



PTX Series Packet Transport Switch Software Documentation



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PTX Series Packet Transport Switch Software Documentation

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Documentation and Release Notes

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

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

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Supported Platforms

For the features described in this document, the following platforms are supported:

- PTX Series

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 the CLI User Guide.

Documentation Conventions

Table 1 on page xv 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.

Table 2 on page xv defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the configure command: user@host> configure
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> show chassis alarms No alarms currently active

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
<i>Italic text like this</i>	<ul style="list-style-type: none"> Introduces or emphasizes important new terms. Identifies book names. Identifies RFC and Internet draft titles. 	<ul style="list-style-type: none"> A policy <i>term</i> is a named structure that defines match conditions and actions. <i>Junos OS System Basics Configuration Guide</i> RFC 1997, <i>BGP Communities Attribute</i>
<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@# set system domain-name <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"> To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level. The console port is labeled CONSOLE.
< > (angle brackets)	Enclose optional keywords or variables.	stub <default-metric <i>metric</i> >;
(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.	broadcast multicast (<i>string1</i> <i>string2</i> <i>string3</i>)
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[] (square brackets)	Enclose a variable for which you can substitute one or more values.	community name members [<i>community-ids</i>]
Indentation and braces ({ })	Identify a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
J-Web GUI Conventions		
Bold text like this	Represents J-Web graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> In the Logical Interfaces box, select All Interfaces. To cancel the configuration, click Cancel.
> (bold right angle bracket)	Separates levels in a hierarchy of J-Web selections.	In the configuration editor hierarchy, select Protocols>Ospf .

Documentation Feedback

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- Document or topic name
- URL or page number
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- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://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.

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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:

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- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>

- Join and participate in the Juniper Networks Community Forum:
<http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

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

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 <http://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 <http://www.juniper.net/support/requesting-support.html>.

PART 1

Overview

- [Platform Overview on page 3](#)
- [Platform Components Overview on page 5](#)

CHAPTER 1

Platform Overview

- [Chained Composite Next Hops for Transit Devices on page 3](#)

Chained Composite Next Hops for Transit Devices

The Juniper Networks PTX Series Packet Transport Switch is principally designed to handle large volumes of transit traffic in the core of large networks. Chained composite next hops help to facilitate this capability by allowing a packet transport switch to process much larger volumes of routes. A chained composite next hop allows the packet transport switch to direct sets of routes sharing the same destination to a common forwarding next hop, rather than having each route also include the destination. In the event that a network destination is changed, rather than having to update all of the routes sharing that destination with the new information, just the shared forwarding next hop is updated with the new information. The chained composite next hops continue to point to this forwarding next hop which now contains the new destination.

When the next hops for MPLS LSPs are created on packet transport switches, the tag information corresponding to the inner-most MPLS label is extracted into a chained composite next hop. The chained composite next hop is stored in the ingress PFE. The chained composite next hop points to a next hop called the forwarding next hop that resides on the egress PFE. The forwarding next hop contains all of the other information (all of the labels except for the inner-most labels; and the IFA/IP information corresponding to the actual next hop node). Many chained composite next hops can share the same forwarding next hop. Additionally, separating the label from the forwarding next hop and storing it on the ingress PFE (within the chained composite next hop) helps to conserve egress PFE memory by reducing the number of rewrite strings stored on the egress PFE.

On PTX Series Packet Transport Switches, chained composite next hops are enabled by default for the following MPLS and VPN protocols and applications:

- Labeled BGP
- Layer 2 VPNs
- Layer 3 VPNs
- LDP
- MPLS

- Point-to-Multipoint LSPs
- RSVP
- Static LSPs

**Related
Documentation**

- [Accepting Route Updates with Unique Inner VPN Labels in Layer 3 VPNs](#)

CHAPTER 2

Platform Components Overview

- [Platform Components for PTX Series Packet Transport Switches on page 5](#)

Platform Components for PTX Series Packet Transport Switches

The PTX Series Packet Transport Switches are a portfolio of high-performance platforms designed for the service provider supercore. These switches deliver powerful capabilities based on innovative silicon and a forwarding architecture focused on MPLS and Ethernet. PTX Series Packet Transport Switches deliver several critical core functionalities, including industry-leading density and scalability, cost optimization, high availability, and network simplification.

The Junos OS chassis management software for the PTX Series Packet Transport Switches provides enhanced environmental monitoring and field-replaceable unit (FRU) control. Chassis management delivers: a faster master switchover, enhanced power budgeting with modular power management, reduced power consumption for partially populated systems, granular control over FRU power-on, multizone cooling with better fan speed control for reduced noise, and CPU leveling during monitoring intervals.

System clocking is controlled by centralized clock generators (CCGs) that provide a 19.44-MHz Stratum 3 clock signal. The CCG can derive a master clock from a valid source and synchronize all interfaces on the chassis to this master clock.

The modular power design allows power efficiency on the order of 1 watt per Gbps. Power supply modules (PSMs) regulate zone power and provide power to specific FRUs in the system. Power distribution units (PDUs) distribute zone power. Customers can use only as much power required for their chassis depending on the number of FRUs present.

The chassis has separate cooling chambers. Fans operating in one chamber have no impact on cooling in another chamber, enabling the chassis to run fans at different speeds in different chambers. The chassis can coordinate FRU temperatures in each zone and the fan speeds of the fan trays in these zones.

Table 3: Maximum FRUs supported on the PTX5000 Packet Transport Switch

FRU	Maximum Number
Routing Engines	2

Table 3: Maximum FRUs supported on the PTX5000 Packet Transport Switch (*continued*)

FRU	Maximum Number
Control Board (CB)	2
Power distribution unit (PDU)	2
Power supply module (PSM)	4 per PDU
Fan	3
FPC	8
PIC	2 per FPC
Switch Interface Board (SIB)	9
Craft Interface (FPD)	1
Centralized clock generator (CCG)	2

Related Documentation

- [PTX5000 Hardware Component Overview](#)
- [PTX5000 Field-Replaceable Units](#)
- [PTX Series PIC Description](#)
- [PTX5000 Centralized Clock Generator Description](#)
- [Clock Sources for PTX Series Packet Transport Switches on page 25](#)
- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)
- [PTX5000 Packet Transport Switch Hardware Guide](#)

PART 2

Configuration

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CHAPTER 3

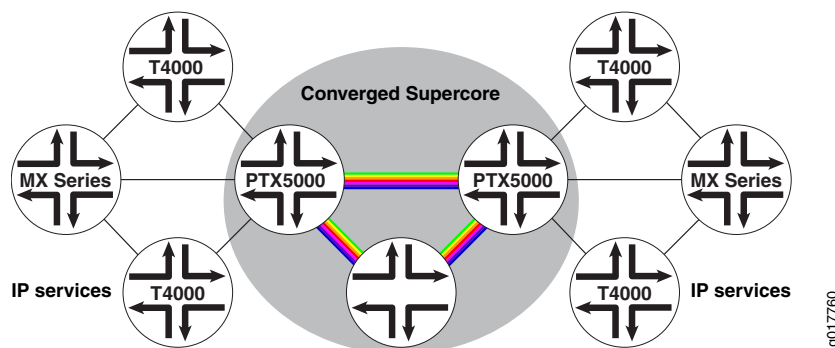
Overview

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- [Physical Part of an Interface Name on page 10](#)
- [Logical Part of an Interface Name on page 12](#)
- [PTX Series Packet Transport Switch Management Ethernet Interfaces on page 12](#)
- [Overview of Forwarding Classes on page 13](#)

Understanding Ethernet Interfaces for PTX Series Packet Transport Switches

PTX Series Packet Transport Switches are a portfolio of high-performance platforms designed for the service provider supercore. A PTX Series Packet Transport Switch working in conjunction with a T Series core router allows a service provider to build a core network that is flexible enough to accommodate cloud-delivered services, mobility for devices and users, and bandwidth-intensive applications such as HD video. Forwarding architecture for PTX Series Packet Transport Switches is focused on MPLS and Ethernet.

Figure 1: PTX5000 in a Juniper Networks Environment



All physical interfaces on a PTX Series Packet Transport Switch use *et* for the FPC type. For information about how to specify interfaces, see these topics:

- [Physical Part of an Interface Name on page 10](#)
- [Logical Part of an Interface Name on page 12](#)



NOTE: Physical interfaces on PTX Series Packet Transport Switches do not support:

- VLAN rewrite for CCC encapsulation
- Source MAC learning for accounting
- MAC policing
- Wide Area Network Physical Layer Device (WAN PHY) mode on the 24-port 10-Gigabit Ethernet PIC

Related Documentation

- [PTX Series Packet Transport Switch PIC Guide.](#)
- [PTX Series Packet Transport Switch Management Ethernet Interfaces on page 12](#)
- [Configuring MAC Filtering on PTX Series Packet Transport Switches on page 17](#)
- [Configuring Aggregated Ethernet Interfaces on PTX Series Packet Transport Switches on page 23](#)

Physical Part of an Interface Name

- [Interface Names for ACX Series Universal Access Routers on page 10](#)
- [J Series Interface Names on page 10](#)
- [Interface Names for M Series and T Series Routers and PTX Series Packet Transport Switches on page 11](#)
- [MX Series Router Interface Names on page 11](#)

Interface Names for ACX Series Universal Access Routers

ACX Series routers do not have actual PIC devices. Instead they have built-in network ports on the front panel of the router. These ports are named using the same naming convention used for routers with PIC devices with the understanding that the FPC, PIC and port are pseudo devices. When you display information about one of these ports, you specify the interface type, the slot for the Flexible PIC Concentrator (FPC), the slot on the FPC for the Physical Interface Card (PIC), and the configured port number.

In the physical part of the interface name, a hyphen (-) separates the media type from the FPC number, and a slash (/) separates the FPC, PIC, and port numbers:

type-fpc/pic/port

J Series Interface Names

On J Series routers, when you display information about an interface, you specify the interface type, the slot in which the Physical Interface Module (PIM) is installed, 0, and the configured port number.

In the physical part of the interface name, a hyphen (-) separates the media type from the PIM number, and a slash (/) separates the PIM, 0, and port numbers:

type-pim/0/port



NOTE: An exception to the *type-pim/0/port* physical description is the Integrated Services Digital Network (ISDN) dialer interface, which uses the syntax *dlnumber*.

Interface Names for M Series and T Series Routers and PTX Series Packet Transport Switches

On M Series and T Series routers and PTX Series Packet Transport Switches, when you display information about an interface, you specify the interface type, the slot in which the Flexible PIC Concentrator (FPC) is installed, the slot on the FPC in which the Physical Interface Card (PIC) is located, and the configured port number.

In the physical part of the interface name, a hyphen (-) separates the media type from the FPC number, and a slash (/) separates the FPC, PIC, and port numbers:

type-fpc/pic/port



NOTE: Exceptions to the *type-fpc/pic/port* physical description include the aggregated Ethernet and aggregated SONET/SDH interfaces, which use the syntax *aenumber* and *asnumber*, respectively.

MX Series Router Interface Names

On MX Series routers when you display information about an interface, you specify the interface type, the Dense Port Concentrator (DPC), Flexible PIC Concentrator (FPC), or Modular Port Concentrator (MPC) slot, the PIC or MIC slot, and the configured port number.



NOTE: Although the MX Series routers use DPCs, FPCs, MPCs, MICs, and PICs, command syntax in this book is shown as *fpc/pic/port* for simplicity.

In the physical part of the interface name, a hyphen (-) separates the media type from the FPC number, and a slash (/) separates the DPC, FPC or MPC, MIC or PIC, and port numbers:

type-fpc/pic/port

- *fpc*—Slot in which the DPC, FPC, or MPC is installed.
- *pic*—Slot on the FPC in which the PIC is located or slot on the MPC in which the MIC is located.

For DPCs, the PIC value is logically mapped to the DPC port numbers. The PIC-to-port mapping varies on different platforms.

- *port*—Port number on the DPC, PIC, or MIC.

Logical Part of an Interface Name

The logical unit part of the interface name corresponds to the logical unit number, which can be a number from 0 through 16,384. In the virtual part of the name, a period (.) separates the port and logical unit numbers:

- J Series routers:

type-pim/O/port.logical

- Other platforms:

type-fpc/pic/port.logical

PTX Series Packet Transport Switch Management Ethernet Interfaces

For PTX Series Packet Transport Switches, the Junos OS automatically creates the router's management Ethernet interface, **em0**. To use **em0** as an out-of-band management port, you must configure its logical port (for example, **em0.0**) with a valid IP address.

Internal Ethernet interfaces are automatically created to connect the Routing Engines to the Packet Forwarding Engines in the FPCs.

When you enter the **show interfaces** command on a PTX Series Packet Transport Switch, the management Ethernet interface and internal Ethernet interfaces (and logical interfaces) are displayed:

```
user@host> show interfaces ?
```

```
...
```

```
em0
```

```
  em0.0
```

```
  ixgbe0
```

```
  ixgbe0.0
```

```
  ixgbe1
```

```
  ixgbe1.0
```

```
...
```



NOTE: The Routing Engines in the PTX Series Packet Transport Switches do not support the management Ethernet interface **fxp0**, or the internal Ethernet interfaces **fxp1** or **fxp2**.

Related Documentation

- [Understanding Management Ethernet Interfaces](#)
- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)

Overview of Forwarding Classes

This topic covers the following information:

- [Output Queue Assignments Based on Forwarding Class on page 13](#)
- [Devices That Support Up to Four Forwarding Classes on page 13](#)
- [Devices That Support Up to 16 Forwarding Classes on page 14](#)
- [Default and Configurable Packet Loss Priority Values on page 14](#)
- [Configuration Statements Used to Configure and Apply Forwarding Classes on page 14](#)

Output Queue Assignments Based on Forwarding Class

It is helpful to think of forwarding classes as output queues. In effect, the end result of classification is the identification of an output queue for a particular packet.

CoS packet classification assigns an incoming packet to an output queue based on the packet's forwarding class. Each packet is associated with one of the following default forwarding classes:

- Expedited forwarding (EF)—Provides a low-loss, low-latency, low-jitter, assured bandwidth, end-to-end service.
- Assured forwarding (AF)—Provides a group of values you can define and includes four subclasses: AF1, AF2, AF3, and AF4, each with three drop probabilities: low, medium, and high.
- Best effort (BE)—Provides no service profile. For the best effort forwarding class, loss priority is typically not carried in a class-of-service (CoS) value and random early detection (RED) drop profiles are more aggressive.
- Network control (NC)—This class is typically high priority because it supports protocol control.

Devices That Support Up to Four Forwarding Classes

Some of the Juniper Networks routing platforms support up to four forwarding classes for classifying customer traffic. On these platforms, you can configure one of each type of default forwarding class. The following Juniper Networks routing platforms support up to four forwarding classes:

- M7i Multiservice Edge Routers with Compact Forwarding Engine Boards (CFEBs)
- M10i Multiservice Edge Routers with CFEBs



NOTE: This list does not reference any Juniper Networks device that has reached its End of Life (EOL) period and its End of Support (EOS) milestone date.

Devices That Support Up to 16 Forwarding Classes

Other Juniper Networks routing platforms support up to 16 forwarding classes, which enables you to classify packets more granularly. For example, you can configure multiple classes of EF traffic: EF, EF1, and EF2. On these platforms, the Junos OS software supports up to eight output queues; therefore, if you configure more than eight forwarding classes, you must map multiple forwarding classes to single output queues. The following Juniper Networks routing platforms support up to 16 forwarding classes and up to 8 output queues:

- M7i Multiservices Edge Routers with Enhanced Compact Forwarding Engine Boards (CFEB-Es)
- M10i Multiservices Edge Routers with CFEB-Es
- M120 Multiservices Edge Routers
- M320 Multiservices Edge Routers
- MX Series 3D Universal Edge Routers
- T Series Core Routers
- PTX Packet Transport Switches

Default and Configurable Packet Loss Priority Values

By default, the loss priority is low. On most devices, you can configure high or low loss priority. On the following devices, you can configure high, low, medium-high, or medium-low loss priority:

- J Series Services Router interfaces
- M320 routers and T Series routers with Enhanced II Flexible PIC Concentrators (FPCs)
- T640 routers with Enhanced Scaling FPC4s
- PTX Series Packet Transport Switches

Configuration Statements Used to Configure and Apply Forwarding Classes

To configure CoS forwarding classes, include the **forwarding-classes** statement at the **[edit class-of-service]** hierarchy level:

```
[edit class-of-service]
forwarding-classes {
  class class-name queue-num queue-number priority (high | low);
  queue queue-number class-name priority (high | low);
}
forwarding-class-map forwarding-class-map-name {
  class class-name queue-num queue-number [ restricted-queue queue-number ];
}
interfaces {
  interface-name {
    unit logical-unit-number {
      forwarding-class class-name;
    }
  }
}
```



```
        forwarding-class-map forwarding-class-map-name;  
    }  
}  
restricted-queues {  
    forwarding-class class-name queue queue-number;  
}
```

**Related
Documentation**

- Default Forwarding Classes
- Configuring Forwarding Classes
- Applying Forwarding Classes to Interfaces
- [Configuring Up to 16 Forwarding Classes on page 54](#)
- Policer Overview

CHAPTER 4

Interfaces

- [Configuring MAC Filtering on PTX Series Packet Transport Switches on page 17](#)
- [Configuring Flexible VLAN Tagging on PTX Series Packet Transport Switches on page 18](#)
- [Configuring Tag Protocol IDs \(TPIDs\) on PTX Series Packet Transport Switches on page 19](#)
- [Configuring Interface Encapsulation on PTX Series Packet Transport Switches on page 19](#)
- [Configuring Ethernet 802.3ah OAM on PTX Series Packet Transport Switches on page 21](#)
- [Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22](#)
- [Configuring Aggregated Ethernet Interfaces on PTX Series Packet Transport Switches on page 23](#)

Configuring MAC Filtering on PTX Series Packet Transport Switches

This topic describes how to configure MAC filtering on PTX Series Packet Transport Switches. MAC filtering enables you to specify the MAC addresses from which the Ethernet interface can receive packets.

MAC filtering support on PTX Series Packet Transport Switches includes:

- MAC source and destination address filtering for each port.
- MAC source address filtering for each physical interface.
- MAC source address filtering for each logical interface.

When you filter logical and physical interfaces, you can specify up to 1000 MAC source addresses per port.

To configure MAC source address filtering for a physical interface, include the **source-filtering** and **source-address-filter** statements at the **[edit interfaces et-fpc/pic/port gigether-options]** hierarchy level:

```
[edit interfaces]
et-x/y/z {
  gigether-options {
    source-filtering;
    source-address-filter {
      mac-address;
```

```
    }  
  }  
}
```

The **source-address-filter** statement configures which MAC source addresses are filtered. The specified physical interface drops all packets from the MAC source addresses you specify. You can specify the MAC address as *nn:nn:nn:nn:nn:nn* where *n* is a decimal digit. To specify more than one address, include multiple **mac-address** options in the **source-address-filter** statement.

To configure MAC source address filtering for a logical interface, include the **accept-source-mac** statement at the **[edit interfaces et-fpc/pic/port unit logical-unit-number]** hierarchy level:

```
[edit interfaces]  
et-x/y/z {  
  gige-ether-options {  
    source-filtering;  
  }  
  unit logical-unit-number {  
    accept-source-mac {  
      mac-address mac-address;  
    }  
  }  
}
```

The **accept-source-mac** statement configures which MAC source addresses are accepted on the logical interface. You can specify the MAC address as *nn:nn:nn:nn:nn:nn* where *n* is a decimal digit. To specify more than one address, include multiple **mac-address mac-address** options in the **accept-source-mac** statement.

After an interface filter is configured, there is an accounting entry that is associated with the MAC address filter. Counters accumulate if there are packets with matching MAC source addresses. You can use the **show interfaces mac-database** Junos OS CLI command to view the address count.

- Related Documentation**
- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)
 - [show interfaces mac-database \(Gigabit Ethernet\) on page 739](#)

Configuring Flexible VLAN Tagging on PTX Series Packet Transport Switches

This topic describes how to configure flexible VLAN tagging on PTX Series Packet Transport Switches. In addition to VLAN tagging and stacked VLAN tagging, you can configure a port for flexible tagging. With flexible VLAN tagging, you can configure two logical interfaces on the same Ethernet port, one with single-tag framing and one with dual-tag framing.

To configure mixed tagging, include the **flexible-vlan-tagging** statement at the **[edit interfaces et-fpc/pic/port]** hierarchy level. You must also include the **vlan-tags** statement with **inner** and **outer** options or the **vlan-id** statement at the **[edit interfaces et-fpc/pic/port unit logical-unit-number]** hierarchy level:

```
[edit interfaces et-fpc/pic/port]
flexible-vlan-tagging;
unit logical-unit-number {
  vlan-id number;
}
unit logical-unit-number {
  vlan-tags inner tpid.vlan-id outer tpid.vlan-id;
}
```

**Related
Documentation**

- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)

Configuring Tag Protocol IDs (TPIDs) on PTX Series Packet Transport Switches

This topic describes how to configure the TPIDs expected to be sent or received on a particular VLAN for PTX Series Packet Transport Switches.

For other types of Juniper Networks Ethernet PICs, you could configure 8 TPIDs per port. However, the PTX Series Packet Transport Switches use MTIP and TL to classify a specific TPID and Ethernet type. For MTIP, you can configure a maximum of 8 TPIDs for each MAC chip.

