size-percent>
<resident>0</resident>
<resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>39</pid>
  <process-name>kern_dump_proc</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>38</pid>
  <process-name>scs_housekeeping</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>37</pid>
  <process-name>netdaemon</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>36</pid>
  <process-name>softdepflush</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>35</pid>
  <process-name>syncer</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>34</pid>
  <process-name>vnlr_u_mem</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>33</pid>
  <process-name>vnlr_u</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
```

```

</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>32</pid>
  <process-name>bufdaemon</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>9</pid>
  <process-name>pagezero</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>8</pid>
  <process-name>vmdaemon</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>7</pid>
  <process-name>pagedaemon</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>31</pid>
  <process-name>swi1: ipfwd</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>30</pid>
  <process-name>swi4: ip6mismatch+</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>29</pid>
  <process-name>swi3: ip6opt ipopt</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>28</pid>
  <process-name>irq11: isab0</process-name>
  <size>0</size>

```

```
<size-percent>00.00</size-percent>
<resident>0</resident>
<resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>27</pid>
  <process-name>swi0: sio</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>26</pid>
  <process-name>irq1: atkbd0</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>25</pid>
  <process-name>irq15: ata1</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>24</pid>
  <process-name>irq14: ata0</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>23</pid>
  <process-name>usbtask</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>22</pid>
  <process-name>usb0</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
  <pid>21</pid>
  <process-name>irq12: acb0</process-name>
  <size>0</size>
  <size-percent>00.00</size-percent>
  <resident>0</resident>
  <resident-percent>00.00</resident-percent>
</pmap-terse-summary>
<pmap-terse-summary junos:style="pmap-process-terse-summary">
```



```

    <pid>20</pid>
    <process-name>irq10: em0 em1+++*</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>19</pid>
    <process-name>swi9: +</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>18</pid>
    <process-name>swi9: task queue</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>17</pid>
    <process-name>swi5: cambio</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>6</pid>
    <process-name>kqueue taskq</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>16</pid>
    <process-name>swi8: +</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>5</pid>
    <process-name>thread taskq</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
    <resident-percent>00.00</resident-percent>
  </pmap-terse-summary>
  <pmap-terse-summary junos:style="pmap-process-terse-summary">
    <pid>15</pid>
    <process-name>yarrow</process-name>
    <size>0</size>
    <size-percent>00.00</size-percent>
    <resident>0</resident>
  </pmap-terse-summary>

```

```

        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>4</pid>
        <process-name>g_down</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>3</pid>
        <process-name>g_up</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>2</pid>
        <process-name>g_event</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>14</pid>
        <process-name>swi6: vm</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>13</pid>
        <process-name>swi7: clock sio</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>12</pid>
        <process-name>swi2: netisr 0</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>11</pid>
        <process-name>idle</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>1</pid>
        <process-name>/packages/mnt/jbase/sbin/init</process-name>

```

```

        <size>1420</size>
        <size-percent>00.04</size-percent>
        <resident>796</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>10</pid>
        <process-name>ktrace</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
    <pmap-terse-summary junos:style="pmap-process-terse-summary">
        <pid>0</pid>
        <process-name>swapper</process-name>
        <size>0</size>
        <size-percent>00.00</size-percent>
        <resident>0</resident>
        <resident-percent>00.00</resident-percent>
    </pmap-terse-summary>
</pmap-terse-information>
</system-memory-information>
<cli>
    <banner></banner>
</cli>
</rpc-reply>

```

### show system memory | display xml (QFX Series)

```

user@switch> show system-memory | display xml
<rpc-reply xmlns:junos="http://xml.juniper.net/junos/12.1I0/junos">
  <system-memory-information>
    <system-memory-summary-information>
      <system-memory-total>3391488</system-memory-total>
      <system-memory-total-percent>100</system-memory-total-percent>
      <system-memory-reserved>1619892</system-memory-reserved>
      <system-memory-reserved-percent> 47</system-memory-reserved-percent>

      <system-memory-wired>1592936</system-memory-wired>
      <system-memory-wired-percent> 46</system-memory-wired-percent>
      <system-memory-active> 177736</system-memory-active>
      <system-memory-active-percent> 5</system-memory-active-percent>
      <system-memory-inactive> 60480</system-memory-inactive>
      <system-memory-inactive-percent> 1</system-memory-inactive-percent>

      <system-memory-cache> 39240</system-memory-cache>
      <system-memory-cache-percent> 1</system-memory-cache-percent>
      <system-memory-free>1244628</system-memory-free>
      <system-memory-free-percent> 36</system-memory-free-percent>
    </system-memory-summary-information>
    <memory-disk-resident-information>
      <resident-memory> 16424</resident-memory>
    </memory-disk-resident-information>
    <output>
      pmap: unable to load pmap_helper module: No such file or directory
    </output>
    <output>
      pmap: unable to load pmap_helper module: No such file or directory
    </output>
  </system-memory-information>

```

```
<cli>  
  <banner></banner>  
</cli>  
</rpc-reply>
```

## show system processes

**List of Syntax**    [Syntax on page 1435](#)  
                           [Syntax \(EX Series Switches\) on page 1435](#)  
                           [Syntax \(QFX Series Switches\) on page 1435](#)  
                           [Syntax \(MX Series Routers\) on page 1435](#)  
                           [Syntax \(OCX Series\) on page 1435](#)  
                           [Syntax \(TX Matrix Routers\) on page 1436](#)  
                           [Syntax \(TX Matrix Plus Router\) on page 1436](#)

**Syntax**    show system processes  
                   <brief | detail | extensive | summary>  
                   <health (pid *process-identifier* | process-name *process-name*)>  
                   <providers>  
                   <resource-limits (brief | detail) *process-name*>  
                   <wide>

**Syntax (EX Series Switches)**    show system processes  
   <all-members>  
   <brief | detail | extensive | summary>  
   <health (pid *process-identifier* | process-name *process-name*)>  
   <local>  
   <member *member-id*>  
   <providers>  
   <resource-limits (brief | detail) *process-name*>  
   <wide>

**Syntax (QFX Series Switches)**    show system processes  
   <all-members>  
   <brief | detail | extensive | summary>  
   <health (pid *process-identifier* | process-name *process-name*)>  
   host-processes (brief|detail )  
   <local>  
   <member *member-id*>  
   <providers>  
   <resource-limits (brief | detail) *process-name*>  
   <wide>

**Syntax (MX Series Routers)**    show system processes  
   <all-members>  
   <brief | detail | extensive | summary>  
   <health (pid *process-identifier* | process-name *process-name*)>  
   <local>  
   <member *member-id*>  
   <providers>  
   <resource-limits (brief | detail) *process-name*>  
   <wide>

**Syntax (OCX Series)**    show system processes  
                                   <brief | detail | extensive | summary >  
                                   <health (pid *process-identifier* | process-name *process-name*)>

	<code>host-processes (brief detail )</code> <code>&lt;providers&gt;</code> <code>&lt;resource-limits&gt;</code> <code>&lt;wide&gt;</code>
<b>Syntax (TX Matrix Routers)</b>	<code>show system processes</code> <code>&lt;brief   detail   extensive   summary&gt;</code> <code>&lt;all-chassis  all-lcc   lcc <i>number</i>   scc&gt;</code> <code>&lt;wide&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show system processes</code> <code>&lt;brief   detail   extensive   summary&gt;</code> <code>&lt;all-chassis  all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</code> <code>&lt;wide&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Option <b>sfc</b> introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. Enhanced output regarding per CPU usage introduced in Junos OS Release 16.1R3 for Junos OS with upgraded FreeBSD.
<b>Description</b>	Display information about software processes that are running on the router or switch and that have controlling terminals.
<b>Options</b>	<b>none</b> —Display standard information about system processes.  <b>brief   detail   extensive   summary</b> —(Optional) Display the specified level of detail.  <b>adaptive-services</b> —(Optional) Display the configuration management process that manages the configuration for stateful firewall, Network Address Translation (NAT), intrusion detection services (IDS), and IP Security (IPsec) services on the Adaptive Services PIC.  <b>alarm-control</b> —(Optional) Display the process to configure the system alarm.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display standard system process information about all the T640 routers (in a routing matrix based on the TX Matrix router) or all the T1600 or T4000 routers (in a routing matrix based on the TX Matrix Plus router) in the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus router only) (Optional) Display standard system process information for all T640 routers (or line-card chassis) connected to the TX Matrix router. Display standard system process information for all connected T1600 or T4000 LCCs.  <b>all-members</b> —(EX4200 switches, QFX Series Virtual Chassis, and MX Series routers ) (Optional) Display standard system process information for all members of the Virtual Chassis configuration.

**ancpd-service**—Display the Access Node Control Protocol (ANCP) process, which works with a special Internet Group Management Protocol (IGMP) session to collect outgoing interface mapping events in a scalable manner.

**application-identification** —Display the process that identifies an application using intrusion detection and prevention (IDP) to allow or deny traffic based on applications running on standard or nonstandard ports.

**audit-process**—(Optional) Display the RADIUS accounting process.

**auto-configuration**—Display the Interface Auto-Configuration process.

**bootp**—Display the process that enables a router, switch, or interface to act as a Dynamic Host Configuration Protocol (DHCP) or bootstrap protocol (BOOTP) relay agent. DHCP relaying is disabled.

**captive-portal-content-delivery**—Display the HTTP redirect service by specifying the location to which a subscriber's initial Web browser session is redirected, enabling initial provisioning and service selection for the subscriber.

**ce-l2tp-service**—(Optional) (M10, M10i, M7i, and MX Series routers only) Display the Universal Edge Layer 2 Tunneling Protocol (L2TP) process, which establishes L2TP tunnels and Point-to-Point Protocol (PPP) sessions through L2TP tunnels.

**cfm**—Display Ethernet Operations, Administration, and Maintenance (OAM) connectivity fault management (CFM) process, which can be used to monitor the physical link between two switches.

**chassis-control**—(Optional) Display the chassis management process.

**class-of-service**—(Optional) Display the class-of-service (CoS) process, which controls the router's or switch's CoS configuration.

**clksyncd-service**—Display the external clock synchronization process, which uses synchronous Ethernet (SyncE).

**craft-control**—Display the process for the I/O of the craft interface.

**database-replication**—(EX Series switches and MX Series routers only) (Optional) Display the database replication process.

**datapath-trace-service**—Display the packet path tracing process.

**dhcp-service**—(EX Series switches and MX Series routers only) (Optional) Display the Dynamic Host Configuration Protocol process, which enables a DHCP server to allocate network IP addresses and deliver configuration settings to client hosts without user intervention.

**diameter-service**—(Optional) Display the diameter process.

**disk-monitoring**—(Optional) Display the disk monitoring process, which checks the health of the hard disk drive on the Routing Engine.

**dynamic-flow-capture**—(Optional) Display the dynamic flow capture (DFC) process, which controls DFC configurations on Monitoring Services III PICs.

**ecc-error-logging**—(Optional) Display the error checking and correction (ECC) process, which logs ECC parity errors in memory on the Routing Engine.

**ethernet-connectivity-fault-management**— Display the process that provides IEEE 802.1ag OAM connectivity fault management (CFM) database information for CFM maintenance association end points (MEPs) in a CFM session.

**ethernet-link-fault-management**—(EX Series switches and MX Series routers only) (Optional) Display the process that provides the OAM link fault management (LFM) information for Ethernet interfaces.

**event-processing**—(Optional) Display the event process (eventd).

**firewall**—(Optional) Display the firewall management process, which manages the firewall configuration and enables accepting or rejecting packets that are transiting an interface on a router or switch.

**general-authentication-service**—(EX Series switches and MX Series routers only) (Optional) Display the general authentication process.

**health (pid *process-identifier* | process-name *process-name*)**—(Optional) Display process health information, either by process id (PID) or by process name.

**host-processes**—Display process information of processes running on the host system.

(On OCX Series only) The following options are available:

- **brief | detail**—(Optional) Display the specified level of detail.

**iccp-service**—Display the Inter-Chassis Communication Protocol (ICCP) process.

**idp-policy**—Display the intrusion detection and prevention (IDP) protocol process.

**ilmi**—Display the Integrated Local Management Interface (ILMI) protocol process, which provides bidirectional exchange of management information between two ATM interfaces across a physical connection.

**inet-process**—Display the IP multicast family process.

**init**—Display the process that initializes the USB modem.

**interface-control**—(Optional) Display the interface process, which controls the router's or switch's physical interface devices and logical interfaces.

**kernel-replication**—(Optional) Display the kernel replication process, which replicates the state of the backup Routing Engine when graceful Routing Engine switchover (GRES) is configured.

**l2-learning**—(Optional) Display the Layer 2 address flooding and learning process.



**l2cpd-service**—Display the Layer 2 Control Protocol process, which enables features such as Layer 2 protocol tunneling and nonstop bridging.

**lACP**—(Optional) Display the Link Aggregation Control Protocol (LACP) process. LACP provides a standardized means for exchanging information between partner systems on a link to allow their link aggregation control instances to reach agreement on the identity of the LAG to which the link belongs, and then to move the link to that LAG, and to enable the transmission and reception processes for the link to function in an orderly manner.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display standard system process information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display standard system process information for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches, QFX Series Virtual Chassis, and MX Series routers) (Optional) Display standard system process information for the local Virtual Chassis member.

**local-policy-decision-function**—Display the process for the Local Policy Decision Function, which regulates collection of statistics related to applications and application groups and tracking of information about dynamic subscribers and static interfaces.

**logical-system-mux**—Display the logical router multiplexer process (lrmuxd), which manages the multiple instances of the routing protocols process (rpd) on a machine running logical routers.

**mac-validation**—Display the MAC validation process, which configures MAC address validation for subscriber interfaces created on demux interfaces in dynamic profiles on MX Series routers.

**member *member-id***—(EX4200 switches, QFX Series Virtual Chassis, and MX Series routers) (Optional) Display standard system process information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**mib-process**—(Optional) Display the MIB II process, which provides the router's MIB II agent.

**mobile-ip**—(Optional) Display the Mobile IP process, which configures Junos OS Mobile IP features.

**moundd-service**—(EX Series switches and MX Series routers only) (Optional) Display the service for NFS mounts requests.

**mpls-traceroute**—(Optional) Display the MPLS Periodic Traceroute process.

**mspd**—(Optional) Display the Multiservice process.

**multicast-snooping**—(EX Series switches and MX Series routers only) (Optional) Display the multicast snooping process, which makes Layer 2 devices such as VLAN switches aware of Layer 3 information, such as the media access control (MAC) addresses of members of a multicast group.

**named-service**—(Optional) Display the DNS Server process, which is used by a router or a switch to resolve hostnames into addresses.

**neighbor-liveness**—Display the process, which specifies the maximum length of time that the router waits for its neighbor to re-establish an LDP session.

**nfsd-service**—(Optional) Display the Remote NFS Server process, which provides remote file access for applications that need NFS-based transport.

**ntp**—Display the Network Time Protocol (NTP) process, which provides the mechanisms to synchronize time and coordinate time distribution in a large, diverse network.

**packet-triggered-subscribers**—Display the packet-triggered subscribers and policy control (PTSP) process, which allows the application of policies to dynamic subscribers that are controlled by a subscriber termination device.

**peer-selection-service**—(Optional) Display the Peer Selection Service process.

**periodic-packet-services**—Display the Periodic packet management process, which is responsible for processing a variety of time-sensitive periodic tasks so that other processes can more optimally direct their resources.

**pfe**—Display the Packet Forwarding Engine management process.

**pgcp-service**—(Optional) Display the pgcpd service process running on the Routing Engine.

**pgm**—Display the Pragmatic General Multicast (PGM) protocol process, which enables a reliable transport layer for multicast applications.

**pic-services-logging**—(Optional) Display the logging process for some PICs. With this process, also known as fsad (the file system access daemon), PICs send special logging information to the Routing Engine for archiving on the hard disk.

**ppp**—(Optional) Display the Point-to-Point Protocol (PPP) process, which is the encapsulation protocol process for transporting IP traffic across point-to-point links.

**ppp-service**—Display the Universal edge PPP process, which is the encapsulation protocol process for transporting IP traffic across universal edge routers.

**pppoe**—(Optional) Display the Point-to-Point Protocol over Ethernet (PPPoE) process, which combines PPP that typically runs over broadband connections with the Ethernet link-layer protocol that allows users to connect to a network of hosts over a bridge or access concentrator.

**process-monitor**—Display the process health monitor process (pmond).

**providers**—(Optional) Display provider processes.

**redundancy-interface-process**—(Optional) Display the ASP redundancy process.

**remote-operations**—(Optional) Display the remote operations process, which provides the ping and traceroute MIBs.

**resource-cleanup**—Display the resource cleanup process.

**resource-limits (brief | detail) process-name**—(Optional) Display process resource limits.

**routing**—(Optional) Display the routing protocol process.

**sampling**—(Optional) Display the sampling process, which performs packet sampling based on particular input interfaces and various fields in the packet header.

**sbc-configuration-process**—Display the session border controller (SBC) process of the border signaling gateway (BSG).

**scc**—(TX Matrix routers only) (Optional) Display standard system process information for the TX Matrix router (or switch-card chassis).

**sdk-service**—Display the SDK Service process, which runs on the Routing Engine and is responsible for communications between the SDK application and Junos OS. Although the SDK Service process is present on the router, it is turned off by default.

**secure-neighbor-discovery**—(EX Series switches and MX Series routers only) (Optional) Display the secure Neighbor Discovery Protocol (NDP) process, which provides support for protecting NDP messages.

**send**—(Optional) Display the Secure Neighbor Discovery Protocol (SEND) process, which provides support for protecting Neighbor Discovery Protocol (NDP) messages.

**service-deployment**—(Optional) Display the service deployment process, which enables Junos OS to work with the Session and Resource Control (SRC) software.

**sfc number**—(TX Matrix Plus routers only) (Optional) Display system process information for the TX Matrix Plus router. Replace *number* with 0.

**snmp**—Display the SNMP process, which enables the monitoring of network devices from a central location and provides the router's or switch's SNMP master agent.

**sonet-aps**—Display the SONET Automatic Protection Switching (APS) process, which monitors any SONET interface that participates in APS.

**static-subscribers**—(Optional) Display the Static subscribers process, which associates subscribers with statically configured interfaces and provides dynamic service activation and activation for these subscribers.

**tunnel-oamd**—(Optional) Display the Tunnel OAM process, which enables the Operations, Administration, and Maintenance of Layer 2 tunneled networks. Layer 2 protocol tunneling (L2PT) allows service providers to send Layer 2 protocol data units (PDUs) across the provider's cloud and deliver them to Juniper Networks EX Series Ethernet Switches that are not part of the local broadcast domain.

**vrrp**—(EX Series switches and MX Series routers only) (Optional) Display the Virtual Router Redundancy Protocol (VRRP) process, which enables hosts on a LAN to make use of redundant routing platforms on that LAN without requiring more than the static configuration of a single default route on the hosts.

**watchdog**—Display the watchdog timer process, which enables the watchdog timer when Junos OS encounters a problem.

**wide**—(Optional) Display process information that might be wider than 80 columns.

**Additional Information** By default, when you issue the **show system processes** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level**

view

**Related Documentation**

- *List of Junos OS Processes*
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

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[show system processes brief on page 1446](#)  
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[show system processes extensive \(EX9200 Switch\) on page 1447](#)  
[show system processes host processes \(OCX1100 Switch\) on page 1448](#)  
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[show system processes sfc \(TX Matrix Plus Router\) on page 1457](#)  
[show system processes lcc wide \(TX Matrix Plus Routing Matrix\) on page 1459](#)  
[show system processes \(QFX Series and OCX Series\) on page 1461](#)

**Output Fields** Table 65 on page 1443 describes the output fields for the **show system processes** command. Output fields are listed in the approximate order in which they appear.

*Table 65: show system processes Output Fields*

Field Name	Field Description	Level of Output
<b>last pid</b>	Last process identifier assigned to the process.	brief extensive summary
<b>load averages</b>	Three load averages followed by the current time.	brief extensive summary
<b>processes</b>	Number of existing processes and the number of processes in each state ( <b>sleeping</b> , <b>running</b> , <b>starting</b> , <b>zombies</b> , and <b>stopped</b> ).	brief extensive summary
<b>CPU</b>	<p>(For systems running Junos OS with upgraded FreeBSD only) Breakdown of the percent usage on a per-CPU basis into the following categories: <b>% user</b>, <b>% nice</b>, <b>% system</b>, <b>% interrupt</b>, <b>% idle</b>.</p> <p><b>NOTE:</b> This field shows up in the second frame of output.</p> <p>To see which platforms run Junos OS with upgraded FreeBSD, see <i>Release Information for Junos OS with Upgraded FreeBSD</i>.</p>	extensive
<b>Mem</b>	Information about physical and virtual memory allocation.	brief extensive summary
<b>Active</b>	<p>Memory allocated and actively used by the program.</p> <p>When the system is under memory pressure, the pageout process reuses memory from the <b>free</b>, <b>cache</b>, <b>inact</b> and, if necessary, <b>active</b> pages. When the pageout process runs, it scans memory to see which pages are good candidates to be unmapped and freed up. Thus, the distinction between <b>Active</b> and <b>Inact</b> memory is only used by the pageout process to determine which pool of pages to free first at the time of a memory shortage.</p> <p>The pageout process first scans the <b>Inact</b> list, and checks whether the pages on this list have been accessed since the time they have been listed here. The pages that have been accessed are moved from the <b>Inact</b> list to the <b>Active</b> list. On the other hand, pages that have not been accessed become prime candidates to be freed by the pageout process. If the pageout process cannot produce enough free pages from the <b>Inact</b> list, pages from the <b>Active</b> list get freed up.</p> <p>Because the pageout process runs only when the system is under memory pressure, the pages on the <b>Inact</b> list remain untouched – even if they have not been accessed recently – when the amount of <b>Free</b> memory is adequate.</p>	brief extensive summary
<b>Inact</b>	<p>Memory allocated but not recently used or memory freed by the programs. Inactive memory remains mapped in the address space of one or more processes and, therefore, counts toward the RSS value of those processes.</p> <p>Any amount of memory freed by the routing protocol process might still be considered part of the <b>RES</b> value. Generally, the kernel delays the migrating of memory out of the <b>Inact</b> queue into the <b>Cache</b> or <b>Free</b> list unless there is a memory shortage.</p>	brief extensive summary

Table 65: show system processes Output Fields (continued)

Field Name	Field Description	Level of Output
<b>Wired</b>	Memory that is not eligible to be swapped, usually used for in-kernel memory structures and/or memory physically locked by a process.	<b>brief extensive summary</b>
<b>Cache</b>	Memory that is not associated with any program and does not need to be swapped before being reused.	<b>brief extensive summary</b>
<b>Buf</b>	Size of memory buffer used to hold data recently called from the disk.	<b>brief extensive summary</b>
<b>Free</b>	Memory that is not associated with any programs. Memory freed by a process can become <b>Inactive</b> , <b>Cache</b> , or <b>Free</b> , depending on the method used by the process to free the memory.	<b>brief extensive summary</b>
<b>Swap</b>	Information about physical and virtual memory allocation.  <b>NOTE:</b> Memory can remain swapped out indefinitely if it is not accessed again. Therefore, the show system process extensive command shows that memory is swapped to disk even though there is plenty of free memory, and such a situation is not unusual.	<b>brief extensive summary</b>
<b>PID</b>	Process identifier.	<b>detail extensive summary</b>
<b>TT</b>	Control terminal name.	<b>none detail</b>
<b>STAT</b>	Symbolic process state. The state is given by a sequence of letters. The first letter indicates the run state of the process: <ul style="list-style-type: none"> <li>• <b>D</b>—In disk or other short-term, uninterruptible wait</li> <li>• <b>I</b>—Idle (sleeping longer than about 20 seconds)</li> <li>• <b>R</b>—Runnable</li> <li>• <b>S</b>—Sleeping for less than 20 seconds</li> <li>• <b>T</b>—Stopped</li> <li>• <b>Z</b>—Dead (zombie)</li> <li>• <b>+</b> —The process is in the foreground process group of its control terminal.</li> <li>• <b>&lt;</b>—The process has raised CPU scheduling priority.</li> <li>• <b>&gt;</b>—The process has specified a soft limit on memory requirements and is currently exceeding that limit; such a process is not swapped.</li> <li>• <b>A</b>—The process requested random page replacement.</li> <li>• <b>E</b>—The process is trying to exit.</li> <li>• <b>L</b>—The process has pages locked in core.</li> <li>• <b>N</b>—The process has reduced CPU scheduling priority.</li> <li>• <b>S</b>—The process requested first-in, first-out (FIFO) page replacement.</li> <li>• <b>s</b>—The process is a session leader.</li> <li>• <b>V</b>—The process is temporarily suspended.</li> <li>• <b>W</b>—The process is swapped out.</li> <li>• <b>X</b>—The process is being traced or debugged.</li> </ul>	<b>none detail</b>

Table 65: *show system processes* Output Fields (continued)

Field Name	Field Description	Level of Output
UID	User identifier.	detail
USERNAME	Process owner.	extensive summary
PPID	Parent process identifier.	detail
CPU	<p><b>(D)</b>—Short-term CPU usage.</p> <p><b>(E and S)</b>—Raw (unweighted) CPU usage. The value of this field is used to sort the processes in the output.</p>	detail extensive summary
RSS	Resident set size.	detail
WCHAN	Symbolic name of the wait channel.	detail
STARTED	Local time when the process started running.	detail
PRI	Current priority of the process. A lower number indicates a higher priority.	detail extensive summary
NI or NICE	UNIX "niceness" value. A lower number indicates a higher priority.	detail extensive summary
SIZE	Total size of the process (text, data, and stack), in kilobytes.	extensive summary
RES	<p>Current amount of program resident memory, in kilobytes.</p> <p>This is also known as RSS or Resident Set Size. The <b>RES</b> value includes shared library pages used by the process. Any amount of memory freed by the process might still be considered part of the <b>RES</b> value. Generally, the kernel delays the migrating of memory out of the <b>Inact</b> queue into the <b>Cache</b> or <b>Free</b> list unless there is a memory shortage. This can lead to large discrepancies between the values reported by the routing protocol process and the kernel, even after the routing protocol process has freed a large amount of memory.</p>	extensive summary
STATE	Current state of the process (for example, <b>sleep</b> , <b>wait</b> , <b>run</b> , <b>idle</b> , <b>zombie</b> , or <b>stop</b> ).	extensive summary
TIME	<p><b>(S)</b>—Number of system and user CPU seconds that the process has used.</p> <p><b>(None, D, and E)</b>—Total amount of time that the command has been running.</p>	detail extensive summary
WCPU	Weighted CPU usage.	extensive summary
COMMAND	<p>Command that is currently running.</p> <p>(MX Series routers only) When you display the software processes for an MX Series Virtual Chassis, the <b>show system processes</b> command does not display information about the relayd process.</p>	detail extensive summary
THR	Number of threads in the process	extensive

## Sample Output

### show system processes

```
user@host> show system processes
PID  TT  STAT      TIME COMMAND
   0  ??  DLs      0:00.70 (swapper)
   1  ??  Is       0:00.35 /sbin/init --
   2  ??  DL       0:00.00 (pagedaemon)
   3  ??  DL       0:00.00 (vmdaemon)
   4  ??  DL       0:42.37 (update)
   5  ??  DL       0:00.00 (if_jnx)
  80  ??  Ss       0:14.66 syslogd -s
  96  ??  Is       0:00.01 portmap
 128  ??  Is       0:02.70 cron
 173  ??  Is       0:02.24 /usr/local/sbin/sshd (sshd1)
 189  ??  S        0:03.80 /sbin/watchdog -t180
 190  ??  I        0:00.03 /usr/sbin/tnetd -N
 191  ??  S        2:24.76 /sbin/ifd -N
 192  ??  S<       0:55.44 /usr/sbin/xntpd -N
 195  ??  S        0:53.11 /usr/sbin/snmpd -N
 196  ??  S        1:15.73 /usr/sbin/mib2d -N
 198  ??  I        0:00.75 /usr/sbin/inetd -N
2677  ??  I        0:00.01 /usr/sbin/mgd -N
2712  ??  Ss       0:00.24 rlogind
2735  ??  R        0:00.00 /bin/ps -ax
1985  p0- S      0:07.41 ./rpd -N
2713  p0  Is      0:00.24 -tcsh (tcsh)
2726  p0  S+      0:00.07 cli
```

### show system processes brief

```
user@host> show system processes brief
last pid:  543;  load averages:  0.00,  0.00,  0.00    18:29:47
37 processes:  1 running, 36 sleeping

Mem: 25M Active, 3976K Inact, 19M Wired, 8346K Buf, 202M Free
Swap: 528M Total, 64K Used, 528M Free
```

### show system processes detail

```
user@host> show system processes detail
PID  UID  PPID  CPU  PRI  NI  RSS  WCHAN  STARTED  TT  STAT      TIME COMMAND
3151 1049 3129   2   28   0  672  -      1:13PM  p0  R+      0:00.00 ps -ax -r
   1   0   0   0  10   0  376  wait   1:51PM  ??  Is      0:00.29 /sbin/init
   2   0   0   0 -18   0   12  psleep  1:51PM  ??  DL      0:00.00 (pagedae
   3   0   0   0  28   0   12  psleep  1:51PM  ??  DL      0:00.00 (vmdaemo
   4   0   0   0  28   0   12  update  1:51PM  ??  DL      0:07.15 (update)
   5   0   0   0   2   0   12  pfesel  1:51PM  ??  IL      0:02.90 (if_pfe)
  27   0   1   0  10   0 17936  mfsidl  1:51PM  ??  Is      0:00.46 mfs /dev/
  81   0   1   0   2   0   496  select  1:52PM  ??  Ss      0:31.21 syslogd -
 119   1   1   0   2   0   492  select  1:52PM  ??  Is      0:00.00 portmap
 134   0   1   0   2   0   580  select  1:52PM  ??  S       0:02.95 amd -p -a
 151   0   1   0  18   0   532  pause   1:52PM  ??  Is      0:00.34 cron
 183   0   1   0   2   0   420  select  1:52PM  ??  Ss      0:00.07 /usr/loca
 206   0   1   0  18   0   72  pause   1:52PM  ??  S       0:00.51 /sbin/wat
 207   0   1   0   2   0   520  select  1:52PM  ??  I       0:00.16 /usr/sbin
 208   0   1   0   2   0   536  select  1:52PM  ??  S       0:08.21 /sbin/dcd
 210   0   1  255   2 -12   740  select  1:52PM  ??  S<      0:05.83 /usr/sbin
```



```

211    0    1    0    2    0  376 select  1:52PM  ??  S    0:00.03 /usr/sbin
215    0    1    0    2    0  548 select  1:52PM  ??  I    0:00.50 /usr/sbin
219    0    1    0    3    0  540 ttyin   1:52PM  v0  Is+  0:00.02 /usr/libe
220    0    1    0    3    0  540 ttyin   1:52PM  v1  Is+  0:00.01 /usr/libe
221    0    1    0    3    0  540 ttyin   1:52PM  v2  Is+  0:00.01 /usr/libe
222    0    1    0    3    0  540 ttyin   1:52PM  v3  Is+  0:00.01 /usr/libe
735    0    1    0    2    0  468 select  2:47PM  ??  S    0:19.14 /usr/sbin
736    0    1    0    2    0  212 select  2:47PM  ??  S    0:14.13 /usr/sbin
1380   0    1    0    3    0  888 ttyin   7:32PM  d0  Is+  0:00.46 bash
3019   0   207    0    2    0  636 select  10:49AM  ??  Ss   0:02.93 tnp.chass
3122   0  1380    0    2    0  1764 select  12:33PM  d0  S    0:00.77 ./rpd -N
3128   0   215    0    2    0   580 select  12:45PM  ??  Ss   0:00.12 rlogind
3129  1049  3128    0   18    0   944 pause  12:45PM  p0  Ss   0:00.14 -tcsh (tc
      0    0    0    0 -18    0    0 sched  1:51PM  ??  DLs  0:00.10 (swapper

```

### show system processes extensive

```
user@host> show system processes extensive
```

```
Mem: 241M Active, 99M Inact, 78M Wired, 325M Cache, 69M Buf, 1251M Free
```

```
Swap: 2048M Total, 2048M Free
```

PID	USERNAME	THR	PRI	NICE	SIZE	RES	STATE	TIME	WCPU	COMMAND
11	root	1	171	52	OK	12K	RUN	807.5H	98.73%	idle
13	root	1	-20	-139	OK	12K	WAIT	36:17	0.00%	swi7: clock sio
1499	root	1	96	0	7212K	3040K	select	34:01	0.00%	license-check
1621	root	1	96	0	20968K	11216K	select	20:25	0.00%	mib2d
1465	root	2	8	-88	115M	11748K	nanslp	14:32	0.00%	chassisd
1478	root	1	96	0	6336K	3816K	select	11:28	0.00%	ppmd
20	root	1	-68	-187	OK	12K	WAIT	10:28	0.00%	irq10: em0 em1+++*
1490	root	1	96	0	11792K	4336K	select	9:44	0.00%	shm-rtssdbd
1618	root	1	96	0	39584K	7464K	select	8:47	0.00%	pfed
1622	root	1	96	0	15268K	10988K	select	6:16	0.00%	snmpd
1466	root	1	96	0	7408K	2896K	select	5:44	0.00%	alarmd
7	root	1	-16	0	OK	12K	client	5:09	0.00%	ifstate notify
1480	root	1	96	0	5388K	2660K	select	4:29	0.00%	ksyncd
12	root	1	-40	-159	OK	12K	WAIT	4:15	0.00%	swi2: netisr 0
1462	root	1	96	0	1836K	1240K	select	3:57	0.00%	bslockd
55	root	1	-16	0	OK	12K	-	3:44	0.00%	schedcpu
1392	root	1	16	0	OK	12K	bcmsem	3:37	0.00%	bcmLINK.0
47	root	1	-16	0	OK	12K	psleep	3:25	0.00%	vmkmemdaemon
36	root	1	20	0	OK	12K	syncer	2:46	0.00%	syncer
1484	root	1	96	0	7484K	3428K	select	2:38	0.00%	clksyncd
1616	root	1	96	0	4848K	2848K	select	2:18	0.00%	irsd
1487	root	1	96	0	32800K	6992K	select	2:10	0.00%	smid
1623	root	1	96	0	34616K	5464K	select	2:01	0.00%	dcd
15	root	1	-16	0	OK	12K	-	1:59	0.00%	yarrow
49	root	1	-16	0	OK	12K	.	1:51	0.00%	ddostasks

### show system processes extensive (EX9200 Switch)

```
user@switch> show system processes extensive
```

```
last pid: 3372; load averages: 0.02, 0.02, 0.00 up 0+01:42:22 16:39:57
```

```
151 processes: 4 running, 131 sleeping, 1 zombie, 15 waiting
```

```
Mem: 935M Active, 122M Inact, 108M Wired, 838M Cache, 214M Buf, 5872M Free
```

```
Swap: 8192M Total, 8192M Free
```

PID	USERNAME	THR	PRI	NICE	SIZE	RES	STATE	TIME	WCPU	COMMAND
-----	----------	-----	-----	------	------	-----	-------	------	------	---------

```

10 root      1 171  52   OK   16K RUN    96:34 92.19% idle
3317 root    1  97   0 40412K 30944K select 0:00  5.13% mgd
3316 root    1  96   0 26672K 20516K select 0:00  3.08% cli
1626 root    2   8 -88  124M 20332K nanslp  3:19  2.39% chassisd
260 root     1  -8   0   OK   16K mdwait 0:16  0.00% md16
19 root      1 -68 -187   OK   16K WAIT   0:12  0.00% irq11: em0 em1
em2*
1642 root    1  96   0  8052K 3936K RUN    0:10  0.00% clksyncd
11 root      1 -20 -139   OK   16K WAIT   0:07  0.00% swi7: clock sio
154 root     1  -8   0   OK   16K mdwait 0:06  0.00% md8
1784 root    1  96   0   98M 33720K select 0:05  0.00% authd
1646 root    1  96   0  7776K 2944K select 0:03  0.00% license-check
1807 root    1  96   0 41340K 9944K select 0:02  0.00% mib2d

```

[...Output truncated...]

### show system processes host processes (OCX1100 Switch)

```

user@switch> show system processes host processes
fpc0:
-----
top - 14:14:32 up  2:05,  0 users,  load average: 0.11, 0.39, 0.39
Tasks: 101 total,  1 running, 98 sleeping,  0 stopped,  2 zombie
Cpu(s):  3.1%us,  2.2%sy,  0.0%ni, 94.2%id,  0.4%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:   3881300k total, 2667040k used, 1214260k free,  53232k buffers
Swap:   15620k total,    0k used,  15620k free,  808492k cached

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
 2780 root      20   0 1860m 1.5g 3780  S   14  41.7   20:56.05  kvm
 1482 bind      20   0 24676 5912 1944  S    2   0.2    0:00.07  named
 4631 root      20   0  648m  94m  13m  S    2   2.5    4:19.59  dcpfe
 9230 root      20   0 15208 1092  832  R    2   0.0    0:00.01  top
   1 root      20   0  4216  660  576  S    0   0.0    2:09.61  init
   2 root      20   0     0     0     0  S    0   0.0    0:00.00  kthreadd
   3 root      20   0     0     0     0  S    0   0.0    0:00.21  ksoftirqd/0
   4 root      20   0     0     0     0  S    0   0.0    0:00.00  kworker/0:0
   5 root       0 -20     0     0     0  S    0   0.0    0:00.00  kworker/0:0H
   7 root      RT   0     0     0     0  S    0   0.0    0:00.52  migration/0
   8 root      20   0     0     0     0  S    0   0.0    0:04.36  rcu_preempt
   9 root      20   0     0     0     0  S    0   0.0    0:00.00  rcu_bh
  10 root      20   0     0     0     0  S    0   0.0    0:00.00  rcu_sched
  11 root      RT   0     0     0     0  S    0   0.0    0:00.53  migration/1

```

[...Output truncated...]

### show system processes lcc wide (TX Matrix Routing Matrix)

```

user@host> show system processes lcc 2 wide
lcc2-re0:
-----
  PID  TT  STAT      TIME  COMMAND
    0  ??  DLs      0:00.00  (swapper)
    1  ??  ILs      0:00.10  /sbin/preinit -- (init)
    2  ??  DL       0:00.00  (pagedaemon)
    3  ??  DL       0:00.00  (vmdaemon)
    4  ??  DL       0:00.00  (bufdaemon)
    5  ??  DL       0:00.04  (syncer)
    6  ??  DL       0:00.00  (netdaemon)
    7  ??  IL       0:00.00  (if_pic_listen)
    8  ??  IL       0:00.00  (scs_housekeeping)

```

```

    9  ??  IL    0:00.00 (if_pfe_listen)
   10  ??  DL    0:00.00 (vmuncachedaemon)
   11  ??  SL    0:00.02 (cb_poll)
  172  ??  ILs   0:00.21 mfs -o noauto /dev/ad1s1b /tmp (newfs)
2909  ??  Is    0:00.00 pccardd
2932  ??  Ss    0:00.07 syslogd -r -s
3039  ??  Is    0:00.00 cron
3217  ??  I     0:00.00 /sbin/watchdog -d
3218  ??  I     0:00.02 /usr/sbin/tnetd -N
3221  ??  S     0:00.11 /usr/sbin/alarmd -N
3222  ??  S     0:00.85 /usr/sbin/craftd -N
3223  ??  S     0:00.05 /usr/sbin/mgd -N
3224  ??  I     0:00.02 /usr/sbin/inetd -N
3225  ??  I     0:00.00 /usr/sbin/tnp.snmpd -N
3226  ??  I     0:00.01 /usr/sbin/tnp.snmpc -N
3228  ??  I     0:00.01 /usr/sbin/smartd -N
3231  ??  I     0:00.01 /usr/sbin/eccd -N
3425  ??  S     0:00.09 /usr/sbin/dfwd -N
3426  ??  S     0:00.19 /sbin/dcd -N
3427  ??  I     0:00.04 /usr/sbin/pfed -N
3430  ??  S     0:00.10 /usr/sbin/ksyncd -N
3482  ??  S     1:53.63 /usr/sbin/chassisd -N
4285  ??  SL    0:00.01 (peer proxy)
4286  ??  SL    0:00.00 (peer proxy)
4303  ??  Ss    0:00.00 mgd: (mgd) (root) (mgd)
4304  ??  R     0:00.00 /bin/ps -ax -ww
3270  d0  Is+   0:00.00 /usr/libexec/getty std.9600 ttyd0

```

### show system processes summary

```

user@host> show system processes summary
last pid: 543; load averages: 0.00, 0.00, 0.00 18:29:47
37 processes: 1 running, 36 sleeping

Mem: 25M Active, 3976K Inact, 19M Wired, 8346K Buf, 202M Free
Swap: 528M Total, 64K Used, 528M Free

  PID USERNAME PRI NICE SIZE   RES STATE   TIME  WCPU   CPU COMMAND
  527 root      2   0  176K  580K select  0:00  0.04%  0.04% rlogind
  543 root     30   0  604K  768K RUN     0:00  0.00%  0.00% top

```

### show system processes (TX Matrix Plus Router)

```

user@host> show system processes
sfc0-re0:
-----
  PID  TT  STAT      TIME  COMMAND
    0  ??  Wls    0:00.00 [swapper]
    1  ??  ILs    0:00.18 /packages/mnt/jbase/sbin/init --
    2  ??  DL     0:00.20 [g_event]
    3  ??  DL     0:00.39 [g_up]
    4  ??  DL     0:00.32 [g_down]
    5  ??  DL     0:00.00 [thread taskq]
    6  ??  DL     0:00.09 [kqueue taskq]
    7  ??  DL     0:00.01 [pagedaemon]
    8  ??  DL     0:00.00 [vmdaemon]
    9  ??  DL     0:06.63 [pagezero]
   10  ??  DL     0:00.00 [ktrace]
   11  ??  RL    310:52.98 [idle]
   12  ??  WL     0:11.03 [swi2: net]

```

```

13 ?? WL 0:27.58 [swi7: clock sio]
14 ?? WL 0:00.00 [swi6: vm]
15 ?? DL 0:03.02 [yarrow]
16 ?? WL 0:00.00 [swi9: +]
17 ?? WL 0:00.00 [swi8: +]
18 ?? WL 0:00.00 [swi5: cambio]
19 ?? WL 0:00.00 [swi9: task queue]
20 ?? WL 0:11.41 [irq16: uhci0 uhci*]
21 ?? DL 0:00.00 [usb0]
22 ?? DL 0:00.00 [usbtask]
23 ?? WL 0:39.51 [irq17: uhci1 uhci*]
24 ?? DL 0:00.00 [usb1]
25 ?? WL 0:00.00 [irq18: uhci2 uhci*]
26 ?? DL 0:00.83 [usb2]
27 ?? DL 0:00.00 [usb3]
28 ?? DL 0:00.00 [usb4]
29 ?? DL 0:00.00 [usb5]
30 ?? DL 0:00.73 [usb6]
31 ?? DL 0:00.00 [usb7]
32 ?? WL 0:00.00 [irq14: ata0]
33 ?? WL 0:00.00 [irq15: ata1]
34 ?? WL 0:00.00 [irq1: atkbd0]
35 ?? WL 0:00.00 [swi0: sio]
36 ?? WL 0:00.00 [irq11: isab0]
37 ?? WL 0:00.00 [swi3: ip6opt ipopt]
38 ?? WL 0:00.00 [swi4: ip6mismatch+]
39 ?? WL 0:00.00 [swi1: ipfwd]
40 ?? DL 0:00.02 [bufdaemon]
41 ?? DL 0:00.02 [vn1ru]
42 ?? DL 0:00.39 [syncer]
43 ?? DL 0:00.05 [softdepflush]
44 ?? DL 0:00.00 [netdaemon]
45 ?? DL 0:00.02 [vmuncachedaemon]
46 ?? DL 0:00.00 [if_pic_listen]
47 ?? DL 0:00.35 [vmkmemdaemon]
48 ?? DL 0:00.00 [cb_poll]
49 ?? DL 0:00.06 [if_pfe_listen]
50 ?? DL 0:00.00 [scs_housekeeping]
51 ?? IL 0:00.00 [kern_dump_proc]
52 ?? IL 0:00.00 [nfsiod 0]
53 ?? IL 0:00.00 [nfsiod 1]
54 ?? IL 0:00.00 [nfsiod 2]
55 ?? IL 0:00.00 [nfsiod 3]
56 ?? DL 0:00.37 [schedcpu]
57 ?? DL 0:00.56 [md0]
79 ?? DL 0:02.58 [md1]
100 ?? DL 0:00.03 [md2]
118 ?? DL 0:00.01 [md3]
139 ?? DL 0:00.95 [md4]
160 ?? DL 0:00.12 [md5]
181 ?? DL 0:00.00 [md6]
217 ?? DL 0:00.02 [md7]
227 ?? DL 0:00.05 [md8]
1341 ?? SL 0:01.34 [bcmTX]
1342 ?? SL 0:01.68 [bcmXGS3AsyncTX]
1343 ?? SL 0:41.40 [bcmLINK.0]
1345 ?? SL 0:33.83 [bcmLINK.1]
1350 ?? Is 0:00.01 /usr/sbin/cron
1502 ?? S 0:00.01 /sbin/watchdog -t-1
1503 ?? S 0:00.86 /usr/libexec/bslockd -mp -N
1504 ?? S 0:00.01 /usr/sbin/tnetd -N

```

```

1507 ?? S      0:01.32 /usr/sbin/alarmd -N
1508 ?? S      0:14.54 /usr/sbin/craftd -N
1509 ?? S      0:01.19 /usr/sbin/mgd -N
1512 ?? I      0:00.05 /usr/sbin/inetd -N
1513 ?? S      0:00.10 /usr/sbin/tnp.sntpd -N
1517 ?? S      0:00.11 /usr/sbin/smartd -N
1525 ?? S      0:01.10 /usr/sbin/idpd -N
1526 ?? S      0:01.43 /usr/sbin/license-check -U -M -p 10 -i 10
1527 ?? I      0:00.01 /usr/libexec/getty Pc ttyv0
1616 ?? DL     0:00.30 [peer proxy]
1617 ?? DL     0:00.32 [peer proxy]
1618 ?? DL     0:00.34 [peer proxy]
1619 ?? DL     0:00.30 [peer proxy]
2391 ?? Is     0:00.01 telnetd
7331 ?? Ss     0:00.03 telnetd
9538 ?? DL     0:01.16 [jsr_kkcm]
9613 ?? DL     0:00.18 [peer proxy]
23781 ?? Ss    0:00.01 telnetd
23926 ?? Ss    0:00.01 mgd: (mgd) (user)/dev/tty2 (mgd)
36867 ?? S      0:03.14 /usr/sbin/rpd -N
36874 ?? S      0:00.08 /usr/sbin/lmpd
36876 ?? S      0:00.17 /usr/sbin/lacpd -N
36877 ?? S      0:00.15 /usr/sbin/bfdd -N
36878 ?? S      0:05.05 /usr/sbin/ppmd -N
36907 ?? S      0:25.07 /usr/sbin/chassisd -N
37775 ?? S      0:00.01 /usr/sbin/bdbrepd -N
45727 ?? S      0:00.02 /usr/sbin/xntpd -j -N -g (ntpd)
45729 ?? S      0:00.38 /usr/sbin/l2ald -N
45730 ?? S<    0:00.12 /usr/sbin/apspd -N
45731 ?? SN     0:00.10 /usr/sbin/sampled -N
45732 ?? S      0:00.03 /usr/sbin/ilmid -N
45733 ?? S      0:00.09 /usr/sbin/rmopd -N
45734 ?? S      0:00.30 /usr/sbin/cosd
45735 ?? I      0:00.00 /usr/sbin/rtspd -N
45736 ?? S      0:00.06 /usr/sbin/fsad -N
45737 ?? S      0:00.05 /usr/sbin/rdd -N
45738 ?? S      0:00.10 /usr/sbin/pppd -N
45739 ?? S      0:00.05 /usr/sbin/dfcd -N
45740 ?? S      0:00.07 /usr/sbin/lfmd -N
45741 ?? S      0:00.01 /usr/sbin/mpiisoamd -N
45742 ?? I      0:00.01 /usr/sbin/sendd -N
45743 ?? S      0:00.08 /usr/sbin/appidd -N
45744 ?? S      0:00.05 /usr/sbin/mspd -N
45745 ?? S      0:00.25 /usr/sbin/jdiameterd -N
45746 ?? S      0:00.10 /usr/sbin/pfed -N
45747 ?? S      0:00.19 /usr/sbin/lpdfd -N
45748 ?? S      0:00.63 /sbin/dcd -N
45750 ?? S      0:00.45 /usr/sbin/mib2d -N
45751 ?? S      0:00.15 /usr/sbin/dfwd -N
45752 ?? S      0:00.15 /usr/sbin/irsd -N
45764 ?? S      0:20.59 /usr/sbin/snmpd -N
56479 ?? Ss    0:00.00 mgd: (mgd) (root) (mgd)
56480 ?? R      0:00.00 /bin/ps -ax
1142 d0- I      0:00.01 /usr/sbin/usbd -N
1160 d0- S      0:29.17 /usr/sbin/eventd -N -r -s -A
6527 d0 Is+    0:00.00 /usr/libexec/getty std.9600 ttyd0
2392 p1 Is     0:00.00 login [pam] (login)
2393 p1 I       0:00.00 -csh (csh)
2394 p1 I       0:00.00 su -
2395 p1 I+      0:00.01 -su (csh)
23782 p2 Is     0:00.00 login [pam] (login)

```

```

23881 p2 I      0:00.00 -csh (csh)
23925 p2 S+    0:00.03 cli
7332  p3 Is    0:00.00 login [pam] (login)
7333  p3 I      0:00.00 -csh (csh)
23780 p3 S+    0:00.02 telnet aj

```

lcc0-re0:

```

-----
PID  TT  STAT      TIME COMMAND
 0  ??  Wls    0:00.00 [swapper]
 1  ??  ILs    0:00.16 /packages/mnt/jbase/sbin/init --
 2  ??  DL     0:00.01 [g_event]
 3  ??  DL     0:00.16 [g_up]
 4  ??  DL     0:00.11 [g_down]
 5  ??  DL     0:00.00 [thread taskq]
 6  ??  DL     0:00.00 [kqueue taskq]
 7  ??  DL     0:00.00 [pagedaemon]
 8  ??  DL     0:00.00 [vmdaemon]
 9  ??  DL     0:01.77 [pagezero]
10  ??  DL     0:00.00 [ktrace]
11  ??  RL    17:22.31 [idle]
12  ??  WL     0:00.32 [swi2: net]
13  ??  WL     0:01.21 [swi7: clock sio]
14  ??  WL     0:00.00 [swi6: vm]
15  ??  DL     0:00.10 [yarrow]
16  ??  WL     0:00.00 [swi9: +]
17  ??  WL     0:00.00 [swi8: +]
18  ??  WL     0:00.00 [swi5: cambio]
19  ??  WL     0:00.00 [swi9: task queue]
20  ??  WL     0:02.73 [irq10: bcm0 uhci1*]
21  ??  WL     0:00.02 [irq11: cb0 uhci0+*]
22  ??  DL     0:00.00 [usb0]
23  ??  DL     0:00.00 [usbtask]
24  ??  DL     0:00.00 [usb1]
25  ??  DL     0:00.05 [usb2]
26  ??  DL     0:00.00 [usb3]
27  ??  DL     0:00.00 [usb4]
28  ??  DL     0:00.00 [usb5]
29  ??  DL     0:00.04 [usb6]
30  ??  DL     0:00.00 [usb7]
31  ??  WL     0:00.00 [irq14: ata0]
32  ??  WL     0:00.00 [irq15: ata1]
33  ??  WL     0:00.00 [irq1: atkbd0]
34  ??  WL     0:00.00 [swi0: sio]
35  ??  WL     0:00.00 [swi3: ip6opt ipopt]
36  ??  WL     0:00.00 [swi4: ip6mismatch+]
37  ??  WL     0:00.00 [swi1: ipfwd]
38  ??  DL     0:00.00 [bufdaemon]
39  ??  DL     0:00.00 [vn1ru]
40  ??  DL     0:00.01 [syncer]
41  ??  DL     0:00.00 [softdepflush]
42  ??  DL     0:00.00 [netdaemon]
43  ??  DL     0:00.00 [vmuncachedaemon]
44  ??  DL     0:00.00 [if_pic_listen]
45  ??  DL     0:00.02 [vmkmemdaemon]
46  ??  DL     0:00.01 [cb_poll]
47  ??  DL     0:00.00 [if_pfe_listen]
48  ??  DL     0:00.00 [scs_housekeeping]
49  ??  IL     0:00.00 [kern_dump_proc]
50  ??  IL     0:00.00 [nfsiod 0]
51  ??  IL     0:00.00 [nfsiod 1]

```

```

52 ?? IL 0:00.00 [nfsiod 2]
53 ?? IL 0:00.00 [nfsiod 3]
54 ?? DL 0:00.01 [schedcpu]
55 ?? DL 0:00.73 [md0]
77 ?? DL 0:03.54 [md1]
98 ?? DL 0:00.37 [md2]
116 ?? DL 0:00.02 [md3]
137 ?? DL 0:00.56 [md4]
158 ?? DL 0:00.15 [md5]
179 ?? DL 0:00.00 [md6]
215 ?? DL 0:00.03 [md7]
225 ?? DL 0:00.03 [md8]
1078 ?? DL 0:00.00 [jsr_kkcm]
1363 ?? SL 0:00.09 [bcmTX]
1364 ?? SL 0:00.10 [bcmXGS3AsyncTX]
1365 ?? SL 0:03.08 [bcmLINK.0]
1370 ?? Is 0:00.00 /usr/sbin/cron
1522 ?? S 0:00.00 /sbin/watchdog -t-1
1523 ?? S 0:00.05 /usr/libexec/bslockd -mp -N
1524 ?? I 0:00.01 /usr/sbin/tnetd -N
1526 ?? S 0:04.98 /usr/sbin/chassisd -N
1527 ?? S 0:00.04 /usr/sbin/alarmd -N
1528 ?? I 0:00.40 /usr/sbin/craftd -N
1529 ?? S 0:00.08 /usr/sbin/mgd -N
1532 ?? I 0:00.04 /usr/sbin/inetd -N
1533 ?? I 0:00.00 /usr/sbin/tnp.sntpd -N
1534 ?? I 0:00.00 /usr/sbin/tnp.sntpc -N
1536 ?? S 0:00.01 /usr/sbin/smartd -N
1540 ?? I 0:00.07 /usr/sbin/jcsd -N
1541 ?? S 0:00.11 /usr/sbin/idpd -N
1542 ?? I 0:00.00 /usr/libexec/getty Pc ttyv0
2089 ?? DL 0:00.01 [peer proxy]
2090 ?? DL 0:00.01 [peer proxy]
2091 ?? DL 0:00.01 [peer proxy]
2657 ?? S 0:00.02 /usr/sbin/dfwd -N
2658 ?? S 0:00.02 /sbin/dcd -N
2659 ?? S 0:00.05 /usr/sbin/snmpd -N
2660 ?? S 0:00.01 /usr/sbin/mib2d -N
2661 ?? S 0:00.01 /usr/sbin/pfed -N
2662 ?? S 0:00.01 /usr/sbin/irsd -N
2667 ?? S 0:00.13 /usr/sbin/ksyncd -N
2690 ?? Ss 0:00.00 mgd: (mgd) (root) (mgd)
2691 ?? R 0:00.00 /bin/ps -ax
1164 d0- S 0:00.00 /usr/sbin/usbd -N
1182 d0- S 0:00.34 /usr/sbin/eventd -N -r -s -A
1543 d0 Is+ 0:00.00 /usr/libexec/getty std.9600 ttyd0

```

lcc1-re0:

```

-----
PID TT STAT TIME COMMAND
0 ?? Wls 0:00.00 [swapper]
1 ?? ILs 0:00.17 /packages/mnt/jbase/sbin/init --
2 ?? DL 0:00.01 [g_event]
3 ?? DL 0:00.16 [g_up]
4 ?? DL 0:00.11 [g_down]
5 ?? DL 0:00.00 [thread taskq]
6 ?? DL 0:00.00 [kqueue taskq]
7 ?? DL 0:00.00 [pagedaemon]
8 ?? DL 0:00.00 [vmdaemon]
9 ?? DL 0:01.77 [pagezero]
10 ?? DL 0:00.00 [ktrace]

```

```

11 ?? RL 17:22.83 [idle]
12 ?? WL 0:00.35 [swi2: net]
13 ?? WL 0:01.20 [swi7: clock sio]
14 ?? WL 0:00.00 [swi6: vm]
15 ?? DL 0:00.10 [yarrow]
16 ?? WL 0:00.00 [swi9: +]
17 ?? WL 0:00.00 [swi8: +]
18 ?? WL 0:00.00 [swi5: cambio]
19 ?? WL 0:00.00 [swi9: task queue]
20 ?? WL 0:02.87 [irq10: bcm0 uhci1*]
21 ?? WL 0:00.02 [irq11: cb0 uhci0+*]
22 ?? DL 0:00.00 [usb0]
23 ?? DL 0:00.00 [usbtask]
24 ?? DL 0:00.00 [usb1]
25 ?? DL 0:00.05 [usb2]
26 ?? DL 0:00.00 [usb3]
27 ?? DL 0:00.00 [usb4]
28 ?? DL 0:00.00 [usb5]
29 ?? DL 0:00.04 [usb6]
30 ?? DL 0:00.00 [usb7]
31 ?? WL 0:00.00 [irq14: ata0]
32 ?? WL 0:00.00 [irq15: ata1]
33 ?? WL 0:00.00 [irq1: atkbd0]
34 ?? WL 0:00.00 [swi0: sio]
35 ?? WL 0:00.00 [swi3: ip6opt ipopt]
36 ?? WL 0:00.00 [swi4: ip6mismatch+]
37 ?? WL 0:00.00 [swi1: ipfwd]
38 ?? DL 0:00.00 [bufdaemon]
39 ?? DL 0:00.00 [vn1ru]
40 ?? DL 0:00.01 [syncer]
41 ?? DL 0:00.00 [softdepflush]
42 ?? DL 0:00.00 [netdaemon]
43 ?? DL 0:00.00 [vmuncachedaemon]
44 ?? DL 0:00.00 [if_pic_listen]
45 ?? DL 0:00.02 [vmkmemdaemon]
46 ?? DL 0:00.01 [cb_poll]
47 ?? DL 0:00.00 [if_pfe_listen]
48 ?? DL 0:00.00 [scs_housekeeping]
49 ?? IL 0:00.00 [kern_dump_proc]
50 ?? IL 0:00.00 [nfsiod 0]
51 ?? IL 0:00.00 [nfsiod 1]
52 ?? IL 0:00.00 [nfsiod 2]
53 ?? IL 0:00.00 [nfsiod 3]
54 ?? DL 0:00.02 [schedcpu]
55 ?? DL 0:00.75 [md0]
77 ?? DL 0:03.40 [md1]
98 ?? DL 0:00.37 [md2]
116 ?? DL 0:00.02 [md3]
137 ?? DL 0:00.56 [md4]
158 ?? DL 0:00.15 [md5]
179 ?? DL 0:00.00 [md6]
215 ?? DL 0:00.03 [md7]
225 ?? DL 0:00.03 [md8]
1052 ?? DL 0:00.00 [jsr_kkcm]
1337 ?? SL 0:00.09 [bcmTX]
1338 ?? SL 0:00.10 [bcmXGS3AsyncTX]
1339 ?? SL 0:03.10 [bcmLINK.0]
1344 ?? Is 0:00.00 /usr/sbin/cron
1496 ?? S 0:00.00 /sbin/watchdog -t-1
1497 ?? S 0:00.05 /usr/libexec/bslockd -mp -N
1498 ?? I 0:00.01 /usr/sbin/tnetd -N

```



```

1500 ?? S      0:04.97 /usr/sbin/chassisd -N
1501 ?? S      0:00.04 /usr/sbin/alarmd -N
1502 ?? I      0:00.40 /usr/sbin/craftd -N
1503 ?? S      0:00.08 /usr/sbin/mgd -N
1506 ?? I      0:00.04 /usr/sbin/inetd -N
1507 ?? I      0:00.00 /usr/sbin/tnp.snmpd -N
1508 ?? I      0:00.00 /usr/sbin/tnp.sntpc -N
1510 ?? S      0:00.01 /usr/sbin/smartd -N
1514 ?? I      0:00.07 /usr/sbin/jcsd -N
1515 ?? S      0:00.18 /usr/sbin/idpd -N
1516 ?? I      0:00.00 /usr/libexec/getty Pc ttyv0
2068 ?? DL     0:00.01 [peer proxy]
2069 ?? DL     0:00.01 [peer proxy]
2070 ?? DL     0:00.01 [peer proxy]
2666 ?? S      0:00.02 /sbin/dcd -N
2667 ?? S      0:00.01 /usr/sbin/irsd -N
2668 ?? S      0:00.01 /usr/sbin/pfed -N
2669 ?? S      0:00.05 /usr/sbin/snmpd -N
2670 ?? S      0:00.01 /usr/sbin/mib2d -N
2671 ?? S      0:00.02 /usr/sbin/dfwd -N
2675 ?? S      0:00.13 /usr/sbin/ksyncd -N
2699 ?? Ss     0:00.00 mgd: (mgd) (root) (mgd)
2700 ?? R      0:00.00 /bin/ps -ax
1138 d0- S     0:00.00 /usr/sbin/usbd -N
1156 d0- S     0:00.37 /usr/sbin/eventd -N -r -s -A
1517 d0 Is+    0:00.00 /usr/libexec/getty std.9600 ttyd0

```

lcc2-re0:

```

-----
PID TT  STAT      TIME COMMAND
  0 ??  Wls      0:00.00 [swapper]
  1 ??  ILs      0:00.18 /packages/mnt/jbase/sbin/init --
  2 ??  DL        0:00.01 [g_event]
  3 ??  DL        0:00.17 [g_up]
  4 ??  DL        0:00.12 [g_down]
  5 ??  DL        0:00.00 [thread taskq]
  6 ??  DL        0:00.00 [kqueue taskq]
  7 ??  DL        0:00.00 [pagedaemon]
  8 ??  DL        0:00.00 [vmdaemon]
  9 ??  DL        0:01.77 [pagezero]
 10 ??  DL        0:00.00 [ktrace]
 11 ??  RL       17:19.13 [idle]
 12 ??  WL        0:00.36 [swi2: net]
 13 ??  WL        0:01.20 [swi7: clock sio]
 14 ??  WL        0:00.00 [swi6: vm]
 15 ??  DL        0:00.13 [yarrow]
 16 ??  WL        0:00.00 [swi9: +]
 17 ??  WL        0:00.00 [swi8: +]
 18 ??  WL        0:00.00 [swi5: cambio]
 19 ??  WL        0:00.00 [swi9: task queue]
 20 ??  WL        0:03.03 [irq10: bcm0 uhci1*]
 21 ??  WL        0:00.02 [irq11: cb0 uhci0+*]
 22 ??  DL        0:00.00 [usb0]
 23 ??  DL        0:00.00 [usbtask]
 24 ??  DL        0:00.00 [usb1]
 25 ??  DL        0:00.05 [usb2]
 26 ??  DL        0:00.00 [usb3]
 27 ??  DL        0:00.00 [usb4]
 28 ??  DL        0:00.00 [usb5]
 29 ??  DL        0:00.04 [usb6]
 30 ??  DL        0:00.00 [usb7]

```

```

31 ?? WL 0:00.00 [irq14: ata0]
32 ?? WL 0:00.00 [irq15: ata1]
33 ?? WL 0:00.00 [irq1: atkbd0]
34 ?? WL 0:00.00 [swi0: sio]
35 ?? WL 0:00.00 [swi3: ip6opt ipopt]
36 ?? WL 0:00.00 [swi4: ip6mismatch+]
37 ?? WL 0:00.00 [swi1: ipfwd]
38 ?? DL 0:00.00 [bufdaemon]
39 ?? DL 0:00.00 [vn1ru]
40 ?? DL 0:00.01 [syncer]
41 ?? DL 0:00.00 [softdepflush]
42 ?? DL 0:00.00 [netdaemon]
43 ?? DL 0:00.00 [vmuncachedaemon]
44 ?? DL 0:00.00 [if_pic_listen]
45 ?? DL 0:00.02 [vmkmemdaemon]
46 ?? DL 0:00.01 [cb_poll]
47 ?? DL 0:00.00 [if_pfe_listen]
48 ?? DL 0:00.00 [scs_housekeeping]
49 ?? IL 0:00.00 [kern_dump_proc]
50 ?? IL 0:00.00 [nfsiod 0]
51 ?? IL 0:00.00 [nfsiod 1]
52 ?? IL 0:00.00 [nfsiod 2]
53 ?? IL 0:00.00 [nfsiod 3]
54 ?? DL 0:00.02 [schedcpu]
55 ?? DL 0:00.75 [md0]
77 ?? DL 0:03.48 [md1]
98 ?? DL 0:00.59 [md2]
116 ?? DL 0:00.02 [md3]
137 ?? DL 0:00.56 [md4]
158 ?? DL 0:00.15 [md5]
179 ?? DL 0:00.00 [md6]
215 ?? DL 0:00.03 [md7]
225 ?? DL 0:00.03 [md8]
1052 ?? DL 0:00.00 [jsr_kkcm]
1337 ?? SL 0:00.09 [bcmTX]
1338 ?? SL 0:00.10 [bcmXGS3AsyncTX]
1339 ?? SL 0:03.22 [bcmLINK.0]
1344 ?? Is 0:00.00 /usr/sbin/cron
1496 ?? S 0:00.00 /sbin/watchdog -t-1
1497 ?? S 0:00.05 /usr/libexec/bslockd -mp -N
1498 ?? S 0:00.01 /usr/sbin/tnetd -N
1500 ?? R 0:05.17 /usr/sbin/chassisd -N
1501 ?? S 0:00.04 /usr/sbin/alarmd -N
1502 ?? I 0:00.39 /usr/sbin/craftd -N
1503 ?? S 0:00.08 /usr/sbin/mgd -N
1506 ?? I 0:00.05 /usr/sbin/inetd -N
1507 ?? I 0:00.00 /usr/sbin/tnp.sntpd -N
1508 ?? I 0:00.00 /usr/sbin/tnp.sntpc -N
1510 ?? S 0:00.01 /usr/sbin/smartd -N
1514 ?? I 0:00.07 /usr/sbin/jcsd -N
1515 ?? S 0:00.17 /usr/sbin/idpd -N
1516 ?? I 0:00.00 /usr/libexec/getty Pc ttyv0
2591 ?? DL 0:00.01 [peer proxy]
2592 ?? DL 0:00.01 [peer proxy]
2593 ?? DL 0:00.01 [peer proxy]
2597 ?? DL 0:00.00 [peer proxy]
3192 ?? S 0:00.01 /usr/sbin/irsd -N
3193 ?? S 0:00.05 /usr/sbin/snmpd -N
3194 ?? S 0:00.02 /sbin/dcd -N
3195 ?? S 0:00.01 /usr/sbin/pfed -N
3196 ?? S 0:00.01 /usr/sbin/mib2d -N

```

```

3197 ?? S      0:00.02 /usr/sbin/dfwd -N
3198 ?? S      0:00.13 /usr/sbin/ksyncd -N
3228 ?? Ss     0:00.00 mgd: (mgd) (root) (mgd)
3229 ?? R      0:00.00 /bin/ps -ax
1138 d0- S     0:00.00 /usr/sbin/usbd -N
1156 d0- S     0:00.42 /usr/sbin/eventd -N -r -s -A
1517 d0 Is+    0:00.00 /usr/libexec/getty std.9600 ttyd0
...

```

### show system processes sfc (TX Matrix Plus Router)

```

user@host> show system processes sfc 0
sfc0-re0:

```

```

-----
PID  TT  STAT      TIME COMMAND
 0  ??  Wls      0:00.00 [swapper]
 1  ??  SLs      0:00.18 /packages/mnt/jbase/sbin/init --
 2  ??  DL       0:00.20 [g_event]
 3  ??  DL       0:00.39 [g_up]
 4  ??  DL       0:00.32 [g_down]
 5  ??  DL       0:00.00 [thread taskq]
 6  ??  DL       0:00.09 [kqueue taskq]
 7  ??  DL       0:00.01 [pagedaemon]
 8  ??  DL       0:00.00 [vmdaemon]
 9  ??  DL       0:06.63 [pagezero]
10  ??  DL       0:00.00 [ktrace]
11  ??  RL      312:09.00 [idle]
12  ??  WL       0:11.07 [swi2: net]
13  ??  WL       0:27.70 [swi7: clock sio]
14  ??  WL       0:00.00 [swi6: vm]
15  ??  DL       0:03.03 [yarrow]
16  ??  WL       0:00.00 [swi9: +]
17  ??  WL       0:00.00 [swi8: +]
18  ??  WL       0:00.00 [swi5: cambio]
19  ??  WL       0:00.00 [swi9: task queue]
20  ??  WL       0:11.46 [irq16: uhci0 uhci*]
21  ??  DL       0:00.00 [usb0]
22  ??  DL       0:00.00 [usbtask]
23  ??  WL       0:39.63 [irq17: uhci1 uhci*]
24  ??  DL       0:00.00 [usb1]
25  ??  WL       0:00.00 [irq18: uhci2 uhci*]
26  ??  DL       0:00.84 [usb2]
27  ??  DL       0:00.00 [usb3]
28  ??  DL       0:00.00 [usb4]
29  ??  DL       0:00.00 [usb5]
30  ??  DL       0:00.73 [usb6]
31  ??  DL       0:00.00 [usb7]
32  ??  WL       0:00.00 [irq14: ata0]
33  ??  WL       0:00.00 [irq15: ata1]
34  ??  WL       0:00.00 [irq1: atkbd0]
35  ??  WL       0:00.00 [swi0: sio]
36  ??  WL       0:00.00 [irq11: isab0]
37  ??  WL       0:00.00 [swi3: ip6opt ipopt]
38  ??  WL       0:00.00 [swi4: ip6mismatch+]
39  ??  WL       0:00.00 [swi1: ipfwd]
40  ??  DL       0:00.02 [bufdaemon]
41  ??  DL       0:00.02 [vn1ru]
42  ??  DL       0:00.39 [syncer]
43  ??  DL       0:00.05 [softdepflush]
44  ??  DL       0:00.00 [netdaemon]
45  ??  DL       0:00.02 [vmuncachedaemon]

```

```

46 ?? DL 0:00.00 [if_pic_listen]
47 ?? DL 0:00.35 [vmkmemdaemon]
48 ?? DL 0:00.00 [cb_poll]
49 ?? DL 0:00.06 [if_pfe_listen]
50 ?? DL 0:00.00 [scs_housekeeping]
51 ?? IL 0:00.00 [kern_dump_proc]
52 ?? IL 0:00.00 [nfsiod 0]
53 ?? IL 0:00.00 [nfsiod 1]
54 ?? IL 0:00.00 [nfsiod 2]
55 ?? IL 0:00.00 [nfsiod 3]
56 ?? DL 0:00.37 [schedcpu]
57 ?? DL 0:00.56 [md0]
79 ?? DL 0:02.58 [md1]
100 ?? DL 0:00.03 [md2]
118 ?? DL 0:00.01 [md3]
139 ?? DL 0:00.95 [md4]
160 ?? DL 0:00.12 [md5]
181 ?? DL 0:00.00 [md6]
217 ?? DL 0:00.02 [md7]
227 ?? DL 0:00.05 [md8]
1341 ?? SL 0:01.35 [bcmTX]
1342 ?? SL 0:01.69 [bcmXGS3AsyncTX]
1343 ?? SL 0:41.57 [bcmLINK.0]
1345 ?? SL 0:33.97 [bcmLINK.1]
1350 ?? Is 0:00.01 /usr/sbin/cron
1502 ?? S 0:00.01 /sbin/watchdog -t-1
1503 ?? S 0:00.86 /usr/libexec/bslockd -mp -N
1504 ?? I 0:00.01 /usr/sbin/tnetd -N
1507 ?? S 0:01.32 /usr/sbin/alarmd -N
1508 ?? S 0:14.54 /usr/sbin/craftd -N
1509 ?? S 0:01.20 /usr/sbin/mgd -N
1512 ?? S 0:00.05 /usr/sbin/inetd -N
1513 ?? S 0:00.10 /usr/sbin/tnp.sntpd -N
1517 ?? S 0:00.11 /usr/sbin/smartd -N
1525 ?? S 0:01.11 /usr/sbin/idpd -N
1526 ?? S 0:01.43 /usr/sbin/license-check -U -M -p 10 -i 10
1527 ?? I 0:00.01 /usr/libexec/getty Pc ttyv0
1616 ?? DL 0:00.30 [peer proxy]
1617 ?? DL 0:00.32 [peer proxy]
1618 ?? DL 0:00.34 [peer proxy]
1619 ?? DL 0:00.30 [peer proxy]
2391 ?? Is 0:00.01 telnetd
7331 ?? Ss 0:00.03 telnetd
9538 ?? DL 0:01.16 [jsr_kkcm]
9613 ?? DL 0:00.18 [peer proxy]
23781 ?? Ss 0:00.01 telnetd
23926 ?? Ss 0:00.03 mgd: (mgd) (user)/dev/tty2 (mgd)
36867 ?? S 0:03.14 /usr/sbin/rpd -N
36874 ?? S 0:00.08 /usr/sbin/lmpd
36876 ?? S 0:00.17 /usr/sbin/lacpd -N
36877 ?? S 0:00.15 /usr/sbin/bfdd -N
36878 ?? S 0:05.05 /usr/sbin/ppmd -N
36907 ?? S 0:26.63 /usr/sbin/chassisd -N
37775 ?? S 0:00.01 /usr/sbin/bdbrepd -N
45727 ?? S 0:00.02 /usr/sbin/xntpd -j -N -g (ntpd)
45729 ?? S 0:00.40 /usr/sbin/l2ald -N
45730 ?? S< 0:00.13 /usr/sbin/apds -N
45731 ?? SN 0:00.10 /usr/sbin/sampled -N
45732 ?? S 0:00.03 /usr/sbin/ilmid -N
45733 ?? S 0:00.09 /usr/sbin/rmopd -N
45734 ?? S 0:00.31 /usr/sbin/cosd

```

```

45735 ?? I 0:00.00 /usr/sbin/rtspd -N
45736 ?? S 0:00.06 /usr/sbin/fsad -N
45737 ?? S 0:00.05 /usr/sbin/rdd -N
45738 ?? S 0:00.10 /usr/sbin/pppd -N
45739 ?? S 0:00.05 /usr/sbin/dfcd -N
45740 ?? S 0:00.08 /usr/sbin/lfmd -N
45741 ?? S 0:00.01 /usr/sbin/mpiisoamd -N
45742 ?? I 0:00.01 /usr/sbin/sendd -N
45743 ?? S 0:00.08 /usr/sbin/appidd -N
45744 ?? S 0:00.05 /usr/sbin/mspd -N
45745 ?? S 0:00.27 /usr/sbin/jdiameterd -N
45746 ?? S 0:00.10 /usr/sbin/pfed -N
45747 ?? S 0:00.19 /usr/sbin/lpdfd -N
45748 ?? S 0:00.64 /sbin/dcd -N
45750 ?? S 0:00.46 /usr/sbin/mib2d -N
45751 ?? S 0:00.16 /usr/sbin/dfwd -N
45752 ?? S 0:00.15 /usr/sbin/irsd -N
45764 ?? S 0:20.60 /usr/sbin/snmpd -N
56481 ?? Ss 0:00.02 telnetd
56548 ?? Rs 0:00.19 mgd: (mgd) (user)/dev/tty0 (mgd)
56577 ?? Ss 0:00.00 mgd: (mgd) (root) (mgd)
56578 ?? R 0:00.00 /bin/ps -ax
1142 d0- S 0:00.01 /usr/sbin/usbd -N
1160 d0- S 0:29.71 /usr/sbin/eventd -N -r -s -A
6527 d0 Is+ 0:00.00 /usr/libexec/getty std.9600 ttyd0
56482 p0 Is 0:00.00 login [pam] (login)
56483 p0 S 0:00.01 -csh (csh)
56547 p0 S+ 0:00.02 cli
2392 p1 Is 0:00.00 login [pam] (login)
2393 p1 I 0:00.00 -csh (csh)
2394 p1 I 0:00.00 su -
2395 p1 I+ 0:00.01 -su (csh)
23782 p2 Is 0:00.00 login [pam] (login)
23881 p2 I 0:00.00 -csh (csh)
23925 p2 S+ 0:00.03 cli
7332 p3 Is 0:00.00 login [pam] (login)
7333 p3 I 0:00.00 -csh (csh)
23780 p3 S+ 0:00.02 telnet aj

```

### show system processes lcc wide (TX Matrix Plus Routing Matrix)

```

user@host> show system processes lcc 2 wide
lcc2-re0:

```

```

-----
PID  TT  STAT  TIME PROVIDER COMMAND
0   ??  WLS   0:00.00 (null)  [swapper]
1   ??  ILs   0:00.19          /packages/mnt/jbase/sbin/init --
2   ??  DL    0:00.02          [g_event]
3   ??  DL    0:00.19          [g_up]
4   ??  DL    0:00.13          [g_down]
5   ??  DL    0:00.00          [thread taskq]
6   ??  DL    0:00.00          [kqueue taskq]
7   ??  DL    0:00.00          [pagedaemon]
8   ??  DL    0:00.00          [vmdaemon]
9   ??  DL    0:01.77          [pagezero]
10  ??  DL    0:00.00          [ktrace]
11  ??  RL    20:33.81         [idle]
12  ??  WL    0:00.38          [swi2: net]
13  ??  WL    0:01.43          [swi7: clock sio]
14  ??  WL    0:00.00          [swi6: vm]
15  ??  DL    0:00.14          [yarrow]

```

16	??	WL	0:00.00	[swi9: +]
17	??	WL	0:00.00	[swi8: +]
18	??	WL	0:00.00	[swi5: cambio]
19	??	WL	0:00.00	[swi9: task queue]
20	??	WL	0:03.18	[irq10: bcm0 uhci1*]
21	??	WL	0:00.03	[irq11: cb0 uhci0+*]
22	??	DL	0:00.00	[usb0]
23	??	DL	0:00.00	[usbtask]
24	??	DL	0:00.00	[usb1]
25	??	DL	0:00.06	[usb2]
26	??	DL	0:00.00	[usb3]
27	??	DL	0:00.00	[usb4]
28	??	DL	0:00.00	[usb5]
29	??	DL	0:00.05	[usb6]
30	??	DL	0:00.00	[usb7]
31	??	WL	0:00.00	[irq14: ata0]
32	??	WL	0:00.00	[irq15: ata1]
33	??	WL	0:00.00	[irq1: atkbd0]
34	??	WL	0:00.00	[swi0: sio]
35	??	WL	0:00.00	[swi3: ip6opt ipopt]
36	??	WL	0:00.00	[swi4: ip6mismatch+]
37	??	WL	0:00.00	[swi1: ipfwd]
38	??	DL	0:00.00	[bufdaemon]
39	??	DL	0:00.00	[vnlru]
40	??	DL	0:00.02	[syncer]
41	??	DL	0:00.01	[softdepflush]
42	??	DL	0:00.00	[netdaemon]
43	??	DL	0:00.00	[vmuncachedaemon]
44	??	DL	0:00.00	[if_pic_listen]
45	??	DL	0:00.03	[vmkmemdaemon]
46	??	DL	0:00.01	[cb_poll]
47	??	DL	0:00.00	[if_pfe_listen]
48	??	DL	0:00.00	[scs_housekeeping]
49	??	IL	0:00.00	[kern_dump_proc]
50	??	IL	0:00.00	[nfsiod 0]
51	??	IL	0:00.00	[nfsiod 1]
52	??	IL	0:00.00	[nfsiod 2]
53	??	IL	0:00.00	[nfsiod 3]
54	??	DL	0:00.02	[schedcpu]
55	??	DL	0:00.75	[md0]
77	??	DL	0:03.84	[md1]
98	??	DL	0:00.59	[md2]
116	??	DL	0:00.02	[md3]
137	??	DL	0:00.72	[md4]
158	??	DL	0:00.15	[md5]
179	??	DL	0:00.00	[md6]
215	??	DL	0:00.03	[md7]
225	??	DL	0:00.03	[md8]
1052	??	DL	0:00.00	[jsr_kkcm]
1337	??	SL	0:00.11	[bcmTX]
1338	??	SL	0:00.12	[bcmXGS3AsyncTX]
1339	??	SL	0:03.82	[bcmLINK.0]
1344	??	Is	0:00.00	/usr/sbin/cron
1496	??	I	0:00.00	/sbin/watchdog -t-1
1497	??	S	0:00.06	/usr/libexec/bslockd -mp -N
1498	??	I	0:00.01	/usr/sbin/tnetd -N
1500	??	S	0:09.93	/usr/sbin/chassisd -N
1501	??	S	0:00.05	/usr/sbin/alarmd -N
1502	??	I	0:00.39	/usr/sbin/craftd -N
1503	??	S	0:00.09	/usr/sbin/mgd -N
1506	??	I	0:00.05	/usr/sbin/inetd -N

```

1507 ?? I      0:00.00      /usr/sbin/tnp.sntpd -N
1508 ?? I      0:00.00      /usr/sbin/tnp.sntpc -N
1510 ?? S      0:00.01      /usr/sbin/smartd -N
1514 ?? I      0:00.07      /usr/sbin/jcsd -N
1515 ?? S      0:00.17      /usr/sbin/idpd -N
1516 ?? I      0:00.00      /usr/libexec/getty Pc ttyv0
2591 ?? DL     0:00.01      [peer proxy]
2592 ?? DL     0:00.01      [peer proxy]
2593 ?? DL     0:00.01      [peer proxy]
2597 ?? DL     0:00.01      [peer proxy]
3192 ?? S      0:00.02      /usr/sbin/irsd -N
3193 ?? S      0:00.05      /usr/sbin/snmpd -N
3194 ?? S      0:00.04      /sbin/dcd -N
3195 ?? I      0:00.01      /usr/sbin/pfed -N
3196 ?? S      0:00.02      /usr/sbin/mib2d -N
3197 ?? I      0:00.03      /usr/sbin/dfwd -N
3198 ?? S      0:00.15      /usr/sbin/ksyncd -N
3559 ?? Ss     0:00.00      mgd: (mgd) (root) (mgd)
3560 ?? R      0:00.00      /bin/ps -ax -Jpww
1138 d0- S      0:00.00      /usr/sbin/usbd -N
1156 d0- S      0:00.50      /usr/sbin/eventd -N -r -s -A
1517 d0 Is+    0:00.00      /usr/libexec/getty std.9600 ttyd0

```

#### show system processes (QFX Series and OCX Series)

```

user@switch> show system processes
PID TT STAT      TIME COMMAND
  0 ?? Wls    -2341043:-31.01 [swapper]
  1 ?? SLs     0:01.34 /packages/mnt/jbase/sbin/init --
  2 ?? DL      2:48.31 [g_event]
  3 ?? DL      1:47.44 [g_up]
  4 ?? DL      1:37.82 [g_down]
  5 ?? DL      0:00.00 [kdm_tcp_poller]
  6 ?? DL      0:00.00 [thread taskq]
  7 ?? DL      0:04.86 [kqueue taskq]
  9 ?? DL      0:03.94 [pagedaemon]
 10 ?? DL      0:00.00 [ktrace]
 11 ?? RL      0:00.00 [idle: cpu31]
 12 ?? RL      0:00.00 [idle: cpu30]
 13 ?? RL      0:00.00 [idle: cpu29]
 14 ?? RL      0:00.00 [idle: cpu28]
 15 ?? RL      0:00.00 [idle: cpu27]
 16 ?? RL      0:00.00 [idle: cpu26]
 17 ?? RL      0:00.00 [idle: cpu25]
 18 ?? RL      0:00.00 [idle: cpu24]
 19 ?? RL      0:00.00 [idle: cpu23]
 20 ?? RL      0:00.00 [idle: cpu22]
 21 ?? RL      0:00.00 [idle: cpu21]
 22 ?? RL      0:00.00 [idle: cpu20]
 23 ?? RL      0:00.00 [idle: cpu19]
 24 ?? RL      0:00.00 [idle: cpu18]
 25 ?? RL      0:00.00 [idle: cpu17]
 26 ?? RL      0:00.00 [idle: cpu16]
 27 ?? RL      0:00.00 [idle: cpu15]
 28 ?? RL      0:00.00 [idle: cpu14]
 29 ?? RL      0:00.00 [idle: cpu13]
 30 ?? RL      0:00.00 [idle: cpu12]
 31 ?? RL      0:00.00 [idle: cpu11]
 32 ?? RL      0:00.00 [idle: cpu10]
 33 ?? RL      0:00.00 [idle: cpu9]
 34 ?? RL      18184:07.25 [idle: cpu8]

```

```

35 ?? RL      0:00.00 [idle: cpu7]
36 ?? RL    17862:11.31 [idle: cpu6]
37 ?? RL    19343:45.16 [idle: cpu5]
38 ?? RL    5192:38.30 [idle: cpu4]
39 ?? RL      0:00.00 [idle: cpu3]
40 ?? RL    19278:02.24 [idle: cpu2]
41 ?? RL    19291:00.72 [idle: cpu1]
42 ?? RL    18910:31.21 [idle: cpu0]
43 ?? WL     19:03.74 [swi2: net]
44 ?? WL    261:43.82 [swi7: clock sio]
45 ?? WL      0:00.00 [swi6: vm]
46 ?? DL      2:18.57 [yarrow]
47 ?? WL      0:00.00 [swi9: +]
48 ?? WL      0:00.00 [swi8: +]
49 ?? WL      0:12.36 [swi5: cambio]
50 ?? WL      0:00.00 [swi9: task queue]
51 ?? WL      0:00.00 [swi0: sio]
52 ?? WL      0:32.40 [irq39: ehci0]
53 ?? DL      0:00.21 [usb0]
54 ?? DL      0:00.00 [usbtask]
55 ?? WL      0:00.00 [irq22: xlr_lbus0]
56 ?? WL      0:00.00 [irq38: xlr_lbus0]
57 ?? WL      0:00.00 [swi3: ip6opt ipopt]
58 ?? WL      0:00.00 [swi4: ip6mismatch+]
59 ?? WL      0:00.00 [swi1: ipfwd]
60 ?? DL      0:18.65 [pagezero]
61 ?? DL      0:18.59 [bufdaemon]
62 ?? DL      1:10.44 [vnlr_u_mem]
63 ?? DL      1:51.66 [syncer]
64 ?? DL      0:20.22 [vnlr_u]
65 ?? DL      0:40.48 [softdepflush]
66 ?? DL      0:00.00 [netdaemon]
67 ?? DL    20:47.67 [vmkmemdaemon]
68 ?? DL      0:00.00 [if_pfe_listen]
69 ?? SL      0:02.80 [kdm_checkkcore]
70 ?? SL      0:03.34 [kdm_savekcore]
71 ?? SL      0:04.31 [kdm_livekcore]
72 ?? SL      0:06.14 [kdm_logger]
73 ?? SL      0:04.31 [kdm_kdb]
74 ?? SL      0:00.02 [devrt_kernel_thread]
75 ?? DL      0:21.54 [vmuncachedaemon]
76 ?? DL      0:00.00 [if_pic_listen0]
77 ?? SL      0:00.00 [nfsiod 0]
78 ?? SL      0:00.00 [nfsiod 1]
79 ?? SL      0:00.00 [nfsiod 2]
80 ?? SL      0:00.00 [nfsiod 3]
81 ?? WL      5:59.98 [irq13: +]
82 ?? RL    105:06.81 [pkt_sender: cpu0]
83 ?? DL      0:03.62 [md0]
95 ?? DL      0:37.04 [md1]
115 ?? DL      0:06.01 [md2]
135 ?? DL      0:00.75 [md3]
155 ?? DL      0:21.17 [md4]
175 ?? DL      0:01.90 [md5]
195 ?? DL      0:06.26 [md6]
231 ?? DL      0:00.01 [md7]
755 ?? Ss     0:04.17 /usr/sbin/cron
847 ?? S       0:00.10 /usr/sbin/tinetd -N
849 ?? S       0:06.82 /usr/sbin/mgd -N
850 ?? S       0:00.32 /usr/sbin/inetd -N
852 ?? S       1:05.34 /usr/sbin/dhcpd -N

```



```

853 ?? S      0:00.18 /usr/sbin/inetd -p /var/run/inetd_4.pid -N -JU __juni
855 ?? L      1181:02.21 /usr/sbin/dc-pfe -N (pafxpc)
857 ?? S      17:55.86 /usr/sbin/vccpd -N
896 ?? S      93:43.45 /usr/sbin/chassism -N
953 ?? S      0:02.89 /sbin/watchdog -t-1
954 ?? S      3:34.00 /sbin/dcd -N
955 ?? S      10:30.13 /usr/sbin/chassisd -N
956 ?? DL     0:00.21 [peer proxy]
957 ?? S      4:07.43 /usr/sbin/alarmd -N
958 ?? S      0:31.69 /usr/sbin/craftd -N
959 ?? S      0:55.16 /usr/sbin/mib2d -N
960 ?? S      3:40.64 /usr/sbin/rpd -N
961 ?? S      0:00.03 /usr/sbin/tnp.snmpd -N
962 ?? S      0:51.94 /usr/sbin/pfed -N
963 ?? S      0:47.31 /usr/sbin/rmopd -N
964 ?? S      0:33.65 /usr/sbin/cosd
965 ?? S      1:48.41 /usr/sbin/ppmd -N
966 ?? S      0:07.18 /usr/sbin/dfwd -N
967 ?? S      1:02.56 /usr/sbin/bfdd -N
968 ?? S      0:00.63 /usr/sbin/rdd -N
969 ?? S      0:40.61 /usr/sbin/dfcd -N
971 ?? S      0:07.81 /usr/sbin/bdbrepd -N
972 ?? S      0:00.28 /usr/sbin/sendd -N
973 ?? S      1:37.69 /usr/sbin/xntpd -j -N -g -JU __example_process4__ (nt
974 ?? S      5:56.28 /usr/sbin/snmpd -N -JU __example_process4__
975 ?? S      16:46.82 /usr/sbin/jdiameterd -N
976 ?? S      2:34.13 /usr/sbin/eswd -N
977 ?? S      1:03.05 /usr/sbin/sflowd -N
978 ?? S      0:22.30 /usr/sbin/fcd -N
979 ?? S      1:07.01 /usr/sbin/vccpdf -N
982 ?? S      0:25.25 /usr/sbin/mcsnoopd -N
983 ?? S      3:45.68 /usr/sbin/rpdf -N
1043 ?? S      0:37.87 /usr/sbin/lacpd -N
1048 ?? DL     0:01.29 [peer proxy]
1111 ?? WL     0:00.00 [swi2: FMNITHRD+]
1112 ?? DL     0:00.03 [peer proxy]
12816 ?? S     15:35.32 /usr/sbin/sfid -N
30893 ?? Ss    0:00.65 sshd: tlewis@tty0 (sshd)
30897 ?? Ss    0:00.15 mgd: (mgd) (tlewis)/dev/tty0 (mgd)
30905 ?? Ss    0:00.64 sshd: tlewis@tty1 (sshd)
30909 ?? Ss    0:00.15 mgd: (mgd) (tlewis)/dev/tty1 (mgd)
30910 ?? Ss    0:01.26 sshd: tcheng@tty2 (sshd)
30914 ?? Ss    0:00.80 mgd: (mgd) (tcheng)/dev/tty2 (mgd)
30937 ?? R      0:00.03 /bin/ps -ax
661 d0- S      0:21.24 /usr/sbin/eventd -N -r -s -A
860 d0 Ss+    0:00.07 /usr/libexec/getty std.9600 ttyd0
30896 p0 Ss+   0:00.55 -cli (cli)
30908 p1 Ss+   0:00.50 -cli (cli)
30913 p2 Ss+   0:00.85 -cli (cli)

```

## show system queues

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1464</a> <a href="#">Syntax (TX Matrix Router) on page 1464</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1464</a> <a href="#">Syntax (MX Series Router) on page 1464</a>
<b>Syntax</b>	show system queues
<b>Syntax (TX Matrix Router)</b>	show system queues <all-chassis  all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system queues <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (MX Series Router)</b>	show system queues <all-members> <local> <member <i>member-id</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display queue statistics.
<b>Options</b>	<p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system queue statistics for all the T640 routers in the chassis that are connected to the TX Matrix router. On a TX Matrix Plus router, display system queue statistics for all the T1600 or T4000 routers in the chassis that are connected to the TX Matrix Plus router.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system queue statistics for all LCC chassis attached to the TX Matrix or TX Matrix Plus router.</p> <p><b>all-members</b>—(MX Series routers only) (Optional) Display system queue statistics for all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system queue statistics for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system queue statistics for a specific connected router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display system queue statistics for the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display system queue statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**scc**—(TX Matrix routers only) (Optional) Display queue statistics for the TX Matrix router.

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system queue statistics for the TX Matrix Plus router. Replace *number* with 0.

<b>Additional Information</b>	By default, when you issue the <b>show system queues</b> command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">Routing Matrix with a TX Matrix Plus Router Solutions Page</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show system queues on page 1466</a> <a href="#">show system queues (SRX Series) on page 1466</a> <a href="#">show system queues scc (TX Matrix Router) on page 1467</a> <a href="#">show system queues sfc (TX Matrix Router) on page 1468</a>
<b>Output Fields</b>	<a href="#">Table 66 on page 1466</a> lists the output fields for the <b>show system queues</b> command. Output fields are listed in the approximate order in which they appear.

*Table 66: show system queues Output Fields*

Field Name	Field Description
<b>Output interface</b>	Interface on the device on which the queue exists: <ul style="list-style-type: none"> <li><b>fxp0</b>—Management Ethernet interface.</li> <li><b>fxp1</b>—Internal Ethernet interface.</li> <li><b>ipip, lsi, tap, mt, mtun, pimd, and pime</b>—Internally generated interface and not configurable.</li> <li><b>dsc</b>—Discard interface.</li> <li><b>em</b>—Management and internal Ethernet interfaces.</li> <li><b>gre</b>—Internally generated interface that is configurable only as the control channel for Generalized MPLS (GMPLS).</li> <li><b>ge</b>—Gigabit Ethernet interface.</li> <li><b>xe</b>—10-Gigabit Ethernet interface.</li> <li><b>lo</b>—Loopback interface; the Junos OS automatically configures one loopback interface (lo0).</li> <li><b>lsq</b>—Link services IQ interface.</li> <li><b>lt</b>—Logical tunnel interface.</li> <li><b>gr, ip, sp</b>—Services interfaces.</li> <li><b>irb</b>—Integrated routing and bridging interface.</li> <li><b>vtep</b>—Virtual Tunnel End Point (VTEP).</li> <li><b>ppd and ppe</b>—Interfaces used to enable a cluster to act as a rendezvous point (RP) or first hop router in the multicast domain.</li> </ul>
<b>bytes</b>	Number of bytes in the queue.
<b>max</b>	Maximum number of bytes allowed in the queue.
<b>packets</b>	Number of packets in the queue.
<b>max</b>	Maximum number of packets allowed in the queue.
<b>drops</b>	Number of packets dropped from the queue.

## Sample Output

### show system queues