As a consequence, you can specify the **tag-protocol-id** configuration statement only for the first port (0) of a PTX Series Ethernet PIC. If you configure **tag-protocol-id** statements on the other port, the configuration is ignored and a system error is recorded.

For example, the following is a supported configuration:

```
[edit interfaces et-2/0/0]
gigether-options {
  ethernet-switch-profile {
    tag-protocol-id [0x8100 0x9100];
  }
}
```

The **tag-protocol-id** configuration statement supports up to eight TPIDs on port 0 of a given Ethernet PIC. All eight TPIDs are populated to the two MTIPs and TLs associated with the Ethernet PIC.

**Related
Documentation**

- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)
- [Configuring Flexible VLAN Tagging on PTX Series Packet Transport Switches on page 18](#)

Configuring Interface Encapsulation on PTX Series Packet Transport Switches

This topic describes how to configure interface encapsulation on PTX Series Packet Transport Switches. Use the **flexible-ethernet-services** configuration statement to configure different encapsulation for different logical interfaces under a physical interface. With flexible Ethernet services encapsulation, you can configure each logical interface encapsulation without range restrictions for VLAN IDs.

Supported encapsulations for physical interfaces include:

- **flexible-ethernet-services**
- **ethernet-ccc**
- **ethernet-tcc**

Supported encapsulations for logical interfaces include:

- **ENET2**
- **vlan-ccc**
- **vlan-tcc**



NOTE: PTX Series Packet Transport Switches do not support **extended-vlan-cc** and **extended-vlan-tcc** encapsulation on logical interfaces. Instead, you can configure a tag protocol ID (TPID) value of 0x9100 to achieve the same results.

To configure flexible Ethernet services encapsulation, include the **encapsulation flexible-ethernet-services** statement at the **[edit interfaces et-fpc/pic/port]** hierarchy level. For example:

```
interfaces {
  et-fpc/pic/port {
    vlan-tagging;
    encapsulation flexible-ethernet-services;
    unit 0 {
      vlan-id 1000;
      family inet {
        address 11.0.0.20/24;
      }
    }
    unit 1 {
      encapsulation vlan-ccc;
      vlan-id 1010;
    }
    unit 2 {
      encapsulation vlan-tcc;
      vlan-id 1020;
      family tcc {
        proxy {
          inet-address 11.0.2.160;
        }
        remote {
          inet-address 11.0.2.10;
        }
      }
    }
  }
}
```

- Related Documentation**
- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)

Configuring Ethernet 802.3ah OAM on PTX Series Packet Transport Switches

The IEEE 802.3ah standard for Operation, Administration, and Management (OAM) provides a specification for *Ethernet in the first mile (EFM)* connectivity. EFM defines how Ethernet can be transmitted over new media types using new Ethernet physical layer (PHY) interfaces. You can configure IEEE 802.3ah OAM on Ethernet point-to-point direct links or links across Ethernet repeaters. The IEEE 802.3ah OAM standard meets the requirement for OAM capabilities as Ethernet moves from being solely an enterprise technology to being a WAN and access technology, as well as being backward-compatible with existing Ethernet technology.

For Ethernet interfaces capable of running at 100 Mbps or faster, the IEEE 802.3ah OAM standard is supported on numerous Juniper Networks routers and switches. This topic describes configuration support for IEEE 802.3ah OAM features on PTX Series Packet Transport Switches.

On PTX Series Packet Transport Switches, Junos OS Release 12.1 supports the following IEEE 802.3ah OAM features at the physical interface level:

- Discovery and link monitoring
- Fault signaling and detection
- Periodic packet management (PPM) processing
- Action profile support
- graceful Routing Engine switchover (GRES)

To configure 802.3ah OAM support for Ethernet interfaces, include the **oam** statement at the **[edit protocols]** hierarchy level:

```
oam {
  ethernet {
    link-fault-management {
      interfaces {
        interface-name {
          pdu-interval interval;
          link-discovery (active | passive);
          pdu-threshold count;
        }
      }
    }
  }
}
```

- Related Documentation**
- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)
 - [Configuring IEEE 802.3ah OAM Link-Fault Management](#)
 - [Configuring Link Discovery](#)

- Detecting Remote Faults
- Configuring an OAM Action Profile

Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches

The IEEE 802.1ag provides a specification for Ethernet connectivity fault management (CFM). The Ethernet network may be comprised of one or more service instances. A service instance could be a VLAN, or a concatenation of VLANs. The goal of CFM is to provide a mechanism to monitor, locate, and isolate faulty links. Ethernet 802.1ag is supported on numerous Juniper Networks routers and switches. This topic describes configuration support for Ethernet OAM 802.1ag features on the PTX Series Packet Transport Switches.

Supported features include:

- Maintenance domain (**maintenance-domain *domain-name***) and maintenance levels (**level *number***).
- Maintenance association (**maintenance-association *ma-name***), including name formats (**name-format** and **short-name-format** for **vlan** and **2octet**), loss threshold (**loss-threshold *number***), and hold interval (**hold-interval *minutes***).
- maintenance association endpoint (MEP) functions, including Maintenance Endpoint ID (**mep *mep-id***), direction down (**direction down**), and autodiscovery (**auto-discovery**).
- Link trace for down MEPs (**link-down**).
- action profile (**action-profile *profile-name***)
- Loopback message generation and reply for down MEPs.

Features that are not supported include:

- Up MEP configuration.
- maintenance association intermediate point (MIP) configuration.

To configure flexible Ethernet services encapsulation on PTX Series Packet Transport Switches, include the **oam** statement at the **[edit protocols]** hierarchy level. For example:

```
[edit protocols]
oam {
  ethernet {
    connectivity-fault-management {
      maintenance-domain md1 {
        level 0;
        maintenance-association ma1 {
          continuity-check {
            interval 100ms;
          }
          mep 1 {
            interface et-0/1/1;
            direction down;
            auto-discovery;
          }
        }
      }
    }
  }
}
```



```

    }
  }
}

```

- Related Documentation**
- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)
 - IEEE 802.1ag OAM Connectivity Fault Management Overview

Configuring Aggregated Ethernet Interfaces on PTX Series Packet Transport Switches

IEEE 802.3ad link aggregation enables you to group Ethernet interfaces to form a single link layer interface, also known as a link aggregation group (LAG) or bundle. Link aggregation can be used for point-to-point connections. It balances traffic across the member links within an aggregated Ethernet bundle and effectively increases the uplink bandwidth. Another advantage of link aggregation is increased availability because the LAG is composed of multiple member links. If one member link fails, the LAG continues to carry traffic over the remaining links.

This topic describes how to configure aggregated Ethernet interfaces on PTX Series Packet Transport Switches.

On PTX Series Packet Transport Switches, aggregated Ethernet support includes the following features:

- A consistent interface type (**et fpc/pic/port**) across all Ethernet interfaces.
- Ability to bundle multiple Ethernet interfaces
- Fault tolerance
- Load balancing between child links
- Advanced features including flexible VLAN tagging and Ethernet services encapsulation

Aggregated Ethernet interfaces can use interfaces from different FPCs or PICs. The following configuration is sufficient to get an aggregated Gigabit Ethernet interface up and running.

```

[edit chassis]
  aggregated-devices {
    ethernet {
      device-count 2;
    }
  }

[edit interfaces]
  et-0/0/0 {
    gigether-options {
      802.3ad ae0;
    }
  }
  et-0/0/1 {

```

```
    gigeether-options {  
      802.3ad ae0;  
    }  
  }  
  ae0 {  
    vlan-tagging;  
    unit 0 {  
      vlan-id 100;  
      family inet {  
        address 200.200.1.2/24;  
      }  
    }  
    unit 1 {  
      vlan-id 101;  
      family inet {  
        address 200.200.2.2/24;  
      }  
    }  
  }  
}
```

- Related Documentation**
- [Understanding Ethernet Interfaces for PTX Series Packet Transport Switches on page 9](#)
 - [Configuring Junos OS for Supporting Aggregated Devices](#)

CHAPTER 5

Clocking, Power Management, and Cooling

- [Clock Sources for PTX Series Packet Transport Switches on page 25](#)
- [Cooling System for PTX Series Packet Transport Switches on page 27](#)
- [Configuring an External Clock Synchronization Interface for PTX Series Packet Transport Switches on page 28](#)
- [Synchronous Ethernet Overview on page 29](#)
- [Configuring the Power-On Sequence for FPCs on PTX Series Packet Transport Switches on page 31](#)
- [Boot Sequence \(M Series, MX Series, T Series, TX Matrix, TX Matrix Plus, and PTX Series Routing Engines \) on page 32](#)

Clock Sources for PTX Series Packet Transport Switches

System clocking on PTX Series Packet Transport Switches is controlled by a Centralized Clock Generator (CCG). The CCG is capable of deriving a master clock from a valid source and synchronizing all interfaces on the chassis to this master clock. The CCG plugs into the rear of the chassis. A pair of CCGs installed in the chassis provide a redundant fallback option.

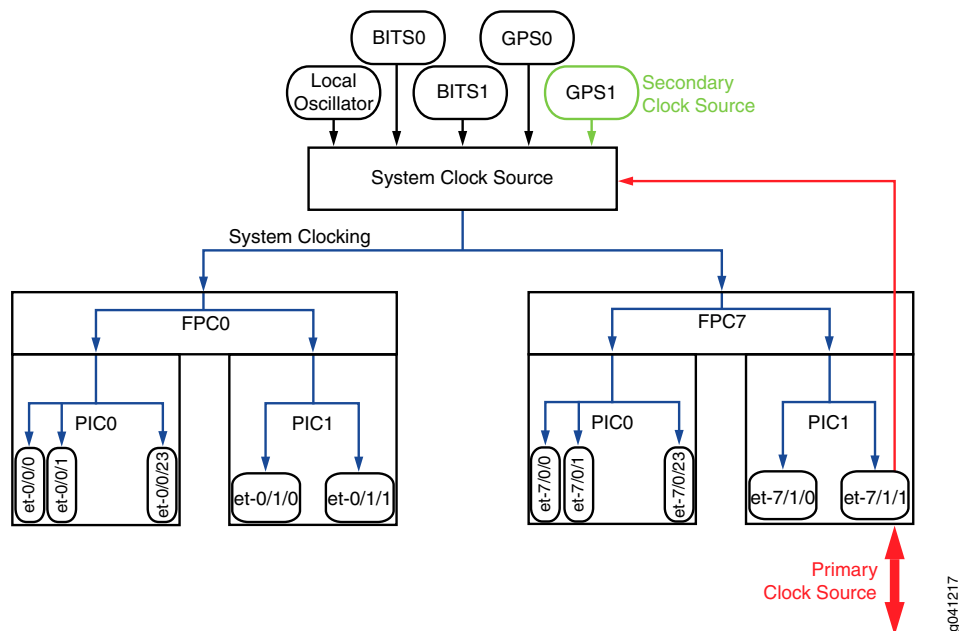
PTX Series Packet Transport Switches can use an internal clock source or it can extract clocking from an external source.

Clock sources and specifications include:

- The PTX Series Packet Transport Switch clock is a Stratum 3E-compliant clock with Free Run +/- 4.6 ppm/20 years, Holdover +/- 0.01 ppm/24 hours, and Drift +/- 0.001 ppm/24 hours.
- The internal clock is based on Freerun OCXO with +/- 10 ppb accuracy.
- External clocking includes a choice of GPS-based clock recovery (5 MHz and 10 MHz) or BITS-T1/E1 Line synchronization (1.544 MHz and 2.048 MHz)
- Synchronous Ethernet is supported based on the ITU G.8261 and G.8262 specifications with line timing from the 10-Gigabit Ethernet, 40-Gigabit Ethernet, or 100-Gigabit Ethernet interface.

Synchronous Ethernet is a key requirement for circuit (emulation) services and mobile radio access technologies. Synchronous Ethernet supports sourcing and transfer of frequency for synchronization purposes for both wireless and wireline services and is primarily used for mobile backhaul and converged transport.

Figure 2: Clocking Example for PTX Series Packet Transport Switches



In this example, the primary clock source is configured as interface **et-7/1/1** and the secondary clock source is configured as **gps1**.

Related Documentation

- [Configuring an External Clock Synchronization Interface for PTX Series Packet Transport Switches on page 28](#)
- [recovered-clock on page 132](#)
- [synchronization on page 137](#)

Cooling System for PTX Series Packet Transport Switches

The cooling system components work together to keep all components within the acceptable temperature range. The host subsystem monitors the temperature of the components. When the PTX Series Packet Transport Switch is operating normally, the fans function at lower than full speed. If a fan fails or the ambient temperature rises above a threshold, the speed of the remaining fans is automatically adjusted to keep the temperature within the acceptable range. If the ambient maximum temperature specification is exceeded and the system cannot be adequately cooled, the Routing Engine shuts down some or all of the hardware components.

The PTX5000 Packet Transport Switch has a cooling system that contains different zones that are monitored and cooled independently.

The cooling system consists of:

- Fans
- Different cooling zones
- Individual monitors and controls for each fan
- Temperature sensors

Fans are monitored by using CLI commands such as **show chassis fan**, **show chassis environment**, and **show chassis zones**. The command displays the cooling zones, number of fans running, and the temperature of the chassis components. Each horizontal fan tray has 6 fans. The fans run at 30% capacity, instead of 70%, which saves 845 W.

Temperature sensors drive fan speeds. PTX5000 has variable fan speed control for each fan. Fan trays have a wide range of 30-100% of maximum RPM. A wide RPM range allows fans to run at minimum speed, while still enabling an increase in RPM to protect hot components.

Fan trays fail if:

- Any fan falls below the set RPM
- Any fan rises above the set RPM
- Any fan loses power

Cooling Protections

- Vertical fan tray 0 ramps to 70
- Horizontal Fan trays 1,2 ramp to 50%
- After 10 minutes, all fan trays ramp to 100%
- If the fans cooling the Routing Engine and Control Board are below 50% of the maximum RPM, the Routing Engine and Control Board will shutdown in 15 minutes
- If a fan fails, all other fans in that cooling zone will ramp to 100%.

- Related Documentation
- [show chassis fan on page 457](#)
 - [show chassis environment on page 177](#)
 - show chassis zones

Configuring an External Clock Synchronization Interface for PTX Series Packet Transport Switches

The PTX Series Packet Transport Switches support an external synchronization interface that can be configured to synchronize the internal Stratum 3 clock to an external source, and then synchronize the chassis interface clock to that source.

This feature can be configured for external primary and secondary interfaces that use building-integrated timing system (BITS), SDH Equipment Timing Source (SETS) timing sources, or an equivalent quality timing source. On the Physical Interface Cards (PICs), the transmit clock of the interface is synchronized to BITS/SETS timing and is traceable to timing within the network.

The PTX Series Packet Transport Switches include a Centralized Clock Generator (CCG) that is used to generate systemwide interface timing signals. The CCG:

- Provides a synchronous Ethernet clock source to the chassis.
- Accepts a BITS clock from CCG bulkhead to use as the basis for the Stratum clock source.
- Accepts an RX recovered clock from an FPC to use as input for the Stratum clock source.

The sources can be BITS, GPS, freerunning, or RX recovered line timing.

To configure a recovered clock for an FPC, include the **recovered-clock** statement at the **[edit chassis fpc slot-number pic pic-number]** hierarchy level:

```
[edit chassis fpc slot-number pic pic-number]
recovered-clock {
  port port-number;
}
```

To configure external synchronization on the router, include the **synchronization** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
synchronization {
  signal-type (t1 | e1);
  switching--mode (revertive | non-revertive);
  transmitter-enable;
  primary (external-a | external-b | fpc-slot-number | gps-0-10mhz | gps-0-5mhz |
    gps-1-10mhz | gps-1-5mhz | bits-a | bits-b);
  secondary (external-a | external-b | fpc-slot-number | gps-0-10mhz | gps-0-5mhz |
    gps-1-10mhz | gps-1-5mhz | bits-a | bits-b);
}
```

Use the **synchronization** statement options to specify a primary and secondary timing source. To do this, configure the following options:

- For the PTX Series Packet Transport Switches, specify a signal type mode for interfaces, either **t1** or **e1**.
- Specify the switching mode as **revertive** if a lower-priority synchronization can be switched to a valid, higher-priority synchronization.
- Specify the primary external timing source by using the **primary (fpc-slot-number | gps-0-10mhz | gps-0-5mhz | gps-1-10mhz | gps-1-5mhz | bits-a | bits-b)** statement.
- Specify the secondary external timing source by using the **secondary (fpc-slot-number | gps-0-10mhz | gps-0-5mhz | gps-1-10mhz | gps-1-5mhz | bits-a | bits-b)** statement.

For the PTX 5000 Packet Transport Switch, the supported clock sources are:

- **fpc-0**, **fpc-1**, **fpc-2**, **fpc-3**, **fpc-4**, **fpc-5**, **fpc-6**, or **fpc-7**.
- **gps-0-10mhz**, **gps-0-5mhz**, **gps-1-10mhz**, or **gps-1-5mhz**.
- **bits-a** or **bits-b**

Related Documentation

- [Clock Sources for PTX Series Packet Transport Switches on page 25](#)
- [recovered-clock on page 132](#)
- [synchronization on page 137](#)

Synchronous Ethernet Overview

Synchronization is a key requirement for circuit (emulation) services and mobile radio access technologies. Traditionally, mobile networks utilized SONET/SDH technologies to backhaul voice and data traffic, and used the native support for frequency of SONET/SDH to synchronize their radio network. With the need for greater-capacity backhaul networks, packet-based technologies such as Carrier Ethernet (which do not support the transfer of frequency), and wireless technologies such as frequency division duplex and time division duplex require not only frequency synchronization but also proper time and phase alignment. This requirement is fulfilled by Synchronous Ethernet, which is used for physical layer frequency synchronization of connected access devices (such as base stations, access nodes, and so on). Synchronous Ethernet supports sourcing and transfer of frequency for synchronization purposes for both wireless and wireline services and is primarily used for mobile backhaul and converged transport.

Synchronous Ethernet (ITU-T G.8261 and ITU-T G.8264) is a physical layer technology that functions regardless of the network load and supports hop-by-hop frequency transfer, where all interfaces on the trail must support Synchronous Ethernet. It enables you to deliver synchronization services that meet the requirements of the present-day mobile network, as well as future Long Term Evolution (LTE)–based infrastructures.

[Table 4 on page 30](#) summarizes the first Junos OS release that supports Synchronous Ethernet on the various Juniper Networks routers and their components:

Table 4: Synchronous Ethernet Support on Junos OS

Routers and Components	Junos OS Release
10-Gigabit Ethernet MPC with SFP+ transceivers	11.2R4
MX5, MX10, MX40, and MX80 3D Universal Edge routers with model numbers MX5-T, MX10-T, MX40-T, and MX80-T	11.2R4
On MX240, MX480, and MX960 3D Universal Edge routers, only the following Enhanced MPCs (MPCs) support Synchronous Ethernet: <ul style="list-style-type: none"> • MPC1E (MX-MPC1E-3D) • MPC1E Q (MX-MPC1E-3D-Q) • MPC2E (MX-MPC2E-3D) • MPC2E Q (MX-MPC2E-3D-Q) • MPC2E EQ (MX-MPC2E-3D-EQ) 	11.2R4
10-Gigabit Ethernet MIC with XFP in WAN-PHY framing mode	11.2R4
10-Gigabit Ethernet MIC with XFP in LAN-PHY framing mode	11.4
Juniper Networks PTX Series Packet Transport Switches with their 10-Gigabit Ethernet, 40-Gigabit Ethernet, and 100-Gigabit Ethernet interfaces	12.1
Juniper Networks ACX2000 Series Universal Access routers with Gigabit Ethernet and 10-Gigabit Ethernet SFP and SFP+ transceivers.	12.2

The ingress clock monitoring feature is supported on all MX Series routers with the 16x10GE MPC. On these routers, the incoming Synchronous Ethernet signals cannot be monitored on the 16x10GE MPC but are monitored by other Modular Port Concentrators (MPCs) in the chassis. Therefore, you can use the 16x10GE MPC for incoming Synchronous Ethernet signals if at least one other MPC with an Ethernet equipment clock (EEC) is present in the chassis. This behavior is referred to as *ingress clock monitoring*. Note that the 16x10GE MPC does not have a built-in EEC or internal clock; therefore, it can only input (accept) a clock signal but cannot act as a clock source.

When an MX Series router is configured for Synchronous Ethernet on the 16x10GE MPC and no other MPC with an EEC is present in the chassis, the Synchronous Ethernet feature cannot be supported by the system. The system notifies the user through log messages and CLI output and justifies its inability to support Synchronous Ethernet.

For information about Synchronous Ethernet support on the 10-Gigabit Ethernet MIC, see Synchronous Ethernet on 10-Gigabit Ethernet MIC Overview.

Starting with Junos OS Release 12.1, Synchronous Ethernet is supported on Juniper Networks PTX Series Packet Transport Switches. On the packet transport switches, Synchronous Ethernet is supported on 10-Gigabit Ethernet, 40-Gigabit Ethernet, and 100-Gigabit Ethernet interfaces and is compliant with ITU-T G.8261 and ITU-T G.8262 standards.

Starting with Junos OS Release 12.2, Synchronous Ethernet is supported on Juniper Networks ACX Series Universal Access routers with Gigabit Ethernet and 10-Gigabit Ethernet SFP and SFP+ transceivers and is compliant with the ITU-T G.8261 and G.8264 standards.

Synchronous Ethernet is not supported in the following instances:

- Slot 10 on MX Series router chassis
- RJ45 ports
- MPC3E with C form-factor pluggable (CFP) transceiver (CFP)



NOTE: Unified in-service software upgrade (unified ISSU) is currently not supported when clock synchronization is configured for Synchronous Ethernet on MX80 3D Universal Edge routers and on the MICs and MPCEs on MX240, MX480, and MX960 routers.

Related Documentation

- [Clock Sources for PTX Series Packet Transport Switches on page 25](#)
- [Configuring Clock Synchronization Interface for MX Series Routers](#)
- [Configuring External Clock Synchronization for ACX Series Routers](#)
- [Ethernet Synchronization Message Channel Overview](#)
- [Example: Configuring Synchronous Ethernet on MX Series Routers](#)
- [Example: Configuring Framing Mode for Synchronous Ethernet on MX Series Routers with 10-Gigabit Ethernet MIC](#)
- [request chassis synchronization mode](#)
- [show chassis synchronization \(MX Series Routers\)](#)
- [Synchronous Ethernet on 10-Gigabit Ethernet MIC Overview](#)
- [synchronization](#)

Configuring the Power-On Sequence for FPCs on PTX Series Packet Transport Switches

The PTX Series Packet Transport Switch chassis supplies redundant power to all FPCs. The Power Supply Modules—PSM2 and PSM3—can power up to four FPCs without redundancy. In cases where all PSMs are not present, or some Power Supply Modules (PSMs) fail or are removed during operation, service interruption is minimized by keeping as many affected FPCs online without supplying redundant power to these FPCs. For example, if there is only one PSM in the PSM2 and PSM3 slots on both Power Distribution Units (PDUs) and more than four FPCs in the chassis, then the first four FPCs as configured by the **fru-poweron-sequence** configuration are kept online, whereas the other FPCs are offline because of no power.

By default, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power on the FPCs. To configure the power-on sequence, include the **fru-poweron-sequence** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
fru-poweron-sequence;
```

Issue the **show chassis power** command to view power limits and usage details for the FPCs. Issue the **show chassis power sequence** command to view details about the power-on sequence for the FPCs. For more information about these commands, see the Junos OS Operational Mode Commands.