```

user@host> show system queues
output interface      bytes      max  packets      max  drops
fxp0                  0      1250000      0      4166      6
fxp1                  0      1250000      0      4166     19
lsi                   0       12500      0        41      0
dsc                   0         0      0         0      0

```

### show system queues (SRX Series)

```

user@host> show system queues
output interface      bytes      max  packets      max  drops
lsi                   0       12500      0        41      0

```

dsc	0	0	0	0	0
lo0	0	0	0	0	0
fxp0	0	12500000	0	41666	4
gre	0	12500	0	41	0
ipip	0	12500	0	41	0
tap	0	0	0	0	0
pime	0	12500	0	41	0
pimd	0	12500	0	41	0
em0	0	12500000	0	41666	0
em1	0	12500000	0	41666	0
em2	0	12500000	0	41666	0
mtun	0	12500	0	41	0
pp0	0	125000	0	416	0
irb	0	12500000	0	41666	0
vtep	0	12500000	0	41666	0
st0	0	125000	0	416	0
ppd0	0	12500	0	41	0
ppe0	0	12500	0	41	0
vlan	0	0	0	0	0
ge-0/0/0	0	1250000	0	4166	0
ge-0/0/1	0	1250000	0	4166	0
ge-0/0/2	0	1250000	0	4166	1
ge-0/0/3	0	1250000	0	4166	0
ge-0/0/4	0	1250000	0	4166	1
ge-0/0/5	0	1250000	0	4166	1
ge-0/0/6	0	1250000	0	4166	0
ge-0/0/7	0	1250000	0	4166	0
ge-0/0/8	0	1250000	0	4166	0
ge-0/0/9	0	1250000	0	4166	0
ge-0/0/10	0	1250000	0	4166	0
ge-0/0/11	0	1250000	0	4166	0
ge-0/0/12	0	1250000	0	4166	0
ge-0/0/13	0	1250000	0	4166	0
ge-0/0/14	0	1250000	0	4166	0
ge-0/0/15	0	1250000	0	4166	0
xe-0/0/16	0	1250000	0	4166	0
xe-0/0/17	0	1250000	0	4166	0
xe-0/0/18	0	1250000	0	4166	0
xe-0/0/19	0	1250000	0	4166	0
sp-0/0/0	0	1250000	0	4166	0
gr-0/0/0	0	12500	0	41	0
ip-0/0/0	0	12500	0	41	0
lsq-0/0/0	0	125000	0	416	0
mt-0/0/0	0	12500	0	41	0
lt-0/0/0	0	12500	0	41	0
input protocol	bytes	max	packets	max	drops
splfwdq	0	1000000	0	1000	0
splnetq	0	1000000	0	1000	0
optionq	0	200000	0	200	0
icmpq	0	50000	0	50	0
frlmiq	0	0	0	0	0
spppintrq	0	25000	0	1000	0
atmctlpktq	0	0	0	0	0
atmoamq	0	0	0	0	0
tnpintrq	0	1250000	0	4166	0
tagintrq	0	200000	0	200	0
tagfragq	0	200000	0	200	0

show system queues scc (TX Matrix Router)

user@host> show system queues scc

output interface	bytes	max	packets	max	drops
fxp0	0	1250000	0	4166	5
lsi	0	12500	0	41	0
dsc	0	0	0	0	0
lo0	0	0	0	0	0
bcm0	0	12500000	0	30000	0
em0	0	12500000	0	30000	0
gre	0	12500	0	41	0
ipip	0	12500	0	41	0
tap	0	0	0	0	0
pime	0	12500	0	41	0
pimd	0	12500	0	41	0
mtun	0	12500	0	41	0
so-1/0/0	0	125000	0	416	0
so-1/1/0	0	125000	0	416	0
so-21/0/0	0	125000	0	416	0
ge-21/1/0	0	1250000	0	4166	0
ge-21/1/1	0	1250000	0	4166	3
ge-21/2/0	0	1250000	0	4166	0
ge-21/2/1	0	1250000	0	4166	3
so-21/3/0	0	125000	0	416	0
so-0/0/0	0	125000	0	416	0
so-0/1/0	0	125000	0	416	0
so-0/2/0	0	125000	0	416	0
pd-0/3/0	0	12500	0	41	0
pe-0/3/0	0	12500	0	41	0
gr-0/3/0	0	12500	0	41	0
ip-0/3/0	0	12500	0	41	0
vt-0/3/0	0	12500	0	41	0
mt-0/3/0	0	12500	0	41	0
lt-0/3/0	0	12500	0	41	0
so-17/0/0	0	125000	0	416	0
input protocol	bytes	max	packets	max	drops
sp1fwdq	0	1000000	0	1000	0
sp1netq	0	1000000	0	1000	0
arpintrq	0	1000	0	50	0
optionq	0	200000	0	200	0
icmpq	0	50000	0	50	0
frlmiq	0	0	0	0	0
spppintrq	0	25000	0	250	0
clnlintrq	0	200000	0	200	0
tnpintrq	0	1250000	0	4166	0
tagintrq	0	200000	0	200	0
tagfragq	0	200000	0	200	0

**show system queues sfc (TX Matrix Router)**

```
user@host> show system queues sfc 0
sfc0-re0:
```

output interface	bytes	max	packets	max	drops
ixgbe1	0	125000000	0	45000	4384
ixgbe0	0	125000000	0	45000	0
lsi	0	12500	0	41	0
dsc	0	0	0	0	0
lo0	0	0	0	0	0
em0	0	12500000	0	41666	1
gre	0	12500	0	41	0
ipip	0	12500	0	41	0
tap	0	0	0	0	0
pime	0	12500	0	41	0

pimd	0	12500	0	41	0
mtun	0	12500	0	41	0
xe-12/0/0	0	1250000	0	4166	0
xe-12/0/1	0	1250000	0	4166	0
xe-12/0/2	0	1250000	0	4166	0
xe-12/0/3	0	1250000	0	4166	0
xe-12/1/0	0	1250000	0	4166	0
xe-12/1/1	0	1250000	0	4166	0
xe-12/1/2	0	1250000	0	4166	0
xe-12/1/3	0	1250000	0	4166	0
xe-20/0/0	0	1250000	0	4166	0
xe-20/0/1	0	1250000	0	4166	0
xe-20/0/2	0	1250000	0	4166	0
xe-20/0/3	0	1250000	0	4166	0
xe-20/1/0	0	1250000	0	4166	0
xe-20/1/1	0	1250000	0	4166	0
xe-20/1/2	0	1250000	0	4166	0
xe-20/1/3	0	1250000	0	4166	0
ge-15/0/0	0	1250000	0	4166	75
ge-15/0/1	0	1250000	0	4166	0
ge-15/0/2	0	1250000	0	4166	75
ge-15/0/3	0	1250000	0	4166	75
ge-15/0/4	0	1250000	0	4166	0
ge-15/0/5	0	1250000	0	4166	0
ge-15/0/6	0	1250000	0	4166	0
ge-15/0/7	0	1250000	0	4166	0
ge-15/0/8	0	1250000	0	4166	0
ge-15/0/9	0	1250000	0	4166	0
xe-4/0/0	0	1250000	0	4166	0
xe-4/0/1	0	1250000	0	4166	0
xe-4/0/2	0	1250000	0	4166	0
xe-4/0/3	0	1250000	0	4166	0
xe-4/1/0	0	1250000	0	4166	0
xe-4/1/1	0	1250000	0	4166	0
xe-4/1/2	0	1250000	0	4166	0
xe-4/1/3	0	1250000	0	4166	0
xe-24/0/0	0	1250000	0	4166	0
xe-24/0/1	0	1250000	0	4166	0
xe-24/0/2	0	1250000	0	4166	0
xe-24/0/3	0	1250000	0	4166	0
xe-24/1/0	0	1250000	0	4166	0
xe-24/1/1	0	1250000	0	4166	0
xe-24/1/2	0	1250000	0	4166	0
xe-24/1/3	0	1250000	0	4166	0
ge-7/0/0	0	1250000	0	4166	0
ge-7/0/1	0	1250000	0	4166	0
ge-7/0/2	0	1250000	0	4166	0
ge-7/0/3	0	1250000	0	4166	75
ge-7/0/4	0	1250000	0	4166	0
ge-7/0/5	0	1250000	0	4166	0
ge-7/0/6	0	1250000	0	4166	0
ge-7/0/7	0	1250000	0	4166	0
ge-7/0/8	0	1250000	0	4166	0
ge-7/0/9	0	1250000	0	4166	0
so-7/1/0	0	125000	0	416	0
so-7/2/0	0	125000	0	416	0
xe-21/0/0	0	1250000	0	4166	0
xe-21/0/1	0	1250000	0	4166	0
xe-21/0/2	0	1250000	0	4166	0
xe-21/0/3	0	1250000	0	4166	0
xe-21/1/0	0	1250000	0	4166	0

xe-21/1/1	0	1250000	0	4166	0
xe-21/1/2	0	1250000	0	4166	0
xe-21/1/3	0	1250000	0	4166	0
xe-14/0/0	0	1250000	0	4166	0
xe-14/0/1	0	1250000	0	4166	0
xe-14/0/2	0	1250000	0	4166	0
xe-14/0/3	0	1250000	0	4166	0
xe-14/1/0	0	1250000	0	4166	0
xe-14/1/1	0	1250000	0	4166	0
xe-14/1/2	0	1250000	0	4166	0
xe-14/1/3	0	1250000	0	4166	0
xe-25/0/0	0	1250000	0	4166	0
xe-25/0/1	0	1250000	0	4166	0
xe-25/0/2	0	1250000	0	4166	0
xe-25/0/3	0	1250000	0	4166	0
xe-25/1/0	0	1250000	0	4166	0
xe-25/1/1	0	1250000	0	4166	0
xe-25/1/2	0	1250000	0	4166	0
xe-25/1/3	0	1250000	0	4166	0
so-22/0/0	0	125000	0	416	0
so-22/0/1	0	125000	0	416	0
so-22/0/2	0	125000	0	416	0
so-22/0/3	0	125000	0	416	0
xe-22/1/0	0	1250000	0	4166	0
xe-22/1/1	0	1250000	0	4166	0
xe-22/1/2	0	1250000	0	4166	0
xe-22/1/3	0	1250000	0	4166	0
xe-6/0/0	0	1250000	0	4166	0
xe-6/0/1	0	1250000	0	4166	0
xe-6/0/2	0	1250000	0	4166	0
xe-6/0/3	0	1250000	0	4166	0
xe-6/1/0	0	1250000	0	4166	0
xe-6/1/1	0	1250000	0	4166	0
xe-6/1/2	0	1250000	0	4166	0
xe-6/1/3	0	1250000	0	4166	0
xe-26/0/0	0	1250000	0	4166	0
xe-26/0/1	0	1250000	0	4166	0
xe-26/0/2	0	1250000	0	4166	0
xe-26/0/3	0	1250000	0	4166	0
xe-26/1/0	0	1250000	0	4166	0
xe-26/1/1	0	1250000	0	4166	0
xe-26/1/2	0	1250000	0	4166	0
xe-26/1/3	0	1250000	0	4166	0
ge-31/0/0	0	1250000	0	4166	0
ge-31/0/1	0	1250000	0	4166	0
ge-31/0/2	0	1250000	0	4166	0
ge-31/0/3	0	1250000	0	4166	0
ge-31/0/4	0	1250000	0	4166	75
ge-31/0/5	0	1250000	0	4166	0
ge-31/0/6	0	1250000	0	4166	75
ge-31/0/7	0	1250000	0	4166	0
ge-31/0/8	0	1250000	0	4166	0
ge-31/0/9	0	1250000	0	4166	0
pd-31/1/0	0	12500	0	41	0
pe-31/1/0	0	12500	0	41	0
gr-31/1/0	0	12500	0	41	0
ip-31/1/0	0	12500	0	41	0
vt-31/1/0	0	12500	0	41	0
mt-31/1/0	0	12500	0	41	0
lt-31/1/0	0	12500	0	41	0
so-29/0/0	0	125000	0	416	0



so-29/0/1	0	125000	0	416	0
so-29/0/2	0	125000	0	416	0
so-29/0/3	0	125000	0	416	0
xe-29/1/0	0	1250000	0	4166	0
xe-29/1/1	0	1250000	0	4166	0
xe-29/1/2	0	1250000	0	4166	0
xe-29/1/3	0	1250000	0	4166	0
so-28/0/0	0	125000	0	416	0
so-28/0/1	0	125000	0	416	0
so-28/0/2	0	125000	0	416	0
so-28/0/3	0	125000	0	416	0
ge-23/0/0	0	1250000	0	4166	0
ge-23/0/1	0	1250000	0	4166	0
ge-23/0/2	0	1250000	0	4166	0
ge-23/0/3	0	1250000	0	4166	0
ge-23/0/4	0	1250000	0	4166	0
ge-23/0/5	0	1250000	0	4166	0
ge-23/0/6	0	1250000	0	4166	0
ge-23/0/7	0	1250000	0	4166	0
ge-23/0/8	0	1250000	0	4166	0
ge-23/0/9	0	1250000	0	4166	0
input protocol	bytes	max	packets	max	drops
splfwdq	0	1000000	0	1000	0
splnetq	0	1000000	0	1000	0
arpintrq	0	1000	0	50	0
optionq	0	200000	0	200	0
icmpq	0	50000	0	50	0
frlmiq	0	0	0	0	0
spppintrq	0	25000	0	250	0
atmctlpktq	0	0	0	0	0
atmoamq	0	0	0	0	0
tnpintrq	0	1250000	0	4166	0
tagintrq	0	200000	0	200	0
tagfragq	0	200000	0	200	0

## show system reboot

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1472</a> <a href="#">Syntax (EX Series Switches) on page 1472</a> <a href="#">Syntax (TX Matrix Router) on page 1472</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1472</a> <a href="#">Syntax (MX Series Router) on page 1472</a> <a href="#">Syntax (QFX Series and OCX Series) on page 1472</a>
<b>Syntax</b>	show system reboot <both-routing-engines>
<b>Syntax (EX Series Switches)</b>	show system reboot <all-members> <both-routing-engines> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system reboot <all-chassis   all-lcc   lcc <i>number</i>   scc> <both-routing-engines>
<b>Syntax (TX Matrix Plus Router)</b>	show system reboot <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> > <both-routing-engines>
<b>Syntax (MX Series Router)</b>	show system reboot <all-members> <both-routing-engines> <local> <member <i>member-id</i> >
<b>Syntax (QFX Series and OCX Series)</b>	show system reboot <both-routing-engines> <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-device <i>name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Display pending system reboots or halts.
<b>Options</b>	<b>none</b> —Display pending reboots or halts on the active Routing Engine.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display halt or reboot request information for all the T640 routers in the chassis that are connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for all the T1600 or T4000 routers in the chassis that are connected to the TX Matrix Plus router.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for all members of the Virtual Chassis configuration.

**all-lcc**—(TX Matrix routers and TX Matrix Plus router only) (Optional) On a TX Matrix router, display system halt or reboot request information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for all connected T1600 or T4000 LCCs.

**both-routing-engines**—(Systems with multiple Routing Engines) (Optional) Display halt or reboot request information on both Routing Engines.

**infrastructure *name***—(QFabric systems only) (Optional) Display reboot request information on the fabric manager Routing Engines and fabric control Routing Engines.

**interconnect-device *name***—(QFabric systems only) (Optional) Display reboot request information on the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display halt or reboot request information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Display reboot request information on the Node group.

**scc**—(TX Matrix router only) (Optional) Display halt or reboot request information for the TX Matrix router (or switch-card chassis).

**sfc**—(TX Matrix Plus router only) (Optional) Display halt or reboot request information for the TX Matrix Plus router.

**Additional Information** By default, when you issue the **show system reboot** command on a TX Matrix or TX Matrix Plus master Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) master Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) backup Routing Engines that are connected to it.

**Required Privilege Level** maintenance

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system reboot on page 1474](#)  
[show system reboot all-lcc \(TX Matrix Router\) on page 1474](#)  
[show system reboot sfc \(TX Matrix Plus Router\) on page 1474](#)  
[show system reboot \(QFX3500 Switch\) on page 1475](#)

## Sample Output

### show system reboot

```
user@host> show system reboot
reboot requested by root at Wed Feb 10 17:40:46 1999
[process id 17885]
```

### show system reboot all-lcc (TX Matrix Router)

```
user@host> show system reboot all-lcc
lcc0-re0:
-----
No shutdown/reboot scheduled.

lcc2-re0:
-----
No shutdown/reboot scheduled.
```

### show system reboot sfc (TX Matrix Plus Router)

```
user@host> show system sfc 0
No shutdown/reboot scheduled.
```

### show system reboot (QFX3500 Switch)

```
user@switch> show system reboot
No shutdown/reboot scheduled.
```

## show system snapshot

---

**List of Syntax**    [Syntax on page 1476](#)  
                         [Syntax \(EX Series Switches\) on page 1476](#)

**Syntax**    show system snapshot

**Syntax (EX Series Switches)**    show system snapshot  
   <all-members | local | member *member-id*>  
   <media (external | internal)>

**Release Information**    Command introduced in Junos OS Release 7.6.  
                                 Command introduced in Junos OS Release 10.0 for EX Series switches.  
                                 Option **slice** deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



**NOTE:** To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

---

**Description**    Display information about the backup software:

- On the routers, display information about the backup software, which is located in the **/altroot**, and **/altconfig** file systems or on the alternate media.
- On the switches, display information about the backup of the root file system (**/**) and directories **/altroot**, **/config**, **/var**, and **/var/tmp**, which are located either on an external USB flash drive or in internal flash memory.



**NOTE:** To back up software, use the **request system snapshot** command.

---

**Options**    **none**—Display information about the backup software.

**all-members | local | member *member-id***—(EX Series switch Virtual Chassis only)  
(Optional) Display the snapshot in a Virtual Chassis:

- **all-members**—Display the snapshot for all members of the Virtual Chassis.
- **local**—Display the snapshot on the member of the Virtual Chassis that you are currently logged into.
- **member *member-id***—Display the snapshot for the specified member of the Virtual Chassis.

**media (external | internal)**—(EX Series switch only) (Optional) Display the destination media location for the snapshot. The **external** option specifies the snapshot on an external mass storage device, such as a USB flash drive. The **internal** option specifies the snapshot on an internal memory source, such as internal flash memory. If no additional options are specified, the command displays the snapshot stored in both slices.

**Required Privilege Level** view

**Related Documentation**

- [request system snapshot on page 1240](#)

**List of Sample Output**

- [show system snapshot \(Router\) on page 1477](#)
- [show system snapshot media external \(Switch\) on page 1477](#)
- [show system snapshot media internal \(Switch\) on page 1478](#)

**Output Fields** Table 67 on page 1477 lists the output fields for the **show system snapshot** command. Output fields are listed in the approximate order in which they appear.

*Table 67: show system snapshot Output Fields*

Field Name	Field Description
Creation date	Date and time of the last snapshot.
JUNOS version on snapshot	Junos OS release number of individual software packages.

## Sample Output

### show system snapshot (Router)

```
user@host> show system snapshot
Information for snapshot on hard-disk
Creation date: Oct 5 13:53:29 2005
JUNOS version on snapshot:
  jbase   : 7.3R2.5
  jcrypto: 7.3R2.5
  jdocs   : 7.3R2.5
  jkernel: 7.3R2.5
  jpfe    : M40-7.3R2.5
  jroute  : 7.3R2.5
```

### show system snapshot media external (Switch)

```
user@switch> show system snapshot media external
Information for snapshot on      external (/dev/dals1a) (backup)
Creation date: Mar 19 03:37:18 2012
JUNOS version on snapshot:
  jbase   : ex-12.1I20120111_0048_user
  jcrypto-ex: 12.1I20120111_0048_user
  jdocs-ex: 12.1I20120111_0048_user
```

```
jroute-ex: 12.1I20120111_0048_user
jswitch-ex: 12.1I20120111_0048_user
jweb-ex: 12.1I20120111_0048_user
Information for snapshot on      external (/dev/da1s2a) (primary)
Creation date: Mar 19 03:38:25 2012
JUNOS version on snapshot:
  jbase   : ex-12.2I20120305_2240_user
  jcrypto-ex: 12.2I20120305_2240_user
  jdocs-ex: 12.2I20120305_2240_user
  jroute-ex: 12.2I20120305_2240_user
  jswitch-ex: 12.2I20120305_2240_user
  jweb-ex: 12.2I20120305_2240_user
```

#### show system snapshot media internal (Switch)

```
user@switch> show system snapshot media internal
Information for snapshot on internal (/dev/da0s1a) (backup)
Creation date: Mar 14 05:01:02 2011
JUNOS version on snapshot:
  jbase   : 11.1R1.9
  jcrypto-ex: 11.1R1.9
  jdocs-ex: 11.1R1.9
  jkernel-ex: 11.1R1.9
  jroute-ex: 11.1R1.9
  jswitch-ex: 11.1R1.9
  jweb-ex: 11.1R1.9
  jpfe-ex42x: 11.1R1.9
Information for snapshot on internal (/dev/da0s2a) (primary)
Creation date: Mar 30 08:46:27 2011
JUNOS version on snapshot:
  jbase   : 11.2-20110330.0
  jcrypto-ex: 11.2-20110330.0
  jdocs-ex: 11.2-20110330.0
  jkernel-ex: 11.2-20110330.0
  jroute-ex: 11.2-20110330.0
  jswitch-ex: 11.2-20110330.0
  jweb-ex: 11.2-20110330.0
  jpfe-ex42x: 11.2-20110330.0
```



## show system software

<b>List of Syntax</b>	<a href="#">Syntax on page 1479</a> <a href="#">Syntax (EX Series Switches) on page 1479</a> <a href="#">Syntax (TX Matrix Router) on page 1479</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1479</a> <a href="#">Syntax (QFX Series) on page 1479</a>
<b>Syntax</b>	show system software <detail>
<b>Syntax (EX Series Switches)</b>	show system software <all-members> <detail> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system software <all-chassis   all-lcc   lcc <i>number</i>   scc> <detail>
<b>Syntax (TX Matrix Plus Router)</b>	show system software <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> > <detail>
<b>Syntax (QFX Series)</b>	show system software <detail> <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-group <i>name</i> >
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
<b>Description</b>	Display the Junos OS extensions loaded on your router or switch.
<b>Options</b>	<p><b>none</b>—Display standard information about all loaded Junos OS extensions.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system software information for all the T640 routers (TX Matrix Router) or all the routers (TX Matrix Plus Router) in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system software information for all T640 routers connected to the</p>

TX Matrix router. On a TX Matrix Plus router, display system software information for all connected T1600 or T4000 LCCs.

**all-members**—(EX4200 switches only) (Optional) Display the system software running on all members of the Virtual Chassis configuration.

**detail**—(Optional) Display detailed information about available Junos OS extensions.

**infrastructure name**—(QFabric systems only) (Optional) Display the system software running on the fabric control Routing Engine and the fabric manager Routing Engine.

**interconnect-device name**—(QFabric systems only) (Optional) Display the system software running on the Interconnect device.

**lcc number**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system software information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system software information for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display the system software running on the local Virtual Chassis member.

**member member-id**—(EX4200 switches only) (Optional) Display the system software running on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**node-group name**—(QFabric systems only) (Optional) Display the system software running on the Node group.

**scc**—(Routing matrix only) (Optional) Display the system software running on a TX Matrix router (or switch-card chassis).

**sfc**—(TX Matrix Plus routers only) (Optional) Display system software information for the TX Matrix Plus router.

**Required Privilege Level** maintenance

## Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

## List of Sample Output

[show system software on page 1481](#)  
[show system software \(TX Matrix Plus Router\) on page 1481](#)  
[show system software \(QFX Series\) on page 1485](#)

## Output Fields

When you enter this command, you are provided a list of Junos OS packages installed on the router and their corresponding Junos OS release number.

## Sample Output

### show system software

```
user@host> show system software
Information for jbase:
```

```
Comment:
JUNOS Base OS Software Suite [7.2R1.7]
```

```
Information for jcrypto:
```

```
Comment:
JUNOS Crypto Software Suite [7.2R1.7]
Information for jdocs:
```

```
Comment:
JUNOS Online Documentation [7.2R1.7]
```

```
Information for jkernel:
```

```
Comment:
JUNOS Kernel Software Suite [7.2R1.7]
```

```
Information for jpfe:
```

```
Comment:
JUNOS Packet Forwarding Engine Support (M20/M40) [7.2R1.7]
```

```
Information for jroute:
```

```
Comment:
JUNOS Routing Software Suite [7.2R1.7]
```

```
Information for junos:
```

```
Comment:
JUNOS Base OS boot [7.2R1.7]
```

### show system software (TX Matrix Plus Router)

```
user@host> show system software
```

sfc0-re0:

-----  
Information for jbase:

Comment:

JUNOS Base OS Software Suite [9.6-20090515.0]

Information for jcrypto:

Comment:

JUNOS Crypto Software Suite [9.6-20090515.0]

Information for jdocs:

Comment:

JUNOS Online Documentation [9.6-20090515.0]

Information for jkernel:

Comment:

JUNOS Kernel Software Suite [9.6-20090515.0]

Information for jpfe:

Comment:

JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090515.0]

Information for jpfe-common:

Comment:

JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090515.0]

Information for jroute:Comment:

JUNOS Routing Software Suite [9.6-20090515.0]

Information for jservices-aacl:

Comment:

JUNOS Services ACL Container package [9.6-20090515.0]

Information for jservices-appid:

Comment:

JUNOS AppId Services [9.6-20090515.0]

Information for jservices-bgf:

Comment:  
JUNOS Border Gateway Function package [9.6-20090515.0]  
Information for jservices-idp:

Comment:  
JUNOS IDP Services [9.6-20090515.0]

Information for jservices-llpdf:

Comment:  
JUNOS Services LL-PDF Container package [9.6-20090515.0]

Information for jservices-sfw:

Comment:  
JUNOS Services Stateful Firewall [9.6-20090515.0]  
Information for jservices-voice:

Comment:  
JUNOS Voice Services Container package [9.6-20090515.0]

Information for junos:

Comment:  
JUNOS Base OS boot [9.6-20090515.0]  
...  
lcc0-re0:

-----  
Information for jbase:

Comment:  
JUNOS Base OS Software Suite [9.6-20090515.0]

Information for jcrypto:

Comment:  
JUNOS Crypto Software Suite [9.6-20090515.0]

Information for jdocs:

Comment:  
JUNOS Online Documentation [9.6-20090515.0]

Information for jkernel:

Comment:  
JUNOS Kernel Software Suite [9.6-20090515.0]

Information for jpfe:

Comment:

JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090515.0]

Information for jpfe-common:

Comment:

JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090515.0]

Information for jroute:

Comment:

JUNOS Routing Software Suite [9.6-20090515.0]

Information for jservices-aac1:

Comment:

JUNOS Services AACL Container package [9.6-20090515.0]

Information for jservices-appid:

Comment:

JUNOS AppId Services [9.6-20090515.0]

Information for jservices-bgf:

Comment:

JUNOS Border Gateway Function package [9.6-20090515.0]

Information for jservices-idp:

Comment:

JUNOS IDP Services [9.6-20090515.0]

Information for jservices-llpdf:

Comment:

JUNOS Services LL-PDF Container package [9.6-20090515.0]

Information for jservices-sfw:

Comment:

JUNOS Services Stateful Firewall [9.6-20090515.0]

Information for jservices-voice:

Comment:

JUNOS Voice Services Container package [9.6-20090515.0]

Information for junos:

Comment:

JUNOS Base OS boot [9.6-20090515.0]

lcc1-re0:

-----  
Information for jbase:

Comment:

JUNOS Base OS Software Suite [9.6-20090515.0]

Information for jcrypto:

Comment:

JUNOS Crypto Software Suite [9.6-20090515.0]

...

### show system software (QFX Series)

user@switch> **show system software**

Information for jbase:

Comment:

JUNOS Base OS Software Suite [11.3-20110730.0]

Information for jcrypto:

Comment:

JUNOS Crypto Software Suite [11.3-20110730.0]

Information for jdocs:

Comment:

JUNOS Online Documentation [11.3-20110730.0]

Information for jkernel:

Comment:

JUNOS Kernel Software Suite [11.3-20110730.0]

Information for jpfe:

Comment:

JUNOS Packet Forwarding Engine Support (QFX) [11.3-20110730.0]

Information for jroute:

Comment:

JUNOS Routing Software Suite [11.3-20110730.0]

Information for jswitch:

Comment:

JUNOS Enterprise Software Suite [11.3-20110730.0]

Information for junos:

Comment:

JUNOS Base OS boot [11.3-20110730.0]

Information for jweb:

Comment:

JUNOS Web Management [11.3-20110730.0]



## show system statistics arp

<b>List of Syntax</b>	<a href="#">Syntax on page 1487</a> <a href="#">Syntax (EX Series Switches) on page 1487</a> <a href="#">Syntax (TX Matrix Router) on page 1487</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1487</a>
<b>Syntax</b>	show system statistics arp
<b>Syntax (EX Series Switches)</b>	show system statistics arp <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics arp <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics arp <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide Address Resolution Protocol (ARP) statistics.
<b>Options</b>	<p><b>none</b>—Display system-wide ARP statistics.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display ARP statistics for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system-wide ARP statistics for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system-wide ARP statistics for all routers connected to the TX Matrix Plus router</p> <p><b>all-members</b>—(EX4200 switches only) (Optional) Display ARP statistics for all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display ARP statistics for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display ARP statistics for a specific router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display ARP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display ARP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display ARP statistics for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display ARP statistics for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics arp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics arp on page 1488](#)  
[show system statistics arp \(EX Series Switches\) on page 1489](#)  
[show system statistics arp \(TX Matrix Plus Router\) on page 1490](#)

## Sample Output

**show system statistics arp**

```
user@host> show system statistics arp
arp:
    184710 datagrams received
```

```

2886 ARP requests received
684 ARP replies received
0 resolution request received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
0 unrestricted proxy requests not proxied
0 restricted proxy requests not proxied
0 datagrams with bogus interface
0 datagrams with incorrect length
0 datagrams for non-IP protocol
0 datagrams with unsupported op code
0 datagrams with bad protocol address length
0 datagrams with bad hardware address length
0 datagrams with multicast source address
0 datagrams with multicast target address
0 datagrams with my own hardware address
0 datagrams for an address not on the interface
0 datagrams with a broadcast source address
0 datagrams with source address duplicate to mine
181140 datagrams which were not for me
0 packets discarded waiting for resolution
4 packets sent after waiting for resolution
703 ARP requests sent
2886 ARP replies sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor

```

#### show system statistics arp (EX Series Switches)

```

user@host> show system statistics arp
arp:
186423 datagrams received
88 ARP requests received
88 ARP replies received
0 resolution request received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
0 proxy requests not proxied
0 restricted proxy requests not proxied
0 datagrams with bogus interface
0 datagrams with incorrect length
0 datagrams for non-IP protocol
0 datagrams with unsupported op code
0 datagrams with bad protocol address length
0 datagrams with bad hardware address length
0 datagrams with multicast source address
0 datagrams with multicast source address
0 datagrams with my own hardware address
164 datagrams for an address not on the interface
0 datagrams with a broadcast source address
0 datagrams with source address duplicate to mine
186075 datagrams which were not for me

```

```
0 packets discarded waiting for resolution
0 packets sent after waiting for resolution
50 ARP requests sent
88 ARP replies sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor
```

### show system statistics arp (TX Matrix Plus Router)

```
user@host> show system statistics arp
sfc0-re0:
```

```
-----
arp:
  487 datagrams received
  8 ARP requests received
  438 ARP replys received
  438 resolution requests received
  0 unrestricted proxy requests
  0 restricted proxy requests
  0 received proxy requests
  0 proxy requestss not proxied
  0 restricted-proxy requestss not proxied
  0 with bogus interface
  0 with incorrect length
  0 for non-IP protocol
  0 with unsupported op code
  0 with bad protocol address length
  0 with bad hardware address length
  0 with multicast source address
  0 with multicast target address
  0 with my own hardware address
  0 for an address not on the interface
  0 with a broadcast source address
  0 with source address duplicate to mine
  41 which were not for me
  0 packets discarded waiting for resolution
  438 packets sent after waiting for resolution
  1282 ARP requests sent
  8 ARP replys sent
  0 requests for memory denied
  0 requests dropped on entry
  0 requests dropped during retry
  0 requests dropped due to interface deletion
  0 requests on unnumbered interfaces
  0 new requests on unnumbered interfaces
  0 replies for from unnumbered interfaces
  0 requests on unnumbered interface with non-subnetted donor
  0 replies from unnumbered interface with non-subnetted donor
```

```
1cc0-re0:
```

```
-----
arp:
  19 datagrams received
  0 ARP requests received
```

```

1 ARP reply received
0 resolution requests received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
0 proxy requestss not proxied
0 restricted-proxy requestss not proxied
0 with bogus interface
0 with incorrect length
0 for non-IP protocol
0 with unsupported op code
0 with bad protocol address length
0 with bad hardware address length
0 with multicast source address
0 with multicast target address
0 with my own hardware address
0 for an address not on the interface
0 with a broadcast source address
0 with source address duplicate to mine
18 which were not for me
0 packets discarded waiting for resolution
0 packets sent after waiting for resolution
8 ARP requests sent
0 ARP replys sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor

```

lcc1-re0:

-----  
arp:

```

17 datagrams received
0 ARP requests received
1 ARP reply received
0 resolution requests received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
0 proxy requestss not proxied
0 restricted-proxy requestss not proxied
0 with bogus interface
0 with incorrect length
0 for non-IP protocol
0 with unsupported op code
0 with bad protocol address length
0 with bad hardware address length
0 with multicast source address
0 with multicast target address
0 with my own hardware address
0 for an address not on the interface
0 with a broadcast source address
0 with source address duplicate to mine
16 which were not for me
0 packets discarded waiting for resolution
0 packets sent after waiting for resolution

```

```
9 ARP requests sent
0 ARP replys sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor
```

lcc2-re0:

-----  
arp:

```
18 datagrams received
1 ARP request received
1 ARP reply received
0 resolution requests received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
0 proxy requestss not proxied
0 restricted-proxy requestss not proxied
0 with bogus interface
0 with incorrect length
0 for non-IP protocol
0 with unsupported op code
0 with bad protocol address length
0 with bad hardware address length
0 with multicast source address
0 with multicast target address
0 with my own hardware address
0 for an address not on the interface
0 with a broadcast source address
0 with source address duplicate to mine
16 which were not for me
0 packets discarded waiting for resolution
0 packets sent after waiting for resolution
9 ARP requests sent
1 ARP reply sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor
```

lcc3-re0:

-----  
arp:

```
13 datagrams received
0 ARP requests received
1 ARP reply received
0 resolution requests received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
```

```
0 proxy requestss not proxied
0 restricted-proxy requestss not proxied
0 with bogus interface
0 with incorrect length
0 for non-IP protocol
0 with unsupported op code
0 with bad protocol address length
0 with bad hardware address length
0 with multicast source address
0 with multicast target address
0 with my own hardware address
0 for an address not on the interface
0 with a broadcast source address
0 with source address duplicate to mine
12 which were not for me
0 packets discarded waiting for resolution
0 packets sent after waiting for resolution
8 ARP requests sent
0 ARP replys sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor
```

## show system statistics clns

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1494</a> <a href="#">Syntax (TX Matrix Router) on page 1494</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1494</a>
<b>Syntax</b>	show system statistics clns
<b>Syntax (TX Matrix Router)</b>	show system statistics clns <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics clns <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide Connectionless Network Service (CLNS) statistics.
<b>Options</b>	<p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for CLNS for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for CLNS for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for CLNS for all connected T1600 or T4000 LCCs.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for CLNS for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for CLNS for a specific router that is connected to the TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"><li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li><li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li><li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li><li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li></ul> <p><b>scc</b>—(TX Matrix routers only) (Optional) Display system statistics for CLNS for the TX Matrix router (or switch-card chassis).</p>



**sfc *number***—(TX Matrix Plus router only) (Optional) Display system statistics for CLNS for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics clns** command on the master Routing Engine of a TX Matrix router or TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation** • [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics clns on page 1495](#)  
[show system statistics clns \(EX Series Switches\) on page 1496](#)  
[show system statistics clns \(TX Matrix Plus Router\) on page 1496](#)

## Sample Output

**show system statistics clns**

```
user@host> show system statistics clns
cln1:
  0 total packets received
  0 packets delivered
  0 too small
  0 bad header length
  0 bad checksum
  0 bad version
  0 unknown or unsupported protocol
  0 bogus sdl size
  0 no free memory in socket buffer
  0 send packets discarded
  0 sbappend failure
  0 mcopy failure
  0 address fields were not reasonable
  0 segment information forgotten
  0 forwarded packets
  0 total packets sent
  0 output packets discarded
  0 non-forwarded packets
  0 packets fragmented
  0 fragments sent
  0 fragments discarded
  0 fragments timed out
  0 fragmentation prohibited
  0 packets reconstructed
  0 packets destined to dead nexthop
  0 packets discarded due to no route
  0 Error pdu rate drops
  0 ER pdu generation failure
```

**show system statistics clns (EX Series Switches)**

```
user@host> show system statistics clns
c1n1:
  0 Total packets received
  0 Packets delivered
  0 Too small packets
  0 Packets with bad header length
  0 Packets with bad checksum
  0 Bad version packets
  0 Unknown or unsupported protocol packets
  0 Packets with bogus sdl size
  0 No free memory in socket buffer
  0 Send packets discarded
  0 Sbappend failure
  0 Mcopy failure
  0 Address fields were not reasonable
  0 Segment information forgotten
  0 Forwarded packets
  0 Total packets sent
  0 Output packets discarded
  0 Non-forwarded packets
  0 Packets fragmented
  0 Fragments sent
  0 Fragments discarded
  0 Fragments timed out
  0 Fragmentation prohibited
  0 Packets reconstructed
  0 Packets destined to dead nexthop
  0 Packets discarded due to no route
  0 Error pdu rate drops
  0 ER pdu generation failure
```

**show system statistics clns (TX Matrix Plus Router)**

```
user@host> show system statistics clns
sfc0-re0:
-----
c1n1:
  0 total packets received
  0 packets delivered
  0 too small
  0 bad header length
  0 bad checksum
  0 bad version
  0 unknown or unsupport protocol
  0 bogus sdl size
  0 no free memory in socket buffer
  0 send packets discarded
  0 sbappend failure
  0 mcopy failure
  0 address fields were not reasonable
  0 segment information forgotten
  0 forwarded packets
  0 total packets sent
  0 output packets discarded
  0 non-forwarded packets
  0 packets fragmented
  0 fragments sent
  0 fragments discarded
```

```

0 fragments timed out
0 fragmentation prohibited
0 packets reconstructed
0 packets destined to dead nexthop
0 packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure

```

```
lcc0-re1:
```

```
-----
c1n1:
```

```

0 total packets received
0 packets delivered
0 too small
0 bad header length
0 bad checksum
0 bad version
0 unknown or unsupport protocol
0 bogus sdl size
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure
0 mcopy failure
0 address fields were not reasonable
0 segment information forgotten
0 forwarded packets
0 total packets sent
0 output packets discarded
0 non-forwarded packets
0 packets fragmented
0 fragments sent
0 fragments discarded
0 fragments timed out
0 fragmentation prohibited
0 packets reconstructed
0 packets destined to dead nexthop
0 packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure

```

```
lcc1-re1:
```

```
-----
c1n1:
```

```

0 total packets received
0 packets delivered
0 too small
0 bad header length
0 bad checksum
0 bad version
0 unknown or unsupport protocol
0 bogus sdl size
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure
0 mcopy failure
0 address fields were not reasonable
0 segment information forgotten
0 forwarded packets
0 total packets sent
0 output packets discarded
0 non-forwarded packets

```

```

0 packets fragmented
0 fragments sent
0 fragments discarded
0 fragments timed out
0 fragmentation prohibited
0 packets reconstructed
0 packets destined to dead nexthop
0 packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure

```

lcc2-re1:

-----  
c1n1:

```

0 total packets received
0 packets delivered
0 too small
0 bad header length
0 bad checksum
0 bad version
0 unknown or unsupport protocol
0 bogus sdl size
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure
0 mcopy failure
0 address fields were not reasonable
0 segment information forgotten
0 forwarded packets
0 total packets sent
0 output packets discarded
0 non-forwarded packets
0 packets fragmented
0 fragments sent
0 fragments discarded
0 fragments timed out
0 fragmentation prohibited
0 packets reconstructed
0 packets destined to dead nexthop
0 packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure

```

lcc3-re1:

-----  
c1n1:

```

0 total packets received
0 packets delivered
0 too small
0 bad header length
0 bad checksum
0 bad version
0 unknown or unsupport protocol
0 bogus sdl size
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure
0 mcopy failure
0 address fields were not reasonable
0 segment information forgotten
0 forwarded packets

```

```
0 total packets sent
0 output packets discarded
0 non-forwarded packets
0 packets fragmented
0 fragments sent
0 fragments discarded
0 fragments timed out
0 fragmentation prohibited
0 packets reconstructed
0 packets destined to dead nexthop
0 packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure
```

## show system statistics icmp

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1500</a> <a href="#">Syntax (EX Series Switches) on page 1500</a> <a href="#">Syntax (TX Matrix Router) on page 1500</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1500</a>
<b>Syntax</b>	show system statistics icmp
<b>Syntax (EX Series Switches)</b>	show system statistics icmp <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics icmp <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics icmp <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide Internet Control Message Protocol (ICMP) statistics.
<b>Options</b>	<b>none</b> —Display system statistics for ICMP.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for ICMP for all the routers in the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for ICMP for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for ICMP for all connected T1600 or T4000 LCCs.  <b>all-members</b> —(EX4200 switches only) (Optional) Display ICMP statistics for all members of the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for ICMP for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for ICMP for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display ICMP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display ICMP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for ICMP for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers and TX Matrix Plus routers with 3D SIBs only) (Optional) Display system statistics for ICMP for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics icmp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation** [• Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics icmp on page 1501](#)  
[show system statistics icmp \(EX Series Switches\) on page 1502](#)  
[show system statistics icmp \(TX Matrix Plus Router\) on page 1503](#)

## Sample Output

**show system statistics icmp**

```
user@host> show system statistics icmp
```

```
icmp:
  16783 drops due to rate limit
  9998 calls to icmp_error
  0 errors not generated because old message was icmp
  Output Histogram
    38877 echo reply
    1 destination unreachable
    1 routing redirect
    163 echo
    5000 time exceeded
    4996 parameter problem
    5000 time stamp reply
  0 messages with bad code fields
  0 messages less than the minimum length
  0 messages with bad checksum
  0 messages with bad source address
  20000 messages with bad length
  0 echo drops with broadcast or multicast destination address
  0 timestamp drops with broadcast or multicast destination address
  Input Histogram
    5093 echo reply
    5000 destination unreachable
    5000 source quench
    5000 routing redirect
    5000 alternate host address
    38877 echo
    5000 router advertisement
    5000 router solicitation
    5000 time exceeded
    5000 parameter problem
    5000 time stamp
    5000 time stamp reply
    5000 information request
    5000 information request reply
    5000 address mask request
    5000 address mask reply
    5000 traceroute
    5000 data conversion error
    5000 mobile host redirect
    5000 IPv6 where-are-you
    5000 IPv6 i-am-here
    5000 mobile registration request
    5000 mobile registration reply
    5000 skip
    5000 photuris
  43877 message responses generated
```

#### show system statistics icmp (EX Series Switches)

```
user@host> show system statistics icmp
icmp:
  0 drops due to rate limit
  12 calls to icmp_error
  0 errors not generated because old message was icmp
  Output histogram:
    297 echo reply
    12 destination unreachable
  0 messages with bad code fields
  0 messages less than the minimum length
  0 messages with bad checksum
  0 messages with bad source address
```



```

0 messages with bad length
0 echo drops with broadcast or multicast destination address
0 timestamp drops with broadcast or multicast destination address
Input histogram:
    297 echo
297 message responses generated

```

#### show system statistics icmp (TX Matrix Plus Router)

```

user@host> show system statistics icmp
sfc0-re0:

```

```

-----
icmp:
    0 drops due to rate limit
    0 calls to icmp_error
    0 errors not generated because old message was icmp
Output histogram:
    echo reply: 21
    0 messages with bad code fields
    0 messages less than the minimum length
    0 messages with bad checksum
    0 messages with bad source address
    0 messages with bad length
    0 echo drops with broadcast or multicast destination address
    0 timestamp drops with broadcast or multicast destination address
Input histogram:
    echo: 21
21 message responses generated

```

```

lcc0-re0:

```

```

-----
icmp:
    0 drops due to rate limit
    1 call to icmp_error
    0 errors not generated because old message was icmp
Output histogram:
    echo reply: 24
    destination unreachable: 1
    0 messages with bad code fields
    0 messages less than the minimum length
    0 messages with bad checksum
    0 messages with bad source address
    0 messages with bad length
    0 echo drops with broadcast or multicast destination address
    0 timestamp drops with broadcast or multicast destination address
Input histogram:
    echo: 24
24 message responses generated

```

```

lcc1-re0:

```

```

-----
icmp:
    0 drops due to rate limit
    0 calls to icmp_error
    0 errors not generated because old message was icmp
Output histogram:
    echo reply: 23
    0 messages with bad code fields
    0 messages less than the minimum length
    0 messages with bad checksum
    0 messages with bad source address

```

```

0 messages with bad length
0 echo drops with broadcast or multicast destination address
0 timestamp drops with broadcast or multicast destination address
Input histogram:
    echo: 23
23 message responses generated

```

lcc2-re0:

-----

icmp:

```

0 drops due to rate limit
0 calls to icmp_error
0 errors not generated because old message was icmp
Output histogram:
    echo reply: 22
0 messages with bad code fields
0 messages less than the minimum length
0 messages with bad checksum
0 messages with bad source address
0 messages with bad length
0 echo drops with broadcast or multicast destination address
0 timestamp drops with broadcast or multicast destination address
Input histogram:
    echo: 22
22 message responses generated

```

lcc3-re0:

-----

icmp:

```

0 drops due to rate limit
0 calls to icmp_error
0 errors not generated because old message was icmp
Output histogram:
    echo reply: 22
0 messages with bad code fields
0 messages less than the minimum length
0 messages with bad checksum
0 messages with bad source address
0 messages with bad length
0 echo drops with broadcast or multicast destination address
0 timestamp drops with broadcast or multicast destination address
Input histogram:
    echo: 22
22 message responses generated

```

## show system statistics icmp6

<b>List of Syntax</b>	<a href="#">Syntax (EX Series Switches) on page 1505</a> <a href="#">Syntax (MX Series Routers) on page 1505</a> <a href="#">Syntax (TX Matrix Router) on page 1505</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1505</a>
<b>Syntax (EX Series Switches)</b>	<pre>show system statistics icmp6 &lt;all-members&gt; &lt;local&gt; &lt;member <i>member-id</i>&gt;</pre>
<b>Syntax (MX Series Routers)</b>	<pre>show system statistics icmp6</pre>
<b>Syntax (TX Matrix Router)</b>	<pre>show system statistics icmp6 &lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</pre>
<b>Syntax (TX Matrix Plus Router)</b>	<pre>show system statistics icmp6 &lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p>
<b>Description</b>	Display system-wide Internet Control Message Protocol for IPv6 (ICMPv6) statistics.
<b>Options</b>	<p><b>none</b>—Display system statistics for ICMPv6.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for ICMPv6 for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for ICMPv6 for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for ICMPv6 for all connected T1600 or T4000 LCCs.</p> <p><b>all-members</b>—(EX4200 switches only) (Optional) Display ICMPv6 statistics for all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for ICMPv6 for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for ICMPv6 for a specific router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display ICMPv6 statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display ICMPv6 statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for ICMPv6 for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for ICMPv6 for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics icmp6** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics icmp6 \(MX Series Routers\) on page 1506](#)  
[show system statistics icmp6 \(EX Series Switches\) on page 1507](#)  
[show system statistics icmp6 \(TX Matrix Plus Router\) on page 1508](#)

## Sample Output

### [show system statistics icmp6 \(MX Series Routers\)](#)

```
user@host> show system statistics icmp6
icmp6:
    79 Calls to icmp_error
```

```

0 Errors not generated because old message was icmp error
0 Errors not generated because rate limitation
Output histogram:
    79 unreachable
    30 echo
    163 multicast listener query
     6 multicast listener report
    940 neighbor solicitation
  694184 neighbor advertisement
0 Messages with bad code fields
0 Messages < minimum length
0 Bad checksums
0 Messages with bad length
Input histogram:
    10 echo reply
     6 multicast listener report
  693975 neighbor solicitation
Histogram of error messages to be generated:
    0 No route
    0 Administratively prohibited
    0 Beyond scope
    79 Address unreachable
    0 Port unreachable
    0 Time exceed transit
    0 Time exceed reassembly
    0 Erroneous header field
    0 Unrecognized next header
    0 Unrecognized option
    0 Unknown
0 Message responses generated
0 Messages with too many ND options
100000 Max System ND nh cache limit
79840 Max Public ND nh cache limit
200 Max IRI ND nh cache limit
19960 Max Management intf ND nh cache limit
79840 Current Public ND nexthops present
4 Current IRI ND nexthops present
0 Current Management ND nexthops present
909266 Total ND nexthops creation failed as limit reached
909266 Public ND nexthops creation failed as public limit reached
0 IRI ND nexthops creation failed as iri limit reached
0 Management ND nexthops creation failed as mgt limit reached

```

### show system statistics icmp6 (EX Series Switches)

```

user@host> show system statistics icmp6
icmp6:
0 Calls to icmp_error
0 Errors not generated because old message was icmp error
0 Errors not generated because rate limitation
0 Messages with bad code fields
0 Messages < minimum length
0 Bad checksums
0 Messages with bad length
    0 No route
    0 Administratively prohibited
    0 Beyond scope
    0 Address unreachable
    0 Port unreachable
    0 packet too big
    0 Time exceed transit

```

```
0 Time exceed reassembly
0 Erroneous header field
0 Unrecognized next header
0 Unrecognized option
0 redirect
0 Unknown
0 Message responses generated
0 Messages with too many ND options
```

## Sample Output

### show system statistics icmp6 (TX Matrix Plus Router)

```
user@host> show system statistics icmp6
sfc0-re0:
-----
icmp6:
  0 calls to icmp_error
  0 errors not generated because old message was icmp error or so
  0 errors not generated because rate limitation
  Output histogram:
    neighbor solicitation: 12
    neighbor advertisement: 4
  0 messages with bad code fields
  0 messages < minimum length
  0 bad checksums
  0 messages with bad length
  Histogram of error messages to be generated:
    0 no route
    0 administratively prohibited
    0 beyond scope
    0 address unreachable
    0 port unreachable
    0 packet too big
    0 time exceed transit
    0 time exceed reassembly
    0 erroneous header field
    0 unrecognized next header
    0 unrecognized option
    0 redirect
    0 unknown
  0 message responses generated
  0 messages with too many ND options

lcc0-re0:
-----
icmp6:
  0 calls to icmp_error
  0 errors not generated because old message was icmp error or so
  0 errors not generated because rate limitation
  Output histogram:
    neighbor solicitation: 12
    neighbor advertisement: 4
  0 messages with bad code fields
  0 messages < minimum length
  0 bad checksums
  0 messages with bad length
  Histogram of error messages to be generated:
    0 no route
    0 administratively prohibited
    0 beyond scope
```

```

0 address unreachable
0 port unreachable
0 packet too big
0 time exceed transit
0 time exceed reassembly
0 erroneous header field
0 unrecognized next header
0 unrecognized option
0 redirect
0 unknown
0 message responses generated
0 messages with too many ND options

```

lcc1-re0:

-----

icmp6:

```

0 calls to icmp_error
0 errors not generated because old message was icmp error or so
0 errors not generated because rate limitation
Output histogram:
    neighbor solicitation: 12
    neighbor advertisement: 4
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
Input histogram:
    neighbor advertisement: 2
Histogram of error messages to be generated:
0 no route
0 administratively prohibited
0 beyond scope
0 address unreachable
0 port unreachable
0 packet too big
0 time exceed transit
0 time exceed reassembly
0 erroneous header field
0 unrecognized next header
0 unrecognized option
0 redirect
0 unknown
0 message responses generated
0 messages with too many ND options

```

lcc2-re0:

-----

icmp6:

```

0 calls to icmp_error
0 errors not generated because old message was icmp error or so
0 errors not generated because rate limitation
Output histogram:
    neighbor solicitation: 12
    neighbor advertisement: 4
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
Input histogram:
    neighbor advertisement: 2
Histogram of error messages to be generated:

```

```

0 no route
0 administratively prohibited
0 beyond scope
0 address unreachable
0 port unreachable
0 packet too big
0 time exceed transit
0 time exceed reassembly
0 erroneous header field
0 unrecognized next header
0 unrecognized option
0 redirect
0 unknown
0 message responses generated
0 messages with too many ND options

```

lcc3-re0:

-----  
icmp6:

```

0 calls to icmp_error
0 errors not generated because old message was icmp error or so
0 errors not generated because rate limitation
Output histogram:
    neighbor solicitation: 12
    neighbor advertisement: 4
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
Input histogram:
    neighbor advertisement: 2
Histogram of error messages to be generated:
0 no route
0 administratively prohibited
0 beyond scope
0 address unreachable
0 port unreachable
0 packet too big
0 time exceed transit
0 time exceed reassembly
0 erroneous header field
0 unrecognized next header
0 unrecognized option
0 redirect
0 unknown
0 message responses generated
0 messages with too many ND options

```



## show system statistics igmp

<b>List of Syntax</b>	<a href="#">Syntax on page 1511</a> <a href="#">Syntax (EX Series Switches) on page 1511</a> <a href="#">Syntax (TX Matrix Router) on page 1511</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1511</a>
<b>Syntax</b>	show system statistics igmp
<b>Syntax (EX Series Switches)</b>	show system statistics igmp <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics igmp <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics igmp <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 12.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Display system-wide Internet Group Management Protocol (IGMP) statistics.
<b>Options</b>	<b>none</b> —Display system statistics for IGMP.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for IGMP for all the routers in the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for IGMP for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for IGMP for all connected T1600 or T4000 LCCs.  <b>all-members</b> —(EX4200 switches only) (Optional) Display IGMP statistics for all members of the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for IGMP for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for IGMP for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display IGMP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display IGMP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for IGMP for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for IGMP for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics igmp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics igmp on page 1512](#)  
[show system statistics igmp \(EX Series Switches\) on page 1513](#)  
[show system statistics igmp \(TX Matrix Plus Router\) on page 1513](#)

## Sample Output

**show system statistics igmp**

```
user@host> show system statistics igmp
igmp:
    17178 messages received
```

```

0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

```

### show system statistics igmp (EX Series Switches)

```

user@host> show system statistics igmp
igmp:
    0 messages received
    0 messages received with too few bytes
    0 messages received with bad checksum
    0 membership queries received
    0 membership queries received with invalid fields
    0 membership reports received
    0 membership reports received with invalid fields
    0 membership reports received for groups to which we belong
    0 Membership reports sent

```

### show system statistics igmp (TX Matrix Plus Router)

```

user@host> show system statistics igmp
sfc0-re0:
-----
igmp:
    0 messages received
    0 messages received with too few bytes
    0 messages received with bad checksum
    0 membership queries received
    0 membership queries received with invalid field(s)
    0 membership reports received
    0 membership reports received with invalid field(s)
    0 membership reports received for groups to which we belong
    0 membership reports sent

lcc0-re0:
-----
igmp:
    0 messages received
    0 messages received with too few bytes
    0 messages received with bad checksum
    0 membership queries received
    0 membership queries received with invalid field(s)
    0 membership reports received
    0 membership reports received with invalid field(s)
    0 membership reports received for groups to which we belong
    0 membership reports sent

lcc1-re0:
-----
igmp:
    0 messages received
    0 messages received with too few bytes
    0 messages received with bad checksum
    0 membership queries received
    0 membership queries received with invalid field(s)

```

```

0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

```

lcc2-re0:

---

igmp:

```

0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

```

lcc3-re0:

---

igmp:

```

0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

```

## show system statistics ip

<b>List of Syntax</b>	<a href="#">Syntax on page 1515</a> <a href="#">Syntax (EX Series Switches) on page 1515</a> <a href="#">Syntax (TX Matrix Router) on page 1515</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1515</a>
<b>Syntax</b>	show system statistics ip
<b>Syntax (EX Series Switches)</b>	show system statistics ip <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics ip <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics ip <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide IPv4 statistics.
<b>Options</b>	<p><b>none</b>—Display system statistics for IPv4.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for IPv4 for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for IPv4 for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for IPv4 for all T1600 or T4000 routers connected to the TX Matrix Plus router.</p> <p><b>all-members</b>—(EX4200 switches only) (Optional) Display IPv4 statistics for all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for IPv4 for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for IPv4 for a specific router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display IPv4 statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display IPv4 statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for IPv4 for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for IPv4 for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics ip** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics ip on page 1516](#)  
[show system statistics ip \(EX Series Switches\) on page 1517](#)  
[show system statistics ip \(TX Matrix Plus Router\) on page 1518](#)

## Sample Output

**show system statistics ip**

```
user@host> show system statistics ip
ip:
    1752658 total packets received
```

```

0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragment sessions dropped (queue overflow)
0 fragments dropped after timeout
0 packets reassembled ok
1709456 packets for this host
10494 packets for unknown/unsupported protocol
546 packets forwarded
0 packets not forwardable
546 redirects sent
1340179 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
10494 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
10494 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
0 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
0 raw packets dropped. no space in socket recv buffer

```

### show system statistics ip (EX Series Switches)

```
user@host> show system statistics ip
```

```
ip:
```

```

74121 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragment sessions dropped (queue overflow)
0 fragments dropped after timeout
0 packets reassembled ok

```

```
1134061 packets for this host
0 packets for unknown/unsupported protocol
40177 packets forwarded
0 packets not forwardable
40177 redirects sent
1122558 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
0 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
0 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
0 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
```

#### show system statistics ip (TX Matrix Plus Router)

```
user@host> show system statistics ip
sfc0-re0:
```

```
-----
ip:
```

```
47695035 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
42350 fragments received
0 fragments dropped (dup or out of space)
0 fragment sessions dropped (queue overflow)
0 fragments dropped after timeout
21175 packets reassembled ok
47674941 packets for this host
146 packets for unknown/unsupported protocol
0 packets forwarded
0 packets not forwardable
0 redirects sent
61304579 packets sent from this host
8496 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
6746344 output datagrams fragmented
0 fragments created
```



```

0 datagrams that can't be fragmented
0 packets with bad options
2400 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
2400 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
12995412 incoming ttpoip packets received
0 incoming ttpoip packets dropped
16959177 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
0 raw packets dropped. no space in socket recv buffer

```

lcc0-re0:

-----  
ip:

```

12990061 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragment sessions dropped (queue overflow)
0 fragments dropped after timeout
0 packets reassembled ok
12989979 packets for this host
82 packets for unknown/unsupported protocol
0 packets forwarded
0 packets not forwardable
0 redirects sent
9318381 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
3440 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
82 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
82 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)

```

```
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
548071 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
0 raw packets dropped. no space in socket recv buffer
```

lcc1-re0:

-----  
ip:

```
12849723 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragment sessions dropped (queue overflow)
0 fragments dropped after timeout
0 packets reassembled ok
12849641 packets for this host
82 packets for unknown/unsupported protocol
0 packets forwarded
0 packets not forwardable
0 redirects sent
7676351 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
82 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
82 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
0 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
0 raw packets dropped. no space in socket recv buffer
```

lcc2-re0:

-----  
ip:

```
16926850 total packets received
0 bad header checksums
```

```

0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragment sessions dropped (queue overflow)
0 fragments dropped after timeout
0 packets reassembled ok
16926768 packets for this host
82 packets for unknown/unsupported protocol
0 packets forwarded
0 packets not forwardable
0 redirects sent
10039747 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
82 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
82 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
0 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
0 raw packets dropped. no space in socket recv buffer

```

lcc3-re0:

-----  
ip:

```

18025026 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragment sessions dropped (queue overflow)
0 fragments dropped after timeout
0 packets reassembled ok
18024944 packets for this host
82 packets for unknown/unsupported protocol

```

```

0 packets forwarded
0 packets not forwardable
0 redirects sent
10456545 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
82 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
82 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
0 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
0 raw packets dropped. no space in socket recv buffer

```

## show system statistics ip6

<b>List of Syntax</b>	<a href="#">Syntax on page 1523</a> <a href="#">Syntax (EX Series Switches) on page 1523</a> <a href="#">Syntax (TX Matrix Router) on page 1523</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1523</a>
<b>Syntax</b>	show system statistics ip6
<b>Syntax (EX Series Switches)</b>	show system statistics ip6 <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics ip6 <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics ip <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide IPv6 statistics.
<b>Options</b>	<b>none</b> —Display system statistics for IPv6.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for IPv6 for all the routers in the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for IPv6 for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for IPv6 for all connected T1600 or T4000 LCCs.  <b>all-members</b> —(EX4200 switches only) (Optional) Display IPv6 statistics for all members of the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for IPv6 for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for IPv6 for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display IPv6 statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display IPv6 statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for IPv6 for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for IPv6 for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics ip6** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics ip6 on page 1524](#)  
[show system statistics ip6 \(EX Series Switches\) on page 1525](#)  
[show system statistics ip6 \(TX Matrix Router\) on page 1526](#)

## Sample Output

**show system statistics ip6**

```
user@host> show system statistics ip6
ip6:
    0 total packets received
```

```

0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragment sessions dropped (queue overflow)
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too many headers
0 failures of source address selection
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol

```

### show system statistics ip6 (EX Series Switches)

```

user@host> show system statistics ip6
ip6:
0 total packets received
0 packets with size smaller than minimum
0 packets with data size < data length
0 packets with bad options
0 packets with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragment sessions dropped (queue overflow)
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
0 packets whose headers are not continuous

```

```
0 tunneling packets that can't find gif
0 packets discarded due to too may headers
0 failures of source address selection
0 forward cache hit
0 forward cache miss
0 Packets destined to dead next hop
0 option packets dropped due to rate limit
0 Packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f
```

### show system statistics ip6 (TX Matrix Router)

```
user@host> show system statistics ip6
sfc0-re0:
```

```
-----
ip6:
```

```
0 total packets received
0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragment sessions dropped (queue overflow)
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too may headers
0 failures of source address selection
source addresses on an outgoing I/F
    4 link-locals
source addresses of same scope
    4 link-locals
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f
0 packet(null) used first nexthop in ecmp unilist
```

```
lcc0-re0:
```

```
-----
ip6:
```



```

0 total packets received
0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragment sessions dropped (queue overflow)
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too many headers
0 failures of source address selection
source addresses on an outgoing I/F
    4 link-locals
source addresses of same scope
    4 link-locals
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f
0 packet(null) used first nexthop in ecmp unilist

```

lcc1-re0:

-----  
ip6:

```

2 total packets received
0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragment sessions dropped (queue overflow)
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.

```

```
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Input histogram:
    ICMP6: 2
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too may headers
0 failures of source address selection
source addresses on an outgoing I/F
    4 link-locals
source addresses of same scope
    4 link-locals
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f
0 packet(null) used first nexthop in ecmp unilist
```

lcc2-re0:

-----  
ip6:

```
2 total packets received
0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragment sessions dropped (queue overflow)
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Input histogram:
    ICMP6: 2
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too may headers
0 failures of source address selection
source addresses on an outgoing I/F
    4 link-locals
```

```

source addresses of same scope
    4 link-locals
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f
0 packet(null) used first nexthop in ecmp unilist

```

lcc3-re0:

-----

ip6:

```

2 total packets received
0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragment sessions dropped (queue overflow)
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Input histogram:
    ICMP6: 2
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too many headers
0 failures of source address selection
source addresses on an outgoing I/F
    4 link-locals
source addresses of same scope
    4 link-locals
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f
0 packet(null) used first nexthop in ecmp unilist

```

## show system statistics mpls

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1530</a> <a href="#">Syntax (EX Series Switches) on page 1530</a> <a href="#">Syntax (TX Matrix Router) on page 1530</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1530</a>
<b>Syntax</b>	show system statistics mpls
<b>Syntax (EX Series Switches)</b>	show system statistics mpls <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics mpls <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics mpls <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide Multiprotocol Label Switching (MPLS) statistics.
<b>Options</b>	<b>none</b> —Display system statistics for MPLS.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for MPLS for all the routers in the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for MPLS for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for MPLS for all connected T1600 or T4000 LCCs.  <b>all-members</b> —(EX4200 switches only) (Optional) Display MPLS statistics for all members of the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for MPLS for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for MPLS for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display MPLS statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display MPLS statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for MPLS for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for MPLS for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics mpls** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation** • [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics mpls on page 1531](#)  
[show system statistics mpls \(EX Series Switches\) on page 1532](#)  
[show system statistics mpls \(TX Matrix Plus Router\) on page 1532](#)

## Sample Output

**show system statistics mpls**

```
user@host> show system statistics mpls
mpls:
    0 total mpls packets received
```

```
0 packets forwarded
0 packets dropped
0 with header too small
0 after tagging, can't fit link MTU
0 with IPv4 explicit NULL tag
0 with IPv4 explicit NULL cksum errors
0 with router alert tag
0 lsp ping packets (ttl-expired/router alert)
0 with ttl expired
0 with tag encoding error
0 packets discarded, no route
```

#### show system statistics mpls (EX Series Switches)

```
user@host> show system statistics mpls
mpls:
    0 Total MPLS packets received
    0 Packets forwarded
    0 Packets dropped
    0 Packets with header too small
    0 After tagging, packets can't fit link MTU
    0 Packets with IPv4 explicit NULL tag
    0 Packets with IPv4 explicit NULL cksum errors
    0 Packets with router alert tag
    0 LSP ping packets (ttl-expired/router alert)
    0 Packets with ttl expired
    0 Packets with tag encoding error
    0 Packets discarded due to no route
    0 Packets used first nexthop in ecmp unilist
    0 Packets dropped due to ifl down
```

#### show system statistics mpls (TX Matrix Plus Router)

```
user@host> show system statistics mpls
sfc0-re0:
-----
mpls:
    0 total mpls packets received
    0 packets forwarded
    0 packets dropped
    0 with header too small
    0 after tagging, can't fit link MTU
    0 with IPv4 explicit NULL tag
    0 with IPv4 explicit NULL cksum errors
    0 with router alert tag
    0 lsp ping packets (ttl-expired/router alert)
    0 with ttl expired
    0 with tag encoding error
    0 packets discarded, no route
    0 packets used first nexthop in ecmp unilist
    0 packets dropped due to ifl down

lcc0-re0:
-----
mpls:
    0 total mpls packets received
    0 packets forwarded
    0 packets dropped
    0 with header too small
    0 after tagging, can't fit link MTU
```

```

0 with IPv4 explicit NULL tag
0 with IPv4 explicit NULL cksum errors
0 with router alert tag
0 lsp ping packets (ttl-expired/router alert)
0 with ttl expired
0 with tag encoding error
0 packets discarded, no route
0 packets used first nexthop in ecmp unilist
0 packets dropped due to ifl down

```

lcc1-re0:

-----

mpls:

```

0 total mpls packets received
0 packets forwarded
0 packets dropped
0 with header too small
0 after tagging, can't fit link MTU
0 with IPv4 explicit NULL tag
0 with IPv4 explicit NULL cksum errors
0 with router alert tag
0 lsp ping packets (ttl-expired/router alert)
0 with ttl expired
0 with tag encoding error
0 packets discarded, no route
0 packets used first nexthop in ecmp unilist
0 packets dropped due to ifl down

```

lcc2-re0:

-----

mpls:

```

0 total mpls packets received
0 packets forwarded
0 packets dropped
0 with header too small
0 after tagging, can't fit link MTU
0 with IPv4 explicit NULL tag
0 with IPv4 explicit NULL cksum errors
0 with router alert tag
0 lsp ping packets (ttl-expired/router alert)
0 with ttl expired
0 with tag encoding error
0 packets discarded, no route
0 packets used first nexthop in ecmp unilist
0 packets dropped due to ifl down

```

lcc3-re0:

-----

mpls:

```

0 total mpls packets received
0 packets forwarded
0 packets dropped
0 with header too small
0 after tagging, can't fit link MTU
0 with IPv4 explicit NULL tag
0 with IPv4 explicit NULL cksum errors
0 with router alert tag
0 lsp ping packets (ttl-expired/router alert)
0 with ttl expired
0 with tag encoding error
0 packets discarded, no route

```

0 packets used first nexthop in ecmp unilist  
0 packets dropped due to ifl down



## show system statistics rdp

<b>List of Syntax</b>	<a href="#">Syntax on page 1535</a> <a href="#">Syntax (EX Series Switches) on page 1535</a> <a href="#">Syntax (TX Matrix Router) on page 1535</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1535</a>
<b>Syntax</b>	<code>show system statistics rdp</code>
<b>Syntax (EX Series Switches)</b>	<code>show system statistics rdp</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>show system statistics rdp</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show system statistics rdp</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p>
<b>Description</b>	Display system-wide Reliable Datagram Protocol (RDP) statistics.
<b>Options</b>	<p><b>none</b>—Display system statistics for RDP.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for RDP for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for RDP for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for RDP for all connected T1600 or T4000 LCCs.</p> <p><b>all-members</b>—(EX4200 switches only) (Optional) Display RDP statistics for all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for RDP for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for RDP for a specific router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display RDP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display RDP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for RDP for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for RDP for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics rdp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics rdp on page 1536](#)  
[show system statistics rdp \(EX Series Switches\) on page 1537](#)  
[show system statistics rdp \(TX Matrix Plus Router\) on page 1537](#)

## Sample Output

**show system statistics rdp**

```
user@host> show system statistics rdp
rdp:
    49668864 input packets
```

```

0 discards for bad checksum
0 discards bad sequence number
0 refused connections
2031513 acks received
0 dropped due to full socket buffers
49692 retransmits
49668864 output packets
24809579 acks sent
28 connects
0 closes
22778052 keepalives received
22778052 keepalives sent

```

### show system statistics rdp (EX Series Switches)

```

user@host> show system statistics rdp
rdp:
    0 Input packets
    0 Packets discarded for bad checksum
    0 Packets discarded due to bad sequence number
    0 Refused connections
    0 Acks received
    0 Packets dropped due to full socket buffers
    0 Retransmits
    0 Output packets
    0 Acks sent
    0 Connects
    0 Closes
    0 Keepalives received
    0 Keepalives sent

```

### show system statistics rdp (TX Matrix Plus Router)

```

user@host> show system statistics rdp
sfc0-re0:
-----
rdp:
    4341558 input packets
    0 discards for bad checksum
    43452 discards bad sequence number
    598 refused connections
    85711 acks received
    101 dropped due to full socket buffers
    9110 retransmits
    4335896 output packets
    734087 acks sent
    372 connects
    65 closes
    526312 keepalives received
    3506373 keepalives sent

```

```

lcc0-re0:
-----
rdp:
    810979 input packets
    0 discards for bad checksum
    477 discards bad sequence number
    484 refused connections
    21798 acks received
    0 dropped due to full socket buffers

```

```

10305 retransmits
813567 output packets
242155 acks sent
68 connects
47 closes
112788 keepalives received
539244 keepalives sent

```

lcc1-re0:

-----

rdp:

```

804747 input packets
0 discards for bad checksum
335 discards bad sequence number
624 refused connections
24275 acks received
0 dropped due to full socket buffers
9878 retransmits
806163 output packets
233079 acks sent
67 connects
47 closes
112816 keepalives received
538845 keepalives sent

```

lcc2-re0:

-----

rdp:

```

945112 input packets
0 discards for bad checksum
172 discards bad sequence number
396 refused connections
34676 acks received
0 dropped due to full socket buffers
15176 retransmits
948073 output packets
249913 acks sent
68 connects
45 closes
112748 keepalives received
648232 keepalives sent

```

lcc3-re0:

-----

rdp:

```

1247011 input packets
0 discards for bad checksum
177 discards bad sequence number
575 refused connections
51787 acks received
0 dropped due to full socket buffers
23717 retransmits
1252925 output packets
314103 acks sent
75 connects
46 closes
113132 keepalives received
863225 keepalives sent

```

## show system statistics tcp

<b>List of Syntax</b>	<a href="#">Syntax on page 1539</a> <a href="#">Syntax (EX Series Switches) on page 1539</a> <a href="#">Syntax (TX Matrix Router) on page 1539</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1539</a>
<b>Syntax</b>	<code>show system statistics tcp</code>
<b>Syntax (EX Series Switches)</b>	<code>show system statistics tcp</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>show system statistics tcp</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show system statistics tcp</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p>
<b>Description</b>	Display system-wide Transmission Control Protocol (TCP) statistics.
<b>Options</b>	<p><b>none</b>—Display system statistics for TCP.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for TCP for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for TCP for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for TCP for all connected T1600 or T4000 LCCs.</p> <p><b>all-members</b>—(EX4200 switches only) (Optional) Display TCP statistics for all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers, TX Matrix Plus routers, and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for TCP for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for TCP for a specific router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display TCP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display TCP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for TCP for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers and TX Matrix Plus routers only) (Optional) Display system statistics for TCP for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics tcp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics tcp on page 1540](#)  
[show system statistics tcp \(EX Series Switches\) on page 1542](#)  
[show system statistics tcp lcc \(TX Matrix Router\) on page 1543](#)  
[show system statistics tcp \(TX Matrix Plus Router\) on page 1544](#)

## Sample Output

**show system statistics tcp**

```
user@host> show system statistics tcp
```

```

tcp:
  3844 packets sent
    3618 data packets (1055596 bytes)
    0 data packets (0 bytes) retransmitted
    0 resends initiated by MTU discovery
    205 ack-only packets (148 packets delayed)
    0 URG only packets
    0 window probe packets
    0 window update packets
    1079 control packets
  5815 packets received
    3377 acks (for 1055657 bytes)
    24 duplicate acks
    0 acks for unsent data
    2655 packets (15004 bytes) received in-sequence
    1 completely duplicate packet (0 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    0 out-of-order packets (0 bytes)
    0 packets (0 bytes) of data after window
    0 window probes
    7 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
  1 connection request
  32 connection accepts
  0 bad connection attempts
  0 listen queue overflows
  33 connections established (including accepts)
  30 connections closed (including 0 drops)
    27 connections updated cached RTT on close
    27 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
  0 embryonic connections dropped
  3374 segments updated rtt (of 3220 attempts)
  0 retransmit timeouts
    0 connections dropped by rexmit timeout
  0 persist timeouts
    0 connections dropped by persist timeout
  344 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
  1096 correct ACK header predictions
  1314 correct data packet header predictions
  32 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    32 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
  0 cookies sent
  0 cookies received

```

```
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
1058 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
```

### show system statistics tcp (EX Series Switches)

```
user@host> show system statistics tcp
```

```
Tcp:
```

```
572724 packets sent
    21936 data packets (1887657 bytes)
    2 data packets retransmitted (20 bytes)
    0 resends initiated by MTU discovery
    3724 ack only packets (537 packets delayed)
    0 URG only packets
    1 window probe packets
    1 window update packets
    1094083 control packets
1134258 packets received
    21371 acks(for 1886660 bytes)
    5870 duplicate acks
    0 acks for unsent data
    19908 packets received in-sequence(267794 bytes)
    3022 completely duplicate packets(0 bytes)
    0 old duplicate packets
    4 packets with some duplicate data(4 bytes duped)
    2 out-of-order packets(2 bytes)
    0 packets of data after window(0 bytes)
    0 window probes
    40 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
547027 connection requests
80 connection accepts
0 bad connection attempts
0 listen queue overflows
103 connections established (including accepts)
547106 connections closed (including 6 drops)
    47 connections updated cached RTT on close
    47 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
547004 embryonic connections dropped
20862 segments updated rtt(of 567830 attempts)
2 retransmit timeouts
    0 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
3032 keepalive timeouts
    3031 keepalive probes sent
    1 connections dropped by keepalive
7823 correct ACK header predictions
12533 correct data packet header predictions
80 syncache entries added
    0 retransmitted
    0 dupsyn
```



```

    4 dropped
    80 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
1 SACK recovery episodes
1 segment retransmits in SACK recovery episodes
1 byte retransmits in SACK recovery episodes
71 SACK options (SACK blocks) received
1 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
547024 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing

```

#### show system statistics tcp lcc (TX Matrix Router)

```

user@host> show system statistics tcp lcc 2
lcc2-re0:

```

```

-----
tcp:
    21271 packets sent
        11069 data packets (12044 bytes)
        0 data packets (0 bytes) retransmitted
        0 resends initiated by MTU discovery
        10198 ack-only packets (10194 packets delayed)
        0 URG only packets
        0 window probe packets
        0 window update packets
        4 control packets
    13363 packets received
        11073 acks (for 12044 bytes)
        0 duplicate acks
        0 acks for unsent data
        12895 packets (2400874 bytes) received in-sequence
        0 completely duplicate packets (0 bytes)
        0 old duplicate packets
        0 packets with some dup. data (0 bytes duped)
        0 out-of-order packets (0 bytes)
        0 packets (0 bytes) of data after window
        0 window probes
        0 window update packets
        0 packets received after close
        0 discarded for bad checksums
        0 discarded for bad header offset fields
        0 discarded because packet too short
    4 connection requests
    0 connection accepts

```

```
0 bad connection attempts
0 listen queue overflows
4 connections established (including accepts)
33 connections closed (including 0 drops)
    0 connections updated cached RTT on close
    0 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
0 embryonic connections dropped
11073 segments updated rtt (of 11073 attempts)
0 retransmit timeouts
    0 connections dropped by rexmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
0 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
464 correct ACK header predictions
2172 correct data packet header predictions
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 out-of-sequence segment drops due to insufficient memory
0 RST packets
0 ICMP packets ignored by TCP
```

#### show system statistics tcp (TX Matrix Plus Router)

```
user@host> show system statistics tcp
sfc0-re0:
```

```
-----
Tcp:
```

```
10420 packets sent
    10203 data packets (2374613 bytes)
    0 data packets retransmitted (0 bytes)
    0 resends initiated by MTU discovery
    202 ack only packets (120 packets delayed)
    0 URG only packets
    0 window probe packets
    0 window update packets
    30 control packets
16635 packets received
    9468 acks(for 2374674 bytes)
    32 duplicate acks
    0 acks for unsent data
    7764 packets received in-sequence(38286 bytes)
    20 completely duplicate packets(0 bytes)
    0 old duplicate packets
    0 packets with some duplicate data(0 bytes duped)
    0 out-of-order packets(0 bytes)
    0 packets of data after window(0 bytes)
    0 window probes
    356 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
10 connection requests
33 connection accepts
0 bad connection attempts
0 listen queue overflows
34 connections established (including accepts)
50 connections closed (including 0 drops)
```

```

    24 connections updated cached RTT on close
    24 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
9 embryonic connections dropped
9468 segments updated rtt(of 9256 attempts)
0 retransmit timeouts
    0 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
14 keepalive timeouts
    14 keepalive probes sent
    0 connections dropped by keepalive
6220 correct ACK header predictions
6625 correct data packet header predictions
33 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    33 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 SACK recovery episodes
0 segment retransmits in SACK recovery episodes
0 byte retransmits in SACK recovery episodes
0 SACK options (SACK blocks) received
0 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
15 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing

```

lcc0-re0:

-----  
 Tcp:

```

    1306 packets sent
        1251 data packets (161855 bytes)
        0 data packets retransmitted (0 bytes)
        0 resends initiated by MTU discovery
        51 ack only packets (1 packets delayed)
        0 URG only packets
        0 window probe packets
        0 window update packets
        6 control packets
    1397 packets received
        1218 acks(for 161904 bytes)
        2 duplicate acks
        0 acks for unsent data

```

```
        612 packets received in-sequence(12495 bytes)
        0 completely duplicate packets(0 bytes)
        0 old duplicate packets
        0 packets with some duplicate data(0 bytes duped)
        0 out-of-order packets(0 bytes)
        0 packets of data after window(0 bytes)
        0 window probes
        22 window update packets
        0 packets received after close
        0 discarded for bad checksums
        0 discarded for bad header offset fields
        0 discarded because packet too short
1 connection requests
24 connection accepts
0 bad connection attempts
0 listen queue overflows
25 connections established (including accepts)
27 connections closed (including 0 drops)
    24 connections updated cached RTT on close
    24 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
0 embryonic connections dropped
1218 segments updated rtt(of 1192 attempts)
0 retransmit timeouts
    0 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
0 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
196 correct ACK header predictions
119 correct data packet header predictions
24 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    24 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 SACK recovery episodes
0 segment retransmits in SACK recovery episodes
0 byte retransmits in SACK recovery episodes
0 SACK options (SACK blocks) received
0 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
2 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
```

0 outgoing segments dropped due to policing

lcc1-re0:

-----  
Tcp:

1118 packets sent  
    1066 data packets (131896 bytes)  
    0 data packets retransmitted (0 bytes)  
    0 resends initiated by MTU discovery  
    48 ack only packets (2 packets delayed)  
    0 URG only packets  
    0 window probe packets  
    0 window update packets  
    6 control packets  
1215 packets received

## show system statistics tnp

---

<b>List of Syntax</b>	<a href="#">Syntax on page 1548</a> <a href="#">Syntax (EX Series Switches) on page 1548</a> <a href="#">Syntax (TX Matrix Router) on page 1548</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1548</a>
<b>Syntax</b>	show system statistics tnp
<b>Syntax (EX Series Switches)</b>	show system statistics tnp <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics tnp <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics tnp <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide Trivial Network Protocol (TNP) statistics.
<b>Options</b>	<b>none</b> —Display system statistics for TNP.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for TNP for all the routers in the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for TNP for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for TNP for all connected T1600 or T4000 LCCs.  <b>all-members</b> —(EX4200 switches only) (Optional) Display TNP statistics for all members of the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for TNP for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for TNP for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display TNP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display TNP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for TNP for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for TNP for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics tnp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation** • [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics tnp on page 1549](#)  
[show system statistics tnp \(EX Series Switches\) on page 1550](#)  
[show system statistics tnp \(TX Matrix Plus Router\) on page 1551](#)

## Sample Output

**show system statistics tnp**

```
user@host> show system statistics tnp
tnp:
      146742559 unicast packets received
```

```
0 broadcast packets received
0 fragmented packets received
0 hello packets dropped
0 fragments dropped
0 fragment reassembly queue flushes
0 hello packets received
0 control packets received
49670972 rdp packets received
337101 udp packets received
96734486 tunnel packets received
0 input packets discarded with no protocol
98375316 unicast packets sent
0 broadcast packets sent
0 fragmented packets sent
0 hello packets dropped
0 fragments dropped
0 hello packets sent
0 control packets sent
49670972 rdp packets sent
337101 udp packets sent
48367243 tunnel packets sent
0 packets sent with unknown protocol
```

#### show system statistics tnp (EX Series Switches)

```
user@host> show system statistics tnp
tnp:
0 Unicast packets received
0 Broadcast packets received
0 Fragmented packets received
0 Hello packets dropped
0 Fragments dropped
0 Fragment reassembly queue flushes
0 Packets with tnp src address collision received
0 Hello packets received
0 Control packets received
0 Rdp packets received
0 Udp packets received
0 Tunnel packets received
0 Input packets discarded with no protocol
0 Packets of version unspecified received
0 Packets of version 1 received
0 Packets of version 2 received
0 Packets of version 3 received
0 Unicast packets sent
0 Broadcast packets sent
0 Fragmented packets sent
0 Hello packets dropped
0 Fragments dropped
0 Hello packets sent
0 Control packets sent
0 Rdp packets sent
0 Udp packets sent
0 Tunnel packets sent
0 Packets sent with unknown protocol
0 Packets of version unspecified sent
0 Packets of version 1 sent
0 Packets of version 2 sent
0 Packets of version 3 sent
```



**show system statistics tnp (TX Matrix Plus Router)**

```
user@host> show system statistics tnp
sfc0-re0:
```

```
-----
tnp:
4543208 unicast packets received
3306239 broadcast packets received
2398 fragmented packets received
0 hello packets dropped
0 fragments dropped
53 fragment reassembly queue flushes
0 packets with tnp src address collision received
3306148 hello packets received
0 control packets received
4439623 rdp packets received
103676 udp packets received
0 tunnel packets received
0 input packets discarded with no protocol
0 packets of version unspecified received
0 packets of version 1 received
8265 packets of version 2 received
7841182 packets of version 3 received

4528238 unicast packets sent
115264 broadcast packets sent
64 fragmented packets sent
0 hello packets dropped
0 fragments dropped
115264 hello packets sent
0 control packets sent
4433293 rdp packets sent
94945 udp packets sent
0 tunnel packets sent
0 packets sent with unknown protocol
0 packets of version unspecified sent
0 packets of version 1 sent
6444 packets of version 2 sent
4637058 packets of version 3 sent
```

```
lcc0-re0:
```

```
-----
tnp:
977938 unicast packets received
894314 broadcast packets received
322 fragmented packets received
0 hello packets dropped
0 fragments dropped
12 fragment reassembly queue flushes
0 packets with tnp src address collision received
894294 hello packets received
0 control packets received
829776 rdp packets received
148182 udp packets received
0 tunnel packets received
0 input packets discarded with no protocol
0 packets of version unspecified received
0 packets of version 1 received
90262 packets of version 2 received
1781990 packets of version 3 received
```

```

981945 unicast packets sent
113988 broadcast packets sent
206 fragmented packets sent
0 hello packets dropped
0 fragments dropped
113988 hello packets sent
0 control packets sent
832646 rdp packets sent
149299 udp packets sent
0 tunnel packets sent
0 packets sent with unknown protocol
0 packets of version unspecified sent
0 packets of version 1 sent
89672 packets of version 2 sent
1006261 packets of version 3 sent

```

lcc1-re0:

---

tnp:

```

967870 unicast packets received
897834 broadcast packets received
38 fragmented packets received
0 hello packets dropped
0 fragments dropped
10 fragment reassembly queue flushes
0 packets with tnp src address collision received
897813 hello packets received
0 control packets received
822840 rdp packets received
145051 udp packets received
0 tunnel packets received
0 input packets discarded with no protocol
0 packets of version unspecified received
0 packets of version 1 received
87117 packets of version 2 received
1778587 packets of version 3 received

```

```

970975 unicast packets sent
114031 broadcast packets sent
25 fragmented packets sent
0 hello packets dropped
0 fragments dropped
114031 hello packets sent
0 control packets sent
824773 rdp packets sent
146202 udp packets sent
0 tunnel packets sent
0 packets sent with unknown protocol
0 packets of version unspecified sent
0 packets of version 1 sent
86595 packets of version 2 sent
998411 packets of version 3 sent

```

lcc2-re0:

---

tnp:

```

1131139 unicast packets received
1007204 broadcast packets received
620 fragmented packets received
0 hello packets dropped
0 fragments dropped

```

```

12 fragment reassembly queue flushes
0 packets with tnp src address collision received
1007185 hello packets received
0 control packets received
966727 rdp packets received
164431 udp packets received
0 tunnel packets received
0 input packets discarded with no protocol
0 packets of version unspecified received
0 packets of version 1 received
106518 packets of version 2 received
2031825 packets of version 3 received

```

```

1135108 unicast packets sent
114130 broadcast packets sent
397 fragmented packets sent
0 hello packets dropped
0 fragments dropped
114130 hello packets sent
0 control packets sent
969748 rdp packets sent
165360 udp packets sent
0 tunnel packets sent
0 packets sent with unknown protocol
0 packets of version unspecified sent
0 packets of version 1 sent
105801 packets of version 2 sent
1143437 packets of version 3 sent

```

lcc3-re0:

-----  
tnp:

```

1495619 unicast packets received
1211116 broadcast packets received
1186 fragmented packets received
0 hello packets dropped
0 fragments dropped
13 fragment reassembly queue flushes
0 packets with tnp src address collision received
1211088 hello packets received
0 control packets received
1275765 rdp packets received
219882 udp packets received
0 tunnel packets received
0 input packets discarded with no protocol
0 packets of version unspecified received
0 packets of version 1 received
161944 packets of version 2 received
2544791 packets of version 3 received

```

```

1502341 unicast packets sent
114160 broadcast packets sent
699 fragmented packets sent
0 hello packets dropped
0 fragments dropped
114160 hello packets sent
0 control packets sent
1281678 rdp packets sent
220663 udp packets sent
0 tunnel packets sent
0 packets sent with unknown protocol

```

0 packets of version unspecified sent  
0 packets of version 1 sent  
161167 packets of version 2 sent  
1455334 packets of version 3 sent

## show system statistics tudp

<b>List of Syntax</b>	<a href="#">Syntax on page 1555</a> <a href="#">Syntax (EX Series Switches) on page 1555</a> <a href="#">Syntax (TX Matrix Router) on page 1555</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1555</a>
<b>Syntax</b>	<code>show system statistics tudp</code>
<b>Syntax (EX Series Switches)</b>	<code>show system statistics tudp</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>show system statistics tudp</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show system statistics tudp</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p>
<b>Description</b>	Display system-wide Trivial User Datagram Protocol (TUDP) statistics.
<b>Options</b>	<p><b>none</b>—Display system statistics for TUDP.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for TUDP for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for TUDP for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for TUDP for all connected T1600 or T4000 LCCs.</p> <p><b>all-members</b>—(EX4200 switches only) (Optional) Display TUDP statistics for all members of the Virtual Chassis configuration.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for TUDP for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for TUDP for a specific router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display TUDP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display TUDP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for TUDP for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for TUDP for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics tudp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics tudp on page 1556](#)  
[show system statistics tudp \(TX Matrix Plus Router\) on page 1557](#)

## Sample Output

**show system statistics tudp**

```
user@host> show system statistics tudp
tudp:
    337109 datagrams received
    0 with incomplete header
```

```

0 with bad data length field
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
337109 delivered
337109 datagrams output

```

### show system statistics tudp (TX Matrix Plus Router)

```

user@host> show system statistics tudp
sfc0-re0:

```

```

-----
tudp:
104389 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
104389 delivered
95619 datagrams output

```

```

lcc0-re0:

```

```

-----
tudp:
148623 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
2 dropped due to no socket
1 broadcast/multicast datagram dropped due to no socket
0 dropped due to full socket buffers
148620 delivered
150327 datagrams output

```

```

lcc1-re0:

```

```

-----
tudp:
145493 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 dropped due to no socket
1 broadcast/multicast datagram dropped due to no socket
0 dropped due to full socket buffers
145492 delivered
147244 datagrams output

```

```

lcc2-re0:

```

```

-----
tudp:
164873 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
2 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
164871 delivered

```

166339 datagrams output

lcc3-re0:

-----  
tudp:

220320 datagrams received  
0 with incomplete header  
0 with bad data length field  
0 with bad checksum  
6 dropped due to no socket  
0 broadcast/multicast datagrams dropped due to no socket  
0 dropped due to full socket buffers  
220314 delivered  
221735 datagrams output



## show system statistics udp

<b>List of Syntax</b>	<a href="#">Syntax on page 1559</a> <a href="#">Syntax (EX Series Switches) on page 1559</a> <a href="#">Syntax (TX Matrix Router) on page 1559</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1559</a>
<b>Syntax</b>	show system statistics udp
<b>Syntax (EX Series Switches)</b>	show system statistics udp <all-members> <local> <member <i>member-id</i> >
<b>Syntax (TX Matrix Router)</b>	show system statistics udp <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics udp <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
<b>Description</b>	Display system-wide User Datagram Protocol (UDP) statistics.
<b>Options</b>	<b>none</b> —Display system statistics for UDP.  <b>all-chassis</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for UDP for all the routers in the chassis.  <b>all-lcc</b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for UDP for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for UDP for all connected T1600 or T4000 LCCs.  <b>all-members</b> —(EX4200 switches only) (Optional) Display UDP statistics for all members of the Virtual Chassis configuration.  <b>lcc <i>number</i></b> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for UDP for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for UDP for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches only) (Optional) Display UDP statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches only) (Optional) Display TUDP statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

**scc**—(TX Matrix routers only) (Optional) Display system statistics for UDP for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for UDP for the TX Matrix router or TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics udp** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level**

view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

[show system statistics udp on page 1560](#)  
[show system statistics udp \(TX Matrix Plus Router\) on page 1561](#)

## Sample Output

**show system statistics udp**

```
user@host> show system statistics udp
udp:
    3658427 datagrams received
```

```

0 with incomplete header
0 with bad data length field
0 with bad checksum
3656885 dropped due to no socket
3656885 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
4291311953 delivered
1551 datagrams output

```

### show system statistics udp (TX Matrix Plus Router)

```

user@host> show system statistics udp
sfc0-re0:

```

```
-----
udp:
```

```

170 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
170 delivered
12079 datagrams output

```

```
lcc0-re0:

```

```
-----
udp:
```

```

55 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
1 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
54 delivered
3891 datagrams output

```

```
lcc1-re0:

```

```
-----
udp:
```

```

50 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
50 delivered
3620 datagrams output

```

```
lcc2-re0:

```

```
-----
udp:
```

```

48 datagrams received
0 with incomplete header
0 with bad data length field

```

```
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
48 delivered
3734 datagrams output
```

lcc3-re0:

-----  
udp:

```
48 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
48 delivered
3640 datagrams output
```

## show system statistics vpls

<b>List of Syntax</b>	<a href="#">Syntax on page 1563</a> <a href="#">Syntax (TX Matrix Router) on page 1563</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1563</a>
<b>Syntax</b>	show system statistics vpls
<b>Syntax (TX Matrix Router)</b>	show system statistics vpls <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system statistics vpls <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p>
<b>Description</b>	Display system-wide Virtual Private LAN Service (VPLS) statistics.
<b>Options</b>	<p><b>none</b>—Display system statistics for VPLS.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system statistics for VPLS for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for VPLS for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for VPLS for all connected T1600 or T4000 LCCs.</p> <p><b>lcc <i>number</i></b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for VPLS for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for VPLS for a specific router that is connected to the TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>

**scc**—(TX Matrix routers only) (Optional) Display system statistics for VPLS for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system statistics for VPLS for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system statistics vpls** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation** • [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output** [show system statistics vpls on page 1564](#)  
[show system statistics vpls \(TX Matrix Plus Router\) on page 1565](#)

## Sample Output

### show system statistics vpls