If the power-on sequence is not configured by including the **fru-poweron-sequence** statement, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power-on the FPCs.

Related Documentation

- [fru-poweron-sequence on page 121](#)

Boot Sequence (M Series, MX Series, T Series, TX Matrix, TX Matrix Plus, and PTX Series Routing Engines)



NOTE: For information about which Routing Engines are supported by each device, see http://www.juniper.net/techpubs/en_US/release-independent/junos/topics/reference/general/routing-engine-m-mx-t-series-support-by-chassis.html.

The M Series, MX Series (except for the MX80 routers), T Series, and TX Matrix routers with a Routing Engine that has a hard disk attempt to boot from the storage media in the following order:

1. Removable media emergency boot device, such as a PC Card (if present)
2. CompactFlash card (if present)
3. Hard disk

The M Series and MX Series with a Routing Engine that has a solid-state drive (SSD) attempt to boot from the storage media in the following order:

1. USB media emergency boot device (if present)
2. CompactFlash card
3. Solid-state drive (SSD) in the SSD slot 1 or SSD slot 2 (if present)

MX80 routers attempt to boot from the storage media in the following order:

1. USB media emergency boot device
2. Dual, internal NAND flash device (first *da0*, then *da1*)

The T series routers with a Routing Engine that has a solid-state drive (SSD), TX Matrix Plus routers, and TX Matrix Plus routers with 3D SIBs attempt to boot from the storage media in the following order:

1. USB media emergency boot device
2. CompactFlash card (if present)
3. Solid-state drive (SSD) in the Disk 1 slot (if present)



NOTE: The Disk 2 slot is not currently supported.

4. Storage media available on the LAN

The PTX Series Packet Transport Switches attempt to boot from the storage media in the following order:

1. USB media emergency boot device
2. CompactFlash card
3. Solid-state drive (SSD) in the Disk 1 slot (if present)
4. Storage media available on the LAN



NOTE: Do not insert an emergency boot device during normal operations. The router does not operate normally when it is booted from an emergency boot device.

If the router boots from an alternate boot device, Junos OS displays a message indicating this when you log in to the router. For example, the following message shows that the software booted from the hard disk (`/dev/ad1s1a`):

```
login: username
Password: password
Last login: date on terminal
```

```
--- Junos 8.0 R1 built date
```

```
---
```

```
--- NOTICE: System is running on alternate media device (/dev/ad2s1a).
```

This situation results when the router detects a problem with the primary boot device—usually the CompactFlash card—that prevents it from booting, and consequently boots from the alternate boot device (the hard disk drive). When this happens, the primary boot device is removed from the list of candidate boot devices. The problem is usually a serious hardware error. We recommend you contact the Juniper Networks Technical Assistance Center (JTAC).

When the router boots from the alternate boot device, the software and configuration are only as current as the most recent **request system snapshot** command. However, if the **mirror-flash-on-disk** command was enabled, then the hard disk drive contains a

synchronized, mirror image of the compact flash drive and therefore the current software and configuration.

- Related Documentation**
- [Routing Engine Specifications](#)

CHAPTER 6

Interoperability between 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP

- Interoperability Between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP on page 35
- Configuring the Interoperability Between the 100-Gigabit Ethernet PICs P1-PTX-2-100GE-CFP and PD-1CE-CFP-FPC4 on page 36

Interoperability Between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP

You can enable interoperability between the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 and the 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP by:

- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface.
- Configuring source address (SA) multicast bit steering mode on the 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP.

SA multicast bit steering mode uses the multicast bit in the source MAC address for packet steering.



NOTE: When SA multicast bit steering mode is configured on a PTX Series Packet Transport Switch 100-Gigabit Ethernet port, VLANs are not supported for that port.

The 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 uses two 50-Gbps Packet Forwarding Engines to achieve 100-Gbps throughput. The 50-Gigabit Ethernet physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both the physical interfaces. You must configure the physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 in static link aggregation group (LAG) mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit aggregated interface is visible on the link connecting to the 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP.

On the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4, ingress packets are forwarded to either Packet Forwarding Engine number 0 or 1 based on the SA multicast bit in the received packet. The SA multicast bit of egress packets is set based on whether the packet is forwarded from Packet Forwarding Engine number 0 or 1. As the default packet steering mode is SA multicast bit steering mode, no configuration is necessary to enable this mode.

On the 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP, the SA multicast bit is ignored in ingress packets. When SA multicast bit steering mode is enabled, the SA multicast bit in the egress packets is set to 0 or 1 based on the flow hash value that is computed internally by the Packet Forwarding Engine complex for each packet. No CLI configuration is required to generate the flow hash value as this computation is done automatically. The flow hash algorithm uses fields in the packet header to compute the flow hash value. By default, the SA multicast bit is set to 0 in egress packets. You must configure SA multicast bit steering mode to enable interoperability with the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4.



NOTE: If you try to enable the interoperability between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP without configuring PD-1CE-CFP-FPC4 (with two 50-Gigabit Ethernet interfaces) in static LAG mode, then there are issues in forwarding or routing protocols. For example, if you create two untagged logical interfaces—one each on the two 50-Gigabit Ethernet interfaces—on the PD-1CE-CFP-FPC4 and one untagged logical interface on the P1-PTX-2-100GE-CFP, then P1-PTX-2-100GE-CFP does not learn about one of the 50-Gigabit Ethernet interfaces on PD-1CE-CFP-FPC4.

**Related
Documentation**

- [Configuring the Interoperability Between the 100-Gigabit Ethernet PICs P1-PTX-2-100GE-CFP and PD-1CE-CFP-FPC4 on page 36](#)
- [sa-multicast on page 133](#)
- [Interoperability Between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and PF-1CGE-CFP](#)

Configuring the Interoperability Between the 100-Gigabit Ethernet PICs P1-PTX-2-100GE-CFP and PD-1CE-CFP-FPC4

You can enable interoperability between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP by performing the following tasks:

- [Configuring SA Multicast Bit Steering Mode on 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP on page 37](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as One Aggregated Ethernet Interface on page 37](#)

Configuring SA Multicast Bit Steering Mode on 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP

To enable the interoperability between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP, you must enable source address (SA) multicast bit steering mode on P1-PTX-2-100GE-CFP.

To configure SA multicast bit steering mode on the 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP:

1. Specify the FPC, PIC, and port information on the chassis.

```
[edit ]
user@host# edit chassis fpc slot pic slot port port-number
```

For example:

```
[edit ]
user@host# edit chassis fpc 1 pic 0 port 0
```

2. Configure the interoperation mode (SA multicast bit steering mode).

```
[edit chassis fpc 1 pic 0]
user@host# set forwarding-mode sa-multicast
```

3. Verify the configuration.

```
[edit ]
user@host# show chassis
fpc 1 {
  pic 0 {
    port 0 {
      forwarding-mode {
        sa-multicast;
      }
    }
  }
}
```



NOTE: As the default packet steering mode for the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 is SA multicast bit steering mode, no configuration is necessary to enable this mode.

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as One Aggregated Ethernet Interface

To enable the interoperability between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and PF-1CGE-CFP or P1-PTX-2-100GE-CFP, you need to configure the two 50-Gigabit Ethernet physical interfaces on PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface. This ensures that a single 100-Gigabit aggregated interface is visible on the link connecting to PF-1CGE-CFP or P1-PTX-2-100GE-CFP instead of two independent 50-Gigabit Ethernet interfaces.

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is

configured with two physical interfaces, it creates the physical interfaces et-x/y/0:0 and et-x/y/0:1, where x is the FPC slot number and y is the PIC slot number. For example, to configure two physical interfaces for PIC slot 0 in FPC slot 5:

1. Specify the number of aggregated Ethernet interfaces to be created.

```
[edit chassis]
user@host# set aggregated devices ethernet device-count count
```

For example:

```
[edit chassis]
user@host# set aggregated devices ethernet device-count 1
```

2. Specify the members to be included within the aggregated Ethernet bundle.

```
[edit interfaces ]
user@host# set interface-name gigether-options 802.3ad bundle
```

The following example shows how to configure two physical interfaces for PIC 0 on a T1600 router.

```
[edit interfaces ]
user@host# set et-5/0/0:0 gigether-options 802.3ad ae0
user@host# set et-5/0/0:1 gigether-options 802.3ad ae0
```

3. Verify the configuration at the chassis.

```
[edit ]
user@host# show chassis
  aggregated-devices {
    ethernet {
      device-count 1;
    }
  }
```

4. Verify the configuration at the interface.

```
[edit ]
user@host# show interfaces
  et-5/0/0:0 {
    gigether-options {
      802.3ad ae0;
    }
  }
  et-5/0/0:1 {
    gigether-options {
      802.3ad ae0;
    }
  }
```

Related Documentation

- [Interoperability Between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP on page 35](#)
- [sa-multicast on page 133](#)

- Interoperability Between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and PF-1CGE-CFP

CHAPTER 7

Traffic Black Hole Detection and Recovery

- [Traffic Black Hole Caused by Fabric Degradation on page 41](#)
- [Disabling FPC Restart on page 42](#)

Traffic Black Hole Caused by Fabric Degradation

A traffic black hole occurs when packets are dropped by a device without notification. Other connected devices continue to forward traffic to the affected device, impacting the network performance. A severely degraded fabric plane can be one of the reasons for a traffic black hole.

Devices can limit the black-hole time by detecting unreachable destination Packet Forwarding Engines and signaling connected devices when they cannot carry traffic because of a severely degraded fabric.

Packet Forwarding Engine destinations can become unreachable for the following reasons:

- The fabric Switch Interface Boards (SIBs) go offline as a result of a CLI command or a pressed physical button.
- The fabric SIBs are turned offline by the Switch Processor Mezzanine Board (SPMB) because of high temperature.
- Voltage or polled I/O errors in the SIBs detected by the SPMB.
- On T640 and T1600 routers:
 - All Packet Forwarding Engines receive destination errors on all planes from remote Packet Forwarding Engines, even when the SIBs are online
 - Complete fabric loss caused by destination timeouts, even when the SIBs are online.
- On PTX Series systems:
 - Link errors on all connected planes
 - Two Packet Forwarding Engines can reach the fabric but not each other
 - Link errors where two Packet Forwarding Engines have connectivity with the fabric but not through a common plane

When the system detects any unreachable Packet Forwarding Engine destinations, healing from a traffic black hole is attempted. If the healing fails, the system turns off the interfaces, thereby stopping the traffic black hole.

The recovery process consists of the following phases:

1. On T640 and T1600 routers: Fabric plane restart phase: Healing is attempted by restarting the fabric planes one by one. This phase does not start if the fabric plane is functioning properly and a single Flexible PIC Concentrator (FPC) is bad.

On PTX Series systems: SIB restart phase: Healing is attempted by restarting the SIBs one by one. This phase does not start if the SIBs are functioning properly and a single Flexible PIC Concentrator (FPC) is bad.

2. On T640 and T1600 routers: Fabric plane and FPC restart phase: Healing is attempted by restarting both the fabric planes and the FPCs. If there are bad FPCs that are unable to initiate high-speed links to the fabric after reboot, creation of traffic black hole is limited because no interfaces are created for these FPCs.

On PTX Series systems: SIB and FPC restart phase: Healing is attempted by restarting both the SIBs and the FPCs. If there are bad FPCs that are unable to initiate high-speed links to the fabric after reboot, creation of traffic black hole is limited because no interfaces are created for these FPCs.

3. FPC offline phase: Traffic black hole is limited by turning the FPCs offline and by turning off interfaces because previous attempts at recovery have failed.

By default, the system limits black-hole time by detecting severely degraded fabric. No user interaction is necessary.

- Related Documentation**
- [Disabling FPC Restart on page 42](#)
 - Router Chassis Configuration Statements
 - [degraded on page 107](#)

Disabling FPC Restart

You can disable FPC restart to limit recovery actions from a degraded fabric condition. On T640 and T1600 routers, only the fabric plane is restarted. On PTX Series systems, only the Switch Interface Boards (SIBs) are restarted. To disable the restarting of FPCs, use the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level:

```
[edit chassis fabric]
degraded {
  action-fpc-restart-disable;
}
```

Whenever FPC restart is disabled, an alarm is raised when there are unreachable destinations present in the router, and you must restart the FPCs manually.

To ensure that both the fabric planes (T640 and T1600 routers) or the SIBs (PTX Series systems) and the FPCs are restarted during the recovery process, do not configure the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level.

- Related Documentation**
- [Traffic Black Hole Caused by Fabric Degradation on page 41](#)
 - Router Chassis Configuration Statements

CHAPTER 8

Routing Policy

- [Example: Overriding the Default BGP Routing Policy on PTX Series Packet Transport Switches on page 45](#)

Example: Overriding the Default BGP Routing Policy on PTX Series Packet Transport Switches

- [Understanding the Default BGP Routing Policy on Packet Transport Switches on page 45](#)
- [Example: Overriding the Default BGP Routing Policy on PTX Series Packet Transport Switches on page 47](#)

Understanding the Default BGP Routing Policy on Packet Transport Switches

On PTX Series Packet Transport Switches, the default BGP routing policy differs from that of other Junos OS routing devices.

The PTX Series switches are MPLS transit platforms that do IP forwarding, typically using interior gateway protocol (IGP) routes. The PTX Series Packet Forwarding Engine (PFE) can accommodate a relatively small number of variable-length prefixes.



NOTE: A PTX Series switch can support full BGP routes in the control plane so that it can be used as a route reflector (RR). It can do exact-length lookup multicast forwarding and can build the multicast forwarding plane for use by the unicast control plane (for example, to perform a reverse-path forwarding lookup for multicast).

Given the PFE limitation, the default routing policy for PTX Series switches is for BGP routes not to be installed in the forwarding table. You can override the default routing policy and select certain BGP routes to install in the forwarding table.

The default behavior for load balancing and BGP routes on PTX Series switches is as follows. It has the following desirable characteristics:

- Allows you to override the default behavior without needing to alter the default policy directly
- Reduces the chance of accidental changes that nullify the defaults
- Sets no flow-control actions, such as accept and reject

The default routing policy on the PTX Series switches is as follows:

```
user@host# show policy-options | display inheritance defaults no-comments
policy-options {
  policy-statement junos-ptx-series-default {
    term t1 {
      from {
        protocol bgp;
        rib inet.0;
      }
      then no-install-to-fib;
    }
    term t2 {
      from {
        protocol bgp;
        rib inet6.0;
      }
      then no-install-to-fib;
    }
    term t3 {
      then load-balance per-packet;
    }
  }
}
routing-options {
  forwarding-table {
    default-export junos-ptx-series-default;
  }
}
user@host# show routing-options forwarding-table default-export | display inheritance
defaults no-comments
default-export junos-ptx-series-default;
```

As shown here, the **junos-ptx-series-default** policy is defined in **[edit policy-options]**. The policy is applied in **[edit routing-options forwarding-table]**, using the **default-export** statement. You can view these default configurations by using the **| display inheritance** flag.

Also, you can use the **show policy** command to view the default policy.

```
user@host> show policy junos-ptx-series-default
Policy junos-ptx-series-default:
  Term t1:
    from proto BGP
    inet.0
    then install-to-fib no
  Term t2:
    from proto BGP
    inet6.0
    then install-to-fib no
  Term t3:
    then load-balance per-packet
```



CAUTION: We strongly recommend that you do not alter the **junos-ptx-series-default** routing policy directly.

Junos OS chains the **junos-ptx-series-default** policy and any user-configured export policy. Because the **junos-ptx-series-default** policy does not use flow-control actions, any export policy that you configure is executed (by way of the implicit next-policy action) for every route. Thus you can override any actions set by the **junos-ptx-series-default** policy. If you do not configure an export policy, the actions set by **junos-ptx-series-default** policy are the only actions.

You can use the policy action **install-to-fib** to override the **no-install-to-fib** action.

Similarly, you can set the **load-balance per-prefix** action to override the **load-balance per-packet** action.

Example: Overriding the Default BGP Routing Policy on PTX Series Packet Transport Switches

This example shows how to override the default routing policy on packet transport switches, such as the PTX Series Packet Transport Switches.

- [Requirements on page 47](#)
- [Overview on page 47](#)
- [Configuration on page 48](#)
- [Verification on page 49](#)

Requirements

This example requires Junos OS Release 12.1 or later.

Overview

By default, the PTX Series switches do not install BGP routes in the forwarding table.

For PTX Series switches, the configuration of the **from protocols bgp** condition with the **then accept** action does not have the usual result that it has on other Junos OS routing devices. With the following routing policy on PTX Series switches, BGP routes do not get installed in the forwarding table.

```

user@host# show policy-options
policy-statement accept-no-install {
  term 1 {
    from protocol bgp;
    then accept;
  }
}
user@host# show routing-options
forwarding-table {
  export accept-no-install
}

user@host> show route forwarding-table
Routing table: default.inet
Internet:
Destination          Type RtRef Next hop          Type Index NhRef Netif
default              perm    0
rjct                 36      2

```

No BGP routes are installed in the forwarding table. This is the expected behavior.

This example shows how to use the **then install-to-fib** action to effectively override the default BGP routing policy.

Configuration

CLI Quick Configuration

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

```
set policy-options prefix-list install-bgp 66.0.0.1/32
set policy-options policy-statement override-ptx-series-default term 1 from prefix-list
install-bgp
set policy-options policy-statement override-ptx-series-default term 1 then load-balance
per-prefix
set policy-options policy-statement override-ptx-series-default term 1 then install-to-fib
set routing-options forwarding-table export override-ptx-series-default
```

Installing Selected BGP Routes in the Forwarding Table

Step-by-Step Procedure

The following example requires you to navigate various levels in the configuration hierarchy. For information about navigating the CLI, see *Using the CLI Editor in Configuration Mode* in the CLI User Guide.

To install selected BGP routes in the forwarding table:

1. Configure a list of prefixes to install in the forwarding table.

```
[edit policy-options prefix-list install-bgp]
user@host# set 66.0.0.1/32
```
2. Configure the routing policy, applying the prefix list as a condition.

```
[edit policy-options policy-statement override-ptx-series-default term 1]
user@host# set from prefix-list install-bgp
user@host# set then install-to-fib
user@host# set then load-balance per-prefix
```
3. Apply the routing policy to the forwarding table.

```
[edit routing-options forwarding-table]
user@host# set export override-ptx-series-default
```

Results

From configuration mode, confirm your configuration by entering the **show policy-options** and **show routing-options** commands. If the output does not display the intended configuration, repeat the instructions in this example to correct the configuration.

```
user@host# show policy-options
prefix-list install-bgp {
  66.0.0.1/32;
}
policy-statement override-ptx-series-default {
  term 1 {
    from {
      prefix-list install-bgp;
    }
    then {
```

```

        load-balance per-prefix;
        install-to-fib;
    }
}

user@host# show routing-options
forwarding-table {
    export override-ptx-series-default;
}

```

If you are done configuring the device, enter **commit** from configuration mode.

Verification

Confirm that the configuration is working properly.

Verifying That the Selected Route Is Installed in the Forwarding Table

Purpose Make sure that the configured policy overrides the default policy

Action From operational mode, enter the **show route forwarding-table** command.

```

user@host> show route forwarding-table destination 66.0.0.1
Internet:
Destination      Type RtRef Next hop          Type Index NhRef Netif
66.0.0.1/32      user  0          5.1.0.2             ucst  574   1 et-6/0/0.1
                  5.2.0.2             ucst  575   1 et-6/0/0.2

```

Meaning This output shows that the route to 66.0.0.1/32 is installed in the forwarding table.