```
user@host> show system statistics vpls
vpls:
  0 total packets received
  0 with size smaller than minimum
  0 with incorrect version number
  0 packets for this host

  0 packets with no logical interface
  0 packets with no family
  0 packets with no route table
  0 packets with no auxiliary table
  0 packets with no corefacing entry
  0 packets with no CE-facing entry

  0 mac route learning requests
  0 mac routes learnt
  0 requests to learn an existing route
  0 learning requests while learning disabled on interface
  0 learning requests over capacity
  0 mac routes moved
  0 requests to move static route

  0 mac route aging requests
  0 mac routes aged
  0 bogus address in aging requests
  0 requests to age static route
  0 requests to re-ageout aged route
  0 requests involving multiple peer FEs
  0 aging acks from PFE
```

```

0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs

```

### show system statistics vpls (TX Matrix Plus Router)

```

user@host> show system statistics vpls
sfc0-re0:

```

```

-----
vpls:
0 total packets received
0 with size smaller than minimum
0 with incorrect version number
0 packets for this host

0 packets with no logical interface
0 packets with no family
0 packets with no route table
0 packets with no auxiliary table
0 packets with no corefacing entry
0 packets with no CE-facing entry

0 mac route learning requests
0 mac routes learnt
0 requests to learn an existing route
0 learning requests while learning disabled on interface
0 learning requests over capacity
0 mac routes moved
0 requests to move static route

0 mac route aging requests
0 mac routes aged
0 bogus address in aging requests
0 requests to age static route
0 requests to re-ageout aged route
0 requests involving multiple peer FEs
0 aging acks from PFE
0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs
0 unsupported platform
0 dropped due to no l3 route table
0 dropped due to no local ifl
0 packets punted
0 dropped due to no socket

```

```

lcc0-re0:

```

```

-----
vpls:
0 total packets received
0 with size smaller than minimum
0 with incorrect version number
0 packets for this host

0 packets with no logical interface
0 packets with no family
0 packets with no route table
0 packets with no auxiliary table
0 packets with no corefacing entry

```

```
0 packets with no CE-facing entry

0 mac route learning requests
0 mac routes learnt
0 requests to learn an existing route
0 learning requests while learning disabled on interface
0 learning requests over capacity
0 mac routes moved
0 requests to move static route

0 mac route aging requests
0 mac routes aged
0 bogus address in aging requests
0 requests to age static route
0 requests to re-ageout aged route
0 requests involving multiple peer FEs
0 aging acks from PFE
0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs
0 unsupported platform
0 dropped due to no l3 route table
0 dropped due to no local ifl
0 packets punted
0 dropped due to no socket
```

lcc1-re0:

-----  
vpls:

```
0 total packets received
0 with size smaller than minimum
0 with incorrect version number
0 packets for this host

0 packets with no logical interface
0 packets with no family
0 packets with no route table
0 packets with no auxiliary table
0 packets with no corefacing entry
0 packets with no CE-facing entry

0 mac route learning requests
0 mac routes learnt
0 requests to learn an existing route
0 learning requests while learning disabled on interface
0 learning requests over capacity
0 mac routes moved
0 requests to move static route

0 mac route aging requests
0 mac routes aged
0 bogus address in aging requests
0 requests to age static route
0 requests to re-ageout aged route
0 requests involving multiple peer FEs
0 aging acks from PFE
0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs
```



```

0 unsupported platform
0 dropped due to no l3 route table
0 dropped due to no local ifl
0 packets punted
0 dropped due to no socket

```

```
lcc2-re0:
```

```
-----
vpls:
```

```

0 total packets received
0 with size smaller than minimum
0 with incorrect version number
0 packets for this host

0 packets with no logical interface
0 packets with no family
0 packets with no route table
0 packets with no auxiliary table
0 packets with no corefacing entry
0 packets with no CE-facing entry

0 mac route learning requests
0 mac routes learnt
0 requests to learn an existing route
0 learning requests while learning disabled on interface
0 learning requests over capacity
0 mac routes moved
0 requests to move static route

0 mac route aging requests
0 mac routes aged
0 bogus address in aging requests
0 requests to age static route
0 requests to re-ageout aged route
0 requests involving multiple peer FEs
0 aging acks from PFE
0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs
0 unsupported platform
0 dropped due to no l3 route table
0 dropped due to no local ifl
0 packets punted
0 dropped due to no socket

```

```
lcc3-re0:
```

```
-----
vpls:
```

```

0 total packets received
0 with size smaller than minimum
0 with incorrect version number
0 packets for this host

0 packets with no logical interface
0 packets with no family
0 packets with no route table
0 packets with no auxiliary table
0 packets with no corefacing entry
0 packets with no CE-facing entry

```

```
0 mac route learning requests
0 mac routes learnt
0 requests to learn an existing route
0 learning requests while learning disabled on interface
0 learning requests over capacity
0 mac routes moved
0 requests to move static route

0 mac route aging requests
0 mac routes aged
0 bogus address in aging requests
0 requests to age static route
0 requests to re-ageout aged route
0 requests involving multiple peer FEs
0 aging acks from PFE
0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs
0 unsupported platform
0 dropped due to no l3 route table
0 dropped due to no local ifl
0 packets punted
0 dropped due to no socket
```

## show system storage

<b>List of Syntax</b>	<a href="#">Syntax on page 1569</a> <a href="#">Syntax (EX Series Switches) on page 1569</a> <a href="#">Syntax (MX Series Router) on page 1569</a> <a href="#">Syntax (QFX Series) on page 1569</a> <a href="#">Syntax (SRX Series) on page 1569</a> <a href="#">Syntax (TX Matrix Router) on page 1569</a> <a href="#">Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs) on page 1569</a>
<b>Syntax</b>	<pre>show system storage &lt;detail&gt; &lt;invoke-on (all-routing-engines   other-routing-engine)&gt;</pre>
<b>Syntax (EX Series Switches)</b>	<pre>show system storage &lt;detail&gt; &lt;all-members&gt; &lt;local&gt; &lt;member member-id&gt; &lt;invoke-on (all-routing-engines   other-routing-engine)&gt;</pre>
<b>Syntax (MX Series Router)</b>	<pre>show system storage &lt;detail&gt; &lt;all-members&gt; &lt;local&gt; &lt;member member-id&gt; &lt;invoke-on (all-routing-engines   other-routing-engine)&gt;</pre>
<b>Syntax (QFX Series)</b>	<pre>show system storage &lt;detail&gt; &lt;infrastructure name&gt; &lt;interconnect-device name&gt; &lt;node-group name&gt; &lt;invoke-on (all-routing-engines   other-routing-engine)&gt;</pre>
<b>Syntax (SRX Series)</b>	<pre>show system storage &lt;detail&gt; &lt;partitions&gt; &lt;invoke-on (all-routing-engines   other-routing-engine)&gt;</pre>
<b>Syntax (TX Matrix Router)</b>	<pre>show system storage &lt;detail&gt; &lt;all-chassis   all-lcc   lcc number   scc&gt; &lt;invoke-on (all-routing-engines   other-routing-engine)&gt;</pre>
<b>Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs)</b>	<pre>show system storage &lt;detail&gt; &lt;all-chassis   all-lcc   lcc number   sfc number&gt; &lt;invoke-on (all-routing-engines   other-routing-engine)&gt;</pre>

<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in JUNOS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Option <b>invoke-on (all-routing-engines   other-routing-engine)</b> introduced in Junos OS Release 14.1</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>Output upgraded for devices running Junos OS with upgraded FreeBSD in Junos OS Release 18.1R1.</p>
<b>Description</b>	Display statistics about the amount of free disk space in the router's or switch's file systems.
<b>Options</b>	<p><b>none</b>—Display standard information about the amount of free disk space in the router's or switch's file systems.</p> <p><b>detail</b>—(Optional) Display detailed output.</p> <p><b>invoke-on all-routing-engines</b>—(Optional) Display the system storage information on all master and backup Routing Engines on a routing matrix based on the TX Matrix or TX Matrix Plus router or on a router that has dual Routing Engines.</p> <p><b>invoke-on other-routing-engines</b>—(Optional) Display the system storage information on the other Routing Engine. For example, if you issue this command on the master Routing Engine on an M320 router, the JUNOS Software displays the system storage information on the backup Routing Engine. On a routing matrix based on the TX Matrix or TX Matrix Plus router, if you issue this command on the TX Matrix or TX Matrix Plus router's master Routing Engine, the JUNOS Software displays all the system storage information on all the backup Routing Engines.</p> <p><b>all-chassis</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system storage statistics for all the routers in the chassis.</p> <p><b>all-lcc</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system storage statistics for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system storage statistics for all routers connected to the TX Matrix Plus router.</p> <p><b>all-members</b>—(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for all members of the Virtual Chassis configuration.</p> <p><b>infrastructure name</b>—(QFabric systems only) (Optional) Display system storage statistics for the fabric control Routing Engines or fabric manager Routing Engines.</p> <p><b>interconnect-device name</b>—(QFabric systems only) (Optional) Display system storage statistics for the Interconnect device.</p> <p><b>lcc number</b>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system storage statistics for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system storage statistics for a specific router that is connected to the TX Matrix Plus router.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Display system storage statistics for the Node group.

**scc**—(TX Matrix routers only) (Optional) Display system storage statistics for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Display system storage statistics for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system storage** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

In Junos OS Release 15.1, when certain platforms switched to Junos OS with upgraded FreeBSD, there was a change in the file system used to the UNIX file system (UFS). This change led to the output of the **show system storage** command being long and difficult to use to determine the free space available on the system. Starting in Junos OS Release 18.1R1, the output of this command has been upgraded to be more concise and readable. To determine affected platforms, see [Feature Explorer](#) and enter **FreeBSD 10 kernel for Junos OS**.

**Required Privilege Level** view

- Related Documentation**
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)
  - [show system storage partitions](#)

- List of Sample Output**
- [show system storage on page 1572](#)
  - [show system storage \(Junos OS with upgraded FreeBSD starting in Junos OS Release 18.1R1\) on page 1573](#)
  - [show system storage \(TX Matrix Plus Router\) on page 1573](#)
  - [show system storage \(QFX3500 Switch\) on page 1575](#)
  - [show system storage invoke-on all-routing-engines on page 1575](#)
  - [show system storage invoke-on other-routing-engine on page 1576](#)

- Output Fields** [Table 68 on page 1572](#) describes the output fields for the **show system storage** command. Output fields are listed in the approximate order in which they appear.

*Table 68: show system storage Output Fields*

Field Name	Field Description
<b>Filesystem</b>	Name of the filesystem.
<b>Size</b>	Size of the filesystem.
<b>Used</b>	Amount of space used in the filesystem.
<b>Avail</b>	Amount of space available in the filesystem.
<b>Capacity</b>	Percentage of the filesystem space that is being used.
<b>Mounted on</b>	Directory in which the filesystem is mounted.

## Sample Output

### show system storage

```

user@host> show system storage
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a      77M       37M       34M     52%      /
devfs           16K       16K        0B    100%    /dev/
/dev/vn0        12M       12M        0B    100%    /packages/mnt/jbase
/dev/vn1        39M       39M        0B    100%
/packages/mnt/jkernel-7.2R1.7
/dev/vn2        12M       12M        0B    100%
/packages/mnt/jpfe-M40-7.2R1.7
/dev/vn3        2.3M      2.3M        0B    100%
/packages/mnt/jdocs-7.2R1.7
/dev/vn4        14M       14M        0B    100%
/packages/mnt/jroute-7.2R1.7
/dev/vn5        4.5M      4.5M        0B    100%
/packages/mnt/jcrypto-7.2R1.7
mfs:172         1.5G      4.0K      1.3G     0%      /tmp
/dev/ad0s1e     12M       20K       11M     0%      /config

```

```

procfs          4.0K      4.0K      0B      100% /proc
/dev/ad1s1f     9.4G      4.9G      3.7G      57%  /var

```

#### show system storage (Junos OS with upgraded FreeBSD starting in Junos OS Release 18.1R1)

```

user@host> show system storage
Filesystem      Size    Used    Avail Capacity  Mounted on
/dev/gpt/oam     945M    663M    207M      76%
/dev/gpt/junos   32G     14G     16G      46%  /.mount
tmpfs           5.4G     12K    5.4G       0%  /.mount/tmp
tmpfs           592M     1.2M   591M       0%  /.mount/mfs

```

#### show system storage (TX Matrix Plus Router)

```

user@host> show system storage
sfc0-re0:
-----
Filesystem      Size    Used    Avail Capacity  Mounted on
/dev/ad0s1a     3.4G    178M    2.9G        6%  /
devfs           1.0K    1.0K      0B      100% /dev
devfs           1.0K    1.0K      0B      100% /dev/
/dev/md0        33M     33M      0B      100% /packages/mnt/jbase
/dev/md1       216M    216M      0B      100%
/packages/mnt/jkernel-9.6-20090519.0
/dev/md2        66M     66M      0B      100%
/packages/mnt/jpfe-T-9.6-20090519.0
/dev/md3        4.1M    4.1M      0B      100%
/packages/mnt/jdocs-9.6-20090519.0
/dev/md4        57M     57M      0B      100%
/packages/mnt/jroute-9.6-20090519.0
/dev/md5        15M     15M      0B      100%
/packages/mnt/jcrypto-9.6-20090519.0
/dev/md6        34M     34M      0B      100%
/packages/mnt/jpfe-common-9.6-20090519.0
/dev/md7        2.0G    10.0K    1.8G        0% /tmp
/dev/md8        2.0G     1.0M    1.8G        0% /mfs
/dev/ad0s1e     383M     82K    352M        0% /config
procfs          4.0K    4.0K      0B      100% /proc
/dev/ad1s1f     52G     7.5G    40G        16% /var

lcc0-re0:
-----
Filesystem      Size    Used    Avail Capacity  Mounted on
/dev/ad0s1a     3.4G    178M    2.9G        6%  /
devfs           1.0K    1.0K      0B      100% /dev
devfs           1.0K    1.0K      0B      100% /dev/
/dev/md0        33M     33M      0B      100% /packages/mnt/jbase
/dev/md1       216M    216M      0B      100%
/packages/mnt/jkernel-9.6-20090519.0
/dev/md2        66M     66M      0B      100%
/packages/mnt/jpfe-T-9.6-20090519.0
/dev/md3        4.1M    4.1M      0B      100%
/packages/mnt/jdocs-9.6-20090519.0
/dev/md4        57M     57M      0B      100%
/packages/mnt/jroute-9.6-20090519.0
/dev/md5        15M     15M      0B      100%
/packages/mnt/jcrypto-9.6-20090519.0
/dev/md6        34M     34M      0B      100%
/packages/mnt/jpfe-common-9.6-20090519.0
/dev/md7        2.0G    10.0K    1.8G        0% /tmp

```

/dev/md8	2.0G	540K	1.8G	0%	/mfs
/dev/ad0s1e	383M	88K	352M	0%	/config
procfs	4.0K	4.0K	0B	100%	/proc
/dev/ad1s1f	52G	6.3G	41G	13%	/var

lcc1-re0:

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/ad0s1a	3.4G	178M	2.9G	6%	/
devfs	1.0K	1.0K	0B	100%	/dev
devfs	1.0K	1.0K	0B	100%	/dev/
/dev/md0	33M	33M	0B	100%	/packages/mnt/jbase
/dev/md1	216M	216M	0B	100%	
/packages/mnt/jkernel-9.6-20090519.0					
/dev/md2	66M	66M	0B	100%	
/packages/mnt/jpfe-T-9.6-20090519.0					
/dev/md3	4.1M	4.1M	0B	100%	
/packages/mnt/jdocs-9.6-20090519.0					
/dev/md4	57M	57M	0B	100%	
/packages/mnt/jroute-9.6-20090519.0					
/dev/md5	15M	15M	0B	100%	
/packages/mnt/jcrypto-9.6-20090519.0					
/dev/md6	34M	34M	0B	100%	
/packages/mnt/jpfe-common-9.6-20090519.0					
/dev/md7	2.0G	10.0K	1.8G	0%	/tmp
/dev/md8	2.0G	540K	1.8G	0%	/mfs
/dev/ad0s1e	383M	88K	352M	0%	/config
procfs	4.0K	4.0K	0B	100%	/proc
/dev/ad1s1f	23G	13G	7.7G	64%	/var

lcc2-re0:

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/ad0s1a	3.4G	178M	2.9G	6%	/
devfs	1.0K	1.0K	0B	100%	/dev
devfs	1.0K	1.0K	0B	100%	/dev/
/dev/md0	33M	33M	0B	100%	/packages/mnt/jbase
/dev/md1	216M	216M	0B	100%	
/packages/mnt/jkernel-9.6-20090519.0					
/dev/md2	66M	66M	0B	100%	
/packages/mnt/jpfe-T-9.6-20090519.0					
/dev/md3	4.1M	4.1M	0B	100%	
/packages/mnt/jdocs-9.6-20090519.0					
/dev/md4	57M	57M	0B	100%	
/packages/mnt/jroute-9.6-20090519.0					
/dev/md5	15M	15M	0B	100%	
/packages/mnt/jcrypto-9.6-20090519.0					
/dev/md6	34M	34M	0B	100%	
/packages/mnt/jpfe-common-9.6-20090519.0					
/dev/md7	2.0G	10.0K	1.8G	0%	/tmp
/dev/md8	2.0G	540K	1.8G	0%	/mfs
/dev/ad0s1e	383M	64K	352M	0%	/config
procfs	4.0K	4.0K	0B	100%	/proc
/dev/ad1s1f	23G	3.7G	17G	18%	/var

lcc3-re0:

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/ad0s1a	3.4G	178M	2.9G	6%	/
devfs	1.0K	1.0K	0B	100%	/dev
devfs	1.0K	1.0K	0B	100%	/dev/



/dev/md0	33M	33M	0B	100%	/packages/mnt/jbase
/dev/md1	216M	216M	0B	100%	
/packages/mnt/jkernel-9.6-20090519.0					
/dev/md2	66M	66M	0B	100%	
/packages/mnt/jpfe-T-9.6-20090519.0					
/dev/md3	4.1M	4.1M	0B	100%	
/packages/mnt/jdocs-9.6-20090519.0					
/dev/md4	57M	57M	0B	100%	
/packages/mnt/jroute-9.6-20090519.0					
/dev/md5	15M	15M	0B	100%	
/packages/mnt/jcrypto-9.6-20090519.0					
/dev/md6	34M	34M	0B	100%	
/packages/mnt/jpfe-common-9.6-20090519.0					
/dev/md7	2.0G	10.0K	1.8G	0%	/tmp
/dev/md8	2.0G	540K	1.8G	0%	/mfs
/dev/ad0s1e	383M	34K	352M	0%	/config
procfs	4.0K	4.0K	0B	100%	/proc
/dev/ad1s1f	23G	18G	3.5G	84%	/var

### show system storage (QFX3500 Switch)

```
user@switch> show system storage
```

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/da0s2a	343M	192M	123M	61%	/
devfs	1.0K	1.0K	0B	100%	/dev
/dev/md0	119M	119M	0B	100%	/packages/mnt/jbase
/dev/md1	513M	513M	0B	100%	
/packages/mnt/jkernel-qfx-11.1R1.5					
/dev/md2	37M	37M	0B	100%	
/packages/mnt/jpfe-qfx-e9xxx-11.1R1.5					
/dev/md3	6.0M	6.0M	0B	100%	
/packages/mnt/jdocs-qfx-11.1R1.5					
/dev/md4	216M	216M	0B	100%	
/packages/mnt/jroute-qfx-11.1R1.5					
/dev/md5	59M	59M	0B	100%	
/packages/mnt/jcrypto-qfx-11.1R1.5					
/dev/md6	85M	85M	0B	100%	
/packages/mnt/jswitch-qfx-11.1R1.5					
/dev/md7	63M	8.0K	58M	0%	/tmp
/dev/da0s2f	228M	14M	196M	7%	/var
/dev/da0s3d	590M	3.0M	540M	1%	/var/tmp
/dev/da0s3e	104M	162K	95M	0%	/config
procfs	4.0K	4.0K	0B	100%	/proc

### show system storage invoke-on all-routing-engines

```
user@host> show system storage invoke-on all-routing-engines
re0:
```

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/ad0s1a	3.3G	440M	2.6G	14%	/
devfs	1.0K	1.0K	0B	100%	/dev
/dev/md0	76M	76M	0B	100%	/packages/mnt/jbase
/dev/md1	40M	40M	0B	100%	
/packages/mnt/jkernel64-14.1-20140407.1					
/dev/md2	219M	219M	0B	100%	
/packages/mnt/jpfe-T-14.1-20140407.1					
/dev/md3	5.4M	5.4M	0B	100%	
/packages/mnt/jdocs-14.1-20140407.1					
/dev/md4	116M	116M	0B	100%	

```

/packages/mnt/jroute-14.1-20140407.1
/dev/md5          44M      44M      0B      100%
/packages/mnt/jcrypto64-14.1-20140407.1
/dev/md6          70M      70M      0B      100%
/packages/mnt/jpfe-common-14.1-20140407.1
/dev/md7          182K     182K     0B      100%
/packages/mnt/jplatform-14.1-20140407.1
/dev/md8          499M     499M     0B      100%
/packages/mnt/jruntime-14.1-20140407.1
/dev/md9          41M      41M      0B      100%
/packages/mnt/jruntime64-14.1-20140407.1
/dev/md10         12M      12M      0B      100%
/packages/mnt/py-base-i386-14.1-20140407.1
/dev/md11         3.2G     8.0K     2.9G     0% /tmp
/dev/md12         3.2G     1.1M     2.9G     0% /mfs
/dev/ad0s1e       376M     220K     346M     0% /config
procfs           4.0K     4.0K     0B      100% /proc
/dev/ad1s1f       50G      43G     3.2G     93% /var

```

rel:

```

-----
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a     3.3G     440M     2.6G     14%      /
devfs           1.0K     1.0K      0B      100%     /dev
/dev/md0        76M      76M      0B      100%     /packages/mnt/jbase
/dev/md1        40M      40M      0B      100%
/packages/mnt/jkernel64-14.1-20140407.1
/dev/md2       219M     219M      0B      100%
/packages/mnt/jpfe-T-14.1-20140407.1
/dev/md3        5.4M     5.4M      0B      100%
/packages/mnt/jdocs-14.1-20140407.1
/dev/md4       116M     116M      0B      100%
/packages/mnt/jroute-14.1-20140407.1
/dev/md5        44M      44M      0B      100%
/packages/mnt/jcrypto64-14.1-20140407.1
/dev/md6        70M      70M      0B      100%
/packages/mnt/jpfe-common-14.1-20140407.1
/dev/md7        182K     182K     0B      100%
/packages/mnt/jplatform-14.1-20140407.1
/dev/md8        499M     499M     0B      100%
/packages/mnt/jruntime-14.1-20140407.1
/dev/md9        41M      41M      0B      100%
/packages/mnt/jruntime64-14.1-20140407.1
/dev/md10       12M      12M      0B      100%
/packages/mnt/py-base-i386-14.1-20140407.1
/dev/md11       3.2G     8.0K     2.9G     0% /tmp
/dev/md12       3.2G     662K     2.9G     0% /mfs
/dev/ad0s1e     375M     230K     344M     0% /config
procfs         4.0K     4.0K     0B      100% /proc
/dev/ad1s1f     52G      46G     2.2G     95% /var

```

#### show system storage invoke-on other-routing-engine

```
user@host> show system storage invoke-on other-routing-engine
```

rel:

```

-----
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a     3.3G     440M     2.6G     14%      /
devfs           1.0K     1.0K      0B      100%     /dev
/dev/md0        76M      76M      0B      100%     /packages/mnt/jbase
/dev/md1        40M      40M      0B      100%

```

/packages/mnt/jkernel64-14.1-20140407.1					
/dev/md2	219M	219M	0B	100%	
/packages/mnt/jpfe-T-14.1-20140407.1					
/dev/md3	5.4M	5.4M	0B	100%	
/packages/mnt/jdocs-14.1-20140407.1					
/dev/md4	116M	116M	0B	100%	
/packages/mnt/jroute-14.1-20140407.1					
/dev/md5	44M	44M	0B	100%	
/packages/mnt/jcrypto64-14.1-20140407.1					
/dev/md6	70M	70M	0B	100%	
/packages/mnt/jpfe-common-14.1-20140407.1					
/dev/md7	182K	182K	0B	100%	
/packages/mnt/jplatform-14.1-20140407.1					
/dev/md8	499M	499M	0B	100%	
/packages/mnt/jruntime-14.1-20140407.1					
/dev/md9	41M	41M	0B	100%	
/packages/mnt/jruntime64-14.1-20140407.1					
/dev/md10	12M	12M	0B	100%	
/packages/mnt/py-base-i386-14.1-20140407.1					
/dev/md11	3.2G	8.0K	2.9G	0%	/tmp
/dev/md12	3.2G	662K	2.9G	0%	/mfs
/dev/ad0s1e	375M	230K	344M	0%	/config
procfs	4.0K	4.0K	0B	100%	/proc
/dev/ad1s1f	52G	46G	2.2G	95%	/var

## show system switchover

---

List of Syntax	Syntax on page 1578
	Syntax (TX Matrix Router) on page 1578
	Syntax (TX Matrix Plus Router) on page 1578
	Syntax (MX Series Router) on page 1578
Syntax	show system switchover
Syntax (TX Matrix Router)	show system switchover <all-chassis   all-lcc   lcc <i>number</i>   scc>
Syntax (TX Matrix Plus Router)	show system switchover <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
Syntax (MX Series Router)	show system switchover <all-members> <local> <member <i>member-id</i> >
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 13.2X51-D20 for QFX Series switches.
Description	Display whether graceful Routing Engine switchover is configured, the state of the kernel replication (ready or synchronizing), any replication errors, and whether the primary and standby Routing Engines are using compatible versions of the kernel database.



**NOTE:** Issue the **show system switchover** command *only* on the backup Routing Engine. This command is *not* supported on the master Routing Engine because the kernel-replication process daemon does not run on the master Routing Engine. This process runs only on the backup Routing Engine.

---

Beginning Junos OS Release 9.6, the **show system switchover** command has been deprecated on the master Routing Engine on all routers other than a TX Matrix (switch-card chassis) or a TX Matrix Plus (switch-fabric chassis) router.

However, in a routing matrix, if you issue the **show system switchover** command on the master Routing Engine of the TX Matrix router (or switch-card chassis), the CLI displays graceful switchover information for the master Routing Engine of the T640 routers (or line-card chassis) in the routing matrix. Likewise, if you issue the **show system switchover** command on the master Routing Engine of a TX Matrix Plus router (or switch-fabric chassis), the CLI displays output for the master Routing Engine of T1600 or T4000 routers in the routing matrix.

**Options** **all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display graceful Routing Engine switchover information for all Routing Engines on the TX Matrix router and the T640 routers configured in the routing matrix. On a TX Matrix Plus router, display graceful Routing Engine switchover information for all Routing Engines on the TX Matrix Plus router and the T1600 or T4000 routers configured in the routing matrix.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display graceful Routing Engine switchover information for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display graceful Routing Engine switchover information for all connected T1600 or T4000 LCCs.

Note that in this instance, packets get dropped. The LCCs perform GRES on their own chassis (GRES cannot be handled by one particular chassis for the entire router) and synchronization is not possible as the LCC plane bringup time varies for each LCC. Therefore, when there is traffic on these planes, there may be a traffic drop.

**all-members**—(MX Series routers only) (Optional) Display graceful Routing Engine switchover information for all Routing Engines on all members of the Virtual Chassis configuration.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display graceful Routing Engine switchover information for a specific T640 router connected to the TX Matrix router. On a TX Matrix Plus router, display graceful Routing Engine switchover information for a specific router connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display graceful Routing Engines switchover information for all Routing Engines on the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display graceful Routing Engine switchover information for all Routing Engines on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**scc**—(TX Matrix router only) (Optional) Display graceful Routing Engine switchover information for the TX Matrix router (or switch-card chassis).

**sfc**—(TX Matrix Plus routers only) (Optional) Display graceful Routing Engine switchover information for the TX Matrix Plus router.

**Additional Information** If you issue the **show system switchover** command on a TX Matrix backup Routing Engine, the command is broadcast to all the T640 backup Routing Engines that are connected to it.

Likewise, if you issue the **show system switchover** command on a TX Matrix Plus backup Routing Engine, the command is broadcast to all the T1600 or T4000 backup Routing Engines that are connected to it.

If you issue the **show system switchover** command on the active Routing Engine in the master router of an MX Series Virtual Chassis, the router displays a message that this command is not applicable on this member of the Virtual Chassis.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

[show system switchover \(Backup Routing Engine - Ready\) on page 1581](#)  
[show system switchover \(Backup Routing Engine - Not Ready\) on page 1582](#)  
[show system switchover \(MX Virtual Chassis\) on page 1582](#)  
[show system switchover \(MX Virtual Chassis\) on page 1582](#)  
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Master Ready on page 1582](#)  
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Master Not Ready on page 1583](#)  
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Backup Ready on page 1583](#)  
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Backup Not Ready on page 1583](#)  
[show system switchover all-lcc \(Routing Matrix and Routing Matrix Plus\) on page 1584](#)

**Output Fields** [Table 69 on page 1580](#) describes the output fields for the **show system switchover** command. Output fields are listed in the approximate order in which they appear.

*Table 69: show system switchover Output Fields*

Field Name	Field Description
Graceful switchover	Display graceful Routing Engine switchover status: <ul style="list-style-type: none"> <li>• <b>On</b>—Indicates <b>graceful-switchover</b> is specified for the <b>routing-options</b> configuration command.</li> <li>• <b>Off</b>—Indicates <b>graceful-switchover</b> is not specified for the <b>routing-options</b> configuration command.</li> </ul>

Table 69: show system switchover Output Fields (continued)

Field Name	Field Description
Configuration database	<p>State of the configuration database:</p> <ul style="list-style-type: none"> <li>• <b>Ready</b>—Configuration database has synchronized.</li> <li>• <b>Synchronizing</b>—Configuration database is synchronizing. Displayed when there are updates within the last 5 seconds.</li> <li>• <b>Synchronize failed</b>—Configuration database synchronize process failed.</li> </ul>
Kernel database	<p>State of the kernel database:</p> <ul style="list-style-type: none"> <li>• <b>Ready</b>—Kernel database has synchronized. This message implies that the system is ready for GRES.</li> <li>• <b>Synchronizing</b>—Kernel database is synchronizing. Displayed when there are updates within the last 5 seconds.</li> <li>• <b>Version incompatible</b>—The primary and standby Routing Engines are running incompatible kernel database versions.</li> <li>• <b>Replication error</b>—An error occurred when the state was replicated from the primary Routing Engine. Inspect <b>Steady State</b> for possible causes, or notify Juniper Networks customer support.</li> </ul>
Peer state	<p>Routing Engine peer state:</p> <p>This field is displayed only when ksyncd is running in multichassis mode (LCC master).</p> <ul style="list-style-type: none"> <li>• <b>Steady State</b>—Peer completed switchover transition.</li> <li>• <b>Peer Connected</b>—Peer in switchover transition.</li> </ul>
Switchover Status	<p>Switchover Status:</p> <ul style="list-style-type: none"> <li>• <b>Ready</b>—Message for system being switchover ready.</li> <li>• <b>Not Ready</b>—Message for system not being ready for switchover.</li> </ul>

## Sample Output

### show system switchover (Backup Routing Engine - Ready)

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

Switchover Status: Ready is the way the last line of the output reads if you are running Junos OS Release 16.1R1 or later. If you are running Junos OS Release 15.x, the last line of the output reads as Switchover Ready, for example:

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Ready
```

### show system switchover (Backup Routing Engine - Not Ready)

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Not Ready
```

Switchover Status: Not Ready is the way the last line of the output reads if you are running Junos OS Release 16.1R1 or later. If you are running Junos OS Release 15.x, the last line of the output reads as Not ready for mastership switch, try after xxx secs, for example:

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Not ready for mastership switch, try after xxx secs.
```

### show system switchover (MX Virtual Chassis)

```
{master:member1-re1}
user@host> show system switchover
member0:
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready

member1:
-----
Command is not applicable on this member of the virtual-chassis
```

### show system switchover (MX Virtual Chassis)

```
{master:member1-re1}
user@host> show system switchover
member0:
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Ready

member1:
-----
Command is not applicable on this member of the virtual-chassis
```

### show system switchover (Routing Matrix and Routing Matrix Plus) - Master Ready

```
user@host> show system switchover
lcc0-re1:
-----
Multichassis replication: On
Configuration database: Ready
```



```
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

```
lcc2-re0:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

### show system switchover (Routing Matrix and Routing Matrix Plus) - Master Not Ready

```
user@host> show system switchover
lcc0-re1:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

```
lcc2-re1:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Not Ready
```

### show system switchover (Routing Matrix and Routing Matrix Plus) - Backup Ready

```
user@host> show system switchover
scc-re0:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

```
lcc0-re0:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

```
lcc2-re1:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

### show system switchover (Routing Matrix and Routing Matrix Plus) - Backup Not Ready

```
user@host> show system switchover
scc-re0:
```

```
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Not Ready
```

```
lcc0-re0:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

```
lcc2-re1:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

### show system switchover all-lcc (Routing Matrix and Routing Matrix Plus)

```
user@host> show system switchover all-lcc
```

```
lcc0-re0:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

```
lcc2-re0:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

## show system rollback

**Syntax** `show system rollback number`  
`<compare number>`

**Release Information** Command introduced before Junos OS Release 7.4.  
 Command introduced in Junos OS Release 9.0 for EX Series switches.  
 Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.  
 Command introduced in Junos OS Release 11.1 for the QFX Series.

**Description** Display the contents of a previously committed configuration, or the differences between two previously committed configurations.



**NOTE:** The `show system rollback` command is a purely operational mode command and cannot be issued with `run` from the configuration mode.

**Options** *number*—Number of a configuration to view. The output displays the configuration. The range of values is 0 through 49.

*compare number* —(Optional) Number of another previously committed (rollback) configuration to compare to rollback *number*. The output displays the differences between the two configurations. The range of values is 0 through 49.

**Required Privilege Level** view

**List of Sample Output** [show system rollback compare on page 1585](#)

## Sample Output

### show system rollback compare

```
user@host> show system rollback 3 compare 1
[edit]
+ interfaces {
+   ge-1/1/1 {
+     unit 0 {
+       family inet {
+         filter {
+           input mf_plp;
+         }
+         address 10.1.1.1/10;
+       }
+     }
+   }
+   ge-1/2/1 {
+     unit 0 {
+       family inet {
+         filter {
```

```
+             input mf_plp;
+         }
+         address 10.1.1.1/10;
+     }
+ }
+ ge-1/3/0 {
+     unit 0 {
+         family inet {
+             filter {
+                 input mf_plp;
+             }
+             address 10.1.1.1/10;
+         }
+     }
+ }
+ }
```

## show system uptime

<b>List of Syntax</b>	<a href="#">Syntax on page 1587</a> <a href="#">Syntax (EX Series Switches) on page 1587</a> <a href="#">Syntax (QFX Series) on page 1587</a> <a href="#">Syntax (TX Matrix Router) on page 1587</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1587</a> <a href="#">Syntax (MX Series Router) on page 1587</a>
<b>Syntax</b>	show system uptime
<b>Syntax (EX Series Switches)</b>	show system uptime <all-members> <local> <member <i>member-id</i> >
<b>Syntax (QFX Series)</b>	show system uptime <director-group <i>name</i> > <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-group <i>name</i> >
<b>Syntax (TX Matrix Router)</b>	show system uptime <all-chassis   all-lcc   lcc <i>number</i>   scc>
<b>Syntax (TX Matrix Plus Router)</b>	show system uptime <detail> <all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i> >
<b>Syntax (MX Series Router)</b>	show system uptime <all-members> <invoke-on> <local> <member <i>member-id</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>sfc</b> option introduced for the TX Matrix Plus router in JUNOS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
<b>Description</b>	Display the current time and information about how long the router or switch, router or switch software, and routing protocols have been running.



**NOTE:** Time values computed from differences in timestamps can vary due to the insertion or deletion of leap-seconds between them.

**Options** **none**—Show time since the system rebooted and processes started.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Show time since the system rebooted and processes started on all the routers in the chassis.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show time since the system rebooted and processes started for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, show time since the system rebooted and processes started for all connected T1600 or T4000 LCCs.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on all members of the Virtual Chassis configuration.

**director-group *name***—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Director group.

**infrastructure *name***—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the fabric control Routing Engine and fabric manager Routing Engine.

**interconnect-device *name***—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Interconnect device.

**invoke-on**—(MX Series routers only) (Optional) Display the time since the system rebooted and processes started on the master Routing Engine, backup Routing Engine, or both, on a router with two Routing Engines.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show time since the system rebooted and processes started for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, show time since the system rebooted and processes started for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace ***member-id*** with a value from 0 through 9. For an MX Series Virtual Chassis, replace ***member-id*** with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Node group.

**scc**—(TX Matrix routers only) (Optional) Show time since the system rebooted and processes started for the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Show time since the system rebooted and processes started for the TX Matrix Plus router. Replace ***number*** with 0.

**Additional Information** By default, when you issue the **show system uptime** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

**Related Documentation**

- [10-Gigabit Ethernet LAN/WAN PIC with XFP \(T640 Router\)](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

- [show system uptime on page 1590](#)
- [show system uptime all-lcc \(TX Matrix Router\) on page 1590](#)
- [show system uptime all-lcc \(TX Matrix Plus Router\) on page 1590](#)
- [show system uptime \(EX Series\) on page 1591](#)
- [show system uptime \(QFX Series\) on page 1591](#)

**Output Fields** [Table 70 on page 1589](#) describes the output fields for the **show system uptime** command. Output fields are listed in the approximate order in which they appear.

*Table 70: show system uptime Output Fields*

Field Name	Field Description
Current time	Current system time in UTC.
Time Source	Reference time source that the system is locked to.
System booted	Date and time when the Routing Engine on the router or switch was last booted and how long it has been running.

Table 70: show system uptime Output Fields (continued)

Field Name	Field Description
<b>Protocols started</b>	Date and time when the routing protocols were last started and how long they have been running.
<b>Last configured</b>	Date and time when a configuration was last committed. Also shows the name of the user who issued the last <b>commit</b> command.
<b>time and up</b>	Current time, in the local time zone, and how long the router or switch has been operational.
<b>users</b>	Number of users logged in to the router or switch.
<b>load averages</b>	Load averages for the last 1 minute, 5 minutes, and 15 minutes.

## Sample Output

### show system uptime

```

user@host> show system uptime
Current time:      1998-10-13 19:45:47 UTC
Time Source:      NTP CLOCK
System booted:    1998-10-12 20:51:41 UTC (22:54:06 ago)
Protocols started: 1998-10-13 19:33:45 UTC (00:12:02 ago)
Last configured:  1998-10-13 19:33:45 UTC (00:12:02 ago) by abc
12:45PM up 22:54, 2 users, load averages: 0.07, 0.02, 0.01

```

### show system uptime all-lcc (TX Matrix Router)

```

user@host> show system uptime all-lcc
lcc0-re0:
-----
Current time: 2004-09-13 09:55:35 PDT
Time Source: LOCAL CLOCK
System booted: 2004-09-13 03:13:55 PDT (06:41:40 ago)
Last configured: 2004-09-13 03:17:48 PDT (06:37:47 ago) by root
9:55AM PDT up 6:42, 1 user, load averages: 0.02, 0.03, 0.00
lcc2-re0:
-----
Current time: 2004-09-13 09:55:35 PDT
Time Source: LOCAL CLOCK
System booted: 2004-09-12 03:23:43 PDT (1d 06:31 ago)
Last configured: 2004-09-13 03:05:36 PDT (06:49:59 ago) by root
9:55AM PDT up 1 day, 6:32, 1 user, load averages: 0.02, 0.01, 0.00

```

### show system uptime all-lcc (TX Matrix Plus Router)

```

user@host> show system uptime all-lcc
sfc0-re0:
-----
Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:33 PDT (17:44:57 ago)
Protocols started: 2009-05-24 06:40:30 PDT (17:44:00 ago)
Last configured: 2009-05-24 06:33:27 PDT (17:51:03 ago) by user1
12:24AM up 17:45, 2 users, load averages: 0.07, 0.05, 0.01

```



lcc0-re0:

```
-----
Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:46 PDT (17:44:44 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:47 PDT (17:43:43 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00
```

lcc1-re0:

```
-----
Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:38 PDT (17:44:52 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:18 PDT (17:44:12 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00
```

lcc2-re0:

```
-----
Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:48 PDT (17:44:42 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:44 PDT (17:43:46 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00
```

lcc3-re0:

```
-----
Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:44 PDT (17:44:46 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:08 PDT (17:44:22 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00
```

### show system uptime (EX Series)

```
user@switch> show system uptime
Current time: 2014-03-12 16:39:56 UTC
Time Source: NTP CLOCK
System booted: 2014-03-12 14:58:05 UTC (01:41:51 ago)
Protocols started: 2014-03-12 14:59:48 UTC (01:40:08 ago)
Last configured: 2014-03-12 14:58:58 UTC (01:40:58 ago) by root
4:39PM up 1:42, 4 users, load averages: 0.02, 0.02, 0.00
```

### show system uptime (QFX Series)

```
user@switch> show system uptime
Current time: 2010-08-27 03:12:30 PDT
Time Source: NTP CLOCK
System booted: 2010-08-13 17:11:54 PDT (1w6d 10:00 ago)
Protocols started: 2010-08-13 17:13:56 PDT (1w6d 09:58 ago)
Last configured: 2010-08-26 05:54:00 PDT (21:18:30 ago) by user
3:12AM up 13 days, 10:01, 3 users, load averages: 0.00, 0.00, 0.00
```

## show system users

---

**List of Syntax**    [Syntax on page 1592](#)  
                          [Syntax \(TX Matrix Router\) on page 1592](#)  
                          [Syntax \(TX Matrix Plus Router\) on page 1592](#)  
                          [Syntax \(MX Series Router\) on page 1592](#)

**Syntax**    show system users  
              <no-resolve>

**Syntax (TX Matrix Router)**    show system users  
  <all-chassis | all-lcc | lcc *number* | scc>  
  <no-resolve>

**Syntax (TX Matrix Plus Router)**    show system users  
  <detail>  
  <all-chassis | all-lcc | lcc *number* | sfc *number*> <no-resolve>

**Syntax (MX Series Router)**    show system users  
  <all-members>  
  <local>  
  <member *member-id*>  
  <no-resolve>

**Release Information**    Command introduced before Junos OS Release 7.4.  
                              Command introduced in Junos OS Release 9.0 for EX Series switches.  
                              **sfc** option introduced for the TX Matrix Plus router in JUNOS OS Release 9.6.  
                              Command introduced in Junos OS Release 11.1 for the QFX Series.  
                              Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

**Description**    List information about the users who are currently logged in to the router or switch.



**NOTE:** The **show system users** command lists the information about administrative users that are logged in to a router or switch using the CLI, J-Web, or an SSH client. The output does not list information about web users or automated users that are logged in from a remote client application using Junos XML APIs, such as NETCONF.

---

**Options**    **none**—List information about the users who are currently logged in to the router or switch.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Show users currently logged in to all the routers in the chassis.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show users currently logged in to all T640 routers (or line-card chassis)

connected to the TX Matrix router. On a TX Matrix Plus router, show users currently logged in to all connected T1600 or T4000 LCCs.

**all-members**—(MX Series routers only) (Optional) Display users currently logged in to all members of the Virtual Chassis configuration.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show users currently logged in to a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, show users currently logged in to a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(MX Series routers only) (Optional) Display users currently logged in to the local Virtual Chassis member.

**member *member-id***—(MX Series routers only) (Optional) Display users currently logged in to the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

**no-resolve**—(Optional) Do not attempt to resolve IP addresses to hostnames.

**scc**—(TX Matrix routers only) (Optional) Show users currently logged in to the TX Matrix router (or switch-card chassis).

**sfc *number***—(TX Matrix Plus routers only) (Optional) Show users currently logged in to the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system users** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**Required Privilege Level** view

## Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

## List of Sample Output

[show system users on page 1594](#)  
[show system users lcc no-resolve \(TX Matrix, TX Matrix Plus Router\) on page 1594](#)  
[show system users \(TX Matrix Plus Router\) on page 1595](#)  
[show system users \(QFX Series\) on page 1596](#)  
[show system users no-resolve \(QFX Series\) on page 1596](#)

## Output Fields

Table 71 on page 1594 describes the output fields for the **show system users** command. Output fields are listed in the approximate order in which they appear.

Table 71: show system users Output Fields

Field Name	Field Description
<b>time and up</b>	Current time, in the local time zone, and how long the router or switch has been operational.
<b>users</b>	Number of users logged in to the router or switch.
<b>load averages</b>	Load averages for the last 1 minute, 5 minutes, and 15 minutes.
<b>USER</b>	Username.
<b>TTY</b>	Terminal through which the user is logged in.
<b>FROM</b>	System from which the user has logged in. A hyphen indicates that the user is logged in through the console.
<b>LOGIN@</b>	Time when the user logged in.
<b>IDLE</b>	How long the user has been idle.
<b>WHAT</b>	Processes that the user is running.

## Sample Output

### show system users

```

user@host> show system users
 7:30PM up 4 days, 2:26, 2 users, load averages: 0.07, 0.02, 0.01
USER   TTY FROM                LOGIN@  IDLE WHAT
root   d0  -                    Fri05PM 4days -csh (csh)
blue   p0  level5.company.net  7:30PM   - cli

```

### show system users lcc no-resolve (TX Matrix, TX Matrix Plus Router)

```

user@host> show system users lcc 2 no-resolve

lcc2-re0:
-----
10:34AM PDT up 1 day, 7:11, 5 users, load averages: 0.03, 0.01, 0.00

```

USER	TTY	FROM	LOGIN@	IDLE	WHAT
root	d0	-	3:21AM	7:12	/bin/csh
user1	p0	scc-re0	10:15AM	-	telnet hostA
user1	p1	scc-re0	10:16AM	-	telnet hostA
user1	p2	scc-re0	10:19AM	-	telnet hostA
user1	p3	scc-re0	10:24AM	-	telnet hostA

### show system users (TX Matrix Plus Router)

```

user@host> show system users
sfc0-re0:
-----
1:41AM up 26 mins, 3 users, load averages: 0.08, 0.04, 0.03
USER   TTY   FROM                LOGIN@  IDLE WHAT
user2   p0    10.209.208.123      1:18AM  21 cli
user2   p1    192.0.2.207         1:37AM  2 cli
user2   p2    192.0.2.19          1:40AM  - cli

lcc0-re0:
-----
1:41AM up 26 mins, 0 users, load averages: 0.00, 0.00, 0.03

lcc1-re0:
-----
1:41AM up 26 mins, 0 users, load averages: 0.00, 0.02, 0.03

lcc2-re0:
-----
1:41AM up 26 mins, 0 users, load averages: 0.16, 0.06, 0.02

lcc3-re0:
-----
1:41AM up 26 mins, 0 users, load averages: 0.12, 0.04, 0.04

user3@aj> show system users
sfc0-re0:
-----
1:42AM up 28 mins, 4 users, load averages: 0.02, 0.03, 0.02
USER   TTY   FROM                LOGIN@  IDLE WHAT
user    p0    device1.example.com 1:18AM  22 cli
user    p1    device2.example.com 1:37AM  - cli
user    p2    device3.example.com 1:40AM  - cli
user    p3    device4.example.com 1:42AM  - csh (csh)

lcc0-re0:
-----
1:42AM up 28 mins, 0 users, load averages: 0.02, 0.01, 0.03

lcc1-re0:
-----
1:42AM up 28 mins, 0 users, load averages: 0.07, 0.04, 0.03

lcc2-re0:
-----
1:42AM up 27 mins, 0 users, load averages: 0.07, 0.06, 0.02

lcc3-re0:
-----
1:42AM up 28 mins, 0 users, load averages: 0.05, 0.04, 0.04

```

**show system users (QFX Series)**

```
user@switch> show system users
```

USER	TTY	FROM	LOGIN@	IDLE	WHAT
user1	p0	192.0.2.117	2:54AM	39	-cli (cli)
user2	p1	192.0.2.116	3:01AM	-	-cli (cli)
user3	p2	192.0.2.97	3:08AM	11	-cli (cli)

**show system users no-resolve (QFX Series)**

```
user@switch> show system users no-resolve
```

USER	TTY	FROM	LOGIN@	IDLE	WHAT
user1	p0	192.0.2.117	2:54AM	39	-cli (cli)
user2	p1	192.0.2.116	3:01AM	-	-cli (cli)
user3	p2	192.0.2.97	3:08AM	11	-cli (cli)

## show system virtual-memory

<b>List of Syntax</b>	<a href="#">Syntax on page 1597</a> <a href="#">Syntax (EX Series) on page 1597</a> <a href="#">Syntax (TX Matrix Router) on page 1597</a> <a href="#">Syntax (TX Matrix Plus Router) on page 1597</a> <a href="#">Syntax (MX Series Router) on page 1597</a> <a href="#">Syntax (QFX Series) on page 1597</a> <a href="#">Syntax (SRX Series) on page 1597</a>
<b>Syntax</b>	<code>show system virtual-memory</code>
<b>Syntax (EX Series)</b>	<code>show system virtual-memory</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (TX Matrix Router)</b>	<code>show system virtual-memory</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</code>
<b>Syntax (TX Matrix Plus Router)</b>	<code>show system virtual-memory</code> <code>&lt;all-chassis   all-lcc   lcc <i>number</i>   sfc <i>number</i>&gt;</code>
<b>Syntax (MX Series Router)</b>	<code>show system virtual-memory</code> <code>&lt;all-members&gt;</code> <code>&lt;local&gt;</code> <code>&lt;member <i>member-id</i>&gt;</code>
<b>Syntax (QFX Series)</b>	<code>show system virtual-memory</code> <code>&lt;infrastructure <i>name</i>&gt;</code> <code>&lt;interconnect-device <i>name</i>&gt;</code> <code>&lt;node-group <i>name</i>&gt;</code>
<b>Syntax (SRX Series)</b>	<code>show system virtual-memory</code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>sfc</b> option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
<b>Description</b>	<p>Display the usage of Junos OS kernel memory listed first by size of allocation and then by type of usage. Use the <b>show system virtual-memory</b> command for troubleshooting with Juniper Networks Customer Support.</p>
<b>Options</b>	<b>none</b> —Display kernel dynamic memory usage information.

**all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display kernel dynamic memory usage information for all chassis.

**all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display kernel dynamic memory usage information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display kernel dynamic memory usage information for all connected T1600 or T4000 LCCs.

**all-members**—(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for all members of the Virtual Chassis configuration.

**infrastructure *name***—(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the fabric control Routing Engine and fabric manager Routing Engine.

**interconnect-device *name***—(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the Interconnect device.

**lcc *number***—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display kernel dynamic memory usage information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display kernel dynamic memory usage information for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**local**—(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for the local Virtual Chassis member.

**member *member-id***—(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace ***member-id*** with a value from 0 through 9. For an MX Series Virtual Chassis, replace ***member-id*** with a value of 0 or 1.

**node-group *name***—(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the Node group.

**scc**—(TX Matrix routers only) (Optional) Display kernel dynamic memory usage information for the TX Matrix router (or switch-card chassis).



**sfc *number***—(TX Matrix Plus routers only) (Optional) Display kernel dynamic memory usage information for the TX Matrix Plus router. Replace *number* with 0.

**Additional Information** By default, when you issue the **show system virtual-memory** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.



**NOTE:** The **show system virtual-memory** command with the **| display XML** pipe option now displays XML output for the command in the parent tags: `<vmstat-memstat-malloc>`, `<vmstat-memstat-zone>`, `<vmstat-sumstat>`, `<vmstat-intr>`, and `<vmstat-kernel-state>` with each child element as a separate XML tag. In Junos OS Releases 10.1 and earlier, the **| display XML** option for this command does not have an XML API element and the entire output is displayed in a single `<output>` tag element.

**Required Privilege Level** view

**Related Documentation**

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

**List of Sample Output**

- [show system virtual-memory on page 1601](#)
- [show system virtual-memory scc \(TX Matrix Router\) on page 1605](#)
- [show system virtual-memory sfc \(TX Matrix Plus Router\) on page 1606](#)
- [show system virtual-memory | display xml on page 1609](#)
- [show system virtual-memory \(QFX Series\) on page 1632](#)

**Output Fields** [Table 72 on page 1600](#) lists the output fields for the **show system virtual-memory** command. Output fields are listed in the approximate order in which they appear.

Table 72: show system virtual-memory Output Fields

Field Name	Field Description
<b>Memory statistics by bucket size</b>	
<b>Size</b>	Memory block size (bytes). The kernel memory allocator appropriates blocks of memory whose size is exactly a power of 2.
<b>In Use</b>	Number of memory blocks of this size that are in use (bytes).
<b>Free</b>	Number of memory blocks of this size that are free (bytes).
<b>Requests</b>	Number of memory allocation requests made.
<b>HighWater</b>	Maximum value the free list can have. Once the system starts reclaiming physical memory, it continues until the free list is increased to this value.
<b>Couldfree</b>	Total number of times that the free elements for a bucket size exceed the high-water mark for that bucket size.
<b>Memory usage type by bucket size</b>	
<b>Size</b>	Memory block size (bytes).
<b>Type(s)</b>	Kernel modules that are using these memory blocks. For a definition of each type, refer to a FreeBSD book.
<b>Memory statistics by type</b>	
<b>Type</b>	Kernel module that is using dynamic memory.
<b>InUse</b>	Number of memory blocks used by this type. The number is rounded up.
<b>MemUse</b>	Amount of memory in use, in kilobytes (KB).
<b>HighUse</b>	Maximum memory ever used by this type.
<b>Limit</b>	Maximum memory that can be allocated to this type.
<b>Requests</b>	Total number of dynamic memory allocation requests this type has made.
<b>Type Limit</b>	Number of times requests were blocked for reaching the maximum limit.
<b>Kern Limit</b>	Number of times requests were blocked for the kernel map.
<b>Size(s)</b>	Memory block sizes this type is using.
<b>Memory Totals</b>	
<b>In Use</b>	Total kernel dynamic memory in use (bytes, rounded up).
<b>Free</b>	Total kernel dynamic memory free (bytes, rounded up).

Table 72: show system virtual-memory Output Fields (continued)

Field Name	Field Description
<b>Requests</b>	Total number of memory allocation requests.
<b>ITEM</b>	Kernel module that is using memory.
<b>Size</b>	Memory block size (bytes).
<b>Limit</b>	Maximum memory that can be allocated to this type.
<b>Used</b>	Number of memory blocks used by this type. The number is rounded up.
<b>Free</b>	Number of memory blocks available to this type.
<b>Requests</b>	Total number of memory allocation requests this type has made.
<b>interrupt</b>	Timer events and scheduling interruptions.
<b>total</b>	Total number of interruptions for each type.
<b>rate</b>	Interruption rate.
<b>Total</b>	Total for all interruptions.

## Sample Output

### show system virtual-memory

```

user@host> show system virtual-memory
Memory statistics by bucket size
Size  In Use  Free  Requests  HighWater  Couldfree
16      906    118    154876    1280        0
32      455    313    209956    640         0
64     4412    260    75380     320        20
128    3200     32    19361     160        81
256    1510     10    8844      80         4
512     446      2    5085      40         0
1K       18      2    5901      20         0
2K     1128      2    4445      10       1368
4K       185      1     456        5         0
8K        5      1    2653        5         0
16K      181      0     233        5         0
32K        2      0    1848        5         0
64K       20      0      22        5         0
128K       5      0       5        5         0
256K        2      0       2        5         0
512K        1      0       1        5         0

Memory usage type by bucket size
Size  Type(s)
16  uc_devlist, nexusdev, iftable, temp, devbuf, atexit, COS, BPF,
    DEVFS mount, DEVFS node, vnodes, mount, pcb, soname, proc-args, kld,
    MD disk, rman, ATA generic, bus, sysctl, ippool, pfestat, ifstate,

```

```

pfe_ipc, mkey, rtable, ifmaddr, ipfw, rnode
32 atkbddev, dirrem, mkdir, diradd, freefile, freefrag, indirdep,
bmsafemap, newblk, temp, devbuf, COS, vnodes, cluster_save buffer,
pcb, soname, proc-args, sigio, kld, Gzip trees, taskqueue, SWAP,
eventhandler, bus, sysctl, uidinfo, subproc, pgrp, pfestat, itable32,
ifstate, pfe_ipc, mkey, rtable, ifmaddr, ipfw, rnode, rtnexthop
64 isadev, iftable, MFS node, allocindir, allocdirect, pagedep, temp,
devbuf, lockf, COS, NULLFS hash, DEVFS name, vnodes,
cluster_save buffer, vfscache, pcb, soname, proc-args, file,
AR driver, AD driver, Gzip trees, rman, eventhandler, bus, sysctl,
subproc, pfestat, pic, ifstate, pfe_ipc, mkey, ifaddr, rtable, ipfw
128 ZONE, freeblks, inodedep, temp, devbuf, zombie, COS, DEVFS node,
vnodes, mount, vfscache, pcb, soname, proc-args, ttys, dev_t,
timecounter, kld, Gzip trees, ISOFS node, bus, uidinfo, cred,
session, pic, itable16, ifstate, pfe_ipc, rtable, ifstat, metrics,
rtnexthop, iffamily
256 iflogical, iftable, MFS node, FFS node, newblk, temp, devbuf,
NFS daemon, vnodes, proc-args, kqueue, file desc, Gzip trees, bus,
subproc, itable16, ifstate, pfe_ipc, sysctl, rtnexthop
512 UFS mount, temp, devbuf, mount, BIO buffer, ptys, ttys, AR driver,
Gzip trees, ISOFS mount, msg, iocltops, ATA generic, bus, proc,
pfestat, lr, ifstate, pfe_ipc, rtable, ipfw, ifstat, rtnexthop
1K iftable, temp, devbuf, NQ NFS Lease, kqueue, kld, AD driver,
Gzip trees, sem, MD disk, bus, ifstate, pfe_ipc, ipfw
2K uc_devlist, UFS mount, temp, devbuf, BIO buffer, pcb, AR driver,
Gzip trees, iocltops, bus, ipfw, ifstat, rcache
4K memdesc, iftable, UFS mount, temp, devbuf, kld, Gzip trees, sem, msg
8K temp, devbuf, syncache, Gzip trees
16K indirdep, temp, devbuf, shm, msg
32K pagedep, kld, Gzip trees
64K VM pgdata, devbuf, MSDOSFS mount
128K UFS ihash, inodedep, NFS hash, kld, ISOFS mount
256K mbuf, vfscache
512K SWAP

```

Memory statistics by type					Type	Kern		
Type	InUse	MemUse	HighUse	Limit	Requests	Limit	Limit	Size(s)
isadev	13	1K	1K127753K	13	0	0	0	64
atkbddev	2	1K	1K127753K	2	0	0	0	32
uc_devlist	24	3K	3K127753K	24	0	0	0	16,2K
nexusdev	3	1K	1K127753K	3	0	0	0	16
memdesc	1	4K	4K127753K	1	0	0	0	4K
mbuf	1	152K	152K127753K	1	0	0	0	256K
iflogical	6	2K	2K127753K	6	0	0	0	256
iftable	17	9K	9K127753K	18	0	0	0	16,64,256,1K,4K
ZONE	15	2K	2K127753K	15	0	0	0	128
VM pgdata	1	64K	64K127753K	1	0	0	0	64K
UFS mount	12	26K	26K127753K	12	0	0	0	512,2K,4K
UFS ihash	1	128K	128K127753K	1	0	0	0	128K
MFS node	6	2K	3K127753K	35	0	0	0	64,256
FFS node	906	227K	227K127753K	1352	0	0	0	256
dirrem	0	0K	4K127753K	500	0	0	0	32
mkdir	0	0K	1K127753K	38	0	0	0	32
diradd	0	0K	6K127753K	521	0	0	0	32
freefile	0	0K	4K127753K	374	0	0	0	32
freeblks	0	0K	8K127753K	219	0	0	0	128
freefrag	0	0K	1K127753K	193	0	0	0	32
allocindir	0	0K	25K127753K	1518	0	0	0	64
indirdep	0	0K	17K127753K	76	0	0	0	32,16K
allocdirect	0	0K	10K127753K	760	0	0	0	64
bmsafemap	0	0K	1K127753K	72	0	0	0	32

newblk	1	1K	1K127753K	2279	0	0	32,256
inodedep	1	128K	175K127753K	2367	0	0	128,128K
pagedep	1	32K	33K127753K	47	0	0	64,32K
temp	1239	92K	96K127753K	8364	0	0	16,32,64K
devbuf	1413	5527K	5527K127753K	1535	0	0	16,32,64,128,256
lockf	38	3K	3K127753K	2906	0	0	64
atexit	1	1K	1K127753K	1	0	0	16
zombie	0	0K	2K127753K	3850	0	0	128
NFS hash	1	128K	128K127753K	1	0	0	128K
NQNFS Lease	1	1K	1K127753K	1	0	0	1K
NFS daemon	1	1K	1K127753K	1	0	0	256
syncache	1	8K	8K127753K	1	0	0	8K
COS	353	44K	44K127753K	353	0	0	16,32,64,128
BPF	189	3K	3K127753K	189	0	0	16
MSDOSFS mount	1	64K	64K127753K	1	0	0	64K
NULLFS hash	1	1K	1K127753K	1	0	0	64
DEVFS mount	2	1K	1K127753K	2	0	0	16
DEVFS name	487	31K	31K127753K	487	0	0	64
DEVFS node	471	58K	58K127753K	479	0	0	16,128
vnodes	28	7K	7K127753K	429	0	0	16,32,64,128,256
mount	15	8K	8K127753K	18	0	0	16,128,512
cluster_save buffer	0	0K	1K127753K	55	0	0	32,64
vfscache	1898	376K	376K127753K	3228	0	0	64,128,256K
BIO buffer	49	98K	398K127753K	495	0	0	512,2K
pcb	159	16K	17K127753K	399	0	0	16,32,64,128,2K
soname	82	10K	10K127753K	42847	0	0	16,32,64,128
proc-args	57	2K	3K127753K	2105	0	0	16,32,64,128,256
ptys	32	16K	16K127753K	32	0	0	512
ttys	254	33K	33K127753K	522	0	0	128,512
kqueue	5	3K	4K127753K	23	0	0	256,1K
sigio	1	1K	1K127753K	27	0	0	32
file	383	24K	24K127753K	16060	0	0	64
file desc	76	19K	20K127753K	3968	0	0	256
shm	1	12K	12K127753K	1	0	0	16K
dev_t	286	36K	36K127753K	286	0	0	128
timecounter	10	2K	2K127753K	10	0	0	128
kld	11	117K	122K127753K	34	0	0	16,32,128,1K,4K
AR driver	1	1K	3K127753K	5	0	0	64,512,2K
AD driver	2	2K	3K127753K	2755	0	0	64,1K
Gzip trees	0	0K	46K127753K	133848	0	0	32,64,128,256
ISOFS node	1136	142K	142K127753K	1189	0	0	128
ISOFS mount	9	132K	132K127753K	10	0	0	512,128K
sem	3	6K	6K127753K	3	0	0	1K,4K
MD disk	2	2K	2K127753K	2	0	0	16,1K
msg	4	25K	25K127753K	4	0	0	512,4K,16K
rman	59	4K	4K127753K	461	0	0	16,64
ioctlops	0	0K	2K127753K	992	0	0	512,2K
taskqueue	2	1K	1K127753K	2	0	0	32
SWAP	2	413K	413K127753K	2	0	0	32,512K
ATA generic	6	3K	3K127753K	6	0	0	16,512
eventhandler	17	1K	1K127753K	17	0	0	32,64
bus	340	30K	31K127753K	794	0	0	16,32,64,128,256
sysctl	0	0K	1K127753K	130262	0	0	16,32,64
uidinfo	4	1K	1K127753K	10	0	0	32,128
cred	22	3K	3K127753K	3450	0	0	128
subproc	156	10K	10K127753K	7882	0	0	32,64,256
proc	2	1K	1K127753K	2	0	0	512
session	12	2K	2K127753K	34	0	0	128
pgrp	16	1K	1K127753K	45	0	0	32
ippool	1	1K	1K127753K	1	0	0	16
pfestat	0	0K	1K127753K	47349	0	0	16,32,64,512

pic	5	1K	1K127753K	5	0	0	64,128
lr	1	1K	1K127753K	1	0	0	512
itable32	110	4K	4K127753K	110	0	0	32
itable16	161	26K	26K127753K	161	0	0	128,256
ifstate	694	159K	160K127753K	1735	0	0	16,32,64,128,1K
pfe_ipc	0	0K	1K127753K	56218	0	0	16,32,64,128,1K
mkey	250	4K	4K127753K	824	0	0	16,32,64
ifaddr	9	1K	1K127753K	9	0	0	64
sysctl	0	0K	1K127753K	30	0	0	256
rtable	49	6K	6K127753K	307	0	0	16,32,64,128,512
ifmaddr	22	1K	1K127753K	22	0	0	16,32
ipfw	23	10K	10K127753K	48	0	0	16,32,64,512,2K
ifstat	698	805K	805K127753K	698	0	0	128,512,2K
rcache	4	8K	8K127753K	4	0	0	2K
rnode	27	1K	1K127753K	285	0	0	16,32
metrics	1	1K	1K127753K	3	0	0	128
rtnexthop	57	9K	9K127753K	312	0	0	32,128,256,512
iffamily	12	2K	2K127753K	12	0	0	128

Memory Totals: In Use      Free      Requests  
                   9311K        54K        489068

ITEM	SIZE	LIMIT	USED	FREE	REQUESTS
PIPE:	192,	0,	4,	81,	4422
SWAPMETA:	160,	95814,	0,	0,	0
unpcb:	160,	0,	114,	36,	279
ripcb:	192,	25330,	5,	37,	5
syncache:	128,	15359,	0,	64,	5
tcpcb:	576,	25330,	23,	12,	32
udpcb:	192,	25330,	14,	28,	255
socket:	256,	25330,	246,	26,	819
KNOTE:	96,	0,	27,	57,	71
NFSNODE:	352,	0,	0,	0,	0
NFSMOUNT:	544,	0,	0,	0,	0
VNODE:	224,	0,	2778,	43,	2778
NAMEI:	1024,	0,	0,	8,	40725
VMSPACE:	192,	0,	57,	71,	3906
PROC:	448,	0,	73,	17,	3923
DP fakepg:	64,	0,	0,	0,	0
PV ENTRY:	28,	499566,	44530,	152053,	1525141
MAP ENTRY:	48,	0,	1439,	134,	351075
KMAP ENTRY:	48,	35645,	179,	119,	10904
MAP:	108,	0,	7,	3,	7
VM OBJECT:	92,	0,	2575,	109,	66912

792644 cpu context switches  
 9863474 device interrupts  
 286510 software interrupts  
 390851 traps  
 3596829 system calls  
   16 kernel threads created  
 3880 fork() calls  
   27 vfork() calls  
   0 rfork() calls  
   0 swap pager pageins  
   0 swap pager pages paged in  
   0 swap pager pageouts  
   0 swap pager pages paged out  
 380 vnode pager pageins  
 395 vnode pager pages paged in  
 122 vnode pager pageouts

```

1476 vnode pager pages paged out
    0 page daemon wakeups
    0 pages examined by the page daemon
101 pages reactivated
161722 copy-on-write faults
    0 copy-on-write optimized faults
84623 zero fill pages zeroed
83063 zero fill pages prezeroed
    7 intransit blocking page faults
535606 total VM faults taken
    0 pages affected by kernel thread creation
238254 pages affected by fork()
    2535 pages affected by vfork()
    0 pages affected by rfork()
283379 pages freed
    0 pages freed by daemon
190091 pages freed by exiting processes
17458 pages active
29166 pages inactive
    0 pages in VM cache
10395 pages wired down
134610 pages free
    4096 bytes per page
183419 total name lookups
    cache hits (90% pos + 7% neg) system 0% per-directory
    deletions 0%, falsehits 0%, toolong 0%

interrupt          total          rate
ata0 irq14         113338           3
mux irq7           727643          21
fxp1 irq10         1178671          34
sio0 irq4           833              0
clk irq0           3439769          99
rtc irq8           4403221          127
Total              9863475          286

Kernel direct memory map:
    4423 pages used
    4057340 pages maximum

```

*Note:* Kernel direct memory map only displays for 64 bit platform.

### show system virtual-memory scc (TX Matrix Router)

```
user@host> show system virtual-memory scc
```

Memory statistics by bucket size

Size	In Use	Free	Requests	HighWater	Couldfree
16	898	126	749493	1280	0
32	2018	1310	980643	640	632
64	3490	13342	935420	320	5365
...					

Memory usage type by bucket size

Size	Type(s)
16	uc_devlist, COS, BPF, DEVFS mount, DEVFS node, vnodes, mount, pcb, soname, rman, bus, sysctl, ifstate, pfe_ipc, mkey, socket, rtable, ifmaddr, ipfw, rnode, iftable, temp, devbuf, atexit, proc-args, kld, MD disk
32	atkbddev, Gzip trees, dirrem, mkdir, diradd, freefile, freefrag, indirdep, bmsafemap, newblk, tseg_qent, COS, vnodes,

...

```

Memory statistics by type
      Type  InUse MemUse HighUse Limit Requests Limit Limit Size(s)
      isadev  12   1K   1K166400K   12    0    0   64
      atkbdddev  2   1K   1K166400K    2    0    0   32
      uc_devlist 24   3K   3K166400K   24    0    0  16,2K
....

Memory Totals:  In Use    Free    Requests
                  6091K   1554K   2897122

```

### show system virtual-memory sfc (TX Matrix Plus Router)

```

user@host> show system virtual-memory sfc 0
sfc0-re0:

```

```

-----
      Type  InUse MemUse HighUse Requests  Size(s)
CAM dev queue  1   1K      -      1   64
  entropy  1024  64K      -   1024   64
    linker  487 6272K      -   1163 16,32,64,4096,32768,131072
      USB   127  10K      -    127 16,32,64,128,256,1024,2048
    lockf   46   3K      -   98418 64
    USBdev   10   2K      -     34 16,128,2048,16384
ifstateSLLNode  0   0K      -   1096 16
  devbuf 21243 15683K      -   21810
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536,131072
    temp  1283  151K      -  2483472
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536,131072
  ip6ndp    0   0K      -      4   64
in6ifmulti   1   1K      -      1   64
in6grentry   1   1K      -      1   64
  iflogical  20   5K      -     29 2048
  iffamilly  45   6K      -     69 32,1024,2048
  rtnexthop 266  46K      -  608013 32,256,512,1024,2048,4096
    metrics  31   4K      -      54 256
    rnode   212   4K      -  607848 16,32
    rcache   4    8K      -      4 65536
    iflist   0   0K      -      6 16,64
  ifdevice  11   8K      -     17 16,32768
  ifstat   424  472K      -    427 512,16384,65536
    ipfw    42  23K      -     145
16,32,64,128,256,512,1024,16384,32768,65536,131072
  ifmaddr  415  11K      -     415 16,32
    rtable  329  28K      -  608066 16,32,64,128,1024,16384
    sysctl   0   0K      -  887976 16,32,64,4096,16384,32768
  ifaddr    64   5K      -      70 32,64,128
    mkey    331   6K      -   12528 16,128
  pfe_ipc    0   0K      -  7299115
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536,131072
  ifstate 1245054 70088K      -  3040437
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768
  idxbucket   1   1K      -      1 16
  itable16  5069 1250K      -   5103 1024,4096
  itable32   157  10K      -     157 64
  itable64    2   1K      -      2 128
    lr        1   1K      -      4 16384
    pic       37   6K      -     37 64,16384
  pfestat    0   0K      -   6220 32,64,128,256,131072
  gencfg   1486  424K      -    2614 16,32,64,256,512,16384,32768,65536

```



```

        jsr      2      1K      -      22  16
        idl      1      4K      -      165
32, 64, 128, 256, 512, 1024, 2048, 8192, 16384, 32768, 65536, 131072
        rtmsg    0      0K      -      16  131072
        module  250     16K      -      250  64, 128
        mtx_pool 1      8K      -      1   64, 128
        DEVFS3   113    13K      -      114  256
        DEVFS1   106    24K      -      106  2048
        pgrp     15     1K      -      8600  64
        session  11     2K      -      2829  512
        proc     2      1K      -      2   16384
        subproc  296    572K     -      24689 2048, 131072
        cred     38     5K      -      619244 256
        plimit   18     4K      -      21311 2048
        uidinfo  3      1K      -      10   32, 512
        sysctl0id 2701   82K     -      2701  16, 32, 64
        sysctltmp 0      0K      -      15572 16, 32, 64, 1024
        umtx     171    11K     -      171   64
        SWAP     2     277K     -      2     64
        bus      779    125K     -      3072  16, 32, 64, 128, 32768
        bus-sc   67     62K     -      1477
16, 32, 64, 512, 1024, 2048, 8192, 16384, 65536, 131072
        devstat  8     17K     -      8   16, 131072
        eventhandler 46    2K     -      47   32, 128
        kobj     93    186K     -      111  65536
        DEVFS     8     1K      -      9   16, 64
        rman     106    7K      -      490  16, 32, 64
        sbuf     0      0K      -      28234 16, 32, 32768, 131072

```

...

lcc0-re0:

```

-----
      Type InUse MemUse HighUse Requests Size(s)
CAM dev queue 1      1K      -      1   64
      entropy 1024    64K     -     1024  64
      linker  487    6272K    -     1163  16, 32, 64, 4096, 32768, 131072
      USB     127    10K     -      127  16, 32, 64, 128, 256, 1024, 2048
      lockf   23     2K      -     169585 64
      USBdev  10     2K      -      34   16, 128, 2048, 16384
      devbuf  5128   10760K    -      5310
16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072
      temp    1285    151K    -     10770
16, 32, 64, 128, 256, 512, 2048, 4096, 8192, 16384, 32768, 65536, 131072
      ip6ndp   0      0K      -      4   64
      iflogical 20     5K      -      29  2048
      iffamilly 45     6K      -      69  32, 1024, 2048
      rtnexthop 189    29K     -     1211988 32, 256, 512, 1024, 2048, 4096
      metrics  11     2K      -      16   256
      rnode    135    3K      -     606391 16, 32
      rcache   4      8K      -      4   65536
      iflist   0      0K      -      6   16, 64
      ifdevice 11     8K      -      17  16, 32768
      ifstat   412    471K     -      415  512, 16384, 65536
      ipfw     42     23K     -      91
16, 32, 64, 128, 256, 512, 1024, 16384, 32768, 65536, 131072
      ifmaddr  415    11K     -      415  16, 32
      rtable   225    20K     -     606584 16, 32, 64, 128, 1024, 16384
      sysctl   0      0K      -     2302479 16, 32, 64
      ifaddr   53     4K      -      69  32, 64, 128
      mkey     133    3K      -     8974  16, 128
      pfe_ipc  0      0K      -     19035108
16, 32, 64, 128, 512, 1024, 2048, 8192, 16384, 32768, 65536, 131072

```

ifstate	710270	42176K	-	9583703	
16,32,64,128,256,512,1024,2048,8192,16384,32768					
idxbucket	1	1K	-	1	16
itable16	5045	1245K	-	1825178	1024,4096
itable32	157	10K	-	157	64
itable64	2	1K	-	2	128
lrr	1	1K	-	4	16384
pic	37	6K	-	37	64,16384
pfestat	0	0K	-	1682	32,64,128,256,131072
gencfg	1486	424K	-	2812	16,32,64,256,512,16384,32768,65536
jsr	0	0K	-	22	16
idl	0	0K	-	4	32768,131072
rtmsg	0	0K	-	3	131072
module	250	16K	-	250	64,128
mtx_pool	1	8K	-	1	64,128
DEVFS3	108	12K	-	109	256
DEVFS1	101	23K	-	101	2048
pgrp	5	1K	-	917	64
session	5	1K	-	917	512
proc	2	1K	-	2	16384
subproc	217	441K	-	4867	2048,131072
cred	21	3K	-	48719	256
plimit	9	2K	-	5255	2048
uidinfo	2	1K	-	2	32,512
sysctluid	2786	85K	-	2786	16,32,64
sysctltmp	0	0K	-	1833	16,32,64,1024
umtx	126	8K	-	126	64
SWAP	2	277K	-	2	64
bus	780	125K	-	2734	16,32,64,128,32768
bus-sc	69	69K	-	1194	
16,32,64,512,1024,2048,8192,16384,65536,131072					
devstat	8	17K	-	8	16,131072
eventhandler	45	2K	-	46	32,128
kobj	93	186K	-	111	65536
DEVFS	8	1K	-	9	16,64
rman	94	6K	-	477	16,32,64
sbuf	0	0K	-	532	16,32,32768,131072
NULLFS hash	1	1K	-	1	64
taskqueue	5	1K	-	5	64
turnstiles	127	8K	-	127	64
Unitno	6	1K	-	44	16,64
ioctlops	0	0K	-	1771718	16,32,64,128,8192,16384,65536,131072
iov	0	0K	-	79425	16,64,128,256,512,1024,2048,131072
msg	4	25K	-	4	32768,131072
sem	4	7K	-	4	16384,32768,131072
shm	2	13K	-	4	32768
ttys	93	16K	-	195	512,32768
soname	31	3K	-	389284	16,32,64,256
pcb	101	16K	-	4374	
16,32,64,128,1024,2048,4096,16384,65536					
BIO buffer	40	80K	-	750	65536
vfscache	1	512K	-	1	65536
cluster_save buffer	0	OK	-	55	32,64
VFS hash	1	256K	-	1	32,64
vnodes	1	1K	-	1	512
mount	266	21K	-	481	16,32,64,128,256,4096,32768
vnodemarker	0	0K	-	2497	16384
pfs_nodes	25	3K	-	25	128
pfs_vncache	144	5K	-	386	32
STP	1	1K	-	1	64

```

        GEOM      173      15K      -      1068
16,32,64,128,256,512,2048,16384,32768,131072
        syncache   1       8K      -       1
16,32,64,128,256,512,2048,16384,32768,131072
        tlv_stat    0       0K      -      223
16,32,64,128,256,512,2048,16384,32768,131072
        NFS daemon  1       8K      -       1
16,32,64,128,256,512,2048,16384,32768,131072
        p1003.1b    1       1K      -       1  16
        MD disk     9      18K      -       9 65536
        ata_generic  2       2K      -      25 16,16384,32768
        ISOFS mount  7       1K      -      13  512
        ISOFS node 1439    135K     -    1453 128
        CAM SIM      1       1K      -       1  64
        CAM XPT      6       1K      -       9 16,64,16384
        CAM periph   1       1K      -       1 128
        ad_driver    2       1K      -       2 256
        pagedep      1      64K      -     105  64
        inodedep     1     256K     -     552 256
        newblk       1       1K      -     327 64,4096
        bmsafemap    0       0K      -      19  64
        allocdirect  0       0K      -     326 128
        freefrag     0       0K      -      31  32
        freeblks     0       0K      -     103 2048
        freefile     0       0K      -     175  32
        diradd       0       0K      -     590  64
        mkdir        0       0K      -     166  32
        dirrem       0       0K      -     382  32
        savedino     0       0K      -     283 512
        UFS mount    15     36K      -      15 2048,65536,131072
        ata_dma      6       1K      -       6 256
        UMAHash      1       4K      -       5 4096,16384,32768,65536,131072
        cdev         26      3K      -      26 256
        file desc    111    25K      -    5199 16,1024,2048,16384
        VM pgdata    2     65K      -       2  64
        sigio        1       1K      -      27  32
        kenv         30      5K      -      33 16,32,64,131072
        atkbddev     2       1K      -       2  32
        kqueue       0       0K      -      88 1024,4096,32768
        proc-args    28      2K      -    3970 32,64,128,256,512,1024
        isadev       23      2K      -      23  64
        zombie       1       1K      -    4651 128
        ithread      92      7K      -      92 16,64,256
        legacydrv     3       1K      -       3  16
        memdesc      1       4K      -       1 131072
        nexusdev     2       1K      -       2  16
        CAM queue    3       1K      -       3  16
        KTRACE       100    10K      -     100 128
        kbdmux       5       9K      -       5 128,2048,65536,131072
ITEM      SIZE      LIMIT      USED      FREE  REQUESTS
UMA Kegs: 136,      0,      71,      1,      71
...
```

### show system virtual-memory | display xml

```

user@host> show system virtual-memory | display xml
<rpc-reply xmlns:junos="http://xml.device1.example.com/junos/10.2R1/junos">
  <system-virtual-memory-information>
    <vmstat-memstat-malloc>
      <memstat-name>CAM dev queue</memstat-name>
      <inuse>1</inuse>
    
```

```
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>entropy</memstat-name>
<inuse>1024</inuse>
<memuse>64</memuse>
<high-use>--</high-use>
<memstat-req>1024</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>linker</memstat-name>
<inuse>481</inuse>
<memuse>1871</memuse>
<high-use>--</high-use>
<memstat-req>1145</memstat-req>
<memstat-size>16,32,64,4096,32768,131072</memstat-size>
<memstat-name>lockf</memstat-name>
<inuse>56</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>5998</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>devbuf</memstat-name>
<inuse>2094</inuse>
<memuse>3877</memuse>
<high-use>--</high-use>
<memstat-req>2099</memstat-req>

<memstat-size>16,32,64,128,512,1024,4096,8192,16384,32768,65536,131072</memstat-size>

<memstat-name>temp</memstat-name>
<inuse>21</inuse>
<memuse>66</memuse>
<high-use>--</high-use>
<memstat-req>3127</memstat-req>

<memstat-size>16,32,64,128,256,512,2048,4096,8192,16384,32768,65536,131072</memstat-size>

<memstat-name>ip6ndp</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>in6ifmulti</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>in6grentry</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>iflogical</memstat-name>
<inuse>13</inuse>
<memuse>3</memuse>
<high-use>--</high-use>
<memstat-req>13</memstat-req>
```

```

<memstat-size>64,2048</memstat-size>
<memstat-name>iffamily</memstat-name>
<inuse>28</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>28</memstat-req>
<memstat-size>32,1024,2048</memstat-size>
<memstat-name>rtnexthop</memstat-name>
<inuse>127</inuse>
<memuse>18</memuse>
<high-use>--</high-use>
<memstat-req>129</memstat-req>
<memstat-size>32,256,512,1024,2048,4096</memstat-size>
<memstat-name>metrics</memstat-name>
<inuse>3</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>5</memstat-req>
<memstat-size>256</memstat-size>
<memstat-name>inifmulti</memstat-name>
<inuse>3</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>3</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>ingrentry</memstat-name>
<inuse>6</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>6</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>rnode</memstat-name>
<inuse>68</inuse>
<memuse>2</memuse>
<high-use>--</high-use>
<memstat-req>76</memstat-req>
<memstat-size>16,32</memstat-size>
<memstat-name>rcache</memstat-name>
<inuse>4</inuse>
<memuse>8</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>65536</memstat-size>
<memstat-name>ifdevice</memstat-name>
<inuse>4</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>16</memstat-size>
<memstat-name>ifstat</memstat-name>
<inuse>40</inuse>
<memuse>22</memuse>
<high-use>--</high-use>
<memstat-req>40</memstat-req>
<memstat-size>512,16384,32768</memstat-size>
<memstat-name>ipfw</memstat-name>
<inuse>42</inuse>
<memuse>23</memuse>
<high-use>--</high-use>
<memstat-req>91</memstat-req>

```

```
<memstat-size>16,32,64,128,256,512,1024,16384,32768,65536,131072</memstat-size>
  <memstat-name>ifmaddr</memstat-name>
  <inuse>103</inuse>
  <memuse>3</memuse>
  <high-use>--</high-use>
  <memstat-req>103</memstat-req>
  <memstat-size>16,32</memstat-size>
  <memstat-name>rtable</memstat-name>
  <inuse>129</inuse>
  <memuse>14</memuse>
  <high-use>--</high-use>
  <memstat-req>139</memstat-req>
  <memstat-size>16,32,64,128,1024,16384</memstat-size>
  <memstat-name>sysctl</memstat-name>
  <inuse>0</inuse>
  <memuse>0</memuse>
  <high-use>--</high-use>
  <memstat-req>14847</memstat-req>
  <memstat-size>16,32,64,4096,16384,32768</memstat-size>
  <memstat-name>ifaddr</memstat-name>
  <inuse>29</inuse>
  <memuse>3</memuse>
  <high-use>--</high-use>
  <memstat-req>29</memstat-req>
  <memstat-size>64,128</memstat-size>
  <memstat-name>mkey</memstat-name>
  <inuse>345</inuse>
  <memuse>6</memuse>
  <high-use>--</high-use>
  <memstat-req>2527</memstat-req>
  <memstat-size>16,128</memstat-size>
  <memstat-name>pfe_ipc</memstat-name>
  <inuse>0</inuse>
  <memuse>0</memuse>
  <high-use>--</high-use>
  <memstat-req>1422</memstat-req>

<memstat-size>16,32,64,128,512,1024,2048,8192,16384,32768,65536,131072</memstat-size>

  <memstat-name>ifstate</memstat-name>
  <inuse>594</inuse>
  <memuse>51</memuse>
  <high-use>--</high-use>
  <memstat-req>655</memstat-req>

<memstat-size>16,32,64,128,256,1024,2048,4096,16384,32768</memstat-size>
  <memstat-name>itable16</memstat-name>
  <inuse>276</inuse>
  <memuse>52</memuse>
  <high-use>--</high-use>
  <memstat-req>294</memstat-req>
  <memstat-size>1024,4096</memstat-size>
  <memstat-name>itable32</memstat-name>
  <inuse>160</inuse>
  <memuse>10</memuse>
  <high-use>--</high-use>
  <memstat-req>160</memstat-req>
  <memstat-size>64</memstat-size>
  <memstat-name>itable64</memstat-name>
  <inuse>2</inuse>
  <memuse>1</memuse>
```

```

<high-use>--</high-use>
<memstat-req>2</memstat-req>
<memstat-size>128</memstat-size>
<memstat-name>lr</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>16384</memstat-size>
<memstat-name>pic</memstat-name>
<inuse>5</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>5</memstat-req>
<memstat-size>64,512</memstat-size>
<memstat-name>pfestat</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>162</memstat-req>
<memstat-size>16,32,128,256,16384</memstat-size>
<memstat-name>gencfg</memstat-name>
<inuse>224</inuse>
<memuse>56</memuse>
<high-use>--</high-use>
<memstat-req>540</memstat-req>
<memstat-size>16,32,64,256,512,32768,65536</memstat-size>
<memstat-name>jsr</memstat-name>
<inuse>2</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
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```



```

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    <memstat-name>KTRACE</memstat-name>
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    <memuse>10</memuse>
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    <memstat-size>128</memstat-size>
    <memstat-name>kbdmux</memstat-name>
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    <memuse>9</memuse>
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    <memstat-size>128,2048,65536,131072</memstat-size>
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  <free>41</free>
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  <zone-name>UMA RCntSlabs:</zone-name>
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  <zone-name>16 Bucket:</zone-name>
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  <count-limit>0</count-limit>
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  <free>20</free>
  <zone-req>30</zone-req>
  <zone-name>32 Bucket:</zone-name>
  <zone-size>140</zone-size>
  <count-limit>0</count-limit>
  <used>33</used>
  <free>23</free>

```

```
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```

```

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<zone-name>1024:</zone-name>

```

```
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<zone-name>4096:</zone-name>
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<count-limit>0</count-limit>
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<free>7</free>
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<zone-name>Files:</zone-name>
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<used>127</used>
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<free>0</free>
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```

```

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<zone-name>mbuf:</zone-name>
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```

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<zone-name>VNODE:</zone-name>
<zone-size>292</zone-size>
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<zone-name>VNODEPOLL:</zone-name>
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<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>S VFS Cache:</zone-name>
<zone-size>68</zone-size>
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<zone-size>1024</zone-size>
<count-limit>0</count-limit>
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```

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<zone-name>socket:</zone-name>
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<zone-name>unpcb:</zone-name>
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<count-limit>25200</count-limit>
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<zone-req>2157</zone-req>
<zone-name>ipq:</zone-name>
<zone-size>52</zone-size>
<count-limit>216</count-limit>
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<free>0</free>
<zone-req>0</zone-req>
<zone-name>udpcb:</zone-name>
<zone-size>232</zone-size>
<count-limit>25194</count-limit>
<used>19</used>
<free>32</free>
<zone-req>31</zone-req>
<zone-name>inpcb:</zone-name>
<zone-size>232</zone-size>
<count-limit>25194</count-limit>
<used>40</used>
<free>28</free>
<zone-req>105</zone-req>
<zone-name>tcpb:</zone-name>
<zone-size>520</zone-size>
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<zone-name>tcptw:</zone-name>
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<free>0</free>
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<zone-name>syncache:</zone-name>
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<zone-name>tcpreass:</zone-name>
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<used>0</used>
<free>0</free>
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<zone-name>sackhole:</zone-name>
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<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
```

```

    <zone-req>0</zone-req>
    <zone-name>ripcb:</zone-name>
    <zone-size>232</zone-size>
    <count-limit>25194</count-limit>
    <used>5</used>
    <free>29</free>
    <zone-req>5</zone-req>
    <zone-name>SWAPMETA:</zone-name>
    <zone-size>276</zone-size>
    <count-limit>94948</count-limit>
    <used>0</used>
    <free>0</free>
    <zone-req>0</zone-req>
    <zone-name>FFS inode:</zone-name>
    <zone-size>132</zone-size>
    <count-limit>0</count-limit>
    <used>1146</used>
    <free>72</free>
    <zone-req>1306</zone-req>
    <zone-name>FFS1 dinode:</zone-name>
    <zone-size>128</zone-size>
    <count-limit>0</count-limit>
    <used>1146</used>
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    <zone-name>FFS2 dinode:</zone-name>
    <zone-size>256</zone-size>
    <count-limit>0</count-limit>
    <used>0</used>
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</vmstat-memstat-zone>
<vmstat-sumstat>
    <cpu-context-switch>934906</cpu-context-switch>
    <dev-intr>1707986</dev-intr>
    <soft-intr>33819</soft-intr>
    <traps>203604</traps>
    <sys-calls>1200636</sys-calls>
    <kernel-thrds>60</kernel-thrds>
    <fork-calls>1313</fork-calls>
    <vfork-calls>21</vfork-calls>
    <rfork-calls>0</rfork-calls>
    <swap-pageins>0</swap-pageins>
    <swap-pagedin>0</swap-pagedin>
    <swap-pageouts>0</swap-pageouts>
    <swap-pagedout>0</swap-pagedout>
    <vnode-pageins>23094</vnode-pageins>
    <vnode-pagedin>23119</vnode-pagedin>
    <vnode-pageouts>226</vnode-pageouts>
    <vnode-pagedout>3143</vnode-pagedout>
    <page-daemon-wakeup>0</page-daemon-wakeup>
    <page-daemon-examined-pages>0</page-daemon-examined-pages>
    <pages-reactivated>8821</pages-reactivated>
    <copy-on-write-faults>48364</copy-on-write-faults>
    <copy-on-write-optimized-faults>31</copy-on-write-optimized-faults>
    <zero-fill-pages-zeroed>74665</zero-fill-pages-zeroed>
    <zero-fill-pages-prezeroed>70061</zero-fill-pages-prezeroed>
    <transit-blocking-page-faults>85</transit-blocking-page-faults>
    <total-vm-faults>191824</total-vm-faults>

<pages-affected-by-kernel-thrd-creat>0</pages-affected-by-kernel-thrd-creat>

```



```

    <pages-affected-by-fork>95343</pages-affected-by-fork>
    <pages-affected-by-vfork>3526</pages-affected-by-vfork>
    <pages-affected-by-rfork>0</pages-affected-by-rfork>
    <pages-freed>221502</pages-freed>
    <pages-freed-by-daemon>0</pages-freed-by-daemon>
    <pages-freed-by-exiting-proc>75630</pages-freed-by-exiting-proc>
    <pages-active>45826</pages-active>
    <pages-inactive>13227</pages-inactive>
    <pages-in-vm-cache>49278</pages-in-vm-cache>
    <pages-wired-down>10640</pages-wired-down>
    <pages-free>70706</pages-free>
    <bytes-per-page>4096</bytes-per-page>
    <swap-pages-used>0</swap-pages-used>
    <peak-swap-pages-used>0</peak-swap-pages-used>
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    <positive-cache-hits>92</positive-cache-hits>
    <negative-cache-hits>5</negative-cache-hits>
    <pass2>0</pass2>
    <cache-deletions>0</cache-deletions>
    <cache-falsehits>0</cache-falsehits>
    <toolong>0</toolong>
</vmstat-sumstat>
<vmstat-intr>
    <intr-name>irq0: clk          </intr-name>
    <intr-cnt>1243455</intr-cnt>
    <intr-rate>999</intr-rate>
    <intr-name>irq4: sio0        </intr-name>
    <intr-cnt>1140</intr-cnt>
    <intr-rate>0</intr-rate>
    <intr-name>irq8: rtc         </intr-name>
    <intr-cnt>159164</intr-cnt>
    <intr-rate>127</intr-rate>
    <intr-name>irq9: cbb1 fxp0   </intr-name>
    <intr-cnt>28490</intr-cnt>
    <intr-rate>22</intr-rate>
    <intr-name>irq10: fxp1       </intr-name>
    <intr-cnt>20593</intr-cnt>
    <intr-rate>16</intr-rate>
    <intr-name>irq14: ata0       </intr-name>
    <intr-cnt>5031</intr-cnt>
    <intr-rate>4</intr-rate>
    <intr-name>Total</intr-name>
    <intr-cnt>1457873</intr-cnt>
    <intr-rate>1171</intr-rate>
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<vm-kernel-state>
    <vm-kmem-map-free>248524800</vm-kmem-map-free>
</vm-kernel-state>
<kernel-direct-mm-size-information>
    <vm-directmm-size-used>4644</vm-directmm-size-used>
    <vm-directmm-size-max>4057334</vm-directmm-size-max>
</kernel-direct-mm-size-information>
</system-virtual-memory-information>
<cli>
    <banner></banner>
</cli>
</rpc-reply>

```

Note: <kernel-direct-mm-size-information> only displays for 64 bit platform.

**show system virtual-memory (QFX Series)**