Related Documentation

- Default Routing Policies and Actions
- Default Import and Export Policies for Protocols
- Examples: Configuring BGP Multipath

CHAPTER 9

Class of Service

- [Understanding CoS CLI Configuration Statements on PTX Series Packet Transport Switches on page 51](#)
- [Configuring Up to 16 Forwarding Classes on page 54](#)
- [Configuring Drop Profile Maps for Schedulers on page 61](#)
- [Example: Configuring Excess Rate for PTX Series Packet Transport Switches on page 61](#)
- [Hardware Capabilities and Limitations on page 67](#)

Understanding CoS CLI Configuration Statements on PTX Series Packet Transport Switches

PTX Series Packet Transport Switches have no new Junos OS CLI configuration statements. However, some statements or statement options supported on other platforms are not supported or may not have effect on PTX Series devices. These exceptions are summarized here.

[edit chassis] Hierarchy Level

The following statement is not applicable to PTX Series Packet Transport Switches. There are always eight queues available. However, if there is a requirement to use only four of eight queues, you can do this by configuring the forwarding class to queue mapping, as appropriate.

```
[edit chassis fpc slot-number pic pic-number],  
  max-queues-per-interface (4 | 8);
```

The following CLI is not applicable to PICs supported on PTX Series Packet Transport Switches:

```
[edit chassis fpc slot-number pic pic-number],  
  q-pic-large-buffer {  
    [large-scale | small-scale]  
  }
```

On PTX Series Packet Transport Switches, buffer occupancy is computed as weighted average. However, configuration of weight at the PIC level is not supported. The default weights are applied.

```
[edit chassis fpc slot-number pic pic-number],  
  red-buffer-occupancy {
```

```
    weighted-averaged [ instant-usage-weight-exponent ] weight-value;  
}
```

The following CLI is not applicable to PICs supported on PTX Series Packet Transport Switches:

```
[edit chassis fpc slot-number pic pic-number],  
traffic-manager {  
    egress-shaping-overhead number;  
    ingress-shaping-overhead number;  
    mode session-shaping;  
}
```

[edit class-of-service] Hierarchy Level

The following CLI is not applicable to PTX Series Packet Transport Switches because there are no separate fabric queues and egress queues:

```
fabric {  
    scheduler-map {  
        priority (high | low) scheduler scheduler-name;  
    }  
}
```

The following CLI does not support the **priority** and **policing-priority** options.

```
forwarding-classes {  
    class queue-num queue-number priority (high | low);  
    queue queue-number class-name priority (high | low) [ policing-priority (premium |  
        normal) ];  
}
```

The following statements are not supported on PTX Series Packet Transport Switches:

- **inet-precedence** rewrite
- Rewrite of both exp and inet-precedence fields for VPN and non-VPN traffic that use the **mpls-inet-both** and **mpls-inet-both-non-vpn** protocol types.
- **exp-push-push-push** and **exp-swap-push-push** rules
- **input-scheduler-map** and **input-shaping-rate**
- The physical interface scheduler is applied on the Packet Forwarding Engine, hence the **scheduler-map-chassis** statement is not applicable.

```
interfaces {  
    interface-name {  
        input-scheduler-map map-name;  
        input-shaping-rate rate;  
        scheduler-map-chassis map-name;  
        unit logical-unit-number {  
            rewrite-rules {  
                inet-precedence (rewrite-name | default) protocol  
                    protocol-types;  
                exp (write-name | default) protocol protocol-types;  
                exp-push-push-push default;  
                exp-swap-push-push default;  
            }  
        }  
    }  
}
```

```

    }
  }
}

```

In the following CLI, only the **inet-precedence** statement is not supported.

```

rewrite-rules {
  (dscp | dscp-ipv6 | exp | ieee-802.1 | ieee-802.1ad | inet-precedence) rewrite-name {
    import (rewrite-name | default);
    forwarding-class class-name {
      loss-priority level code-point (alias | bits);
    }
  }
}

```

Classifiers on routing instances are not supported on PTX Series Packet Transport Switches because L3VPN is not supported. Hence, the following CLI is not applicable.

```

[edit class-of-service]
routing-instances routing-instance-name {
  classifiers {
    exp (classifier-name | default);
    dscp (classifier-name | default);
    dscp-ipv6 (classifier-name | default);
  }
}

```

The following limitations apply to statements under **schedulers** on PTX Series Packet Transport Switches:

- **protocol** (non-tcp | tcp) is not supported for **drop-profile-map**. The **any** option is supported.
- **excess-priority** is not supported.
- **rate-limit** is supported for **transmit-rate**. It is applied only when schedulers are configured as **strict-high**.

```

schedulers (Class of Service) {
  scheduler-name {
    buffer-size (percent percentage | remainder | temporal microseconds);
    drop-profile-map loss-priority (any | low | medium-low | medium-high | high) protocol (any ) drop-profile profile-name;
    priority priority-level;
    transmit-rate (rate | percent percentage | remainder) <exact | rate-limit>;
  }
}

```



NOTE: Configurations that are supported only on Gigabit Ethernet IQ PICs, channelized IQ PICs, and so forth are not applicable to PTX Series Packet Transport Switches. These PICs are not supported on this platform. Those CLIs are not listed here.

[edit firewall] Hierarchy Level

In the following CLI, the **dscp** clause is not supported.

```
family family-name {
  filter filter-name {
    term term-name {
      from {
        match-conditions;
      }
      then {
        dscp 0;
        forwarding-class class-name;
        loss-priority (high | low);
        three-color-policer {
          (single-rate | two-rate) policer-name;
        }
      }
    }
  }
}
```

Configuring Up to 16 Forwarding Classes

By default on all routers, four output queues are mapped to four forwarding classes, as shown in the topic Default Forwarding Classes. On Juniper Networks J Series Services Routers, M120 and M320 Multiservice Edge Routers, and T Series Core Routers, you can configure more than four forwarding classes and queues. For information about configuring J Series routers, see the J Series router documentation.



NOTE: You cannot use CoS-based forwarding features if you configure more than eight forwarding classes on the device.

On M120, M320, MX Series, T Series routers, and PTX Series Packet Transport Switches, you can configure up to 16 forwarding classes and eight queues, with multiple forwarding classes assigned to single queues. The concept of assigning multiple forwarding classes to a queue is sometimes referred to as creating *forwarding-class aliases*. This section explains how to configure M320 and T Series routers.

Mapping multiple forwarding classes to single queues is useful. Suppose, for example, that forwarding classes are set based on multifield packet classification, and the multifield classifiers are different for core-facing interfaces and customer-facing interfaces. Suppose you need four queues for a core-facing interface and five queues for a customer-facing interface, where **fc0** through **fc4** correspond to the classifiers for the customer-facing interface, and **fc5** through **fc8** correspond to classifiers for the core-facing interface, as shown in [Figure 3 on page 54](#).

Figure 3: Customer-Facing and Core-Facing Forwarding Classes



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In this example, there are nine classifiers and, therefore, nine forwarding classes. The forwarding class-to-queue mapping is shown in [Table 5 on page 55](#).

Table 5: Sample Forwarding Class-to-Queue Mapping

Forwarding Class Names	Queue Number
fc0	0
fc5	
fc1	1
fc6	
fc2	2
fc7	
fc3	3
fc8	
fc4	4

To configure up to 16 forwarding classes, include the **class** and **queue-num** statements at the **[edit class-of-service forwarding-classes]** hierarchy level:

```
[edit class-of-service forwarding-classes]
class class-name queue-num queue-number;
```

You can configure up to 16 different forwarding-class names. The corresponding output queue number can be from 0 through 7. Therefore, you can map multiple forwarding classes to a single queue. If you map multiple forwarding classes to a queue, the multiple forwarding classes must refer to the same scheduler (at the **[edit class-of-service scheduler-maps map-name forwarding-class class-name scheduler scheduler-name]** hierarchy level).

When you configure up to 16 forwarding classes, you can use them as you can any other forwarding class—in classifiers, schedulers, firewall filters (multifield classifiers), policers, and rewrite rules.

When you configure up to 16 forwarding classes, the following limitations apply:

- The **class** and **queue** statements at the **[edit class-of-service forwarding-classes]** hierarchy level are mutually exclusive. In other words, you can include one or the other of the following configurations, but not both:

```
[edit class-of-service forwarding-classes]
queue queue-number class-name;
```

```
[edit class-of-service forwarding-classes]
class class-name queue-num queue-number;
```

- On T Series routers only, when you configure IEEE 802.1p rewrite marking on Gigabit Ethernet IQ, Gigabit Ethernet IQ2, Gigabit Ethernet Enhanced IQ (IQE), and Gigabit Ethernet Enhanced IQ2 (IQ2E) PICs, you cannot configure more than eight forwarding classes. This limitation does not apply to M Series routers. On M Series routers, you can configure up to 16 forwarding classes when you configure IEEE 802.1p rewrite marking on any of these PICs.
- For GRE and IP-IP tunnels, IP precedence and DSCP rewrite marking of the inner header do not work with more than eight forwarding classes.
- When you use CoS-based forwarding features, you cannot configure more than eight forwarding classes with a forwarding policy. However, if you try to configure CoS-based forwarding with more than eight forwarding classes configured, commit fails with a message. Therefore, you can configure CBF on a router with eight or less than eight forwarding classes only. Under this condition, the forwarding class to queue mapping can be either one-to-one or one-to-many.
- A scheduler map that maps eight different forwarding classes to eight different schedulers can only be applied to interfaces that support eight queues. If you apply this type of scheduler map to an interface that only supports four queues, then the commit will fail.
- We recommend that you configure the statements changing PICs to support eight queues and then applying an eight queue scheduler map in two separate steps. Otherwise, the commit might succeed but the PIC might not have eight queues when the scheduler map is applied, generating an error.

You can determine the ID number assigned to a forwarding class by issuing the **show class-of-service forwarding-class** command. You can determine whether the classification is fixed by issuing the **show class-of-service forwarding-table classifier mapping** command. In the command output, if the **Table Type** field appears as **Fixed**, the classification is fixed. For more information about fixed classification, see [Applying Forwarding Classes to Interfaces](#).

For information about configuring eight forwarding classes on ATM2 IQ interfaces, see [Enabling Eight Queues on ATM Interfaces](#).

This section discusses the following topics:

- [Enabling Eight Queues on Interfaces on page 56](#)
- [Multiple Forwarding Classes and Default Forwarding Classes on page 58](#)
- [PICs Restricted to Four Queues on page 58](#)
- [Examples: Configuring Up to 16 Forwarding Classes on page 59](#)

Enabling Eight Queues on Interfaces

By default, Intelligent Queuing (IQ), Intelligent Queuing 2 (IQ2), Intelligent Queuing Enhanced (IQE), and Intelligent Queuing 2 Enhanced (IQ2E) PICs on M320 and T Series routers are restricted to a maximum of four egress queues per interface. To configure a maximum of eight egress queues on these interfaces, include the **max-queues-per-interface** statement at the **[edit chassis fpc slot-number pic pic-number]** hierarchy level:

```
[edit chassis fpc slot-number pic pic-number]
max-queues-per-interface (4 | 8);
```

On a TX Matrix or TX Matrix Plus router or TX Matrix Plus router with 3D SIBs, include the **max-queues-per-interface** statement at the **[edit chassis lcc number fpc slot-number pic pic-number]** hierarchy level:

```
[edit chassis lcc number fpc slot-number pic pic-number]
max-queues-per-interface (4 | 8);
```

The numerical value can be 4 or 8.

For Juniper Networks J Series routers, this statement is not supported. J Series routers always have eight queues available.



NOTE: In addition to configuring eight queues at the **[edit chassis]** hierarchy level, the configuration at the **[edit class-of-service]** hierarchy level must support eight queues per interface.

The maximum number of queues per IQ PIC can be 4 or 8. If you include the **max-queues-per-interface** statement, all ports on the IQ PIC use configured mode and all interfaces on the IQ PIC have the same maximum number of queues.

To determine how many queues an interface supports, you can check the **CoS queues** output field of the **show interfaces interface-name extensive** command:

```
user@host> show interfaces so-1/0/0 extensive
CoS queues: 8 supported
```

If you include the **max-queues-per-interface 4** statement, you can configure all four ports and configure up to four queues per port.

For 4-port OC3c/STM1 Type I and Type II PICs on M320 and T Series routers, when you include the **max-queues-per-interface 8** statement, you can configure up to eight queues on ports 0 and 2. After you commit the configuration, the PIC goes offline and comes back online with only ports 0 and 2 operational. No interfaces can be configured on ports 1 and 3.

For Quad T3 and Quad E3 PICs, when you include the **max-queues-per-interface 8** statement, you can configure up to eight queues on ports 0 and 2. After you commit the configuration, the PIC goes offline and comes back online with only ports 0 and 2 operational. No interfaces can be configured on ports 1 and 3.

When you include the **max-queues-per-interface** statement and commit the configuration, all physical interfaces on the IQ PIC are deleted and readded. Also, the PIC is taken offline and then brought back online immediately. You do not need to take the PIC offline and online manually. You should change modes between four queues and eight queues only when there is no active traffic going to the IQ PIC.

Multiple Forwarding Classes and Default Forwarding Classes

For queues 0 through 3, if you assign multiple forwarding classes to a single queue, default forwarding class assignment works as follows:

- The first forwarding class that you assign to queue 0 acquires the default BE classification and scheduling.
- The first forwarding class that you assign to queue 1 acquires the default EF classification and scheduling.
- The first forwarding class that you assign to queue 2 acquires the default AF classification and scheduling.
- The first forwarding class that you assign to queue 3 acquires the default NC classification and scheduling.

Of course you can override the default classification and scheduling by configuring custom classifiers and schedulers.

If you do not explicitly map forwarding classes to queues 0 through 3, then the respective default classes are automatically assigned to those queues. When you are counting the 16 forwarding classes, you must include in the total any default forwarding classes automatically assigned to queues 0 through 3. As a result, you can map up to 13 forwarding classes to a single queue when the single queue is queue 0, 1, 2, or 3. You can map up to 12 forwarding classes to a single queue when the single queue is queue 4, 5, 6, or 7. In summary, there must be at least one forwarding class each (default or otherwise) assigned to queue 0 through 3, and you can assign the remaining 12 forwarding classes (16–4) to any queue.

For example, suppose you assign two forwarding classes to queue 0 and you assign no forwarding classes to queues 1 through 3. The software automatically assigns one default forwarding class each to queues 1 through 3. This means 11 forwarding classes (16–5) are available for you to assign to queues 4 through 7.

For more information about forwarding class defaults, see [Default Forwarding Classes](#).

PICs Restricted to Four Queues

Some Juniper Networks T Series Core Router PICs support up to 16 forwarding classes and are restricted to 4 queues. Contact Juniper Networks customer support for a current list of T Series router PICs that are restricted to four queues. To determine how many queues an interface supports, you can check the **CoS queues** output field of the **show interfaces *interface-name* extensive** command:

```
user@host> show interfaces so-1/0/0 extensive
CoS queues: 8 supported
```

By default, for T Series router PICs that are restricted to four queues, the router overrides the global configuration based on the following formula:

$$Q_r = Q_d \bmod R_{\max}$$

Q_r is the queue number assigned if the PIC is restricted to four queues.

Qd is the queue number that would have been mapped if this PIC were not restricted.

Rmax is the maximum number of restricted queues available. Currently, this is four.

For example, assume you map the forwarding class **ef** to queue 6. For a PIC restricted to four queues, the queue number for forwarding class **ef** is $Qr = 6 \bmod 4 = 2$.

To determine which queue is assigned to a forwarding class, use the **show class-of-service forwarding-class** command from the top level of the CLI. The output shows queue assignments for both global queue mappings and restricted queue mappings:

```
user@host> show class-of-service forwarding-class
Forwarding class      Queue    Restricted Queue  Fabric priority
be                    0         2                low
ef                    1         2                low
assured-forwarding    2         2                low
network-control       3         3                low
```

For T Series router PICs restricted to four queues, you can override the formula-derived queue assignment by including the **restricted-queues** statement at the **[edit class-of-service]** hierarchy level:

```
[edit class-of-service]
restricted-queues {
  forwarding-class class-name queue queue-number;
}
```

You can configure up to 16 forwarding classes. The output queue number can be from 0 through 3. Therefore, for PICs restricted to four queues, you can map multiple forwarding classes to single queues. If you map multiple forwarding classes to a queue, the multiple forwarding classes must refer to the same scheduler. This requirement applies to all PICs. The class name you configure at the **[edit class-of-service restricted-queues]** hierarchy level must be either a default forwarding class name or a forwarding class you configure at the **[edit class-of-service forwarding-classes]** hierarchy level.

Examples: Configuring Up to 16 Forwarding Classes

Configure 16 forwarding classes:

Configuring 16 Forwarding Classes

```
[edit class-of-service]
forwarding-classes {
  class fc0 queue-num 0;
  class fc1 queue-num 0;
  class fc2 queue-num 1;
  class fc3 queue-num 1;
  class fc4 queue-num 2;
  class fc5 queue-num 2;
  class fc6 queue-num 3;
  class fc7 queue-num 3;
  class fc8 queue-num 4;
  class fc9 queue-num 4;
  class fc10 queue-num 5;
  class fc11 queue-num 5;
  class fc12 queue-num 6;
  class fc13 queue-num 6;
  class fc14 queue-num 7;
```

```
class fc15 queue-num 7;
}
```

For PICs restricted to four queues, map four forwarding classes to each queue:

**Restricted Queues:
Mapping Two
Forwarding Classes to
Each Queue**

```
[edit class-of-service]
restricted-queues {
  forwarding-class fc0 queue 0;
  forwarding-class fc1 queue 0;
  forwarding-class fc2 queue 0;
  forwarding-class fc3 queue 0;
  forwarding-class fc4 queue 1;
  forwarding-class fc5 queue 1;
  forwarding-class fc6 queue 1;
  forwarding-class fc7 queue 1;
  forwarding-class fc8 queue 2;
  forwarding-class fc9 queue 2;
  forwarding-class fc10 queue 2;
  forwarding-class fc11 queue 2;
  forwarding-class fc12 queue 3;
  forwarding-class fc13 queue 3;
  forwarding-class fc14 queue 3;
  forwarding-class fc15 queue 3;
}
```

If you map multiple forwarding classes to a queue, the multiple forwarding classes must refer to the same scheduler:

**Configuring a
Scheduler Map
Applicable to an
Interface Restricted to
Four Queues**

```
[edit class-of-service]
scheduler-maps {
  interface-restricted {
    forwarding-class be scheduler Q0;
    forwarding-class ef scheduler Q1;
    forwarding-class ef1 scheduler Q1;
    forwarding-class ef2 scheduler Q1;
    forwarding-class af1 scheduler Q2;
    forwarding-class af scheduler Q2;
    forwarding-class nc scheduler Q3;
    forwarding-class nc1 scheduler Q3;
  }
}
[edit class-of-service]
restricted-queues {
  forwarding-class be queue 0;
  forwarding-class ef queue 1;
  forwarding-class ef1 queue 1;
  forwarding-class ef2 queue 1;
  forwarding-class af queue 2;
  forwarding-class af1 queue 2;
  forwarding-class nc queue 3;
  forwarding-class nc1 queue 3;
}
```

Configuring Drop Profile Maps for Schedulers

Drop-profile maps associate drop profiles with a scheduler. The map examines the current loss priority setting of the packet (high, low, or any) and assigns a drop profile according to these values. For example, you can specify that all TCP packets with low loss priority are assigned a drop profile that you name **low-drop**. You can associate multiple drop-profile maps with a single queue.

The scheduler drop profile defines the drop probabilities across the range of delay-buffer occupancy, thereby supporting the RED process. Depending on the drop probabilities, RED might drop packets aggressively long before the buffer becomes full, or it might drop only a few packets even if the buffer is almost full. For information on how to configure drop profiles, see RED Drop Profiles Overview.

By default, the drop profile is mapped to packets with low PLP and any protocol type. To configure how packet types are mapped to a specified drop profile, include the **drop-profile-map** statement at the **[edit class-of-service schedulers *scheduler-name*]** hierarchy level:

```
[edit class-of-service schedulers scheduler-name ]
  drop-profile-map loss-priority (any | low | medium-low | medium-high | high) protocol (any
    | non-tcp | tcp) drop-profile profile-name;
```

The map sets the drop profile for a specific PLP and protocol type. The inputs for the map are the PLP and the protocol type. The output is the drop profile. For more information about how CoS maps work, see CoS Inputs and Outputs Overview.



NOTE: On Juniper Network MX Series 3D Universal Edge Routers, T4000 Core Routers, and PTX Series Packet Transport Switches, you can configure only the **any** option for the **protocol** statement.

For each scheduler, you can configure separate drop profile maps for each loss priority.

You can configure a maximum of 32 different drop profiles.

Related Documentation

- [Configuring RED Drop Profiles](#)

Example: Configuring Excess Rate for PTX Series Packet Transport Switches

You can configure excess rate to customize the distribution of available excess bandwidth among the queues for PTX Series Packet Transport Switches. When excess rate is not configured, the excess bandwidth available is distributed in proportion to the transmit rates allocated to the queues.

- [Requirements on page 62](#)
- [Overview on page 62](#)

- [Configuration on page 62](#)
- [Verification on page 67](#)

Requirements

This example uses the following hardware and software components:

- One PTX Series Packet Transport Switch
- Junos OS Release 12.1X48R2 or later

Overview

This set of examples illustrates how you configure schedulers for the PTX Series Packet Transport Switch to distribute the remaining bandwidth (excess rate) among the configured queues.

When you configure excess rate, use the following guidelines:

- The **transmit-rate** statements of the configured schedulers can add up to at most 100%.
- All queues on the PTX Series Packet Transport Switch have the same excess priority. Excess priority configuration is not supported.
- If a strict-high priority queue is configured and is rate-limited, this queue gets the rate-limited bandwidth first. Then the configured **transmit-rate** value of other queues is met (regardless of queue priority), and finally the excess bandwidth is distributed in proportion to the configured **excess-rate** values.



NOTE: We recommend that you configure rate limit on strict-high queues because the other queues may not meet their guaranteed bandwidths. See **transmit-rate**.

Configuration

To configure excess rate, perform one or more of these tasks:

- [Configuring Schedulers Without Specifying Excess Rate on page 62](#)
- [Configuring Schedulers by Specifying Excess Rate on page 64](#)
- [Configuring Schedulers to Control Excess Rate for Non-High Priority Queues on page 65](#)

Configuring Schedulers Without Specifying Excess Rate

CLI Quick Configuration

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

```
set class-of-schedule schedulers sched_queue_0 transmit-rate percent 20
set class-of-schedule schedulers sched_queue_1 transmit-rate percent 40
```



```
set class-of-schedule schedulers sched_queue_2 transmit-rate percent 10
set class-of-schedule schedulers sched_queue_3 transmit-rate percent 10
```

Step-by-Step Procedure

In this example, four queues are configured and each associated scheduler is assigned the indicated transmit rate. Across the four queues, the transmit rate totals to 80%. No excess rate is configured. Assuming that each queue has loads greater than or equal to the configured transmit rate, the remaining 20% of the bandwidth is distributed in proportion to the configured transmit rates (20:40:10:10):

- sched_queue_0—5% (20% of the guaranteed rate plus 5% of the remaining bandwidth is 25%)
- sched_queue_1—10% (40% of the guaranteed rate plus 10% of the remaining bandwidth is 50%)
- sched_queue_2—2.5% (10% of the guaranteed rate plus 2.5% of the remaining bandwidth is 12.5%)
- sched_queue_3—2.5% (10% of the guaranteed rate plus 2.5% of the remaining bandwidth is 12.5%)

The following example requires you to navigate various levels in the configuration hierarchy. For instructions on how to do that, see *Using the CLI Editor in Configuration Mode* in the CLI User Guide.

To configure the schedulers:

1. Create the scheduler for queue 0:

```
[edit class-of-schedule]
user@host# set schedulers sched_queue_0 transmit-rate percent 20
```
2. Create the scheduler for queue 1:

```
[edit class-of-schedule]
user@host# set schedulers sched_queue_1 transmit-rate percent 40
```
3. Create the scheduler for queue 2:

```
[edit class-of-schedule]
user@host# set schedulers sched_queue_2 transmit-rate percent 10
```
4. Create the scheduler for queue 3:

```
[edit class-of-schedule]
user@host# set schedulers sched_queue_3 transmit-rate percent 10
```

Results From configuration mode, confirm your configuration by entering the **show class-of-service schedulers** command. If the output does not display the intended configuration, repeat the configuration instructions in this example to correct it.

```
sched_queue_0 {
  transmit-rate percent 20;
}
sched_queue_1 {
  transmit-rate percent 40;
}
```

```
    sched_queue_2 {  
        transmit-rate percent 10;  
    }  
    sched_queue_3 {  
        transmit-rate percent 10;  
    }
```

If you are done configuring the device, enter **commit** from configuration mode.

Configuring Schedulers by Specifying Excess Rate

CLI Quick Configuration

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

```
set class-of-schedule schedulers sched_queue_0 transmit-rate percent 25  
set class-of-schedule schedulers sched_queue_0 excess-rate percent 25  
set class-of-schedule schedulers sched_queue_1 transmit-rate percent 25  
set class-of-schedule schedulers sched_queue_1 excess-rate percent 50  
set class-of-schedule schedulers sched_queue_2 transmit-rate percent 25  
set class-of-schedule schedulers sched_queue_3 transmit-rate percent 25
```

Step-by-Step Procedure

In this example, four schedulers are configured and each is assigned a transmit rate of 25%. Queue 0 is configured with 40% and queue 1 with 60% of the excess rate. If the offered load through queue 2 is only 10%, the remaining bandwidth is distributed as: queue excess rate / total excess rate * remaining bandwidth percentage. If a queue has transmit rate configured but not excess rate, the excess rate for that queue is 1. In this example, the excess rate ratio is 25:50:1:1, which yields the following distribution of the 15% remaining bandwidth from queue 2:

- sched_queue_0—4.93% ($25 / 76 * 15\%$)
- sched_queue_1—9.87% ($50 / 76 * 15\%$)
- sched_queue_3—0.197% ($1 / 76 * 15\%$)

When the offered load on queue 2 increases to 25% or greater, the other queues get only their configured transmit rates.

The following example requires you to navigate various levels in the configuration hierarchy. For instructions on how to do that, see *Using the CLI Editor in Configuration Mode* in the CLI User Guide.

To configure the schedulers:

1. Create the scheduler for queue 0:

```
[edit class-of-schedule]  
user@host# set schedulers sched_queue_0 transmit-rate percent 25  
user@host# set schedulers sched_queue_0 excess-rate percent 25
```

2. Create the scheduler for queue 1:

```
[edit class-of-schedule]  
user@host# set schedulers sched_queue_1 transmit-rate percent 25
```

```
user@host# set schedulers sched_queue_1 excess-rate percent 50
```

3. Create the scheduler for queue 2:

```
[edit class-of-schedule]
user@host# set schedulers sched_queue_2 transmit-rate percent 25
```

4. Create the scheduler for queue 3:

```
[edit class-of-schedule]
user@host# set schedulers sched_queue_3 transmit-rate percent 25
```

Results From configuration mode, confirm your configuration by entering the **show class-of-service schedulers** command. If the output does not display the intended configuration, repeat the configuration instructions in this example to correct it.

```
sched_queue_0 {
  transmit-rate percent 25;
  excess-rate percent 25;
}
sched_queue_1 {
  transmit-rate percent 25;
  excess-rate percent 50;
}
sched_queue_2 {
  transmit-rate percent 25;
}
sched_queue_3 {
  transmit-rate percent 25;
}
```

If you are done configuring the device, enter **commit** from configuration mode.

Configuring Schedulers to Control Excess Rate for Non-High Priority Queues

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

```
set class-of-schedule schedulers sched_queue_0 transmit-rate percent 90
set class-of-schedule schedulers sched_queue_0 priority high
set class-of-schedule schedulers sched_queue_1 transmit-rate percent 10
set class-of-schedule schedulers sched_queue_1 priority low
set class-of-schedule schedulers sched_queue_2 excess-rate percent 10
set class-of-schedule schedulers sched_queue_3 excess-rate percent 30
```

Step-by-Step Procedure In this example, the scheduler for queue 0 is configured to transmit up to 90% of traffic if there is enough offered load. When the traffic to queue 0 is less than 90%, excess rate is configured to distribute the remaining bandwidth in the ratio 1:10:30 (when the offered load on queue 1 is greater than 10%), which yields the following distribution of the remaining bandwidth from queue 0:

- sched_queue_1— $0.0244 * x\%$ ($1 / 41 * \text{remaining bandwidth } (x)\%$)
- sched_queue_2— $0.244 * x\%$ ($10 / 41 * \text{remaining bandwidth } (x)\%$)
- sched_queue_3— $0.732 * x\%$ ($30 / 41 * \text{remaining bandwidth } (x)\%$)



NOTE: Although the transmit-rate values on queues can add up to at most 100%, the excess-rate value does not have this restriction because it is a ratio.

The following example requires you to navigate various levels in the configuration hierarchy. For instructions on how to do that, see *Using the CLI Editor in Configuration Mode* in the CLI User Guide.

To configure the schedulers:

1. Create the scheduler for queue 0:


```
[edit class-of-schedule]
user@host# set schedulers sched_queue_0 transmit-rate percent 90
user@host# set schedulers sched_queue_0 priority high
```
2. Create the scheduler for queue 1:


```
[edit class-of-schedule]
user@host# set schedulers sched_queue_1 transmit-rate percent 10
user@host# set schedulers sched_queue_1 priority low
```
3. Create the scheduler for queue 2:


```
[edit class-of-schedule]
user@host# set schedulers sched_queue_2 excess-rate percent 10
```
4. Create the scheduler for queue 3:


```
[edit class-of-schedule]
user@host# set schedulers sched_queue_3 excess-rate percent 30
```

Results From configuration mode, confirm your configuration by entering the **show class-of-service schedulers** command. If the output does not display the intended configuration, repeat the configuration instructions in this example to correct it.

```
sched_queue_0 {
  transmit-rate percent 90;
  priority high;
}
sched_queue_1 {
  transmit-rate percent 10;
  priority low;
```

```

}
sched_queue_2 {
    excess-rate percent 10;
}
sched_queue_3 {
    excess-rate percent 30;
}

```

If you are done configuring the device, enter **commit** from configuration mode.

Verification

Verifying the Excess Rate Configuration

Purpose	Verify that the excess rate configuration is producing the results you expect.
Action	From operational mode, enter the show interfaces queue <i>interface</i> command for the physical interface to verify.
Meaning	The show command output lists the traffic by queue and forwarding class names. Verify that the Bytes field for active queues on the specified physical interface match the proportions you expect from the excess rate configuration.
Related Documentation	<ul style="list-style-type: none"> • Schedulers Overview • Configuring a Scheduler • excess-rate • Table 7 on page 73

Hardware Capabilities and Limitations

For basic MX Series router architecture information, see Packet Flow on MX Series 3D Universal Edge Routers. For CoS hardware capabilities about other routers, see these sections:

- [CoS Hardware Capabilities and Limitations on J Series, M Series, and T Series Routers on page 67](#)
- [CoS Hardware Capabilities and Limitations on PTX Series Packet Transport Switches on page 73](#)

CoS Hardware Capabilities and Limitations on J Series, M Series, and T Series Routers

Juniper Networks J Series Services Routers, M320 Multiservice Edge Routers, and T Series Core Routers, as well as M Series Multiservice Edge Routers with enhanced Flexible PIC Concentrators (FPCs), have more CoS capabilities than M Series routers that use other FPC models. [Table 6 on page 68](#) lists some of these the differences.