```

user@switch> show system virtual-memory | display xml
<rpc-reply xmlns:junos="http://device1.example.com/junos/11.1R1/junos">
  <system-virtual-memory-information>
    <vmstat-memstat-malloc>
      <memstat-name>CAM dev queue</memstat-name>
      <inuse>1</inuse>
      <memuse>1</memuse>
      <high-use>-</high-use>
      <memstat-req>1</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>entropy</memstat-name>
      <inuse>1024</inuse>
      <memuse>64</memuse>
      <high-use>-</high-use>
      <memstat-req>1024</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>linker</memstat-name>
      <inuse>481</inuse>
      <memuse>1871</memuse>
      <high-use>-</high-use>
      <memstat-req>1145</memstat-req>
      <memstat-size>16, 32, 64, 4096, 32768, 131072</memstat-size>
      <memstat-name>lockf</memstat-name>
      <inuse>56</inuse>
      <memuse>4</memuse>
      <high-use>-</high-use>
      <memstat-req>5998</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>devbuf</memstat-name>
      <inuse>2094</inuse>
      <memuse>3877</memuse>
      <high-use>-</high-use>
      <memstat-req>2099</memstat-req>

      <memstat-size>16, 32, 64, 128, 512, 1024, 4096, 8192, 16384, 32768, 65536, 131072</memstat-size>

      <memstat-name>temp</memstat-name>
      <inuse>21</inuse>
      <memuse>66</memuse>
      <high-use>-</high-use>
      <memstat-req>3127</memstat-req>

      <memstat-size>16, 32, 64, 128, 256, 512, 2048, 4096, 8192, 16384, 32768, 65536, 131072</memstat-size>

      <memstat-name>ip6ndp</memstat-name>
      <inuse>0</inuse>
      <memuse>0</memuse>
      <high-use>-</high-use>
      <memstat-req>4</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>in6ifmulti</memstat-name>
      <inuse>1</inuse>
      <memuse>1</memuse>
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```

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  <dev-intr>1707986</dev-intr>
  <soft-intr>33819</soft-intr>
  <traps>203604</traps>
  <sys-calls>1200636</sys-calls>
  <kernel-thrds>60</kernel-thrds>
  <fork-calls>1313</fork-calls>
  <vfork-calls>21</vfork-calls>
  <rfork-calls>0</rfork-calls>
  <swap-pageins>0</swap-pageins>
  <swap-pagedin>0</swap-pagedin>
  <swap-pageouts>0</swap-pageouts>
  <swap-pagedout>0</swap-pagedout>
  <vnode-pageins>23094</vnode-pageins>
  <vnode-pagedin>23119</vnode-pagedin>
  <vnode-pageouts>226</vnode-pageouts>
  <vnode-pagedout>3143</vnode-pagedout>
  <page-daemon-wakeup>0</page-daemon-wakeup>
  <page-daemon-examined-pages>0</page-daemon-examined-pages>
  <pages-reactivated>8821</pages-reactivated>

```

```

<copy-on-write-faults>48364</copy-on-write-faults>
<copy-on-write-optimized-faults>31</copy-on-write-optimized-faults>
<zero-fill-pages-zeroed>74665</zero-fill-pages-zeroed>
<zero-fill-pages-prezeroed>70061</zero-fill-pages-prezeroed>
<transit-blocking-page-faults>85</transit-blocking-page-faults>
<total-vm-faults>191824</total-vm-faults>

<pages-affected-by-kernel-thrd-creat>0</pages-affected-by-kernel-thrd-creat>
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<pages-affected-by-vfork>3526</pages-affected-by-vfork>
<pages-affected-by-rfork>0</pages-affected-by-rfork>
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<pages-freed-by-daemon>0</pages-freed-by-daemon>
<pages-freed-by-exiting-proc>75630</pages-freed-by-exiting-proc>
<pages-active>45826</pages-active>
<pages-inactive>13227</pages-inactive>
<pages-in-vm-cache>49278</pages-in-vm-cache>
<pages-wired-down>10640</pages-wired-down>
<pages-free>70706</pages-free>
<bytes-per-page>4096</bytes-per-page>
<swap-pages-used>0</swap-pages-used>
<peak-swap-pages-used>0</peak-swap-pages-used>
<total-name-lookups>214496</total-name-lookups>
<positive-cache-hits>92</positive-cache-hits>
<negative-cache-hits>5</negative-cache-hits>
<pass2>0</pass2>
<cache-deletions>0</cache-deletions>
<cache-falsehits>0</cache-falsehits>
<toolong>0</toolong>
</vmstat-sumstat>
<vmstat-intr>
  <intr-name>irq0: clk      </intr-name>
  <intr-cnt>1243455</intr-cnt>
  <intr-rate>999</intr-rate>
  <intr-name>irq4: sio0     </intr-name>
  <intr-cnt>1140</intr-cnt>
  <intr-rate>0</intr-rate>
  <intr-name>irq8: rtc      </intr-name>
  <intr-cnt>159164</intr-cnt>
  <intr-rate>127</intr-rate>
  <intr-name>irq9: cbb1 fxp0 </intr-name>
  <intr-cnt>28490</intr-cnt>
  <intr-rate>22</intr-rate>
  <intr-name>irq10: fxp1    </intr-name>
  <intr-cnt>20593</intr-cnt>
  <intr-rate>16</intr-rate>
  <intr-name>irq14: ata0    </intr-name>
  <intr-cnt>5031</intr-cnt>
  <intr-rate>4</intr-rate>
  <intr-name>Total</intr-name>
  <intr-cnt>1457873</intr-cnt>
  <intr-rate>1171</intr-rate>
</vmstat-intr>
<vm-kernel-state>
  <vm-kmem-map-free>248524800</vm-kmem-map-free>
</vm-kernel-state>
</system-virtual-memory-information>
<cli>
  <banner></banner>
</cli>
</rpc-reply>

```

```

regress@hager> show system virtual-memory
      Type InUse MemUse HighUse Requests Size(s)
      mtx_pool 1 8K - 1 (F4p)
      DEVFS 63 2K - 64 16,128
      subproc 282 559K - 2131 32768,8388608
      proc 2 1K - 2 262144
      session 6 1K - 19 2048
      pgrp 9 1K - 25 128
      cred 35 5K - 38288 1024
      uidinfo 4 1K - 10 32,128
      plimit 31 8K - 189 32768
      sysctltmp 0 0K - 981 16,32,64,32768
      sysctlold 862 23K - 862 16,32,64
      umtx 189 9K - 189 64
      ifa_list 14 1K - 14 16
vpls_lc_instance 1 2K - 1 4194304
      ifl_tlv_info 1 1K - 1 16
      mesh-group 4 1K - 4 256
      rtmsg 0 0K - 1021 8388608
      idl 1 20K - 186 32,64,512,4096,65536,8388608
      gencfg 569 2777K - 626
16,32,64,128,256,512,1024,2048,4096,8192,1048576,2097152,4194304
      pfestat 123 34K - 626 16,32,4096,16384,4194304,8388608
      pic 4 2K - 4 32,64,256,2097152
      ifservice 1 1K - 1 32
      lr 1 1K - 1 1048576
      itable64 1 1K - 1 2048
      itable32 189 12K - 189 128
      itable16 372 72K - 378 4096,262144
      ifstate 3072 113K - 3506
16,64,128,256,512,1024,2048,4096,8192,32768,1048576,2097152,4194304
      pfe_ipc 0 0K - 1766
16,32,64,128,256,512,1024,4096,8192,16384,32768,524288,1048576,2097152,4194304,8388608

      mkey 568 9K - 7615 16,256
      socket 2 1K - 2 16
      ifaddr 27 2K - 27 128
      sysctl 23 6K - 43074 16,32,64,128,262144,1048576,2097152

      rtable 115 17K - 117 16,32,256,512,4096,8192,1048576
      ifmaddr 40 2K - 40 16,32
      ipfw 48 25K - 103
16,32,64,256,1024,4096,16384,32768,262144,524288,1048576,2097152,4194304,8388608

      rtdata 1 1K - 1 32
      ifstat 109 158K - 156
32,512,2048,16384,32768,1048576,8388608
      ifdevice 5 3K - 5 16,2097152
      rcache 4 8K - 4 4194304
      rnode 56 2K - 58 16,32
      metrics 3 1K - 4 1024
      rtnexthop 126 17K - 126 16,32,2048,4096,8192,16384,32768,65536

      iffamily 31 4K - 31 16,32,2048,4096
      iflogical 18 5K - 18 16,128,65536,1048576
      NULLFS node 14 1K - 3102 16
      NULLFS hash 1 1K - 1 128
      bus-sc 19 8K - 82
16,64,128,1024,2048,4096,8192,16384,262144,524288,1048576,2097152,4194304,8388608

```



bus	256	35K	-	425	16, 32, 64, 128, 512, 2097152
devstat	10	21K	-	10	16, 8388608
eventhandler	72	4K	-	72	32, 256, 512
NULLFS mount	6	1K	-	6	16
kobj	72	144K	-	78	4194304
pfs_nodes	25	2K	-	25	256
pfs_vncache	41	2K	-	81	32
rman	38	3K	-	43	16, 32, 256
CAM dev queue	2	1K	-	2	128
sbuf	0	0K	-	427	16, 32, 128, 2048, 2097152
GEOM	142	15K	-	725	
16, 32, 128, 256, 512, 1024, 2048, 16384, 1048576, 2097152					
ISOFS node	4780	449K	-	4780	512
taskqueue	9	1K	-	9	16, 256
turnstiles	190	12K	-	190	128
Unitno	6	1K	-	8	16, 64
iov	0	0K	-	72731	16, 32, 64, 128, 256, 512, 1024, 2048
ioctlops	0	0K	-	12180	
16, 64, 65536, 524288, 1048576, 2097152, 4194304, 8388608					
msg	4	25K	-	4	2097152, 8388608
sem	4	7K	-	4	1048576, 2097152, 8388608
shm	13	76K	-	17	8388608
ttys	157	22K	-	892	2048, 2097152
ptys	1	1K	-	1	512
mbuf_tag	6	1K	-	7293	32, 128
pcb	483	111K	-	2577	
16, 32, 64, 128, 256, 8192, 16384, 65536, 262144, 1048576, 2097152, 4194304, 8388608					
soname	164	18K	-	22803	16, 32, 64, 128, 1024
BIO buffer	102	204K	-	1066	4194304
vfscache	1	512K	-	1	4194304
cluster_save buffer	0	0K	-	40	32, 64
VFS hash	1	256K	-	1	32, 64
vnodes	1	1K	-	1	2048
vnodemarker	0	0K	-	729	524288
mount	226	25K	-	337	16, 32, 64, 512, 1024, 262144, 2097152
ISOFS mount	1	1K	-	1	2048
ifl_idx_mgr	1	1K	-	1	128
CAM queue	7	1K	-	25	16
MD sectors	32	128K	-	32	8388608
MD disk	36	9K	-	36	16, 4194304
CAM SIM	2	1K	-	2	64
CAM periph	3	1K	-	4	256
jlist	1	1K	-	1	64
STP	31	7K	-	31	16, 1024, 2048, 1048576
cdev	26	4K	-	26	1024
synccache	1	8K	-	1	1024
CAM XPT	15	3K	-	46	16, 64, 262144, 1048576, 2097152
tlv_stat	0	0K	-	87	16, 64, 262144, 1048576, 2097152
Aggregator	2	1K	-	2	256
sigio	2	1K	-	3	32
Bridge Domain	4	2K	-	4	16, 1048576
p1003.1b	1	1K	-	1	16
filedesc	176	39K	-	2234	16, 4096, 16384, 1048576, 2097152
kenv	50	6K	-	58	16, 32, 64, 128, 512, 8388608
kqueue	27	13K	-	59	32, 4096, 262144, 2097152
proc-args	69	3K	-	1472	
16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192					
zombie	1	1K	-	1850	256
entropy	1024	48K	-	1024	64
ithread	45	3K	-	45	16, 64, 2048
UART	3	2K	-	3	128, 1048576, 2097152

KTRACE	101	8K	-	101	256
USBdev	4	1K	-	11	16,512,1048576
newblk	1	1K	-	1	262144
inodedep	1	256K	-	1	262144
pagedep	1	64K	-	1	262144
UFS mount	18	38K	-	30	65536,4194304,8388608
linker	212	240K	-	325	
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536,262144,524288,1048576,2097152,4194304,8388608					
UMAHash	2	17K	-	10	262144,1048576,2097152,4194304,8388608
lockf	89	6K	-	19507	128
USB	134	10K	-	25616	16,32,64,128,1024,8192,262144,4194304
VM pgdata	1	256K	-	1	16,32,64,128,1024,8192,262144,4194304
temp	4384	656K	-	9085	
16,32,64,256,512,1024,2048,4096,65536,262144,1048576,2097152,4194304,8388608					
devbuf	290	1556K	-	415	
16,32,64,128,256,1024,2048,4096,8192,1048576,2097152,4194304,8388608					
cache	2	1K	-	2	16384
DEVFS1	79	18K	-	80	32768
DEVFS3	326	39K	-	327	1024
DEVFS2	79	2K	-	228	16
module	186	12K	-	186	64,128
gresstatevarlog	1	96K	-	1	64,128
DEVFS_RULE	5	1K	-	5	32,262144
KATS	0	0K	-	11	16,32,64,256
crypto	1	1K	-	1	1048576
Export Host	2	2K	-	2	2097152
inpcbpolicy	118	2K	-	790	16
ipsecpolicy	236	37K	-	1580	4096
ITEM	SIZE	LIMIT	USED	FREE	REQUESTS
UMA Kegs:	136,	0,	80,	16,	80
UMA Zones:	392,	0,	80,	1,	80
UMA Slabs:	64,	0,	3588,	129,	5170
UMA RCntSlabs:	104,	0,	147,	1,	147
UMA Hash:	128,	0,	5,	25,	7
16 Bucket:	76,	0,	37,	13,	53
32 Bucket:	140,	0,	31,	25,	53
64 Bucket:	268,	0,	37,	5,	82
128 Bucket:	524,	0,	98,	0,	649
VM OBJECT:	136,	0,	8074,	394,	42585
MAP:	168,	0,	8,	15,	8
KMAP ENTRY:	72,	35828,	31,	181,	9422
MAP ENTRY:	72,	0,	5354,	900,	121777
PV ENTRY:	28,	700278,	148072,	12075,	1346404
DP fakepg:	88,	0,	1,	87,	1
mt_zone:	768,	0,	261,	119,	261
16:	16,	0,	4817,	258,	61005
32:	32,	0,	700,	91,	45307
48:	48,	0,	1752,	120,	73638
64:	64,	0,	830,	114,	27311
80:	80,	0,	458,	70,	3204
96:	96,	0,	9523,	37,	9655
120:	120,	0,	694,	74,	56623
128:	128,	0,	337,	113,	1230
160:	160,	0,	512,	16,	2000
176:	176,	0,	123,	9,	178
208:	208,	0,	351,	29,	2390
232:	232,	0,	270,	19,	466

240:	240,	0,	22,	26,	1478
248:	248,	0,	0,	0,	0
256:	256,	0,	210,	15,	253
296:	296,	0,	8,	18,	753
512:	512,	0,	113,	7,	564
1024:	1024,	0,	146,	10,	974
2048:	2048,	0,	239,	577,	5805
4096:	4096,	0,	367,	7,	4011
Files:	80,	0,	1030,	74,	47744
MAC labels:	20,	0,	8479,	140,	67133
PROC:	632,	0,	130,	20,	1979
THREAD:	524,	0,	175,	14,	175
KSEGRP:	100,	0,	175,	35,	175
UPCALL:	44,	0,	0,	0,	0
SLEEPQUEUE:	32,	0,	190,	149,	190
VMSPACE:	328,	0,	68,	28,	1917
mbuf_packet:	256,	88200,	0,	128,	9045
mbuf:	256,	88200,	57,	595,	187328
mbuf_cluster:	2048,	22048,	132,	162,	7694
mbuf_jumbo_pagesize:	4096,	0,	0,	0,	0
mbuf_jumbo_9k:	9216,	0,	0,	0,	0
mbuf_jumbo_16k:	16384,	0,	0,	0,	0
g_bio:	144,	0,	0,	297,	87407
ata_request:	224,	0,	0,	0,	0
ata_composite:	192,	0,	0,	0,	0
GENCFG:	72,	1000004,	249,	69,	266
VNODE:	272,	0,	6149,	11,	9449
VNODEPOLL:	72,	0,	0,	0,	0
NAMEI:	1024,	0,	0,	36,	125321
S VFS Cache:	68,	0,	6099,	61,	7466
L VFS Cache:	291,	0,	224,	23,	228
NFSMOUNT:	488,	0,	0,	0,	0
NFSNODE:	472,	0,	0,	0,	0
PIPE:	404,	0,	69,	12,	1198
KNOTE:	72,	0,	106,	53,	18201
socket:	376,	22050,	566,	14,	7613
unpcb:	144,	22059,	258,	39,	5877
ipq:	52,	216,	0,	0,	0
udp_inpcb:	272,	22050,	21,	21,	43
tcp_inpcb:	272,	22050,	91,	7,	743
tcpcb:	704,	22050,	91,	14,	743
sackhole:	20,	0,	0,	0,	0
tcptw:	60,	4410,	0,	0,	0
syncache:	128,	15360,	0,	60,	25
tcp_reass:	20,	1521,	0,	0,	0
ripcb:	272,	22050,	8,	20,	8
SWAPMETA:	280,	322518,	0,	0,	0
FFS inode:	144,	0,	1222,	20,	1387
FFS1 dinode:	128,	0,	1222,	8,	1387
FFS2 dinode:	256,	0,	0,	0,	0
md0:	512,	0,	20183,	17,	20183
cryptop:	64,	0,	0,	0,	0
cryptodesc:	56,	0,	0,	0,	0
md3:	512,	0,	18,	6,	18

7497039 cpu context switches  
 5325569 device interrupts  
 4299293 software interrupts  
 0 traps  
 7483223 system calls  
 63 kernel threads created  
 1896 fork() calls

```
20 vfork() calls
0 rfork() calls
0 swap pager pageins
0 swap pager pages paged in
0 swap pager pageouts
0 swap pager pages paged out
27971 vnode pager pageins
30458 vnode pager pages paged in
551 vnode pager pageouts
5527 vnode pager pages paged out
0 page daemon wakeups
0 pages examined by the page daemon
25370 pages reactivated
173201 copy-on-write faults
36 copy-on-write optimized faults
135659 zero fill pages zeroed
127984 zero fill pages prezeroed
224 intransit blocking page faults
462029 total VM faults taken
0 pages affected by kernel thread creation
780640 pages affected by fork()
4850 pages affected by vfork()
0 pages affected by rfork()
401993 pages freed
0 pages freed by daemon
201585 pages freed by exiting process
71208 pages active
35957 pages inactive
100195 pages in VM cache
399107 pages wired down
411743 pages free
4096 bytes per page
0 swap pages used
0 peak swap pages used
310371 total name lookups
    cache hits (86% pos + 10% neg) system 0% per-directory
    deletions 0%, falsehits 0%, toolong 0%
interrupt                total    rate
clock                    3651206    3990
uart                     67064      73
IPI                      819301     895
Totalodesc:              4537571    4959
vm.kmem_map_free: 391446528
```

## show version invoke-on

<b>List of Syntax</b>	<a href="#">Syntax on page 1659</a> <a href="#">Syntax (MX Series Router) on page 1659</a>
<b>Syntax</b>	show version invoke-on (all-routing-engines   other-routing-engine)
<b>Syntax (MX Series Router)</b>	show version invoke-on (all-routing-engines   other-routing-engine) <all-members> <local> <member <i>member-id</i> >
<b>Release Information</b>	Command introduced before JUNOS Release 7.4.
<b>Description</b>	Display the hostname and version information about the software running on a router with two Routing Engines.
<b>Options</b>	<p><b>all-routing-engines</b>—Display the hostnames and version information about the software running on all master and backup Routing Engines on a routing matrix based on the TX Matrix or TX Matrix Plus router or on a router that has dual Routing Engines.</p> <p><b>other-routing-engine</b>—Display the hostnames and version information about the software running on the other Routing Engine. For example, if you issue this command on the master Routing Engine on an M320 router, the JUNOS Software displays the hostname and version information on the backup Routing Engine. On a routing matrix based on the TX Matrix or TX Matrix Plus router, if you issue this command on the TX Matrix or TX Matrix Plus router's master Routing Engine, the JUNOS Software displays all the hostnames and version information on all the backup Routing Engines.</p> <p><b>all-members</b>—(MX Series routers only) (Optional) Display the hostnames and version information about the software running on all master and backup Routing Engines on all members of the Virtual Chassis configuration. Specify the <b>all-members</b> option before the <b>invoke-on</b> keyword.</p> <p><b>local</b>—(MX Series routers only) (Optional) Display the hostnames and version information about the software running on all master and backup Routing Engines on the local Virtual Chassis member. Specify the <b>local</b> option before the <b>invoke-on</b> keyword.</p> <p><b>member <i>member-id</i></b>—(MX Series routers only) (Optional) Display the hostnames and version information about the software running on all master and backup Routing Engines on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. Specify the <b>member <i>member-id</i></b> option before the <b>invoke-on</b> keyword.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show version invoke-on all-routing-engines (TX Matrix Router) on page 1660</a>

[show version invoke-on other-routing-engine \(TX Matrix Router\) on page 1662](#)  
[show version invoke-on all-routing-engines \(TX Matrix Plus Router\) on page 1663](#)  
[show version invoke-on other-routing-engine \(TX Matrix Plus Router\) on page 1669](#)  
[show version invoke-on all-routing-engines \(TX Matrix Plus Router with 3D SIBs\) on page 1670](#)  
[show version invoke-on other-routing-engine \(TX Matrix Plus Router with 3D SIBs\) on page 1677](#)

## Sample Output

### show version invoke-on all-routing-engines (TX Matrix Router)

```
user@host> show version invoke-on all-routing-engines
scc-re0:
-----
Hostname: bob
Model: TX Matrix
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
JUNOS Support Tools Package [7.1-20041025.1]

scc-re1:
-----
Hostname: bob1
Model: TX Matrix
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
JUNOS Support Tools Package [7.1-20041025.1]

lcc0-re0:
-----
Hostname: cas
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]

lcc0-re1:
-----
Hostname: cas1-lcc0
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
```

```
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc1-re0:
```

```
-----
Hostname: jas
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc1-re1:
```

```
-----
Hostname: jas1
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc2-re0:
```

```
-----
Hostname: dew
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc2-re1:
```

```
-----
Hostname: dew1
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc3-re0:
```

```
-----
Hostname: wa
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
```

```
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc3-re1:
```

```
-----
Hostname: wa1
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041025.1]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

### show version invoke-on other-routing-engine (TX Matrix Router)

```
user@host> show version invoke-on other-routing-engine
scc-re1:
```

```
-----
Hostname: bob1
Model: TX Matrix
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
JUNOS Support Tools Package [7.1-20041025.1]
```

```
lcc0-re1:
```

```
-----
Hostname: cas1-lcc0
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc1-re1:
```

```
-----
Hostname: jas1
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

```
lcc2-re1:
```

```
-----
Hostname: dew1
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041024.0]
JUNOS Kernel Software Suite [7.1-20041024.0]
```



```
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
lcc3-re1:
```

```
-----
Hostname: wal
Model: t640
JUNOS Base OS boot [7.1-20041024.0]
JUNOS Base OS Software Suite [7.1-20041025.1]
JUNOS Kernel Software Suite [7.1-20041024.0]
JUNOS Packet Forwarding Engine Support (T-Series) [7.1-20041024.0]
JUNOS Routing Software Suite [7.1-20041024.0]
JUNOS Online Documentation [7.1-20041024.0]
JUNOS Crypto Software Suite [7.1-20041024.0]
```

### show version invoke-on all-routing-engines (TX Matrix Plus Router)

```
user@host> show version invoke-on all-routing-engines
sfc0-re0:
```

```
-----
Hostname: aj
Model: txp
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

```
lcc0-re0:
```

```
-----
Hostname: lj
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

```
lcc1-re0:
```

```
Hostname: mj
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

lcc2-re0:

```
-----
Hostname: pj
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

lcc3-re0:

```
-----
Hostname: tj
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

sfc0-re1:

```
-----
Hostname: aj1
```

```

Model: txp
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc0-re1:
```

```

-----
Hostname: ljl
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc1-re1:
```

```

-----
Hostname: mjl
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc2-re1:
```

```

-----
Hostname: pj1
Model: t1600

```

JUNOS Base OS boot [9.6-20090519.0]  
JUNOS Base OS Software Suite [9.6-20090519.0]  
JUNOS Kernel Software Suite [9.6-20090519.0]  
JUNOS Crypto Software Suite [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]  
JUNOS Online Documentation [9.6-20090519.0]  
JUNOS Voice Services Container package [9.6-20090519.0]  
JUNOS Border Gateway Function package [9.6-20090519.0]  
JUNOS Services AACL Container package [9.6-20090519.0]  
JUNOS Services LL-PDF Container package [9.6-20090519.0]  
JUNOS Services Stateful Firewall [9.6-20090519.0]  
JUNOS AppId Services [9.6-20090519.0]  
JUNOS IDP Services [9.6-20090519.0]  
JUNOS Routing Software Suite [9.6-20090519.0]

lcc3-re1:

-----  
Hostname: tj1  
Model: t1600  
JUNOS Base OS boot [9.6-20090519.0]  
JUNOS Base OS Software Suite [9.6-20090519.0]  
JUNOS Kernel Software Suite [9.6-20090519.0]  
JUNOS Crypto Software Suite [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]  
JUNOS Online Documentation [9.6-20090519.0]  
JUNOS Voice Services Container package [9.6-20090519.0]  
JUNOS Border Gateway Function package [9.6-20090519.0]  
JUNOS Services AACL Container package [9.6-20090519.0]  
JUNOS Services LL-PDF Container package [9.6-20090519.0]  
JUNOS Services Stateful Firewall [9.6-20090519.0]  
JUNOS AppId Services [9.6-20090519.0]  
JUNOS IDP Services [9.6-20090519.0]  
JUNOS Routing Software Suite [9.6-20090519.0]

lcc0-re0:

-----  
Hostname: lj  
Model: t1600  
JUNOS Base OS boot [9.6-20090519.0]  
JUNOS Base OS Software Suite [9.6-20090519.0]  
JUNOS Kernel Software Suite [9.6-20090519.0]  
JUNOS Crypto Software Suite [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]  
JUNOS Online Documentation [9.6-20090519.0]  
JUNOS Voice Services Container package [9.6-20090519.0]  
JUNOS Border Gateway Function package [9.6-20090519.0]  
JUNOS Services AACL Container package [9.6-20090519.0]  
JUNOS Services LL-PDF Container package [9.6-20090519.0]  
JUNOS Services Stateful Firewall [9.6-20090519.0]  
JUNOS AppId Services [9.6-20090519.0]  
JUNOS IDP Services [9.6-20090519.0]  
JUNOS Routing Software Suite [9.6-20090519.0]

lcc0-re1:

-----  
Hostname: lj1  
Model: t1600  
JUNOS Base OS boot [9.6-20090519.0]

```

JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc1-re0:
```

```

-----
Hostname: mj
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc1-re1:
```

```

-----
Hostname: mj1
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc2-re0:
```

```

-----
Hostname: pj
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]

```

JUNOS Kernel Software Suite [9.6-20090519.0]  
JUNOS Crypto Software Suite [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]  
JUNOS Online Documentation [9.6-20090519.0]  
JUNOS Voice Services Container package [9.6-20090519.0]  
JUNOS Border Gateway Function package [9.6-20090519.0]  
JUNOS Services AACL Container package [9.6-20090519.0]  
JUNOS Services LL-PDF Container package [9.6-20090519.0]  
JUNOS Services Stateful Firewall [9.6-20090519.0]  
JUNOS AppId Services [9.6-20090519.0]  
JUNOS IDP Services [9.6-20090519.0]  
JUNOS Routing Software Suite [9.6-20090519.0]

lcc2-re1:

-----  
Hostname: pj1  
Model: t1600  
JUNOS Base OS boot [9.6-20090519.0]  
JUNOS Base OS Software Suite [9.6-20090519.0]  
JUNOS Kernel Software Suite [9.6-20090519.0]  
JUNOS Crypto Software Suite [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]  
JUNOS Online Documentation [9.6-20090519.0]  
JUNOS Voice Services Container package [9.6-20090519.0]  
JUNOS Border Gateway Function package [9.6-20090519.0]  
JUNOS Services AACL Container package [9.6-20090519.0]  
JUNOS Services LL-PDF Container package [9.6-20090519.0]  
JUNOS Services Stateful Firewall [9.6-20090519.0]  
JUNOS AppId Services [9.6-20090519.0]  
JUNOS IDP Services [9.6-20090519.0]  
JUNOS Routing Software Suite [9.6-20090519.0]

lcc3-re0:

-----  
Hostname: tj  
Model: t1600  
JUNOS Base OS boot [9.6-20090519.0]  
JUNOS Base OS Software Suite [9.6-20090519.0]  
JUNOS Kernel Software Suite [9.6-20090519.0]  
JUNOS Crypto Software Suite [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]  
JUNOS Online Documentation [9.6-20090519.0]  
JUNOS Voice Services Container package [9.6-20090519.0]  
JUNOS Border Gateway Function package [9.6-20090519.0]  
JUNOS Services AACL Container package [9.6-20090519.0]  
JUNOS Services LL-PDF Container package [9.6-20090519.0]  
JUNOS Services Stateful Firewall [9.6-20090519.0]  
JUNOS AppId Services [9.6-20090519.0]  
JUNOS IDP Services [9.6-20090519.0]  
JUNOS Routing Software Suite [9.6-20090519.0]

lcc3-re1:

-----  
Hostname: tj1  
Model: t1600  
JUNOS Base OS boot [9.6-20090519.0]  
JUNOS Base OS Software Suite [9.6-20090519.0]  
JUNOS Kernel Software Suite [9.6-20090519.0]

```

JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

### show version invoke-on other-routing-engine (TX Matrix Plus Router)

```

user@host> show version invoke-on other-routing-engine
sfc0-re1:

```

```

-----
Hostname: aj1
Model: txp
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc0-re1:
```

```

-----
Hostname: lj1
Model: tl600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]

```

```
lcc1-re1:
```

```

-----
Hostname: mj1
Model: tl600
JUNOS Base OS boot [9.6-20090519.0]

```

```
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

```
lcc2-re1:
```

```
-----
Hostname: pj1
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

```
lcc3-re1:
```

```
-----
Hostname: tj1
Model: t1600
JUNOS Base OS boot [9.6-20090519.0]
JUNOS Base OS Software Suite [9.6-20090519.0]
JUNOS Kernel Software Suite [9.6-20090519.0]
JUNOS Crypto Software Suite [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090519.0]
JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090519.0]
JUNOS Online Documentation [9.6-20090519.0]
JUNOS Voice Services Container package [9.6-20090519.0]
JUNOS Border Gateway Function package [9.6-20090519.0]
JUNOS Services AACL Container package [9.6-20090519.0]
JUNOS Services LL-PDF Container package [9.6-20090519.0]
JUNOS Services Stateful Firewall [9.6-20090519.0]
JUNOS AppId Services [9.6-20090519.0]
JUNOS IDP Services [9.6-20090519.0]
JUNOS Routing Software Suite [9.6-20090519.0]
```

#### show version invoke-on all-routing-engines (TX Matrix Plus Router with 3D SIBs)

```
user@host> show version invoke-on all-routing-engines
sfc0-re0:
```

```
-----
Hostname: sfc0
```



```

Model: txp
JUNOS Base OS boot [13.1]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services ACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]

```

```
sfc0-re1:
```

```

-----
Hostname: sfc0_alt_re
Model: txp
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS 64-bit Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services ACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]

```

JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc0-re0:

-----  
Hostname: lcc0  
Model: t4000  
JUNOS Base OS boot [13.1-20130305.0]  
JUNOS Base OS Software Suite [13.1-20130305.0]  
JUNOS Kernel Software Suite [13.1-20130305.0]  
JUNOS Crypto Software Suite [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]  
JUNOS Online Documentation [13.1-20130305.0]  
JUNOS Services AACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppId Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130305.0]  
JUNOS Services HTTP Content Management package [13.1-20130305.0]  
JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]  
JUNOS Services LL-PDF Container package [13.1-20130305.0]  
JUNOS Services MobileNext Software package [13.1-20130305.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]  
JUNOS Services NAT [13.1-20130305.0]  
JUNOS Services PTSP Container package [13.1-20130305.0]  
JUNOS Services RPM [13.1-20130305.0]  
JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc0-re1:

-----  
Hostname: lcc0\_alt\_re  
Model: t4000  
JUNOS Base OS boot [13.1-20130305.0]  
JUNOS Base OS Software Suite [13.1-20130305.0]  
JUNOS Kernel Software Suite [13.1-20130305.0]  
JUNOS Crypto Software Suite [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]  
JUNOS Online Documentation [13.1-20130305.0]  
JUNOS Services AACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppId Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130305.0]  
JUNOS Services HTTP Content Management package [13.1-20130305.0]  
JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]

```

JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]

```

```
lcc2-re0:
```

```

-----
Hostname: lcc2
Model: t4000
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services AACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]

```

```
lcc2-re1:
```

```

-----
Hostname: lcc2_alt_re
Model: t4000
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]

```

JUNOS Services AACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppId Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130305.0]  
JUNOS Services HTTP Content Management package [13.1-20130305.0]  
JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]  
JUNOS Services LL-PDF Container package [13.1-20130305.0]  
JUNOS Services MobileNext Software package [13.1-20130305.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]  
JUNOS Services NAT [13.1-20130305.0]  
JUNOS Services PTSP Container package [13.1-20130305.0]  
JUNOS Services RPM [13.1-20130305.0]  
JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc4-re0:

-----  
Hostname: lcc4  
Model: t4000  
JUNOS Base OS boot [13.1-20130305.0]  
JUNOS Base OS Software Suite [13.1-20130305.0]  
JUNOS Kernel Software Suite [13.1-20130305.0]  
JUNOS Crypto Software Suite [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]  
JUNOS Online Documentation [13.1-20130305.0]  
JUNOS Services AACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppId Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130305.0]  
JUNOS Services HTTP Content Management package [13.1-20130305.0]  
JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]  
JUNOS Services LL-PDF Container package [13.1-20130305.0]  
JUNOS Services MobileNext Software package [13.1-20130305.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]  
JUNOS Services NAT [13.1-20130305.0]  
JUNOS Services PTSP Container package [13.1-20130305.0]  
JUNOS Services RPM [13.1-20130305.0]  
JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc4-re1:

```

-----
Hostname: tcc4_alt_re
Model: t4000
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services AACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]

```

```

tcc6-re0:

```

```

-----
Hostname: tcc6
Model: t1600
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services AACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]

```

JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc6-re1:

-----  
Hostname: lcc6\_alt\_re  
Model: t1600  
JUNOS Base OS boot [13.1-20130305.0]  
JUNOS Base OS Software Suite [13.1-20130305.0]  
JUNOS Kernel Software Suite [13.1-20130305.0]  
JUNOS Crypto Software Suite [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]  
JUNOS Online Documentation [13.1-20130305.0]  
JUNOS Services AACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppId Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130305.0]  
JUNOS Services HTTP Content Management package [13.1-20130305.0]  
JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]  
JUNOS Services LL-PDF Container package [13.1-20130305.0]  
JUNOS Services MobileNext Software package [13.1-20130305.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]  
JUNOS Services NAT [13.1-20130305.0]  
JUNOS Services PTSP Container package [13.1-20130305.0]  
JUNOS Services RPM [13.1-20130305.0]  
JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc7-re0:

-----  
Hostname: lcc7  
Model: t1600  
JUNOS Base OS boot [13.1-20130305.0]  
JUNOS Base OS Software Suite [13.1-20130305.0]  
JUNOS Kernel Software Suite [13.1-20130305.0]  
JUNOS Crypto Software Suite [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]  
JUNOS Online Documentation [13.1-20130305.0]  
JUNOS Services AACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppId Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package

```
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]
```

```
lcc7-re1:
```

```
-----
Hostname: lcc7_alt_re
Model: t1600
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services ACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]
```

#### show version invoke-on other-routing-engine (TX Matrix Plus Router with 3D SIBs)

```
user@host> show version invoke-on other-routing-engine
```

```
sfc0-re1:
```

```
-----
Hostname: sfc0_alt_re
```

```
Model: txp
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS 64-bit Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services AACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]
```

```
lcc0-re1:
```

```
-----
Hostname: lcc0_alt_re
Model: t4000
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services AACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
```



```

JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]

```

```
lcc2-re1:
```

```

-----
Hostname: lcc2_alt_re
Model: t4000
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services ACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]
JUNOS IDP Services [13.1-20130305.0]
JUNOS Services Jflow Container package [13.1-20130305.0]
JUNOS Services LL-PDF Container package [13.1-20130305.0]
JUNOS Services MobileNext Software package [13.1-20130305.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]
JUNOS Services NAT [13.1-20130305.0]
JUNOS Services PTSP Container package [13.1-20130305.0]
JUNOS Services RPM [13.1-20130305.0]
JUNOS Services Stateful Firewall [13.1-20130305.0]
JUNOS Voice Services Container package [13.1-20130305.0]
JUNOS Services Example Container package [13.1-20130305.0]
JUNOS Services Crypto [13.1-20130305.0]
JUNOS Services SSL [13.1-20130305.0]
JUNOS Services IPSec [13.1-20130305.0]
JUNOS Runtime Software Suite [13.1-20130305.0]
JUNOS Routing Software Suite [13.1-20130305.0]

```

```
lcc4-re1:
```

```

-----
Hostname: lcc4_alt_re
Model: t4000
JUNOS Base OS boot [13.1-20130305.0]
JUNOS Base OS Software Suite [13.1-20130305.0]
JUNOS Kernel Software Suite [13.1-20130305.0]
JUNOS Crypto Software Suite [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]
JUNOS Online Documentation [13.1-20130305.0]
JUNOS Services ACL Container package [13.1-20130305.0]
JUNOS Services Application Level Gateways [13.1-20130305.0]
JUNOS AppId Services [13.1-20130305.0]
JUNOS Border Gateway Function package [13.1-20130305.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130305.0]
JUNOS Services HTTP Content Management package [13.1-20130305.0]

```

JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]  
JUNOS Services LL-PDF Container package [13.1-20130305.0]  
JUNOS Services MobileNext Software package [13.1-20130305.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]  
JUNOS Services NAT [13.1-20130305.0]  
JUNOS Services PTSP Container package [13.1-20130305.0]  
JUNOS Services RPM [13.1-20130305.0]  
JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc6-re1:

-----  
Hostname: lcc6\_alt\_re  
Model: t1600  
JUNOS Base OS boot [13.1-20130305.0]  
JUNOS Base OS Software Suite [13.1-20130305.0]  
JUNOS Kernel Software Suite [13.1-20130305.0]  
JUNOS Crypto Software Suite [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]  
JUNOS Online Documentation [13.1-20130305.0]  
JUNOS Services ACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppId Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130305.0]  
JUNOS Services HTTP Content Management package [13.1-20130305.0]  
JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]  
JUNOS Services LL-PDF Container package [13.1-20130305.0]  
JUNOS Services MobileNext Software package [13.1-20130305.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]  
JUNOS Services NAT [13.1-20130305.0]  
JUNOS Services PTSP Container package [13.1-20130305.0]  
JUNOS Services RPM [13.1-20130305.0]  
JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

lcc7-re1:

-----  
Hostname: lcc7\_alt\_re  
Model: t1600  
JUNOS Base OS boot [13.1-20130305.0]  
JUNOS Base OS Software Suite [13.1-20130305.0]  
JUNOS Kernel Software Suite [13.1-20130305.0]  
JUNOS Crypto Software Suite [13.1-20130305.0]

JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130305.0]  
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130305.0]  
JUNOS Online Documentation [13.1-20130305.0]  
JUNOS Services ACL Container package [13.1-20130305.0]  
JUNOS Services Application Level Gateways [13.1-20130305.0]  
JUNOS AppID Services [13.1-20130305.0]  
JUNOS Border Gateway Function package [13.1-20130305.0]  
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130305.0]  
JUNOS Services HTTP Content Management package [13.1-20130305.0]  
JUNOS IDP Services [13.1-20130305.0]  
JUNOS Services Jflow Container package [13.1-20130305.0]  
JUNOS Services LL-PDF Container package [13.1-20130305.0]  
JUNOS Services MobileNext Software package [13.1-20130305.0]  
JUNOS Services Mobile Subscriber Service Container package [13.1-20130305.0]  
JUNOS Services NAT [13.1-20130305.0]  
JUNOS Services PTSP Container package [13.1-20130305.0]  
JUNOS Services RPM [13.1-20130305.0]  
JUNOS Services Stateful Firewall [13.1-20130305.0]  
JUNOS Voice Services Container package [13.1-20130305.0]  
JUNOS Services Example Container package [13.1-20130305.0]  
JUNOS Services Crypto [13.1-20130305.0]  
JUNOS Services SSL [13.1-20130305.0]  
JUNOS Services IPSec [13.1-20130305.0]  
JUNOS Runtime Software Suite [13.1-20130305.0]  
JUNOS Routing Software Suite [13.1-20130305.0]

## request system storage cleanup

---

**List of Syntax**    [Syntax on page 1682](#)  
                          [Syntax \(EX Series Switches\) on page 1682](#)  
                          [Syntax \(MX Series Router\) on page 1682](#)  
                          [Syntax \(QFX Series\) on page 1682](#)  
                          [Syntax \(SRX Series\) on page 1682](#)

**Syntax**    request system storage cleanup  
              <dry-run>  
              <no-confirm>  
              <re0 | re1 | routing-engine (backup | both | local | master | other)>

**Syntax (EX Series Switches)**    request system storage cleanup  
  <all-members>  
  <dry-run>  
  <local>  
  <member *member-id*>  
  <no-confirm>  
  <re0 | re1 | routing-engine (backup | both | local | master | other)>  
  <satellite [slot-id *slot-id* | device-alias *alias-name*]>

**Syntax (MX Series Router)**    request system storage cleanup  
  <all-members>  
  <dry-run>  
  <local>  
  <member *member-id*>  
  <no-confirm>  
  <re0 | re1 | routing-engine (backup | both | local | master | other)>  
  <satellite [slot-id *slot-id* | device-alias *alias-name*]>

**Syntax (QFX Series)**    request system storage cleanup  
  <component (*serial number* | *UUID* | all)>  
  <director-group *name*>  
  <dry-run>  
  <infrastructure *name*>  
  <interconnect-device *name*>  
  <name-tag *name-tag*>  
  <no-confirm>  
  <node-group *name*>  
  <prune>  
  <qfabric (*component name*) | dry-run | name-tag | repository>  
  <repository (core | log)>  
  <re0 | re1 | routing-engine (backup | both | local | master | other)>

**Syntax (SRX Series)**    request system storage cleanup  
  <dry-run>  
  <no-confirm>  
  <re0 | re1 | routing-engine (backup | both | local | master | other)>

- Release Information** Command introduced in Junos OS Release 7.4.  
**dry-run** option introduced in Junos OS Release 7.6.  
 Command introduced in Junos OS Release 9.0 for EX Series switches.  
 Command introduced in Junos OS Release 9.2 for SRX Series.  
 Command introduced in Junos OS Release 11.1 for the QFX Series.  
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.  
**satellite** option introduced in Junos OS Release 14.2R3.  
**no-confirm** and **(re0 | re1 | routing-engine (backup | both | local | master | other))** options introduced in Junos OS 17.3R1.
- Description** Free storage space on the router or switch by rotating log files and proposing a list of files for deletion. User input is required for file deletion. On a QFabric system, you can delete debug files located on individual devices or on the entire QFabric system.
- Options** **all-members**—(EX4200 switches and MX Series routers only) (Optional) Delete files on the Virtual Chassis master Routing Engine only.



**NOTE:** To delete files on the other members of the Virtual Chassis configuration, log in to each backup Routing Engine and delete the files using the **request system storage cleanup local** command.

**component (UUID | serial number | all)**—(QFabric systems only) (Optional) Delete files located on individual QFabric system devices or on the entire QFabric system.

**director-group name**—(QFabric systems only) (Optional) Delete files on the Director group.

**dry-run**—(Optional) List files proposed for deletion (without deleting them).

**infrastructure name**—(QFabric systems only) (Optional) Delete files on the fabric control Routing Engine and fabric manager Routing Engine.

**interconnect-device name**—(QFabric systems only) (Optional) Delete files on the Interconnect device.

**local**—(EX4200 switches and MX Series routers only) (Optional) Delete files on the local Virtual Chassis member.

**member member-id**—(EX4200 switches and MX Series routers only) (Optional) Delete files on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace **member-id** with a value from 0 through 9. For an MX Series Virtual Chassis, replace **member-id** with a value of 0 or 1.

**name-tag name-tag**—(QFabric systems only) (Optional) Delete debug files that match a specific regular expression.

**node-group name**—(QFabric systems only) (Optional) Delete files on the Node group.

**no-confirm**—(Optional) Do not ask for confirmation before doing the cleanup.

**prune**—(QFabric systems only) (Optional) Delete debug files located in either the core or log debug repositories of a QFabric system device.

**qfabric component *name***—(QFabric systems only) (Optional) Delete debug files located in the debug repositories of a QFabric system device.

**(re0 | re1 | routing-engine (backup | both | local | master | other))**—(Optional) Request operation on system storage on RE0, RE1, or on specified Routing Engine by these classifications: backup, both, local, master, or other.

When Routing Engine is specified, the below message is shown before listing the files and deleting them.