To determine whether your M Series router is equipped with an enhanced FPC, issue the **show chassis hardware** command. The presence of an enhanced FPC is designated by the **E-FPC** description in the output.

```
user@host> 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

J Series Services Routers do not use FPCs. Instead, they use Physical Interface Modules (PIMs), which are architecturally like FPCs but functionally like PICs. Both PIMs and PICs provide the interfaces to the routers.

Many operations involving the DSCP bits depend on the router and PIC type. For example, some DSCP classification configurations for MPLS and Internet can only be performed on MX, M120, and M320 routers with Enhanced Type III FPCs only. For examples of these possibilities, see *Applying Classifiers to Logical Interfaces*.

In [Table 6 on page 68](#), the information in the column titled “M320 and T Series FPCs” is valid for all M320 and T Series router FPCs, including Enhanced II FPCs.



NOTE: The T4000 router supports the lowest of the scaling numbers for classifiers, rewrite rules, and WRED associated with MX Series and T Series routers.

Table 6: Comparison of CoS Hardware Capabilities and Limitations

Feature	J Series PIMs	M Series FPCs	M Series Enhanced FPCs	M320 and T Series FPCs	Comments
Classifiers					
Maximum number per FPC, PIC, or PIM	64	1	8	64	For M Series router FPCs, the one-classifier limit includes the default IP precedence classifier. If you create a new classifier and apply it to an interface, the new classifier does not override the default classifier for other interfaces on the same FPC. In general, the first classifier associated with a logical interface is used. The default classifier can be replaced only when a single interface is associated with the default classifier. For more information, see <i>Applying Classifiers to Logical Interfaces</i> .

Table 6: Comparison of CoS Hardware Capabilities and Limitations (*continued*)

Feature	J Series PIMs	M Series FPCs	M Series Enhanced FPCs	M320 and T Series FPCs	Comments
<p>NOTE: On IQ2 and IQ2E PICs, the CoS classification and CoS rewrite processes are offloaded from the FPC to the PIC, thus the capabilities and limitations of these types of PIC must be taken into consideration. For information about CoS classifiers and rewrite rules limitations on IQ2 and IQ2E PICs, see CoS Capabilities and Limitations on IQ2 and IQ2E PICs (M Series and T Series Platforms).</p> <p>NOTE: For information about CoS classifiers and rewrite rules on MIC or MPC interfaces, see CoS Capabilities and Limitations on MIC and MPC Interfaces</p>					
dscp	Yes	No	Yes	Yes	On all routers, you cannot configure IP precedence and DiffServ code point (DSCP) classifiers on a single logical interface, because both apply to IPv4 packets. For more information, see Applying Classifiers to Logical Interfaces.
dscp-ipv6	Yes	No	Yes	Yes	<p>For T Series routers, you can apply separate classifiers for IPv4 and IPv6 packets per logical interface.</p> <p>For M Series router enhanced FPCs, you cannot apply separate classifiers for IPv4 and IPv6 packets. Classifier assignment works as follows:</p> <ul style="list-style-type: none"> • If you assign a DSCP classifier only, IPv4 and IPv6 packets are classified using the DSCP classifier. • If you assign an IP precedence classifier only, IPv4 and IPv6 packets are classified using the IP precedence classifier. The lower three bits of the DSCP field are ignored because IP precedence mapping requires the upper three bits only. • If you assign either the DSCP or the IP precedence classifier in conjunction with the DSCP IPv6 classifier, the commit fails. • If you assign a DSCP IPv6 classifier only, IPv4 and IPv6 packets are classified using the DSCP IPv6 classifier, but the commit displays a warning message. <p>For more information, see Applying Classifiers to Logical Interfaces.</p>
ieee-802.1p	Yes	No	Yes	Yes	<p>On M Series router enhanced FPCs and T Series routers, if you associate an IEEE 802.1p classifier with a logical interface, you cannot associate any other classifier with that logical interface. For more information, see Applying Classifiers to Logical Interfaces.</p> <p>For most PICs, if you apply an IEEE 802.1p classifier to a logical interface, you cannot apply non-IEEE classifiers on other logical interfaces on the same physical interface. This restriction does not apply to Gigabit Ethernet IQ2 PICs.</p>

Table 6: Comparison of CoS Hardware Capabilities and Limitations (*continued*)

Feature	J Series PIMs	M Series FPCs	M Series Enhanced FPCs	M320 and T Series FPCs	Comments
inet-precedence	Yes	Yes	Yes	Yes	On all routers, you cannot assign IP precedence and DSCP classifiers to a single logical interface, because both apply to IPv4 packets. For more information, see <i>Applying Classifiers to Logical Interfaces</i> .
mpls-exp	Yes	Yes	Yes	Yes	For M Series router FPCs, only the default MPLS EXP classifier is supported; the default MPLS EXP classifier takes the EXP bits 1 and 2 as the output queue number.
Loss priorities based on the Frame Relay discard eligible (DE) bit	Yes	No	No	No	—

Table 6: Comparison of CoS Hardware Capabilities and Limitations (*continued*)

Feature	J Series PIMs	M Series FPCs	M Series Enhanced FPCs	M320 and T Series FPCs	Comments
Drop Profiles					
Maximum number per FPC, PIC, or PIM	32	2	16	32	—
Per queue	Yes	No	Yes	Yes	—
Per loss priority	Yes	Yes	Yes	Yes	—
Per Transmission Control Protocol (TCP) bit	Yes	No	Yes	Yes	—
Policing					
Adaptive shaping for Frame Relay traffic	Yes	No	No	No	—
Traffic policing	Yes	Yes	Yes	Yes	—
Two-rate tricolor marking (TCM)	No	No	No	Yes	Allows you to configure up to four loss priorities. Two-rate TCM is supported on T Series routers with Enhanced II FPCs and the T640 Core Router with Enhanced Scaling FPC4.
Virtual channels	Yes	No	No	No	—
Queuing					
<p>Gigabit Ethernet IQ2 PICs support only one queue in the scheduler map with medium-high, high, or strict-high priority. If more than one queue is configured with high or strict-high priority, the one that appears first in the configuration is implemented as strict-high priority. This queue receives unlimited transmission bandwidth. The remaining queues are implemented as low priority, which means they might be starved.</p> <p>On the IQE PIC, you can rate-limit the strict-high and high queues. Without this limiting, traffic that requires low latency (delay) such as voice can block the transmission of medium-priority and low-priority packets. Unless limited, high and strict-high traffic is always sent before lower priority traffic.</p>					

Table 6: Comparison of CoS Hardware Capabilities and Limitations (*continued*)

Feature	J Series PIMs	M Series FPCs	M Series Enhanced FPCs	M320 and T Series FPCs	Comments
Priority	Yes	No	Yes	Yes	Support for the medium-low and medium-high queuing priority mappings varies by FPC type. For more information, see Platform Support for Priority Scheduling.
Per-queue output statistics	Yes	No	Yes	Yes	Per-queue output statistics are shown in the output of the show interfaces queue command.
Rewrite Markers					
Maximum number per FPC, PIC, or PIM	64	No maximum	No maximum	64	—
<p>NOTE: On IQ2 and IQ2E PICs, the CoS classification and CoS rewrite processes are offloaded from the FPC to the PIC, thus the capabilities and limitations of these types of PIC must be taken into consideration. For information about CoS classifiers and rewrite rules limitations on IQ2 and IQ2E PICs, see CoS Capabilities and Limitations on IQ2 and IQ2E PICs (M Series and T Series Platforms).</p> <p>For information about CoS classifiers and rewrite rules on MIC and MPC interfaces, see CoS Capabilities and Limitations on MIC and MPC Interfaces</p>					
dscp	Yes	No	Yes	Yes	<p>For J Series router PIMs and M Series Enhanced FPCs, bits 0 through 5 are rewritten, and bits 6 through 7 are preserved.</p> <p>For M320 and T Series router non-IQ FPCs, bits 0 through 5 are rewritten, and bits 6 through 7 are preserved.</p> <p>For M320 and T Series router FPCs, you must decode the loss priority using the firewall filter before you can use loss priority to select the rewrite CoS value. For more information, see Setting Packet Loss Priority.</p> <p>For M320 and T Series router FPCs, Adaptive Services PIC link services IQ interfaces (lsq-) do not support DSCP rewrite markers.</p>
dscp-ipv6	Yes	No	Yes	Yes	<p>For J Series router PIMs, M Series router Enhanced FPCs, and M320 and T Series router FPCs, bits 0 through 5 are rewritten, and bits 6 through 7 are preserved.</p> <p>For M320 and T Series routers FPCs, you must decode the loss priority using the firewall filter before you can use loss priority to select the rewrite CoS value. For more information, see Setting Packet Loss Priority.</p> <p>For M320 and T Series router FPCs, Adaptive Services PIC link services IQ interfaces (lsq-) do not support DSCP rewrite markers.</p>
frame-relay-de	Yes	No	No	No	—

Table 6: Comparison of CoS Hardware Capabilities and Limitations (*continued*)

Feature	J Series PIMs	M Series FPCs	M Series Enhanced FPCs	M320 and T Series FPCs	Comments
ieee-802.1	Yes	No	Yes	Yes	For M Series router enhanced FPCs and T Series router FPCs, fixed rewrite loss priority determines the value for bit 0; queue number (forwarding class) determines bits 1 and 2. For IQ PICs, you can only configure one IEEE 802.1 rewrite rule on a physical port. All logical ports (units) on that physical port should apply the same IEEE 802.1 rewrite rule.
inet-precedence	Yes	Yes	Yes	Yes	<p>For J Series router PIMs, bits 0 through 2 are rewritten, and bits 3 through 7 are preserved.</p> <p>For M Series router FPCs, bits 0 through 2 are rewritten, and bits 3 through 7 are preserved.</p> <p>For M Series router Enhanced FPCs, bits 0 through 2 are rewritten, bits 3 through 5 are cleared, and bits 6 through 7 are preserved.</p> <p>For M320 and T Series routers FPCs, bits 0 through 2 are rewritten and bits 3 through 7 are preserved.</p> <p>For M320 and T Series router FPCs, you must decode the loss priority using the firewall filter before you can use loss priority to select the rewrite CoS value. For more information, see Setting Packet Loss Priority.</p>
mpls-exp	Yes	Yes	Yes	Yes	<p>For M320 and T Series router FPCs, you must decode the loss priority using the firewall filter before you can use loss priority to select the rewrite CoS value. For more information, see Setting Packet Loss Priority.</p> <p>For M Series routers FPCs, fixed rewrite loss priority determines the value for bit 0; queue number (forwarding class) determines bits 1 and 2.</p>

CoS Hardware Capabilities and Limitations on PTX Series Packet Transport Switches

Table 7: CoS Hardware Capabilities and Limitations on PTX Series Packet Transport Switches

Feature	PTX Series	Comments
Classifiers		

Table 7: CoS Hardware Capabilities and Limitations on PTX Series Packet Transport Switches (*continued*)

Feature	PTX Series	Comments
Maximum number per PFE	64	<p>L2 classifiers (sum of ieee-802.1 + ieee-802.1ad cannot exceed 32)</p> <p>DSCP and inet-precedence classifiers (sum of dscp + inet-precedence classifiers cannot exceed 32)</p> <p>dscp-ipv6 classifiers</p> <p>exp classifiers</p>
dscp	Yes	DSCP and IP precedence classifiers cannot be configured on the same logical interface.
dscp-ipv6	Yes	Separate classifiers can be applied for IPv4 and IPv6 packets per logical interface.
ieee-802.1p	Yes	You can associate ieee-802.1p with any other type of classifier on the same logical interface. For L3 packets, an L3 classifier takes precedence over an IEEE classifier.
inet-precedence	Yes	
mpls-exp	Yes	
Loss priorities based on the Frame Relay discard eligible (DE) bit	No	

Table 7: CoS Hardware Capabilities and Limitations on PTX Series Packet Transport Switches (*continued*)

Feature	PTX Series	Comments
Drop Profiles		
Maximum number	32	You can configure up to 32 drop profiles in the PTX chassis.
Per queue	Yes	
Per loss priority	Yes	
Per Transmission Control Protocol (TCP) bit	No	
Policing		
Traffic policing	Yes	
Two-rate tricolor marking (TCM)	Yes	
Queuing		
Priority	Yes (4)	
Per-queue output statistics	Yes	Red-dropped counters are not maintained per drop precedence. Also tail drop counters always show zero because packets are always dropped by the RED algorithm.
Rewrite Markers		
Maximum number per PFE	64	The sum of L2 and L3 rewrite rules cannot exceed 64.
dscp	Yes	
dscp-ipv6	Yes	
ieee-802.1	Yes	L2 and L3 rewrites can be applied to the same packet simultaneously.
inet-precedence	No	
mpls-exp	Yes	

CHAPTER 10

Firewall Filters

- [Standard Firewall Filter Match Conditions for IPv4 Traffic on page 77](#)
- [Standard Firewall Filter Match Conditions for IPv6 Traffic on page 86](#)
- [Standard Firewall Filter Match Conditions for MPLS Traffic on page 93](#)
- [Standard Firewall Filter Match Conditions for Layer 2 CCC Traffic on page 93](#)
- [Standard Firewall Filter Terminating Actions on page 97](#)
- [Standard Firewall Filter Nonterminating Actions on page 99](#)

Standard Firewall Filter Match Conditions for IPv4 Traffic

You can configure a standard stateless firewall filter with match conditions for Internet Protocol version 4 (IPv4) traffic (**family inet**). [Table 8 on page 77](#) describes the **match-conditions** you can configure at the **[edit firewall family inet filter filter-name term term-name from]** hierarchy level.

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic

Match Condition	Description
address address [except]	Match the IPv4 source or destination address field unless the except option is included. If the option is included, do not match the IPv4 source or destination address field.
ah-spi spi-value	(M Series routers, except M120 and M320) Match the IPsec authentication header (AH) security parameter index (SPI) value. NOTE: This match condition is not supported on PTX series packet transport switches.
ah-spi-except spi-value	(M Series routers, except M120 and M320) Do not match the IPsec AH SPI value. NOTE: This match condition is not supported on PTX series packet transport switches.
apply-groups	Specify which groups to inherit configuration data from. You can specify more than one group name. You must list them in order of inheritance priority. The configuration data in the first group takes priority over the data in subsequent groups.
apply-groups-except	Specify which groups not to inherit configuration data from. You can specify more than one group name.

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
destination-address <i>address</i> [except]	<p>Match the IPv4 destination address field unless the except option is included. If the option is included, do not match the IPv4 destination address field..</p> <p>You cannot specify both the address and destination-address match conditions in the same term.</p>
destination-class <i>class-names</i>	<p>Match one or more specified destination class names (sets of destination prefixes grouped together and given a class name). For more information, see Firewall Filter Match Conditions Based on Address Classes.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
destination-class-except <i>class-names</i>	<p>Do not match one or more specified destination class names. For details, see the destination-class match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
destination-port <i>number</i>	<p>Match the UDP or TCP destination port field.</p> <p>You cannot specify both the port and destination-port match conditions in the same term.</p> <p>If you configure this match condition, we recommend that you also configure the protocol udp or protocol tcp match statement in the same term to specify which protocol is being used on the port.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the port numbers are also listed): afs (1483), bgp (179), biff (512), bootpc (68), bootps (67), cmd (514), cvspserver (2401), dhcp (67), domain (53), eklogin (2105), ekshell (2106), exec (512), finger (79), ftp (21), ftp-data (20), http (80), https (443), ident (113), imap (143), kerberos-sec (88), klogin (543), kpasswd (761), krb-prop (754), krbupdate (760), kshell (544), ldap (389), ldp (646), login (513), mobileip-agent (434), mobileip-mn (435), msdp (639), netbios-dgm (138), netbios-ns (137), netbios-ssn (139), nfsd (2049), nntp (119), ntalk (518), ntp (123), pop3 (110), pptp (1723), printer (515), radacct (1813), radius (1812), rip (520), rkinit (2108), smtp (25), snmp (161), snmptrap (162), snpp (444), socks (1080), ssh (22), sunrpc (111), syslog (514), tacacs (49), tacacs-ds (65), talk (517), telnet (23), tftp (69), timed (525), who (513), or xdmcp (177).</p>
destination-port-except <i>number</i>	<p>Do not match the UDP or TCP destination port field. For details, see the destination-port match condition.</p>
destination-prefix-list <i>name</i> [except]	<p>Match destination prefixes in the specified list unless the except option is included. If the option is included, do not match the destination prefixes in the specified list.</p> <p>Specify the name of a prefix list defined at the [edit policy-options prefix-list <i>prefix-list-name</i>] hierarchy level.</p>

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
dscp number	<p>Match the Differentiated Services code point (DSCP). The DiffServ protocol uses the type-of-service (ToS) byte in the IP header. The most significant 6 bits of this byte form the DSCP. For more information, see BA Classifier Overview.</p> <p>You can specify a numeric value from 0 through 63. To specify the value in hexadecimal form, include 0x as a prefix. To specify the value in binary form, include b as a prefix.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed):</p> <ul style="list-style-type: none"> • RFC 3246, <i>An Expedited Forwarding PHB (Per-Hop Behavior)</i>, defines one code point: ef (46). • RFC 2597, <i>Assured Forwarding PHB Group</i>, defines 4 classes, with 3 drop precedences in each class, for a total of 12 code points: <ul style="list-style-type: none"> • af11 (10), af12 (12), af13 (14) • af21 (18), af22 (20), af23 (22) • af31 (26), af32 (28), af33 (30) • af41 (34), af42 (36), af43 (38)
dscp-except number	Do not match on the DSCP number. For more information, see the dscp match condition.
esp-spi spi-value	<p>Match the IPsec encapsulating security payload (ESP) SPI value. Match on this specific SPI value. You can specify the ESP SPI value in hexadecimal, binary, or decimal form.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
esp-spi-except spi-value	<p>Match the IPsec ESP SPI value. Do not match on this specific SPI value.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
first-fragment	<p>Match if the packet is the first fragment of a fragmented packet. Do not match if the packet is a trailing fragment of a fragmented packet. The first fragment of a fragmented packet has a fragment offset value of 0.</p> <p>This match condition is an alias for the bit-field match condition fragment-offset 0 match condition.</p> <p>To match both first and trailing fragments, you can use two terms that specify different match conditions: first-fragment and is-fragment.</p>
forwarding-class class	<p>Match the forwarding class of the packet.</p> <p>Specify assured-forwarding, best-effort, expedited-forwarding, or network-control.</p> <p>For information about forwarding classes and router-internal output queues, see “Overview of Forwarding Classes” on page 13.</p>
forwarding-class-except class	Do not match the forwarding class of the packet. For details, see the forwarding-class match condition.
fragment-flags number	<p>(Ingress only) Match the three-bit IP fragmentation flags field in the IP header.</p> <p>In place of the numeric field value, you can specify one of the following keywords (the field values are also listed): dont-fragment (0x4), more-fragments (0x2), or reserved (0x8).</p>

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
fragment-offset value	<p>Match the 13-bit fragment offset field in the IP header. The value is the offset, in 8-byte units, in the overall datagram message to the data fragment. Specify a numeric value, a range of values, or a set of values. An offset value of 0 indicates the first fragment of a fragmented packet.</p> <p>The first-fragment match condition is an alias for the fragment-offset 0 match condition.</p> <p>To match both first and trailing fragments, you can use two terms that specify different match conditions (first-fragment and is-fragment).</p>
fragment-offset-except number	Do not match the 13-bit fragment offset field.
icmp-code number	<p>Match the ICMP message code field.</p> <p>If you configure this match condition, we recommend that you also configure the protocol icmp match condition in the same term.</p> <p>If you configure this match condition, you must also configure the icmp-type message-type match condition in the same term. An ICMP message code provides more specific information than an ICMP message type, but the meaning of an ICMP message code is dependent on the associated ICMP message type.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed). The keywords are grouped by the ICMP type with which they are associated:</p> <ul style="list-style-type: none"> parameter-problem: ip-header-bad (0), required-option-missing (1) redirect: redirect-for-host (1), redirect-for-network (0), redirect-for-tos-and-host (3), redirect-for-tos-and-net (2) time-exceeded: ttl-eq-zero-during-reassembly (1), ttl-eq-zero-during-transit (0) unreachable: communication-prohibited-by-filtering (13), destination-host-prohibited (10), destination-host-unknown (7), destination-network-prohibited (9), destination-network-unknown (6), fragmentation-needed (4), host-precedence-violation (14), host-unreachable (1), host-unreachable-for-TOS (12), network-unreachable (0), network-unreachable-for-TOS (11), port-unreachable (3), precedence-cutoff-in-effect (15), protocol-unreachable (2), source-host-isolated (8), source-route-failed (5)
icmp-code-except message-code	Do not match the ICMP message code field. For details, see the icmp-code match condition.
icmp-type number	<p>Match the ICMP message type field.</p> <p>If you configure this match condition, we recommend that you also configure the protocol icmp match condition in the same term.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed): echo-reply (0), echo-request (8), info-reply (16), info-request (15), mask-request (17), mask-reply (18), parameter-problem (12), redirect (5), router-advertisement (9), router-solicit (10), source-quench (4), time-exceeded (11), timestamp (13), timestamp-reply (14), or unreachable (3).</p>
icmp-type-except message-type	Do not match the ICMP message type field. For details, see the icmp-type match condition.

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
interface <i>interface-name</i>	<p>Match the interface on which the packet was received.</p> <p>NOTE: If you configure this match condition with an interface that does not exist, the term does not match any packet.</p>
interface-group <i>group-number</i>	<p>Match the logical interface on which the packet was received to the specified interface group or set of interface groups. For <i>group-number</i>, specify a single value or a range of values from 0 through 255.</p> <p>To assign a logical interface to an interface group <i>group-number</i>, specify the <i>group-number</i> at the [interfaces <i>interface-name</i> unit <i>number</i> family <i>family</i> filter group] hierarchy level.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For more information, see Filtering Packets Received on a Set of Interface Groups Overview.</p>
interface-group-except <i>group-number</i>	<p>Do not match the logical interface on which the packet was received to the specified interface group or set of interface groups. For details, see the interface-group match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
interface-set <i>interface-set-name</i>	<p>Match the interface on which the packet was received to the specified interface set.</p> <p>To define an interface set, include the interface-set statement at the [edit firewall] hierarchy level.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For more information, see Filtering Packets Received on an Interface Set Overview.</p>

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
ip-options values	<p>Match the 8-bit IP option field, if present, to the specified value or list of values.</p> <p>In place of a numeric value, you can specify one of the following text synonyms (the option values are also listed): loose-source-route (131), record-route (7), router-alert (148), security (130), stream-id (136), strict-source-route (137), or timestamp (68).</p> <p>To match <i>any</i> value for the IP option, use the text synonym any. To match on <i>multiple</i> values, specify the list of values within square brackets ('[' and ']'). To match a <i>range</i> of values, use the value specification [<i>value1-value2</i>].</p> <p>For example, the match condition ip-options [0-147] matches on an IP options field that contains the loose-source-route, record-route, or security values, or any other value from 0 through 147. However, this match condition does not match on an IP options field that contains only the router-alert value (148).</p> <p>For most interfaces, a filter term that specifies an ip-option match on one or more <i>specific</i> IP option values (a value other than any) causes packets to be sent to the Routing Engine so that the kernel can parse the IP option field in the packet header.</p> <ul style="list-style-type: none"> For a firewall filter term that specifies an ip-option match on one or more specific IP option values, you cannot specify the count, log, or syslog nonterminating actions <i>unless</i> you also specify the discard terminating action in the same term. This behavior prevents double-counting of packets for a filter applied to a transit interface on the router. Packets processed on the kernel might be dropped in case of a system bottleneck. To ensure that matched packets are instead sent to the Packet Forwarding Engine (where packet processing is implemented in hardware), use the ip-options any match condition. <p>The 10-Gigabit Ethernet Modular Port Concentrator (MPC), 100-Gigabit Ethernet MPC, 60-Gigabit Ethernet MPC, 60-Gigabit Queuing Ethernet MPC, and 60-Gigabit Ethernet Enhanced Queuing MPC on MX Series routers are capable of parsing the IP option field of the IPv4 packet header. For interfaces configured on those MPCs, <i>all</i> packets that are matched using the ip-options match condition are sent to the Packet Forwarding Engine for processing.</p>
ip-options-except values	<p>Do not match the IP option field to the specified value or list of values. For details about specifying the <i>values</i>, see the ip-options match condition.</p>
is-fragment	<p>Match if the packet is a trailing fragment of a fragmented packet. Do not match the first fragment of a fragmented packet.</p> <p>NOTE: To match both first and trailing fragments, you can use two terms that specify different match conditions (first-fragment and is-fragment).</p>

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
loss-priority level	<p>Match the packet loss priority (PLP) level.</p> <p>Specify a single level or multiple levels: low, medium-low, medium-high, or high.</p> <p>Supported on M120 and M320 routers; M7i and M10i routers with the Enhanced CFEB (CFEB-E); and MX Series routers.</p> <p>For IP traffic on M320, MX Series, and T Series routers with Enhanced II Flexible PIC Concentrators (FPCs), you must include the tri-color statement at the [edit class-of-service] hierarchy level to commit a PLP configuration with any of the four levels specified. If the tri-color statement is not enabled, you can only configure the high and low levels. This applies to all protocol families.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For information about the tri-color statement, see <i>Configuring Tricolor Marking</i>. For information about using behavior aggregate (BA) classifiers to set the PLP level of incoming packets, see <i>BA Classifier Overview</i>.</p>
loss-priority-except level	<p>Do not match the PLP level. For details, see the loss-priority match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
packet-length bytes	<p>Match the length of the received packet, in bytes. The length refers only to the IP packet, including the packet header, and does not include any Layer 2 encapsulation overhead.</p>