```
Please check the list of files to be deleted using the dry-run option. i.e.  
request system storage cleanup dry-run  
Do you want to proceed ? [yes,no] (no)
```

**repository (core | log)**—(QFabric systems only) (Optional) Specify the repository on the QFabric system device for which you want to delete debug files.

**satellite [slot-id *slot-id* | device-alias *alias-name*]**—(Junos Fusion only) (Optional) Specify the satellite device in the Junos Fusion by FPC ID or device alias name for which you want to delete debug files.

<b>Additional Information</b>	If logging is configured and being used, the <b>dry-run</b> option rotates the log files. In that case, the output displays the message "Currently rotating log files, please wait." If no logging is currently under way, the output displays only a list of files to delete.
<b>Required Privilege Level</b>	maintenance
<b>List of Sample Output</b>	<a href="#">request system storage cleanup dry-run on page 1685</a> <a href="#">request system storage cleanup on page 1686</a> <a href="#">request system storage cleanup director-group (QFabric Systems) on page 1686</a> <a href="#">request system storage cleanup infrastructure device-name (QFabric Systems) on page 1688</a> <a href="#">request system storage cleanup interconnect-device device-name (QFabric Systems) on page 1689</a> <a href="#">request system storage cleanup node-group group-name (QFabric Systems) on page 1690</a> <a href="#">request system storage cleanup qfabric component device-name (QFabric Systems) on page 1691</a> <a href="#">request system storage cleanup qfabric component device-name repository core (QFabric Systems) on page 1691</a> <a href="#">request system storage cleanup qfabric component all (QFabric Systems) on page 1691</a>
<b>Output Fields</b>	<a href="#">Table 73 on page 1685</a> describes the output fields for the <b>request system storage cleanup</b> command. Output fields are listed in the approximate order in which they appear.

Table 73: request system storage cleanup Output Fields

Field Name	Field Description
List of files to delete:	Shows list of files available for deletion.
Size	Size of the core-dump file.
Date	Last core-dump file modification date and time.
Name	Name of the core-dump file.
Directory to delete:	Shows list of directories available for deletion.
Repository scope:	Repository where core-dump files and log files are stored. The core-dump files are located in the <b>core</b> repository, and the log files are located in the <b>log</b> repository. The default <b>Repository scope</b> is shared since both the <b>core</b> and <b>log</b> repositories are shared by all of the QFabric system devices.
Repository head:	Name of the top-level repository location.
Repository name:	Name of the repository: <b>core</b> or <b>log</b> .
Creating list of debug artifacts to be removed under:	Shows location of files available for deletion.
List of debug artifacts to be removed under:	Shows list of files available for deletion.

## Sample Output

### request system storage cleanup dry-run

```
user@host> request system storage cleanup dry-run
Currently rotating log files, please wait.
This operation can take up to a minute.
```

List of files to delete:

	Size	Date	Name
	11.4K	Mar 8 15:00	/var/log/messages.1.gz
	7245B	Feb 5 15:00	/var/log/messages.3.gz
	11.8K	Feb 22 13:00	/var/log/messages.2.gz
	3926B	Mar 16 13:57	/var/log/messages.0.gz
	3962B	Feb 22 12:47	/var/log/sampled.1.gz
	4146B	Mar 8 12:20	/var/log/sampled.0.gz
	4708B	Dec 21 11:39	/var/log/sampled.2.gz
	7068B	Jan 16 18:00	/var/log/messages.4.gz
	13.7K	Dec 27 22:00	/var/log/messages.5.gz
	890B	Feb 22 17:22	/var/tmp/sampled.pkts
	65.8M	Oct 26 09:10	/var/sw/pkg/jinstall-7.4R1.7-export-signed.tgz
	63.1M	Oct 26 09:13	/var/sw/pkg/jbundle-7.4R1.7.tgz

**request system storage cleanup**

```
user@host> request system storage cleanup
Currently rotating log files, please wait.
This operation can take up to a minute.
```

List of files to delete:

	Size	Date	Name
11.4K	Mar 8 15:00	/var/log/messages.1.gz	
7245B	Feb 5 15:00	/var/log/messages.3.gz	
11.8K	Feb 22 13:00	/var/log/messages.2.gz	
3926B	Mar 16 13:57	/var/log/messages.0.gz	
11.6K	Mar 8 15:00	/var/log/messages.5.gz	
7254B	Feb 5 15:00	/var/log/messages.6.gz	
12.9K	Feb 22 13:00	/var/log/messages.8.gz	
3726B	Mar 16 13:57	/var/log/messages.7.gz	
3962B	Feb 22 12:47	/var/log/sampled.1.gz	
4146B	Mar 8 12:20	/var/log/sampled.0.gz	
4708B	Dec 21 11:39	/var/log/sampled.2.gz	
7068B	Jan 16 18:00	/var/log/messages.4.gz	
13.7K	Dec 27 22:00	/var/log/messages.5.gz	
890B	Feb 22 17:22	/var/tmp/sampled.pkts	
65.8M	Oct 26 09:10	/var/sw/pkg/jinstall-7.4R1.7-export-signed.tgz	
63.1M	Oct 26 09:13	/var/sw/pkg/jbundle-7.4R1.7.tgz	

Delete these files ? [yes,no] (yes)

**request system storage cleanup director-group (QFabric Systems)**

```
user@switch> request system storage cleanup director-group
List of files to delete:
```

	Size	Date	Name
4.0K	2011-11-07 05:16:29	/tmp/2064.sfcauth	
4.0K	2011-11-07 05:07:34	/tmp/30804.sfcauth	
4.0K	2011-11-07 04:13:41	/tmp/26792.sfcauth	
4.0K	2011-11-07 04:13:39	/tmp/26432.sfcauth	
0	2011-11-07 07:45:40	/tmp/cluster_cleanup.log	
1.3M	2011-11-07 07:39:11	/tmp/cn_monitor.20111107-052401.log	
4.0K	2011-11-07 07:36:29	/tmp/clustat.28019.log	
4.0K	2011-11-07 07:36:29	/tmp/clustat_x.28019.log	
9.6M	2011-11-07 05:30:24	/tmp/sfc.2.log	
4.0K	2011-11-07 05:28:11	/tmp/mgd-init.1320672491.log	
248K	2011-11-07 05:19:24	/tmp/cn_monitor.20111107-045111.log	
4.0K	2011-11-07 05:17:18	/tmp/clustat.3401.log	
4.0K	2011-11-07 05:17:18	/tmp/clustat_x.3401.log	
8.0K	2011-11-07 04:58:25	/tmp/mgd-init.1320670633.log	
0	2011-11-07 04:54:01	/tmp/mysql_db_install_5.1.37.log	
4.0K	2011-11-07 04:52:08	/tmp/cn_send.log	
0	2011-11-07 04:52:00	/tmp/init_eth0.log	
4.0K	2011-11-07 04:49:35	/tmp/install_interfaces.sh.log	
4.0K	2011-11-07 04:48:15	/tmp/bootstrap.sh.log	
160K	2011-11-07 04:47:43	/tmp/bootstrap_cleanup.log	
38M	2011-11-07 04:42:42	/tmp/cn_monitor.20111104-110308.log	
4.0K	2011-11-07 04:38:47	/tmp/clustat.30913.log	
4.0K	2011-11-07 04:38:47	/tmp/clustat_x.30913.log	
4.0K	2011-11-07 04:38:03	/tmp/dcf_upgrade.sh.remove.log	
4.0K	2011-11-07 04:38:03	/tmp/peer_update.log	
4.0K	2011-11-07 04:38:02	/tmp/dcf_upgrade.log	



```

4.0K  2011-11-07 04:38:02 /tmp/perl_mark_upgrade.log
8.0K  2011-11-07 04:13:42 /tmp/install_dcf_rpm.log
4.0K  2011-11-07 04:13:06 /tmp/00_cleanup.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/ccif_patch_4410_4450.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/pcf-tools.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/initial.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/inventory.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/qf-db.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/sfc.sh.1320667986.log
8.0K  2011-11-07 04:13:05 /tmp/jinstall-qfabric.log
8.0K  2011-11-04 11:10:24 /tmp/mgd-init.1320430192.log
4.0K  2011-11-04 11:07:03 /tmp/mysql_dcf_db_install.log
8.0K  2011-11-04 10:55:07 /tmp/ccif_patch_4410_4450.sh.1320429307.log
8.0K  2011-11-04 10:55:07 /tmp/initial.sh.1320429307.log
4.0K  2011-11-04 10:55:07 /tmp/inventory.sh.1320429307.log
8.0K  2011-11-04 10:55:07 /tmp/sfc.sh.1320429307.log
4.0K  2011-11-04 10:54:09 /tmp/ks-script-Ax0tz5.log
4.0K  2011-11-07 04:13:06 /tmp//sfc.sh.1320667986.log
8.0K  2011-11-04 10:55:07 /tmp//sfc.sh.1320429307.log

```

Directory to delete:

```

45M   2011-11-08 10:57:43 /tmp/sfc-captures

```

List of files to delete:

	Size	Date	Name
4.0K	2011-11-08 05:47:47	/tmp/5713.sfcauth	
4.0K	2011-11-08 05:14:32	/tmp/14494.sfcauth	
4.0K	2011-11-08 05:11:47	/tmp/9978.sfcauth	
4.0K	2011-11-08 05:09:37	/tmp/6128.sfcauth	
4.0K	2011-11-08 05:04:28	/tmp/29703.sfcauth	
4.0K	2011-11-07 11:59:10	/tmp/7811.sfcauth	
4.0K	2011-11-07 11:36:08	/tmp/32415.sfcauth	
4.0K	2011-11-07 11:30:30	/tmp/22406.sfcauth	
4.0K	2011-11-07 11:24:37	/tmp/12131.sfcauth	
4.0K	2011-11-07 10:48:42	/tmp/12687.sfcauth	
4.0K	2011-11-07 09:27:20	/tmp/31082.sfcauth	
4.0K	2011-11-07 07:33:58	/tmp/14633.sfcauth	
4.0K	2011-11-07 05:08:25	/tmp/15447.sfcauth	
4.0K	2011-11-07 04:12:29	/tmp/26874.sfcauth	
4.0K	2011-11-07 04:12:27	/tmp/26713.sfcauth	
4.0K	2011-11-07 03:49:17	/tmp/17691.sfcauth	
4.0K	2011-11-05 01:32:23	/tmp/5716.sfcauth	
4.0K	2011-11-07 08:00:17	/tmp/sfcsnmpd.log	
4.0K	2011-11-07 07:57:50	/tmp/cluster_cleanup.log	
824K	2011-11-07 07:38:37	/tmp/cn_monitor.20111107-053643.log	
4.0K	2011-11-07 07:36:30	/tmp/clustat.18399.log	
4.0K	2011-11-07 07:36:30	/tmp/clustat_x.18399.log	
4.0K	2011-11-07 07:35:47	/tmp/command_lock.log	
4.0K	2011-11-07 05:39:54	/tmp/mgd-init.1320673194.log	
92K	2011-11-07 05:19:25	/tmp/cn_monitor.20111107-050412.log	
4.0K	2011-11-07 05:17:20	/tmp/clustat.30115.log	
4.0K	2011-11-07 05:17:20	/tmp/clustat_x.30115.log	
8.0K	2011-11-07 05:08:07	/tmp/mgd-init.1320671241.log	
4.0K	2011-11-07 05:04:57	/tmp/cn_send.log	
0	2011-11-07 05:04:52	/tmp/init_eth0.log	
4.0K	2011-11-07 05:02:38	/tmp/install_interfaces.sh.log	
4.0K	2011-11-07 05:01:19	/tmp/bootstrap.sh.log	
160K	2011-11-07 05:00:47	/tmp/bootstrap_cleanup.log	
28M	2011-11-07 04:42:27	/tmp/cn_monitor.20111104-112954.log	
4.0K	2011-11-07 04:38:49	/tmp/clustat.6780.log	

```

4.0K  2011-11-07 04:38:49 /tmp/clustat_x.6780.log
4.0K  2011-11-07 04:38:05 /tmp/issue_event.log
4.0K  2011-11-07 04:38:05 /tmp/peer_upgrade_reboot.log
12K   2011-11-07 04:38:05 /tmp/primary_update.log
4.0K  2011-11-07 04:38:04 /tmp/dcf_upgrade.sh.remove.log
4.0K  2011-11-07 04:38:04 /tmp/peer_rexec_upgrade.log
4.0K  2011-11-07 04:13:42 /tmp/peer_install_dcf_rpm.log
4.0K  2011-11-07 04:11:57 /tmp/dcf-tools.sh.1320667917.log
0     2011-11-07 04:11:57 /tmp/initial.sh.1320667917.log
0     2011-11-07 04:11:57 /tmp/inventory.sh.1320667917.log
4.0K  2011-11-07 04:11:57 /tmp/qf-db.sh.1320667917.log
4.0K  2011-11-07 04:11:57 /tmp/sfc.sh.1320667917.log
4.0K  2011-11-07 04:11:56 /tmp/00_cleanup.sh.1320667916.log
0     2011-11-07 04:11:56 /tmp/ccif_patch_4410_4450.sh.1320667916.log
8.0K  2011-11-07 04:11:56 /tmp/jinstall-qfabric.log
4.0K  2011-11-07 04:11:33 /tmp/dcf_upgrade.log
8.0K  2011-11-04 11:53:12 /tmp/mgd-init.1320432782.log
8.0K  2011-11-04 11:06:17 /tmp/ccif_patch_4410_4450.sh.1320429977.log
8.0K  2011-11-04 11:06:17 /tmp/initial.sh.1320429977.log
4.0K  2011-11-04 11:06:17 /tmp/inventory.sh.1320429977.log
8.0K  2011-11-04 11:06:17 /tmp/sfc.sh.1320429977.log
4.0K  2011-11-04 11:05:19 /tmp/ks-script_tnWeb.log
4.0K  2011-11-07 04:11:57 /tmp//sfc.sh.1320667917.log
8.0K  2011-11-04 11:06:17 /tmp//sfc.sh.1320429977.log

```

Directory to delete:

```
49M   2011-11-08 10:45:20 /tmp/sfc-captures
```

#### request system storage cleanup infrastructure device-name (QFabric Systems)

```
user@switch> request system storage cleanup infrastructure FC
re0:
```

-----

List of files to delete:

	Size	Date	Name
	139B	Nov 8 19:03	/var/log/default-log-messages.0.gz
	5602B	Nov 8 19:03	/var/log/messages.0.gz
	28.4K	Nov 8 10:15	/var/log/messages.1.gz
	35.2K	Nov 7 13:45	/var/log/messages.2.gz
	207B	Nov 7 16:02	/var/log/wtmp.0.gz
	27B	Nov 7 12:14	/var/log/wtmp.1.gz
	184.4M	Nov 7 12:16	/var/sw/pkg/jinstall-dc-re-11.3I20111104_1216_dc-builder-domestic-signed.tgz
	124.0K	Nov 7 15:59	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:57	/var/tmp/gres-tp/lock
	155B	Nov 7 16:02	/var/tmp/krt_gencfg_filter.txt
	0B	Nov 7 12:35	/var/tmp/last_ccif_update
	1217B	Nov 7 12:15	/var/tmp/loader.conf.preinstall
	184.4M	Nov 6 07:11	/var/tmp/mchassis-install.tgz
	10.8M	Nov 7 12:16	/var/tmp/preinstall/bootstrap-install-11.3I20111104_1216_dc-builder.tar
	57.4K	Nov 7 12:16	/var/tmp/preinstall/configs-11.3I20111104_1216_dc-builder.tgz
	259B	Nov 7 12:16	/var/tmp/preinstall/install.conf
	734.3K	Nov 4 13:46	/var/tmp/preinstall/jboot-dc-re-11.3I20111104_1216_dc-builder.tgz
	177.8M	Nov 7 12:16	/var/tmp/preinstall/jbundle-dc-re-11.3I20111104_1216_dc-builder-domestic.tgz
	124B	Nov 7 12:15	/var/tmp/preinstall/metatags

```
1217B Nov 7 12:16 /var/tmp/preinstall_boot_loader.conf
0B Nov 7 16:02 /var/tmp/rtssdb/if-rtssdb
```

### request system storage cleanup interconnect-device device-name (QFabric Systems)

```
user@switch> request system storage cleanup interconnect IC
re1:
```

-----

List of files to delete:

Size	Date	Name
11B	Nov 7 15:55	/var/jail/tmp/alarmd.ts
128B	Nov 8 19:06	/var/log/default-log-messages.0.gz
9965B	Nov 8 19:06	/var/log/messages.0.gz
15.8K	Nov 8 12:30	/var/log/messages.1.gz
15.8K	Nov 8 11:00	/var/log/messages.2.gz
15.7K	Nov 8 07:30	/var/log/messages.3.gz
15.8K	Nov 8 04:00	/var/log/messages.4.gz
15.7K	Nov 8 00:30	/var/log/messages.5.gz
18.7K	Nov 7 21:00	/var/log/messages.6.gz
17.6K	Nov 7 19:00	/var/log/messages.7.gz
58.3K	Nov 7 16:00	/var/log/messages.8.gz
20.3K	Nov 7 15:15	/var/log/messages.9.gz
90B	Nov 7 15:41	/var/log/wtmp.0.gz
57B	Nov 7 12:41	/var/log/wtmp.1.gz
124.0K	Nov 7 15:42	/var/tmp/gres-tp/env.dat
0B	Nov 7 12:40	/var/tmp/gres-tp/lock
0B	Nov 7 12:41	/var/tmp/if-rtssdb/env.lck
12.0K	Nov 7 15:41	/var/tmp/if-rtssdb/env.mem
132.0K	Nov 7 15:55	/var/tmp/if-rtssdb/shm_usr1.mem
2688.0K	Nov 7 15:41	/var/tmp/if-rtssdb/shm_usr2.mem
2048.0K	Nov 7 15:41	/var/tmp/if-rtssdb/trace.mem
730B	Nov 7 19:57	/var/tmp/juniper.conf+.gz
155B	Nov 7 15:53	/var/tmp/krt_gencfg_filter.txt
0B	Nov 7 15:41	/var/tmp/rtssdb/if-rtssdb

```
re0:
```

-----

List of files to delete:

Size	Date	Name
11B	Nov 7 15:55	/var/jail/tmp/alarmd.ts
121B	Nov 8 19:06	/var/log/default-log-messages.0.gz
16.7K	Nov 8 19:06	/var/log/messages.0.gz
22.2K	Nov 8 17:45	/var/log/messages.1.gz
18.4K	Nov 8 17:00	/var/log/messages.2.gz
21.6K	Nov 8 16:00	/var/log/messages.3.gz
17.9K	Nov 8 14:30	/var/log/messages.4.gz
19.4K	Nov 8 13:30	/var/log/messages.5.gz
18.2K	Nov 8 12:30	/var/log/messages.6.gz
20.4K	Nov 8 11:30	/var/log/messages.7.gz
21.4K	Nov 8 10:15	/var/log/messages.8.gz
21.0K	Nov 8 09:00	/var/log/messages.9.gz
19.9K	Nov 8 08:13	/var/log/snmp-traps.0.gz
203B	Nov 8 15:36	/var/log/wtmp.0.gz
57B	Nov 7 12:41	/var/log/wtmp.1.gz
124.0K	Nov 7 15:42	/var/tmp/gres-tp/env.dat
0B	Nov 7 12:40	/var/tmp/gres-tp/lock
0B	Nov 7 12:41	/var/tmp/if-rtssdb/env.lck

```

12.0K Nov 7 15:41 /var/tmp/if-rtbdb/env.mem
132.0K Nov 7 15:55 /var/tmp/if-rtbdb/shm_usr1.mem
2688.0K Nov 7 15:41 /var/tmp/if-rtbdb/shm_usr2.mem
2048.0K Nov 7 15:41 /var/tmp/if-rtbdb/trace.mem
727B Nov 7 15:54 /var/tmp/juniper.conf+.gz
155B Nov 7 15:55 /var/tmp/krt_gencfg_filter.txt
0B Nov 7 15:41 /var/tmp/rtbdb/if-rtbdb

```

### request system storage cleanup node-group group-name (QFabric Systems)

```

user@switch> request system storage cleanup node-group NW-NG
BBAK0372:

```

-----

List of files to delete:

	Size	Date	Name
	126B	Nov 8 19:07	/var/log/default-log-messages.0.gz
	179B	Nov 7 13:32	/var/log/install.0.gz
	22.9K	Nov 8 19:07	/var/log/messages.0.gz
	26.5K	Nov 8 17:30	/var/log/messages.1.gz
	20.5K	Nov 8 13:15	/var/log/messages.2.gz
	33.2K	Nov 7 17:45	/var/log/messages.3.gz
	35.5K	Nov 7 15:45	/var/log/messages.4.gz
	339B	Nov 8 17:10	/var/log/wtmp.0.gz
	58B	Nov 7 12:40	/var/log/wtmp.1.gz
	124.0K	Nov 8 17:08	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:39	/var/tmp/gres-tp/lock
	0B	Nov 7 12:59	/var/tmp/if-rtbdb/env.lck
	12.0K	Nov 8 17:09	/var/tmp/if-rtbdb/env.mem
	2688.0K	Nov 8 17:09	/var/tmp/if-rtbdb/shm_usr1.mem
	132.0K	Nov 8 17:09	/var/tmp/if-rtbdb/shm_usr2.mem
	2048.0K	Nov 8 17:09	/var/tmp/if-rtbdb/trace.mem
	1082B	Nov 8 17:09	/var/tmp/juniper.conf+.gz
	155B	Nov 7 17:39	/var/tmp/krt_gencfg_filter.txt
	0B	Nov 8 17:09	/var/tmp/rtbdb/if-rtbdb

EE3093:

-----

List of files to delete:

	Size	Date	Name
	11B	Nov 8 17:33	/var/jail/tmp/alarmd.ts
	119B	Nov 8 19:08	/var/log/default-log-messages.0.gz
	180B	Nov 7 17:41	/var/log/install.0.gz
	178B	Nov 7 13:32	/var/log/install.1.gz
	2739B	Nov 8 19:08	/var/log/messages.0.gz
	29.8K	Nov 8 18:45	/var/log/messages.1.gz
	31.8K	Nov 8 17:15	/var/log/messages.2.gz
	20.6K	Nov 8 16:00	/var/log/messages.3.gz
	15.4K	Nov 8 10:15	/var/log/messages.4.gz
	15.4K	Nov 8 02:15	/var/log/messages.5.gz
	25.5K	Nov 7 20:45	/var/log/messages.6.gz
	48.0K	Nov 7 17:45	/var/log/messages.7.gz
	32.8K	Nov 7 13:45	/var/log/messages.8.gz
	684B	Nov 8 17:02	/var/log/wtmp.0.gz
	58B	Nov 7 12:40	/var/log/wtmp.1.gz
	124.0K	Nov 7 17:34	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:40	/var/tmp/gres-tp/lock
	0B	Nov 7 12:59	/var/tmp/if-rtbdb/env.lck

```

12.OK Nov 7 17:39 /var/tmp/if-rtbdb/env.mem
2688.OK Nov 7 17:39 /var/tmp/if-rtbdb/shm_usr1.mem
132.OK Nov 7 17:40 /var/tmp/if-rtbdb/shm_usr2.mem
2048.OK Nov 7 17:39 /var/tmp/if-rtbdb/trace.mem
155B Nov 7 17:40 /var/tmp/krt_gencfg_filter.txt
0B Nov 7 17:39 /var/tmp/rtbdb/if-rtbdb

```

#### request system storage cleanup qfabric component device-name (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component Test
Repository type: regular
Repository head: /pbstorage
Creating list of debug artifacts to be removed under: /pbstorage/rdumps/Test
Removing debug artifacts ... (press control C to abort)
Removing /pbstorage/rdumps/Test/cosd.core.0.0.05162011123308.gz ... done
Removing /pbstorage/rdumps/Test/cosd.core.1.0.05162011123614.gz ... done
Removing /pbstorage/rdumps/Test/cosd.core.2.0.05162011123920.gz ... done
Removing /pbstorage/rdumps/Test/livekcore.05132011163930.gz ... done
Removing /pbstorage/rdumps/Test/tnetd.core.0.1057.05162011124500.gz ... done
Removing /pbstorage/rdumps/Test/vmcore.05132011120528.gz ... done
Removing /pbstorage/rdumps/Test/vmcore.kz ... done
Creating list of debug artifacts to be removed under: /pbstorage/rlogs/Test
Removing debug artifacts ... (press control C to abort)
Removing /pbstorage/rlogs/Test/kdumpinfo.05132011120528 ... done
Removing /pbstorage/rlogs/Test/kernel.tarball.0.1039.05122011234415.tgz ... done
Removing /pbstorage/rlogs/Test/kernel.tarball.1.1039.05132011175544.tgz ... done
Removing /pbstorage/rlogs/Test/tnetd.tarball.0.1057.05162011175453.tgz ... done

```

#### request system storage cleanup qfabric component device-name repository core (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component Test repository core
Repository scope: shared
Repository head: /pbdata/export
Repository name: core
Creating list of debug artifacts to be removed under: /pbdata/export/rdumps/Test
NOTE: core repository under /pbdata/export/rdumps/Test empty

```

#### request system storage cleanup qfabric component all (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component all
Repository scope: shared
Repository head: /pbdata/export
Creating list of debug artifacts to be removed under: /pbdata/export/rdumps
NOTE: core repository under /pbdata/export/rdumps/all empty
Creating list of debug artifacts to be removed under: /pbdata/export/rlogs
List of debug artifacts to clean up ... (press control C to abort)
/pbdata/export/rlogs/73747cd8-0710-11e1-b6a4-00e081c5297e/install-11072011125819.log
/pbdata/export/rlogs/77116f18-0710-11e1-a2a0-00e081c5297e/install-11072011125819.log
/pbdata/export/rlogs/BBAK0372/install-11072011121538.log
/pbdata/export/rlogs/BBAK0394/install-11072011121532.log
/pbdata/export/rlogs/EE3093/install-11072011121536.log
/pbdata/export/rlogs/WS001/YN5999/install-11072011121644.log
/pbdata/export/rlogs/WS001/YW3803/install-11072011122429.log
/pbdata/export/rlogs/cd78871a-0710-11e1-878e-00e081c5297e/install-11072011125932.log
/pbdata/export/rlogs/d0afdale-0710-11e1-a1d0-00e081c5297e/install-11072011125930.log
/pbdata/export/rlogs/d0afdale-0710-11e1-a1d0-00e081c5297e/install-11072011133211.log
/pbdata/export/rlogs/d0afdale-0710-11e1-a1d0-00e081c5297e/install-11072011155302.log
/pbdata/export/rlogs/d31ab7a6-0710-11e1-ad1b-00e081c5297e/install-11072011125931.log
/pbdata/export/rlogs/d4d0f254-0710-11e1-90c3-00e081c5297e/install-11072011125932.log

```



## restart

**List of Syntax**    [Syntax on page 1693](#)

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[Syntax \(EX Series Switches\) on page 1693](#)

[Syntax \(MX Series Routers\) on page 1694](#)

[Syntax \(QFX Series\) on page 1694](#)

[Syntax \(Routing Matrix\) on page 1694](#)

[Syntax \(TX Matrix Routers\) on page 1694](#)

[Syntax \(TX Matrix Plus Routers\) on page 1695](#)

[Syntax \(QFX Series\) on page 1695](#)

**Syntax**    restart

```
<adaptive-services | ancpd-service | application-identification | audit-process |
  auto-configuration | captive-portal-content-delivery | ce-l2tp-service | chassis-control |
  class-of-service | clksyncd-service | database-replication | datapath-trace-service
  | dhcp-service | diameter-service | disk-monitoring | dynamic-flow-capture |
  ecc-error-logging | ethernet-connectivity-fault-management
  | ethernet-link-fault-management | event-processing | firewall
  | general-authentication-service | gracefully | iccp-service | idp-policy | immediately
  | interface-control | ipsec-key-management | kernel-replication | l2-learning | l2cpd-service
  | l2tp-service | l2tp-universal-edge | lacp | license-service | link-management
  | local-policy-decision-function | mac-validation | mib-process | mounstd-service
  | mpls-traceroute | mspd | multicast-snooping | named-service | nfsd-service |
  packet-triggered-subscribers | peer-selection-service | pgm | pic-services-logging | pki-service
  | ppp | ppp-service | pppoe | protected-system-domain-service |
  redundancy-interface-process | remote-operations | root-system-domain-service | routing
  <logical-system logical-system-name> | sampling | sbc-configuration-process | sdk-service
  | service-deployment | services | snmp | soft | static-subscribers | statistics-service |
  subscriber-management | subscriber-management-helper | tunnel-oamd | usb-control |
  vrrp | web-management>
<gracefully | immediately | soft>
```

**Syntax (ACX Series**    restart

**Routers)**

```
<adaptive-services | audit-process | auto-configuration | autoinstallation | chassis-control |
  class-of-service | clksyncd-service | database-replication | dhcp-service | diameter-service
  | disk-monitoring | dynamic-flow-capture | ethernet-connectivity-fault-management
  | ethernet-link-fault-management | event-processing | firewall
  | general-authentication-service | gracefully | immediately | interface-control |
  ipsec-key-management | l2-learning | lacp | link-management | mib-process | mounstd-service
  | mpls-traceroute | mspd | named-service | nfsd-service | pgm | pki-service | ppp | pppoe |
  redundancy-interface-process | remote-operations | routing | sampling | sdk-service
  | secure-neighbor-discovery | service-deployment | services | snmp | soft | statistics-service |
  subscriber-management | subscriber-management-helper | tunnel-oamd | vrrp>
```

**Syntax (EX Series**    restart

**Switches)**

```
<autoinstallation | chassis-control | class-of-service | database-replication | dhcp |
  dhcp-service | diameter-service | dot1x-protocol | ethernet-link-fault-management |
  ethernet-switching | event-processing | firewall | general-authentication-service |
  interface-control | kernel-replication | l2-learning | lacp | license-service | link-management
  | lldpd-service | mib-process | mounstd-service | multicast-snooping | pgm |
```

redundancy-interface-process | remote-operations | routing | secure-neighbor-discovery  
| service-deployment | sflow-service | snmp | vrrp | web-management>

**Syntax (MX Series  
Routers)**

restart  
<adaptive-services | ancpd-service | application-identification | audit-process |  
auto-configuration | captive-portal-content-delivery | ce-l2tp-service | chassis-control |  
class-of-service | clksyncd-service | database-replication | datapath-trace-service  
| dhcp-service | diameter-service | disk-monitoring | dynamic-flow-capture |  
ecc-error-logging | ethernet-connectivity-fault-management  
| ethernet-link-fault-management | event-processing | firewall |  
general-authentication-service | gracefully | iccp-service | idp-policy | immediately  
| interface-control | ipsec-key-management | kernel-replication | l2-learning | l2cpd-service  
| l2tp-service | l2tp-universal-edge | lacp | license-service | link-management  
| local-policy-decision-function | mac-validation | mib-process | mounstd-service  
| mpls-traceroute | mspd | multicast-snooping | named-service | nfsd-service |  
packet-triggered-subscribers | peer-selection-service | pgm | pic-services-logging |  
pki-service | ppp | ppp-service | pppoe | protected-system-domain-service |  
redundancy-interface-process | remote-operations | root-system-domain-service | routing  
| routing <logical-system *logical-system-name*> | sampling | sbc-configuration-process |  
sdk-service | service-deployment | services | snmp | soft | static-subscribers | statistics-service |  
subscriber-management | subscriber-management-helper | tunnel-oamd | usb-control |  
vrrp | web-management>  
<all-members>  
<gracefully | immediately | soft>  
<local>  
<member *member-id*>

**Syntax (QFX Series)**

restart  
<adaptive-services | audit-process | chassis-control | class-of-service | dialer-services |  
diameter-service | dlsw | ethernet-connectivity | event-processing | fibre-channel | firewall  
| general-authentication-service | igmp-host-services | interface-control |  
ipsec-key-management | isdn-signaling | l2ald | l2-learning | l2tp-service | mib-process |  
named-service | network-access-service | nstrace-process | pgm | ppp | pppoe |  
redundancy-interface-process | remote-operations | *logical-system-name*> | routing |  
sampling | secure-neighbor-discovery | service-deployment | snmp | usb-control |  
web-management>  
<gracefully | immediately | soft>

**Syntax (Routing  
Matrix)**

restart  
<adaptive-services | audit-process | chassis-control | class-of-service | disk-monitoring |  
dynamic-flow-capture | ecc-error-logging | event-processing | firewall | interface-control  
| ipsec-key-management | kernel-replication | l2-learning | l2tp-service | lacp |  
link-management | mib-process | pgm | pic-services-logging | ppp | pppoe |  
redundancy-interface-process | remote-operations | routing <logical-system  
*logical-system-name*> | sampling | service-deployment | snmp>  
<all | all-lcc | lcc *number*>  
<gracefully | immediately | soft>

**Syntax (TX Matrix  
Routers)**

restart  
<adaptive-services | audit-process | chassis-control | class-of-service | dhcp-service |  
diameter-service | disk-monitoring | dynamic-flow-capture | ecc-error-logging |  
event-processing | firewall | interface-control | ipsec-key-management | kernel-replication  
| l2-learning | l2tp-service | lacp | link-management | mib-process | pgm | pic-services-logging



	<p>  ppp   pppoe   redundancy-interface-process   remote-operations   routing &lt;logical-system <i>logical-system-name</i>&gt;   sampling   service-deployment   snmp   statistics-service&gt;</p> <p>&lt;all-chassis   all-lcc   lcc <i>number</i>   scc&gt;</p> <p>&lt;gracefully   immediately   soft&gt;</p>
<b>Syntax (TX Matrix Plus Routers)</b>	<p>restart</p> <p>&lt;adaptive-services   audit-process   chassis-control   class-of-service   dhcp-service   diameter-service   disk-monitoring   dynamic-flow-capture   ecc-error-logging   event-processing   firewall   interface-control   ipsec-key-management   kernel-replication   l2-learning   l2tp-service   lacp   link-management   mib-process   pgm   pic-services-logging   ppp   pppoe   redundancy-interface-process   remote-operations   routing &lt;logical-system <i>logical-system-name</i>&gt;   sampling   service-deployment   snmp   statistics-service&gt;</p> <p>&lt;all-chassis   all-lcc   all-sfc   lcc <i>number</i>   sfc <i>number</i>&gt;</p> <p>&lt;gracefully   immediately   soft&gt;</p>
<b>Syntax (QFX Series)</b>	<p>restart</p> <p>&lt;adaptive-services   audit-process   chassis-control   class-of-service   dialer-services   diameter-service   dlsf   ethernet-connectivity   event-processing   fibre-channel   firewall   general-authentication-service   igmp-host-services   interface-control   ipsec-key-management   isdn-signaling   l2ald   l2-learning   l2tp-service   mib-process   named-service   network-access-service   nstrace-process   pgm   ppp   pppoe   redundancy-interface-process   remote-operations   <i>logical-system-name</i>&gt;   routing   sampling   secure-neighbor-discovery   service-deployment   snmp   usb-control   web-management&gt;</p> <p>&lt;gracefully   immediately   soft&gt;</p>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>Options added:</p> <ul style="list-style-type: none"> <li>• <b>dynamic-flow-capture</b> in Junos OS Release 7.4.</li> <li>• <b>dlsf</b> in Junos OS Release 7.5.</li> <li>• <b>event-processing</b> in Junos OS Release 7.5.</li> <li>• <b>ppp</b> in Junos OS Release 7.5.</li> <li>• <b>l2ald</b> in Junos OS Release 8.0.</li> <li>• <b>link-management</b> in Release 8.0.</li> <li>• <b>pgcp-service</b> in Junos OS Release 8.4.</li> <li>• <b>sbc-configuration-process</b> in Junos OS Release 9.5.</li> <li>• <b>services pgcp gateway</b> in Junos OS Release 9.6.</li> <li>• <b>sfc</b> and <b>all-sfc</b> for the TX Matrix Router in Junos OS Release 9.6.</li> </ul>
<b>Description</b>	Restart a Junos OS process.



**CAUTION:** Never restart a software process unless instructed to do so by a customer support engineer. A restart might cause the router or switch to drop calls and interrupt transmission, resulting in possible loss of data.

**Options**    **none**—Same as **gracefully**.

**adaptive-services**—(Optional) Restart the configuration management process that manages the configuration for stateful firewall, Network Address Translation (NAT), intrusion detection services (IDS), and IP Security (IPsec) services on the Adaptive Services PIC.

**all-chassis**—(TX Matrix and TX Matrix Plus routers only) (Optional) Restart the software process on all chassis.

**all-lcc**—(TX Matrix and TX Matrix Plus routers only) (Optional) For a TX Matrix router, restart the software process on all T640 routers connected to the TX Matrix router. For a TX Matrix Plus router, restart the software process on all T1600 routers connected to the TX Matrix Plus router.

**all-members**—(MX Series routers only) (Optional) Restart the software process for all members of the Virtual Chassis configuration.

**all-sfc**—(TX Matrix Plus routers only) (Optional) For a TX Matrix Plus router, restart the software processes for the TX Matrix Plus router (or switch-fabric chassis).

**ancpd-service**—(Optional) Restart the Access Node Control Protocol (ANCP) process, which works with a special Internet Group Management Protocol (IGMP) session to collect outgoing interface mapping events in a scalable manner.

**application-identification**—(Optional) Restart the process that identifies an application using intrusion detection and prevention (IDP) to allow or deny traffic based on applications running on standard or nonstandard ports.

**audit-process**—(Optional) Restart the RADIUS accounting process that gathers statistical data that can be used for general network monitoring, analyzing, and tracking usage patterns, for billing a user based on the amount of time or type of services accessed.

**auto-configuration**—(Optional) Restart the Interface Auto-Configuration process.

**autoinstallation**—(EX Series switches only) (Optional) Restart the autoinstallation process.

**captive-portal-content-delivery**—(Optional) Restart the HTTP redirect service by specifying the location to which a subscriber's initial Web browser session is redirected, enabling initial provisioning and service selection for the subscriber.

**ce-l2tp-service**—(M10, M10i, M7i, and MX Series routers only) (Optional) Restart the Universal Edge Layer 2 Tunneling Protocol (L2TP) process, which establishes L2TP tunnels and Point-to-Point Protocol (PPP) sessions through L2TP tunnels.

**chassis-control**—(Optional) Restart the chassis management process.

**class-of-service**—(Optional) Restart the class-of-service (CoS) process, which controls the router's or switch's CoS configuration.

**clksyncd-service**—(Optional) Restart the external clock synchronization process, which uses synchronous Ethernet (SyncE).

**database-replication**—(EX Series switches and MX Series routers only) (Optional) Restart the database replication process.

**datapath-trace-service**—(Optional) Restart the packet path tracing process.

**dhcp**—(EX Series switches only) (Optional) Restart the software process for a Dynamic Host Configuration Protocol (DHCP) server. A DHCP server allocates network IP addresses and delivers configuration settings to client hosts without user intervention.

**dhcp-service**—(Optional) Restart the Dynamic Host Configuration Protocol process.

**dialer-services**—(EX Series switches only) (Optional) Restart the ISDN dial-out process.

**diameter-service**—(Optional) Restart the diameter process.

**disk-monitoring**—(Optional) Restart disk monitoring, which checks the health of the hard disk drive on the Routing Engine.

**dls**—(QFX Series only) (Optional) Restart the data link switching (DLSw) service.

**dot1x-protocol**—(EX Series switches only) (Optional) Restart the port-based network access control process.

**dynamic-flow-capture**—(Optional) Restart the dynamic flow capture (DFC) process, which controls DFC configurations on Monitoring Services III PICs.

**ecc-error-logging**—(Optional) Restart the error checking and correction (ECC) process, which logs ECC parity errors in memory on the Routing Engine.

**ethernet-connectivity-fault-management**—(Optional) Restart the process that provides IEEE 802.1ag Operation, Administration, and Management (OAM) connectivity fault management (CFM) database information for CFM maintenance association end points (MEPs) in a CFM session.

**ethernet-link-fault-management**—(EX Series switches and MX Series routers only) (Optional) Restart the process that provides the OAM link fault management (LFM) information for Ethernet interfaces.

**ethernet-switching**—(EX Series switches only) (Optional) Restart the Ethernet switching process.

**event-processing**—(Optional) Restart the event process (eventd).

**fibre-channel**—(QFX Series only) (Optional) Restart the Fibre Channel process.

**firewall**—(Optional) Restart the firewall management process, which manages the firewall configuration and enables accepting or rejecting packets that are transiting an interface on a router or switch.

**general-authentication-service**—(EX Series switches and MX Series routers only) (Optional) Restart the general authentication process.

**gracefully**—(Optional) Restart the software process.

**iccp-service**—(Optional) Restart the Inter-Chassis Communication Protocol (ICCP) process.

**idp-policy**—(Optional) Restart the intrusion detection and prevention (IDP) protocol process.

**immediately**—(Optional) Immediately restart the software process.

**interface-control**—(Optional) Restart the interface process, which controls the router's or switch's physical interface devices and logical interfaces.

**ipsec-key-management**—(Optional) Restart the IPsec key management process.

**isdn-signaling**—(QFX Series only) (Optional) Restart the ISDN signaling process, which initiates ISDN connections.

**kernel-replication**—(Optional) Restart the kernel replication process, which replicates the state of the backup Routing Engine when graceful Routing Engine switchover (GRES) is configured.

**l2-learning**—(Optional) Restart the Layer 2 address flooding and learning process.

**l2cpd-service**—(Optional) Restart the Layer 2 Control Protocol process, which enables features such as Layer 2 protocol tunneling and nonstop bridging.

**l2tp-service**—(M10, M10i, M7i, and MX Series routers only) (Optional) Restart the Layer 2 Tunneling Protocol (L2TP) process, which sets up client services for establishing Point-to-Point Protocol (PPP) tunnels across a network and negotiating Multilink PPP if it is implemented.

**l2tp-universal-edge**—(MX Series routers only) (Optional) Restart the L2TP process, which establishes L2TP tunnels and PPP sessions through L2TP tunnels.

**lACP**—(Optional) Restart the Link Aggregation Control Protocol (LACP) process. LACP provides a standardized means for exchanging information between partner systems on a link to allow their link aggregation control instances to reach agreement on the identity of the LAG to which the link belongs, and then to move the link to that LAG, and to enable the transmission and reception processes for the link to function in an orderly manner.

**lcc number**—(TX Matrix and TX Matrix Plus routers only) (Optional) For a TX Matrix router, restart the software process for a specific T640 router that is connected to the TX Matrix router. For a TX Matrix Plus router, restart the software process for a specific router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

**license-service**—(EX Series switches only) (Optional) Restart the feature license management process.

**link-management**— (TX Matrix and TX Matrix Plus routers and EX Series switches only) (Optional) Restart the Link Management Protocol (LMP) process, which establishes and maintains LMP control channels.

**lldpd-service**—(EX Series switches only) (Optional) Restart the Link Layer Discovery Protocol (LLDP) process.

**local**—(MX Series routers only) (Optional) Restart the software process for the local Virtual Chassis member.

**local-policy-decision-function**— (Optional) Restart the process for the Local Policy Decision Function, which regulates collection of statistics related to applications and application groups and tracking of information about dynamic subscribers and static interfaces.

**mac-validation**— (Optional) Restart the Media Access Control (MAC) validation process, which configures MAC address validation for subscriber interfaces created on demux interfaces in dynamic profiles on MX Series routers.

**member *member-id***—(MX Series routers only) (Optional) Restart the software process for a specific member of the Virtual Chassis configuration. Replace ***member-id*** with a value of 0 or 1.

**mib-process**—(Optional) Restart the Management Information Base (MIB) version II process, which provides the router's MIB II agent.

**mobile-ip**—(Optional) Restart the Mobile IP process, which configures Junos OS Mobile IP features.

**mountd-service**—(EX Series switches and MX Series routers only) (Optional) Restart the service for NFS mount requests.

**mpls-traceroute**—(Optional) Restart the MPLS Periodic Traceroute process.

**mspd**—(Optional) Restart the Multiservice process.

**multicast-snooping**—(EX Series switches and MX Series routers only) (Optional) Restart the multicast snooping process, which makes Layer 2 devices, such as VLAN switches, aware of Layer 3 information, such as the media access control (MAC) addresses of members of a multicast group.

**named-service**—(Optional) Restart the DNS Server process, which is used by a router or a switch to resolve hostnames into addresses.

**network-access-service**—(QFX Series only) (Optional) Restart the network access process, which provides the router's Challenge Handshake Authentication Protocol (CHAP) authentication service.

**nfsd-service**—(Optional) Restart the Remote NFS Server process, which provides remote file access for applications that need NFS-based transport.

**packet-triggered-subscribers**—(Optional) Restart the packet-triggered subscribers and policy control (PTSP) process, which allows the application of policies to dynamic subscribers that are controlled by a subscriber termination device.

**peer-selection-service**—(Optional) Restart the Peer Selection Service process.

**pgcp-service**—(Optional) Restart the pgcpd service process running on the Routing Engine. This option does not restart pgcpd processes running on mobile station PICs. To restart pgcpd processes running on mobile station PICs, use the **services pgcp gateway** option.

**pgm**—(Optional) Restart the process that implements the Pragmatic General Multicast (PGM) protocol for assisting in the reliable delivery of multicast packets.

**pic-services-logging**—(Optional) Restart the logging process for some PICs. With this process, also known as fsad (the file system access daemon), PICs send special logging information to the Routing Engine for archiving on the hard disk.

**pki-service**—(Optional) Restart the PKI Service process.

**ppp**—(Optional) Restart the Point-to-Point Protocol (PPP) process, which is the encapsulation protocol process for transporting IP traffic across point-to-point links.

**ppp-service**—(Optional) Restart the Universal edge PPP process, which is the encapsulation protocol process for transporting IP traffic across universal edge routers.

**pppoe**—(Optional) Restart the Point-to-Point Protocol over Ethernet (PPPoE) process, which combines PPP that typically runs over broadband connections with the Ethernet link-layer protocol that allows users to connect to a network of hosts over a bridge or access concentrator.

**protected-system-domain-service**—(Optional) Restart the Protected System Domain (PSD) process.

**redundancy-interface-process**—(Optional) Restart the ASP redundancy process.

**remote-operations**—(Optional) Restart the remote operations process, which provides the ping and traceroute MIBs.

**root-system-domain-service**—(Optional) Restart the Root System Domain (RSD) service.

**routing**—(ACX Series routers, QFX Series, EX Series switches, and MX Series routers only) (Optional) Restart the routing protocol process.

**routing <logical-system *logical-system-name*>**—(Optional) Restart the routing protocol process, which controls the routing protocols that run on the router or switch and maintains the routing tables. Optionally, restart the routing protocol process for the specified logical system only.

**sampling**—(Optional) Restart the sampling process, which performs packet sampling based on particular input interfaces and various fields in the packet header.

**sbc-configuration-process**—(Optional) Restart the session border controller (SBC) process of the border signaling gateway (BSG).

**scc**—(TX Matrix routers only) (Optional) Restart the software process on the TX Matrix router (or switch-card chassis).

**sdk-service**—(Optional) Restart the SDK Service process, which runs on the Routing Engine and is responsible for communications between the SDK application and Junos OS. Although the SDK Service process is present on the router, it is turned off by default.

**secure-neighbor-discovery**—(QFX Series, EX Series switches, and MX Series routers only) (Optional) Restart the secure Neighbor Discovery Protocol (NDP) process, which provides support for protecting NDP messages.

**sfc *number***—(TX Matrix Plus routers only) (Optional) Restart the software process on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

**service-deployment**—(Optional) Restart the service deployment process, which enables Junos OS to work with the Session and Resource Control (SRC) software.

**services**—(Optional) Restart a service.

**services pgcp gateway *gateway-name***—(Optional) Restart the pgcpd process for a specific border gateway function (BGF) running on an MS-PIC. This option does not restart the pgcpd process running on the Routing Engine. To restart the pgcpd process on the Routing Engine, use the **pgcp-service** option.

**sflow-service**—(EX Series switches only) (Optional) Restart the flow sampling (sFlow technology) process.

**snmp**—(Optional) Restart the SNMP process, which enables the monitoring of network devices from a central location and provides the router's or switch's SNMP master agent.

**soft**—(Optional) Reread and reactivate the configuration without completely restarting the software processes. For example, BGP peers stay up and the routing table stays constant. Omitting this option results in a graceful restart of the software process.

**static-subscribers**—(Optional) Restart the static subscribers process, which associates subscribers with statically configured interfaces and provides dynamic service activation and activation for these subscribers.

**statistics-service**—(Optional) Restart the process that manages the Packet Forwarding Engine statistics.

**subscriber-management**—(Optional) Restart the Subscriber Management process.

**subscriber-management-helper**—(Optional) Restart the Subscriber Management Helper process.

**tunnel-oamd**—(Optional) Restart the Tunnel OAM process, which enables the Operations, Administration, and Maintenance of Layer 2 tunneled networks. Layer 2 protocol tunneling (L2PT) allows service providers to send Layer 2 protocol data units (PDUs) across the provider's cloud and deliver them to Juniper Networks EX Series Ethernet Switches that are not part of the local broadcast domain.

**usb-control**—( MX Series routers) (Optional) Restart the USB control process.

**vrrp**—(ACX Series routers, EX Series switches, and MX Series routers only) (Optional) Restart the Virtual Router Redundancy Protocol (VRRP) process, which enables hosts on a LAN to make use of redundant routing platforms on that LAN without requiring more than the static configuration of a single default route on the hosts.

**web-management**—(QFX Series, EX Series switches, and MX Series routers only) (Optional) Restart the Web management process.

**Required Privilege Level**

reset

**Related Documentation**

- *Overview of Junos OS CLI Operational Mode Commands*

**List of Sample Output** [restart interface-control gracefully on page 1702](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### [restart interface-control gracefully](#)

```
user@host> restart interface-control gracefully
Interface control process started, pid 41129
```