packet-length-except bytes	<p>Do not match the length of the received packet, in bytes. For details, see the packet-length match type.</p>
port number	<p>Match the UDP or TCP source or destination port field.</p> <p>If you configure this match condition, you cannot configure the destination-port match condition or the source-port match condition in the same term.</p> <p>If you configure this match condition, we recommend that you also configure the protocol udp or protocol tcp match statement in the same term to specify which protocol is being used on the port.</p> <p>In place of the numeric value, you can specify one of the text synonyms listed under destination-port.</p>
port-except number	<p>Do not match the UDP or TCP source or destination port field. For details, see the port match condition.</p>
precedence ip-precedence-value	<p>Match the IP precedence field.</p> <p>In place of the numeric field value, you can specify one of the following text synonyms (the field values are also listed): critical-ecp (0xa0), flash (0x60), flash-override (0x80), immediate (0x40), internet-control (0xc0), net-control (0xe0), priority (0x20), or routine (0x00). You can specify precedence in hexadecimal, binary, or decimal form.</p>

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
precedence-except ip-precedence-value	Do not match the IP precedence field. In place of the numeric field value, you can specify one of the following text synonyms (the field values are also listed): critical-ecp (0x0), flash (0x60), flash-override (0x80), immediate (0x40), internet-control (0xc0), net-control (0xe0), priority (0x20), or routine (0x00). You can specify precedence in hexadecimal, binary, or decimal form.
prefix-list name	Match the prefixes of the source or destination address fields to the prefixes in the specified list unless the except option is included. If the option is included, do not match the prefixes of the source or destination address fields to the prefixes in the specified list. The prefix list is defined at the [edit policy-options prefix-list prefix-list-name] hierarchy level.
protocol number	Match the IP protocol type field. In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed): ah (51), dstopts (60), egp (8), esp (50), fragment (44), gre (47), hop-by-hop (0), icmp (1), icmp6 (58), icmpv6 (58), igmp (2), ipip (4), ipv6 (41), ospf (89), pim (103), rsvp (46), sctp (132), tcp (6), udp (17), or vrrp (112).
protocol-except number	Do not match the IP protocol type field. In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed): ah (51), dstopts (60), egp (8), esp (50), fragment (44), gre (47), hop-by-hop (0), icmp (1), icmp6 (58), icmpv6 (58), igmp (2), ipip (4), ipv6 (41), ospf (89), pim (103), rsvp (46), sctp (132), tcp (6), udp (17), or vrrp (112).
rat-type tech-type-value	Match the radio-access technology (RAT) type specified in the 8-bit Tech-Type field of Proxy Mobile IPv4 (PMIPv4) access technology type extension. The technology type specifies the access technology through which the mobile device is connected to the access network. Specify a single value, a range of values, or a set of values. You can specify a technology type as a numeric value from 0 through 255 or as a system keyword. <ul style="list-style-type: none"> The following numeric values are examples of well-known technology types: <ul style="list-style-type: none"> Numeric value 1 matches IEEE 802.3. Numeric value 2 matches IEEE 802.11a/b/g. Numeric value 3 matches IEEE 802.16e Numeric value 4 matches IEEE 802.16m. Text string eutran matches 4G. Text string geran matches 2G. Text string utran matches 3G.
rat-type-except tech-type-value	Do not match the RAT Type.
service-filter-hit	Match a packet received from a filter where a service-filter-hit action was applied. NOTE: This match condition is not supported on PTX series packet transport switches.
source-address address [except]	Match the IPv4 address of the source node sending the packet unless the except option is included. If the option is included, do not match the IPv4 address of the source node sending the packet. You cannot specify both the address and source-address match conditions in the same term.

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
source-class <i>class-names</i>	<p>Match one or more specified source class names (sets of source prefixes grouped together and given a class name). For more information, see Firewall Filter Match Conditions Based on Address Classes.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
source-class-except <i>class-names</i>	<p>Do not match one or more specified source class names. For details, see the source-class match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
source-port <i>number</i>	<p>Match the UDP or TCP source port field.</p> <p>You cannot specify the port and source-port match conditions in the same term.</p> <p>If you configure this match condition for IPv4 traffic, we recommend that you also configure the protocol udp or protocol tcp match statement in the same term to specify which protocol is being used on the port.</p> <p>In place of the numeric value, you can specify one of the text synonyms listed with the destination-port <i>number</i> match condition.</p>
source-port-except <i>number</i>	Do not match the UDP or TCP source port field. For details, see the source-port match condition.
source-prefix-list <i>name</i> [except]	<p>Match source prefixes in the specified list unless the except option is included. If the option is included, do not match the source prefixes in the specified list.</p> <p>Specify the name of a prefix list defined at the [edit policy-options prefix-list <i>prefix-list-name</i>] hierarchy level.</p>
tcp-established	<p>Match TCP packets of an established TCP session (packets other than the first packet of a connection). This is an alias for tcp-flags "(ack rst)".</p> <p>This match condition does not implicitly check that the protocol is TCP. To check this, specify the protocol tcp match condition.</p>

Table 8: Standard Firewall Filter Match Conditions for IPv4 Traffic (*continued*)

Match Condition	Description
tcp-flags value	<p>Match one or more of the low-order 6 bits in the 8-bit TCP flags field in the TCP header.</p> <p>To specify individual bit fields, you can specify the following text synonyms or hexadecimal values:</p> <ul style="list-style-type: none"> • fin (0x01) • syn (0x02) • rst (0x04) • push (0x08) • ack (0x10) • urgent (0x20) <p>In a TCP session, the SYN flag is set only in the initial packet sent, while the ACK flag is set in all packets sent after the initial packet.</p> <p>You can string together multiple flags using the bit-field logical operators.</p> <p>For combined bit-field match conditions, see the tcp-established and tcp-initial match conditions.</p> <p>If you configure this match condition, we recommend that you also configure the protocol tcp match statement in the same term to specify that the TCP protocol is being used on the port.</p> <p>For IPv4 traffic only, this match condition does not implicitly check whether the datagram contains the first fragment of a fragmented packet. To check for this condition for IPv4 traffic only, use the first-fragment match condition.</p>
tcp-initial	<p>Match the initial packet of a TCP connection. This is an alias for tcp-flags "(lack & syn)".</p> <p>This condition does not implicitly check that the protocol is TCP. If you configure this match condition, we recommend that you also configure the protocol tcp match condition in the same term.</p>
ttl number	<p>Match the IPv4 time-to-live number. Specify a TTL value or a range of TTL values. For number, you can specify one or more values from 0 through 255. This match condition is supported only on M120, M320, MX Series, and T Series routers.</p>
ttl-except number	<p>Do not match on the IPv4 TTL number. For details, see the ttl match condition.</p>

Related Documentation

- Guidelines for Configuring Standard Firewall Filters
- [Standard Firewall Filter Terminating Actions on page 97](#)
- [Standard Firewall Filter Nonterminating Actions on page 99](#)

Standard Firewall Filter Match Conditions for IPv6 Traffic

You can configure a standard stateless firewall filter with match conditions for Internet Protocol version 6 (IPv6) traffic (**family inet6**). [Table 9 on page 87](#) describes the **match-conditions** you can configure at the **[edit firewall family inet6 filter filter-name term term-name from]** hierarchy level.

Table 9: Standard Firewall Filter Match Conditions for IPv6 Traffic

Match Condition	Description
address <i>address</i> [except]	Match the IPv6 source or destination address field unless the except option is included. If the option is included, do not match the IPv6 source or destination address field.
apply-groups	Specify which groups to inherit configuration data from. You can specify more than one group name. You must list them in order of inheritance priority. The configuration data in the first group takes priority over the data in subsequent groups.
apply-groups-except	Specify which groups not to inherit configuration data from. You can specify more than one group name.
destination-address <i>address</i> [except]	Match the IPv6 destination address field unless the except option is included. If the option is included, do not match the IPv6 destination address field. You cannot specify both the address and destination-address match conditions in the same term.
destination-class <i>class-names</i>	Match one or more specified destination class names (sets of destination prefixes grouped together and given a class name). NOTE: This match condition is not supported on PTX series packet transport switches. For more information, see Firewall Filter Match Conditions Based on Address Classes.
destination-class-except <i>class-names</i>	Do not match one or more specified destination class names. For details, see the destination-class match condition. NOTE: This match condition is not supported on PTX series packet transport switches.
destination-port <i>number</i>	Match the UDP or TCP destination port field. You cannot specify both the port and destination-port match conditions in the same term. If you configure this match condition, we recommend that you also configure the next-header udp or next-header tcp match condition in the same term to specify which protocol is being used on the port. In place of the numeric value, you can specify one of the following text synonyms (the port numbers are also listed): afs (1483), bgp (179), biff (512), bootpc (68), bootps (67), cmd (514), cvspserver (2401), dhcp (67), domain (53), eklogin (2105), ekshell (2106), exec (512), finger (79), ftp (21), ftp-data (20), http (80), https (443), ident (113), imap (143), kerberos-sec (88), klogin (543), kpasswd (761), krb-prop (754), krbupdate (760), kshell (544), ldap (389), ldp (646), login (513), mobileip-agent (434), mobileip-mn (435), msdp (639), netbios-dgm (138), netbios-ns (137), netbios-ssn (139), nfsd (2049), nntp (119), ntalk (518), ntp (123), pop3 (110), pptp (1723), printer (515), radacct (1813), radius (1812), rip (520), rkinit (2108), smtp (25), snmp (161), snmptrap (162), snpp (444), socks (1080), ssh (22), sunrpc (111), syslog (514), tacacs (49), tacacs-ds (65), talk (517), telnet (23), tftp (69), timed (525), who (513), or xdmcp (177).
destination-port-except <i>number</i>	Do not match the UDP or TCP destination port field. For details, see the destination-port match condition.
destination-prefix-list <i>prefix-list-name</i> [except]	Match the IPv6 destination prefix to the specified list unless the except option is included. If the option is included, do not match the IPv6 destination prefix to the specified list. The prefix list is defined at the [edit policy-options prefix-list <i>prefix-list-name</i>] hierarchy level.

Table 9: Standard Firewall Filter Match Conditions for IPv6 Traffic (*continued*)

Match Condition	Description
forwarding-class <i>class</i>	<p>Match the forwarding class of the packet.</p> <p>Specify assured-forwarding, best-effort, expedited-forwarding, or network-control.</p> <p>For information about forwarding classes and router-internal output queues, see “Overview of Forwarding Classes” on page 13.</p>
forwarding-class-except <i>class</i>	Do not match the forwarding class of the packet. For details, see the forwarding-class match condition.
hop-limit <i>hop-limit</i>	Match the hop limit to the specified hop limit or set of hop limits. For hop-limit , specify a single value or a range of values from 0 through 255..
hop-limit-except <i>message-code</i>	Do not match the hop limit to the specified hop limit or set of hop limits. For details, see the hop-limit match condition.
icmp-code <i>message-code</i>	<p>Match the ICMP message code field.</p> <p>If you configure this match condition, we recommend that you also configure the next-header icmp or next-header icmp6 match condition in the same term.</p> <p>If you configure this match condition, you must also configure the icmp-type message-type match condition in the same term. An ICMP message code provides more specific information than an ICMP message type, but the meaning of an ICMP message code is dependent on the associated ICMP message type.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed). The keywords are grouped by the ICMP type with which they are associated:</p> <ul style="list-style-type: none"> parameter-problem: ip6-header-bad (0), unrecognized-next-header (1), unrecognized-option (2) time-exceeded: ttl-eq-zero-during-reassembly (1), ttl-eq-zero-during-transit (0) destination-unreachable: administratively-prohibited (1), address-unreachable (3), no-route-to-destination (0), port-unreachable (4)
icmp-code-except <i>message-code</i>	Do not match the ICMP message code field. For details, see the icmp-code match condition.
icmp-type <i>message-type</i>	<p>Match the ICMP message type field.</p> <p>If you configure this match condition, we recommend that you also configure the next-header icmp or next-header icmp6 match condition in the same term.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed): destination-unreachable (1), echo-reply (129), echo-request (128), membership-query (130), membership-report (131), membership-termination (132), neighbor-advertisement (136), neighbor-solicit (135), node-information-reply (140), node-information-request (139), packet-too-big (2), parameter-problem (4), redirect (137), router-advertisement (134), router-renumbering (138), router-solicit (133), or time-exceeded (3).</p>
icmp-type-except <i>message-type</i>	Do not match the ICMP message type field. For details, see the icmp-type match condition.

Table 9: Standard Firewall Filter Match Conditions for IPv6 Traffic (*continued*)

Match Condition	Description
interface <i>interface-name</i>	<p>Match the interface on which the packet was received.</p> <p>NOTE: If you configure this match condition with an interface that does not exist, the term does not match any packet.</p>
interface-group <i>group-number</i>	<p>Match the logical interface on which the packet was received to the specified interface group or set of interface groups. For <i>group-number</i>, specify a single value or a range of values from 0 through 255.</p> <p>To assign a logical interface to an interface group <i>group-number</i>, specify the <i>group-number</i> at the [interfaces interface-name unit number family family filter group] hierarchy level.</p> <p>For more information, see Filtering Packets Received on a Set of Interface Groups Overview.</p>
interface-group-except <i>group-number</i>	<p>Do not match the logical interface on which the packet was received to the specified interface group or set of interface groups. For details, see the interface-group match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
interface-set <i>interface-set-name</i>	<p>Match the interface on which the packet was received to the specified interface set.</p> <p>To define an interface set, include the interface-set statement at the [edit firewall] hierarchy level.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For more information, see Filtering Packets Received on an Interface Set Overview.</p>
loss-priority <i>level</i>	<p>Match the packet loss priority (PLP) level.</p> <p>Specify a single level or multiple levels: low, medium-low, medium-high, or high.</p> <p>Supported on M120 and M320 routers; M7i and M10i routers with the Enhanced CFEB (CFEB-E); and MX Series routers.</p> <p>For IP traffic on M320, MX Series, and T Series routers with Enhanced II Flexible PIC Concentrators (FPCs), you must include the tri-color statement at the [edit class-of-service] hierarchy level to commit a PLP configuration with any of the four levels specified. If the tri-color statement is not enabled, you can only configure the high and low levels. This applies to all protocol families.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For information about the tri-color statement, see Configuring Tricolor Marking. For information about using behavior aggregate (BA) classifiers to set the PLP level of incoming packets, see “Overview of Forwarding Classes” on page 13.</p>
loss-priority-except <i>level</i>	<p>Do not match the PLP level. For details, see the loss-priority match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>

Table 9: Standard Firewall Filter Match Conditions for IPv6 Traffic (*continued*)

Match Condition	Description
next-header <i>header-type</i>	<p>Match the 8-bit Next Header field that identifies the type of header between the IPv6 header and payload.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed): ah (51), dstopts (60), egp (8), esp (50), fragment (44), gre (47), hop-by-hop (0), icmp (1), icmp6 (58), icmpv6 (58), igmp (2), ipip (4), ipv6 (41), no-next-header (59), ospf (89), pim (103), routing (43), rsvp (46), sctp (132), tcp (6), udp (17), or vrrp (112).</p> <p>NOTE: next-header icmp6 and next-header icmpv6 match conditions perform the same function. next-header icmp6 is the preferred option. next-header icmpv6 is hidden in the Junos OS CLI.</p>
next-header-except <i>header-type</i>	Do not match the 8-bit Next Header field that identifies the type of header between the IPv6 header and payload. For details, see the next-header match type.
packet-length <i>bytes</i>	Match the length of the received packet, in bytes. The length refers only to the IP packet, including the packet header, and does not include any Layer 2 encapsulation overhead.
packet-length-except <i>bytes</i>	Do not match the length of the received packet, in bytes. For details, see the packet-length match type.
payload-protocol <i>protocol-type</i>	<p>Match the payload protocol type.</p> <p>In place of the protocol-type numeric value, you can specify one of the following text synonyms (the field values are also listed): specify one or a set of of the following: ah (51), dstopts (60), egp (8), esp (50), fragment (44), gre (47), hop-by-hop (0), icmp (1), icmp6 (58), igmp (2), ipip (4), ipv6 (41), no-next-header, ospf (89), pim (103), routing, rsvp (46), sctp (132), tcp (6), udp (17), or vrrp (112).</p>
payload-protocol-except <i>protocol-type</i>	Do not match the payload protocol type. For details, see the payload-protocol match type.
port <i>number</i>	<p>Match the UDP or TCP source or destination port field.</p> <p>If you configure this match condition, you cannot configure the destination-port match condition or the source-port match condition in the same term.</p> <p>If you configure this match condition, we recommend that you also configure the next-header udp or next-header tcp match condition in the same term to specify which protocol is being used on the port.</p> <p>In place of the numeric value, you can specify one of the text synonyms listed under destination-port.</p>
port-except <i>number</i>	Do not match the UDP or TCP source or destination port field. For details, see the port match condition.
prefix-list <i>prefix-list-name</i> [except]	<p>Match the prefixes of the source or destination address fields to the prefixes in the specified list unless the except option is included. If the option is included, do not match the prefixes of the source or destination address fields to the prefixes in the specified list.</p> <p>The prefix list is defined at the [edit policy-options prefix-list <i>prefix-list-name</i>] hierarchy level.</p>

Table 9: Standard Firewall Filter Match Conditions for IPv6 Traffic (*continued*)

Match Condition	Description
service-filter-hit	<p>Match a packet received from a filter where a service-filter-hit action was applied.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
source-address <i>address</i> [except]	<p>Match the IPv6 address of the source node sending the packet unless the except option is included. If the option is included, do not match the IPv6 address of the source node sending the packet.</p> <p>You cannot specify both the address and source-address match conditions in the same term.</p>
source-class <i>class-names</i>	<p>Match one or more specified source class names (sets of source prefixes grouped together and given a class name).</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For more information, see Firewall Filter Match Conditions Based on Address Classes.</p>
source-class-except <i>class-names</i>	<p>Do not match one or more specified source class names. For details, see the source-class match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
source-port <i>number</i>	<p>Match the UDP or TCP source port field.</p> <p>You cannot specify the port and source-port match conditions in the same term.</p> <p>If you configure this match condition, we recommend that you also configure the next-header udp or next-header tcp match condition in the same term to specify which protocol is being used on the port.</p> <p>In place of the numeric value, you can specify one of the text synonyms listed with the destination-port number match condition.</p>
source-port-except <i>number</i>	<p>Do not match the UDP or TCP source port field. For details, see the source-port match condition.</p>
source-prefix-list <i>name</i> [except]	<p>Match the IPv6 address prefix of the packet source field unless the except option is included. If the option is included, do not match the IPv6 address prefix of the packet source field.</p> <p>Specify a prefix list name defined at the [edit policy-options prefix-list <i>prefix-list-name</i>] hierarchy level.</p>
tcp-established	<p>Match TCP packets other than the first packet of a connection. This is a text synonym for tcp-flags "(ack rst)" (0x14).</p> <p>NOTE: This condition does not implicitly check that the protocol is TCP. To check this, specify the protocol tcp match condition.</p> <p>If you configure this match condition, we recommend that you also configure the next-header tcp match condition in the same term.</p>

Table 9: Standard Firewall Filter Match Conditions for IPv6 Traffic (*continued*)

Match Condition	Description
tcp-flags <i>flags</i>	<p>Match one or more of the low-order 6 bits in the 8-bit TCP flags field in the TCP header.</p> <p>To specify individual bit fields, you can specify the following text synonyms or hexadecimal values:</p> <ul style="list-style-type: none"> • fin (0x01) • syn (0x02) • rst (0x04) • push (0x08) • ack (0x10) • urgent (0x20) <p>In a TCP session, the SYN flag is set only in the initial packet sent, while the ACK flag is set in all packets sent after the initial packet.</p> <p>You can string together multiple flags using the bit-field logical operators.</p> <p>For combined bit-field match conditions, see the tcp-established and tcp-initial match conditions.</p> <p>If you configure this match condition, we recommend that you also configure the next-header tcp match condition in the same term to specify that the TCP protocol is being used on the port.</p>
tcp-initial	<p>Match the initial packet of a TCP connection. This is a text synonym for tcp-flags "(!ack & syn)".</p> <p>This condition does not implicitly check that the protocol is TCP. If you configure this match condition, we recommend that you also configure the next-header tcp match condition in the same term.</p>
traffic-class <i>number</i>	<p>Match the 8-bit field that specifies the class-of-service (CoS) priority of the packet.</p> <p>This field was previously used as the type-of-service (ToS) field in IPv4.</p> <p>You can specify a numeric value from 0 through 63. To specify the value in hexadecimal form, include 0x as a prefix. To specify the value in binary form, include b as a prefix.</p> <p>In place of the numeric value, you can specify one of the following text synonyms (the field values are also listed):</p> <ul style="list-style-type: none"> • RFC 3246, <i>An Expedited Forwarding PHB (Per-Hop Behavior)</i>, defines one code point: ef (46). • RFC 2597, <i>Assured Forwarding PHB Group</i>, defines 4 classes, with 3 drop precedences in each class, for a total of 12 code points: <ul style="list-style-type: none"> • af11 (10), af12 (12), af13 (14) • af21 (18), af22 (20), af23 (22) • af31 (26), af32 (28), af33 (30) • af41 (34), af42 (36), af43 (38)
traffic-class-except <i>number</i>	<p>Do not match the 8-bit field that specifies the CoS priority of the packet. For details, see the traffic-class match description.</p>



NOTE: If you specify an IPv6 address in a match condition (the `address`, `destination-address`, or `source-address` match conditions), use the syntax for text representations described in RFC 2373, *IP Version 6 Addressing Architecture*. For more information about IPv6 addresses, see [IPv6 Overview](#) and [IPv6 Standards](#).

Related Documentation

- [Guidelines for Configuring Standard Firewall Filters](#)
- [Standard Firewall Filter Terminating Actions on page 97](#)
- [Standard Firewall Filter Nonterminating Actions on page 99](#)

Standard Firewall Filter Match Conditions for MPLS Traffic

You can configure a standard stateless firewall filter with match conditions for MPLS traffic (`family mpls`).



NOTE: The input-list *filter-names* and output-list *filter-names* statements for firewall filters for the `mpls` protocol family are supported on all interfaces with the exception of management interfaces and internal Ethernet interfaces (`fxp` or `em0`), loopback interfaces (`lo0`), and USB modem interfaces (`umd`).

[Table 10 on page 93](#) describes the *match-conditions* you can configure at the `[edit firewall family mpls filter filter-name term term-name from]` hierarchy level.

Table 10: Standard Firewall Filter Match Conditions for MPLS Traffic

Match Condition	Description
<code>apply-groups</code>	Specify which groups to inherit configuration data from. You can specify more than one group name. You must list them in order of inheritance priority. The configuration data in the first group takes priority over the data in subsequent groups.
<code>apply-groups-except</code>	Specify which groups not to inherit configuration data from. You can specify more than one group name.
<code>exp number</code>	Experimental (EXP) bit number or range of bit numbers in the MPLS header. For <i>number</i> , you can specify one or more values from 0 through 7 in decimal, binary, or hexadecimal format. NOTE: This match condition is not supported on PTX series packet transport switches.
<code>exp-except number</code>	Do not match on the EXP bit number or range of bit numbers in the MPLS header. For <i>number</i> , you can specify one or more values from 0 through 7. NOTE: This match condition is not supported on PTX series packet transport switches.
<code>forwarding-class class</code>	Forwarding class. Specify <code>assured-forwarding</code> , <code>best-effort</code> , <code>expedited-forwarding</code> , or <code>network-control</code> .
<code>forwarding-class-except class</code>	Do not match on the forwarding class. Specify <code>assured-forwarding</code> , <code>best-effort</code> , <code>expedited-forwarding</code> , or <code>network-control</code> .

Table 10: Standard Firewall Filter Match Conditions for MPLS Traffic (*continued*)

Match Condition	Description
interface <i>interface-name</i>	<p>Interface on which the packet was received. You can configure a match condition that matches packets based on the interface on which they were received.</p> <p>NOTE: If you configure this match condition with an interface that does not exist, the term does not match any packet.</p>
interface-set <i>interface-set-name</i>	<p>Match the interface on which the packet was received to the specified interface set.</p> <p>To define an interface set, include the interface-set statement at the [edit firewall] hierarchy level.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For more information, see Filtering Packets Received on an Interface Set Overview.</p>
ip-version <i>number</i>	<p>(Interfaces on Enhanced Scaling flexible PIC concentrators [FPCs] on supported T Series routers only) Inner IP version. To match MPLS-tagged IPv4 packets, match on the text synonym ipv4.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
loss-priority <i>level</i>	<p>Match the packet loss priority (PLP) level.</p> <p>Specify a single level or multiple levels: low, medium-low, medium-high, or high.</p> <p>Supported on M120 and M320 routers; M7i and M10i routers with the Enhanced CFEB (CFEB-E); and MX Series routers.</p> <p>For IP traffic on M320, MX Series, and T Series routers with Enhanced II Flexible PIC Concentrators (FPCs), you must include the tri-color statement at the [edit class-of-service] hierarchy level to commit a PLP configuration with any of the four levels specified. If the tri-color statement is not enabled, you can only configure the high and low levels. This applies to all protocol families.</p> <p>For information about the tri-color statement, see Configuring Tricolor Marking. For information about using behavior aggregate (BA) classifiers to set the PLP level of incoming packets, see “Overview of Forwarding Classes” on page 13.</p>
loss-priority-except <i>level</i>	<p>Do not match the PLP level. For details, see the loss-priority match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>

**Related
Documentation**

- [Guidelines for Configuring Standard Firewall Filters](#)
- [Standard Firewall Filter Terminating Actions on page 97](#)
- [Standard Firewall Filter Nonterminating Actions on page 99](#)

Standard Firewall Filter Match Conditions for Layer 2 CCC Traffic

You can configure a standard stateless firewall filter with match conditions for Layer 2 circuit cross-connect (CCC) traffic (**family ccc**).

The following restrictions apply to firewall filters for Layer 2 CCC traffic:

- The **input-list *filter-names*** and **output-list *filter-names*** statements for firewall filters for the **ccc** protocol family are supported on all interfaces with the exception of management interfaces and internal Ethernet interfaces (**fxp** or **em0**), loopback interfaces (**lo0**), and USB modem interfaces (**umd**).
- On MX Series routers only, you cannot apply a Layer 2 CCC stateless firewall filter (a firewall filter configured at the **[edit firewall filter family ccc]** hierarchy level) as an output filter. On MX Series routers, firewall filters configured for the **family ccc** statement can be applied only as input filters.

Table 11 on page 95 describes the **match-conditions** you can configure at the **[edit firewall family ccc filter *filter-name* term *term-name* from]** hierarchy level.

Table 11: Standard Firewall Filter Match Conditions for Layer 2 CCC Traffic

Match Condition	Description
apply-groups	Specify which groups to inherit configuration data from. You can specify more than one group name. You must list them in order of inheritance priority. The configuration data in the first group takes priority over the data in subsequent groups.
apply-groups-except	Specify which groups not to inherit configuration data from. You can specify more than one group name.
destination-mac-address <i>address</i>	<p>(MX Series routers only) Match the destination media access control (MAC) address of a virtual private LAN service (VPLS) packet.</p> <p>To have packets correctly evaluated by this match condition when applied to egress traffic flowing over a CCC circuit from a logical interface on an I-chip DPC in a Layer 2 virtual private network (VPN) routing instance, you must make a configuration change to the Layer 2 VPN routing instance. You must explicitly disable the use of a control word for traffic flowing out over a Layer 2 circuit. The use of a control word is enabled by default for Layer 2 VPN routing instances to support the emulated virtual circuit (VC) encapsulation for Layer 2 circuits.</p> <p>To explicitly disable the use of a control word for Layer 2 VPNs, include the no-control-word statement at either of the following hierarchy levels:</p> <ul style="list-style-type: none"> • [edit routing-instances <i>routing-instance-name</i> protocols l2vpn] • [edit logical-systems <i>logical-system-name</i> routing-instances <i>routing-instance-name</i> protocols l2vpn] <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For more information, see Disabling the Control Word for Layer 2 VPNs.</p>
forwarding-class <i>class</i>	Forwarding class. Specify assured-forwarding , best-effort , expedited-forwarding , or network-control .
forwarding-class-except <i>class</i>	Do not match on the forwarding class. Specify assured-forwarding , best-effort , expedited-forwarding , or network-control .

Table 11: Standard Firewall Filter Match Conditions for Layer 2 CCC Traffic (*continued*)

Match Condition	Description
interface-group group-number	<p>Match the logical interface on which the packet was received to the specified interface group or set of interface groups. For group-number, specify a single value or a range of values from 0 through 255.</p> <p>To assign a logical interface to an interface group group-number, specify the group-number at the [interfaces interface-name unit number family family filter group] hierarchy level.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For more information, see Filtering Packets Received on a Set of Interface Groups Overview.</p>
interface-group-except number	<p>Do not match the logical interface on which the packet was received to the specified interface group or set of interface groups. For details, see the interface-group match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
learn-vlan-1p-priority number	<p>(MX Series routers only) Match on the IEEE 802.1p learned VLAN priority bits in the provider VLAN tag (the only tag in a single-tag frame with 802.1Q VLAN tags or the outer tag in a dual-tag frame with 802.1Q VLAN tags). Specify a single value or multiple values from 0 through 7.</p> <p>Compare with the user-vlan-1p-priority match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
learn-vlan-1p-priority-except number	<p>(MX Series routers only) Do not match on the IEEE 802.1p learned VLAN priority bits. For details, see the learn-vlan-1p-priority match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
loss-priority level	<p>Packet loss priority (PLP) level. Specify a single level or multiple levels: low, medium-low, medium-high, or high.</p> <p>Supported on M120 and M320 routers; M7i and M10i routers with the Enhanced CFEB (CFEB-E); and MX Series routers.</p> <p>For IP traffic on M320, MX Series, and T Series routers with Enhanced II Flexible PIC Concentrators (FPCs), you must include the tri-color statement at the [edit class-of-service] hierarchy level to commit a PLP configuration with any of the four levels specified. If the tri-color statement is not enabled, you can only configure the high and low levels. This applies to all protocol families.</p> <p>For information about the tri-color statement, see Configuring Tricolor Marking. For information about using behavior aggregate (BA) classifiers to set the PLP level of incoming packets, see “Overview of Forwarding Classes” on page 13.</p>
loss-priority-except level	<p>Do not match on the packet loss priority level. Specify a single level or multiple levels: low, medium-low, medium-high, or high.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p> <p>For information about using behavior aggregate (BA) classifiers to set the PLP level of incoming packets, see BA Classifier Overview.</p>

Table 11: Standard Firewall Filter Match Conditions for Layer 2 CCC Traffic (*continued*)

Match Condition	Description
user-vlan-1p-priority <i>number</i>	<p>(MX Series routers only) Match on the IEEE 802.1p user priority bits in the customer VLAN tag (the inner tag in a dual-tag frame with 802.1Q VLAN tags). Specify a single value or multiple values from 0 through 7.</p> <p>Compare with the learn-vlan-1p-priority match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>
user-vlan-1p-priority-except <i>number</i>	<p>(MX Series routers only) Do not match on the IEEE 802.1p user priority bits. For details, see the user-vlan-1p-priority match condition.</p> <p>NOTE: This match condition is not supported on PTX series packet transport switches.</p>

Related Documentation

- Guidelines for Configuring Standard Firewall Filters
- [Standard Firewall Filter Terminating Actions on page 97](#)
- [Standard Firewall Filter Nonterminating Actions on page 99](#)

Standard Firewall Filter Terminating Actions

Standard stateless firewall filters support different sets of terminating actions for each protocol family.



NOTE: You cannot configure the next term action with a *terminating* action in the same filter term. However, you can configure the next term action with another *nonterminating* action in the same filter term.

[Table 12 on page 97](#) describes the terminating actions you can specify in a standard firewall filter term.

Table 12: Terminating Actions for Standard Firewall Filters

Terminating Action	Description	Protocols
accept	Accept the packet.	<ul style="list-style-type: none"> • family any • family inet • family inet6 • family mpls • family vpls • family ccc • family bridge

Table 12: Terminating Actions for Standard Firewall Filters (*continued*)

Terminating Action	Description	Protocols
discard	Discard a packet silently, without sending an Internet Control Message Protocol (ICMP) message. Discarded packets are available for logging and sampling.	<ul style="list-style-type: none"> family any family inet family inet6 family mpls family vpls family ccc family bridge
logical-system <i>logical-system-name</i>	Direct the packet to the specified logical system. NOTE: This action is not supported on PTX series packet transport switches.	<ul style="list-style-type: none"> family inet family inet6
reject message-type	<p>Reject the packet and return an ICMPv4 or ICMPv6 message:</p> <ul style="list-style-type: none"> If no message-type is specified, a destination unreachable message is returned by default. If tcp-reset is specified as the message-type, tcp-reset is returned only if the packet is a TCP packet. Otherwise, the administratively-prohibited message, which has a value of 13, is returned. If any other message-type is specified, that message is returned. <p>NOTE: Rejected packets can be sampled or logged if you configure the sample or syslog action.</p> <p>The message-type can be one of the following values: address-unreachable, administratively-prohibited, bad-host-tos, bad-network-tos, beyond-scope, fragmentation-needed, host-prohibited, host-unknown, host-unreachable, network-prohibited, network-unknown, network-unreachable, no-route, port-unreachable, precedence-cutoff, precedence-violation, protocol-unreachable, source-host-isolated, source-route-failed, or tcp-reset.</p>	<ul style="list-style-type: none"> family inet family inet6
routing-instance <i>routing-instance-name</i>	Direct the packet to the specified routing instance. NOTE: This action is not supported on PTX series packet transport switches.	<ul style="list-style-type: none"> family inet family inet6
topology <i>topology-name</i>	<p>Direct the packet to the specified topology.</p> <p>NOTE: This action is not supported on PTX series packet transport switches.</p> <p>Each routing instance (master or virtual-router) supports one default topology to which all forwarding classes are forwarded. For Multitopology Routing, you can configure a firewall filter on the ingress interface to match a specific forwarding class, such as expedited forwarding, with a specific topology. The traffic that matches the specified forwarding class is then added to the routing table for that topology.</p>	<ul style="list-style-type: none"> family inet family inet6

Related Documentation

- Guidelines for Configuring Standard Firewall Filters
- [Standard Firewall Filter Nonterminating Actions on page 99](#)

Standard Firewall Filter Nonterminating Actions

Standard stateless firewall filters support different sets of nonterminating actions for each protocol family.



NOTE: You cannot configure the next term action with a *terminating* action in the same filter term. However, you can configure the next term action with another *nonterminating* action in the same filter term.

Table 13 on page 99 describes the nonterminating actions you can configure for a standard firewall filter term.

Table 13: Nonterminating Actions for Standard Firewall Filters

Nonterminating Action	Description	Protocol Families
<code>count counter-name</code>	Count the packet in the named counter.	<ul style="list-style-type: none"> • family any • family inet • family inet6 • family mpls • family vpls • family ccc • family bridge

Table 13: Nonterminating Actions for Standard Firewall Filters (*continued*)

Nonterminating Action	Description	Protocol Families
dscp value	<p>Set the IPv4 Differentiated Services code point (DSCP) bit. You can specify a numerical value from 0 through 63. To specify the value in hexadecimal form, include 0x as a prefix. To specify the value in binary form, include b as a prefix.</p> <p>The default DSCP value is best effort, that is, be or 0.</p> <p>You can also specify on the following text synonyms:</p> <ul style="list-style-type: none"> af11—Assured forwarding class 1, low drop precedence af12—Assured forwarding class 1, medium drop precedence af13—Assured forwarding class 1, high drop precedence af21—Assured forwarding class 2, low drop precedence af22—Assured forwarding class 2, medium drop precedence af23—Assured forwarding class 2, high drop precedence af31—Assured forwarding class 3, low drop precedence af32—Assured forwarding class 3, medium drop precedence af33—Assured forwarding class 3, high drop precedence af41—Assured forwarding class 4, low drop precedence af42—Assured forwarding class 4, medium drop precedence af43—Assured forwarding class 4, high drop precedence be—Best effort cs0—Class selector 0 cs1—Class selector 1 cs2—Class selector 2 cs3—Class selector 3 cs4—Class selector 4 cs5—Class selector 5 cs6—Class selector 6 cs7—Class selector 7 ef—Expedited forwarding <p>NOTE: This action is not supported on PTX Series packet transport switches.</p> <p>NOTE: The actions dscp 0 or dscp be are supported only on T320, T640, T1600, TX Matrix, TX Matrix Plus, and M320 routers and on the 10-Gigabit Ethernet Modular Port Concentrators (MPC), 60-Gigabit Ethernet MPC, 60-Gigabit Ethernet Queuing MPC, and 60-Gigabit Ethernet Enhanced Queuing MPC on MX Series routers. However, these actions are not supported on Enhanced III Flexible PIC Concentrators (FPCs) on M320 routers.</p> <p>NOTE: On T4000 routers, the dscp 0 action is not supported during the interoperation between a T1600 Enhanced Scaling Type 4 FPC and a T4000 Type 5 FPC.</p>	family inet

Table 13: Nonterminating Actions for Standard Firewall Filters (*continued*)

Nonterminating Action	Description	Protocol Families
forwarding-class <i>class-name</i>	Classify the packet to the named forwarding class: <ul style="list-style-type: none"> <i>forwarding-class-name</i> assured-forwarding best-effort expedited-forwarding network-control 	<ul style="list-style-type: none"> family any family inet family inet6 family mpls family vpls family ccc family bridge
ipsec-sa <i>ipsec-sa</i>	Use the specified IPsec security association. NOTE: This action is not supported on MX Series routers, Type 5 FPCs on T4000 routers, and PTX Series packet transport switches.	family inet
load-balance <i>group-name</i>	Use the specified load-balancing group. NOTE: This action is not supported on MX Series routers or PTX Series packet transport switches.	family inet
log	Log the packet header information in a buffer within the Packet Forwarding Engine. You can access this information by issuing the show firewall log command at the command-line interface (CLI).	<ul style="list-style-type: none"> family inet family inet6
logical-system <i>logical-system-name</i>	Direct packets to a specific logical system.	<ul style="list-style-type: none"> family inet family inet6
loss-priority (high medium-high medium-low low)	Set the packet loss priority (PLP) level. You cannot also configure the three-color-policer nonterminating action for the same firewall filter term. These two nonterminating actions are mutually exclusive. Supported on M120 and M320 routers; M7i and M10i routers with the Enhanced CFEB (CFEB-E); and MX Series routers. For IP traffic on M320, MX Series, and T Series routers with Enhanced II Flexible PIC Concentrators (FPCs), you must include the tri-color statement at the [edit class-of-service] hierarchy level to commit a PLP configuration with any of the four levels specified. If the tri-color statement is not enabled, you can only configure the high and low levels. This applies to all protocol families. For information about the tri-color statement and for information about using behavior aggregate (BA) classifiers to set the PLP level of incoming packets, see BA Classifier Overview.	<ul style="list-style-type: none"> family any family inet family inet6 family mpls family vpls family ccc family bridge
next-hop-group <i>group-name</i>	Use the specified next-hop group.	family inet
next-interface <i>interface-name</i>	(MX Series) Direct packets to the specified outgoing interface.	<ul style="list-style-type: none"> family inet family inet6
next-ip <i>ip-address</i>	(MX Series) Direct packets to the specified destination IPv4 address.	family inet

Table 13: Nonterminating Actions for Standard Firewall Filters (*continued*)

Nonterminating Action	Description	Protocol Families
next-ip6 <i>ipv6-address</i>	(MX Series) Direct packets to the specified destination IPv6 address.	family inet6
packet-mode	Updates a bit field in the packet key buffer, which specifies traffic that will bypass flow-based forwarding. Packets with the packet-mode action modifier follow the packet-based forwarding path and bypass flow-based forwarding completely. For more information about selective stateless packet-based services, see the <i>Junos OS Security Configuration Guide</i> .	family any
policer <i>policer-name</i>	Name of policer to use to rate-limit traffic. NOTE: For IPv6, applies to SRX100, SRX210, SRX220, SRX240, and SRX650 devices only.	<ul style="list-style-type: none"> • family any • family inet • family inet6 • family mpls • family vpls • family ccc • family bridge
port-mirror	Port-mirror the packet based on the specified family. Supported on M120 routers, M320 routers configured with Enhanced III FPCs, and MX Series routers only.	<ul style="list-style-type: none"> • family inet • family inet6 • family vpls • family ccc • family bridge
prefix-action <i>action-name</i>	Count or police packets based on the specified action name. NOTE: This action is not supported on PTX Series packet transport switches.	family inet
routing-instance <i>routing-instance-name</i>	Direct packets to the specified routing instance.	<ul style="list-style-type: none"> • family inet • family inet6
sample	Sample the packet. NOTE: The Junos OS does not sample packets originating from the router. If you configure a filter and apply it to the output side of an interface, then only the transit packets going through that interface are sampled. Packets that are sent from the Routing Engine to the Packet Forwarding Engine are not sampled.	<ul style="list-style-type: none"> • family inet • family inet6 • family mpls
service-accounting	Count the packet for service accounting. The count is applied to a specific named counter (_junos-dyn-service-counter) that RADIUS can obtain. NOTE: This action is not supported on T4000 Type 5 FPCs and PTX Series packet transport switches.	<ul style="list-style-type: none"> • family inet • family inet6

Table 13: Nonterminating Actions for Standard Firewall Filters (*continued*)

Nonterminating Action	Description	Protocol Families
service-filter-hit	<p>(Only if the service-filter-hit flag is marked by a previous filter in the current type of chained filters) Direct the packet to the next type of filters.</p> <p>Indicate to subsequent filters in the chain that the packet was already processed. This action, coupled with the service-filter-hit match condition in receiving filters, helps to streamline filter processing.</p> <p>NOTE: This action is not supported on T4000 Type 5 FPCs and PTX Series packet transport switches.</p>	<ul style="list-style-type: none"> • family inet • family inet6
syslog	Log the packet to the system log file.	<ul style="list-style-type: none"> • family inet • family inet6
three-color-policer (single-rate two-rate) policer-name	<p>Police the packet using the specified single-rate or two-rate three-color-policer.</p> <p>You cannot also configure the loss-priority action for the same firewall filter term. These two actions are mutually exclusive.</p>	<ul style="list-style-type: none"> • family inet • family inet6 • family mpls • family vpls • family ccc • family bridge

Table 13: Nonterminating Actions for Standard Firewall Filters (*continued*)

Nonterminating Action	Description	Protocol Families
traffic-class value	<p>Specify the traffic-class code point. You can specify a numerical value from 0 through 63. To specify the value in hexadecimal form, include 0x as a prefix. To specify the value in binary form, include b as a prefix.</p> <p>The default traffic-class value is best effort, that is, be or 0.</p> <p>In place of the numeric value, you can specify one of the following text synonyms:</p> <ul style="list-style-type: none"> • af11—Assured forwarding class 1, low drop precedence • af12—Assured forwarding class 1, medium drop precedence • af13—Assured forwarding class 1, high drop precedence • af21—Assured forwarding class 2, low drop precedence • af22—Assured forwarding class 2, medium drop precedence • af23—Assured forwarding class 2, high drop precedence • af31—Assured forwarding class 3, low drop precedence • af32—Assured forwarding class 3, medium drop precedence • af33—Assured forwarding class 3, high drop precedence • af41—Assured forwarding class 4, low drop precedence • af42—Assured forwarding class 4, medium drop precedence • af43—Assured forwarding class 4, high drop precedence • be—Best effort • cs0—Class selector 0 • cs1—Class selector 1 • cs2—Class selector 2 • cs3—Class selector 3 • cs4—Class selector 4 • cs5—Class selector 5 • cs6—Class selector 6 • cs7—Class selector 7 • ef—Expedited forwarding <p>NOTE: The actions traffic-class 0 or traffic-class be are supported only on T Series and M320 routers and on the 10-Gigabit Ethernet Modular Port Concentrator (MPC), 60-Gigabit Ethernet MPC, 60-Gigabit Ethernet Queuing MPC, and 60-Gigabit Ethernet Enhanced Queuing MPC on MX Series routers. However, these actions are not supported on Enhanced III Flexible PIC Concentrators (FPCs) on M320 routers.</p>	family inet6


Related Documentation

- Guidelines for Configuring Standard Firewall Filters
- [Standard Firewall Filter Terminating Actions on page 97](#)

CHAPTER 11

Configuration Statements

accept-source-mac

Syntax	<pre>accept-source-mac { mac-address <i>mac-address</i> { policer { input <i>cos-policer-name</i>; output <i>cos-policer-name</i>; } } }</pre>
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i>], [edit logical-systems <i>logical-system-name</i> interfaces <i>interface-name</i> unit <i>logical-unit-number</i>]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 12.1X48 for PTX Packet Transport Switches.
Description	<p>For Gigabit Ethernet intelligent queuing (IQ) interfaces only, accept traffic from and to the specified remote media access control (MAC) address.</p> <p>The accept-source-mac statement is equivalent to the source-address-filter statement, which is valid for aggregated Ethernet, Fast Ethernet, and Gigabit Ethernet interfaces only.</p> <p>On untagged Gigabit Ethernet interfaces, you should not configure the source-address-filter statement and the accept-source-mac statement simultaneously. On tagged Gigabit Ethernet interfaces, you should not configure the source-address-filter statement and the accept-source-mac statement with an identical MAC address specified in both filters.</p> <p>The statements are explained separately.</p>
	<div> NOTE: The policer statement is not supported on PTX Series Packet Transport Switches.</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">Configuring MAC Address FilteringConfiguring MAC Filtering on PTX Series Packet Transport Switches on page 17source-filtering on page 136

action-fpc-restart-disable

Syntax	action-fpc-restart-disable;
Hierarchy Level	[edit chassis fabric degraded]
Release Information	Statement added in Junos OS Release 11.4. Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Switches.
Description	Allow the user to disable restarting of the FPCs during healing from a degraded fabric condition. The device can automatically recover from degraded fabric conditions by restarting both the fabric planes and the FPCs. If the action-fpc-restart-disable statement is configured, the healing attempt is limited to restarting the fabric planes only.
Default	The system will detect a blackholing condition and try to heal the system.
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"> • Disabling FPC Restart on page 42 • Traffic Black Hole Caused by Fabric Degradation on page 41

degraded

Syntax	<pre>degraded { action-fpc-restart-disable; degraded-fabric-detection-enable; degraded-fpc-bad-plane-threshold <i>number-bad-planes</i>; }</pre>
Hierarchy Level	[edit chassis fabric degraded]
Release Information	Statement introduced in Junos OS Release 11.4. Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Switches.
Description	Configure options that apply to degraded chassis fabric conditions.
Options	The statements are explained separately.
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"> • Traffic Black Hole Caused by Fabric Degradation on page 41 • Disabling FPC Restart on page 42

degraded-fabric-detection-enable

Syntax	degraded-fabric-detection-enable;
Hierarchy Level	[edit chassis fabric degraded]
Release Information	Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Switches.
Description	Enable detection of an FPC with degraded fabric.
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">• Traffic Black Hole Caused by Fabric Degradation on page 41• Disabling FPC Restart on page 42

degraded-fpc-bad-plane-threshold

Syntax	degraded-fpc-bad-plane-threshold <i>number-bad-planes</i> ;
Hierarchy Level	[edit chassis fabric degraded]
Release Information	Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Switches.
Description	Configure the number of bad planes that indicate an FPC is degraded.
Options	number-bad-planes —Number of bad planes. Range: 4 through 18 Default: 4
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">• Traffic Black Hole Caused by Fabric Degradation on page 41• Disabling FPC Restart on page 42

encapsulation (Logical Interface)

Syntax	encapsulation (atm-ccc-cell-relay atm-ccc-vc-mux atm-cisco-nlpid atm-mlppp-llc atm-nlpid atm-ppp-llc atm-ppp-vc-mux atm-snap atm-tcc-snap atm-tcc-vc-mux atm-vc-mux ether-over-atm-llc ether-vpls-over-atm-llc ether-vpls-over-fr ether-vpls-over-ppp ethernet ethernet-ccc ethernet-vpls ethernet-vpls-fr frame-relay-ccc frame-relay-ether-type frame-relay-ether-type-tcc frame-relay-ppp frame-relay-tcc gre-fragmentation multilink-frame-relay-end-to-end multilink-ppp ppp-over-ether ppp-over-ether-over-atm-llc vlan-bridge vlan-ccc vlan-vci-ccc vlan-tcc vlan-vpls);
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i>], [edit logical-systems <i>logical-system-name</i> interfaces <i>interface-name</i> unit <i>logical-unit-number</i>], [edit interfaces rlsq <i>number</i> unit <i>logical-unit-number</i>]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches (vlan-ccc and vlan-tcc options only). Statement introduced in Junos OS Release 12.2 for the ACX Series Universal Access Routers. Only the atm-ccc-cell-relay and atm-ccc-vc-mux options are supported on ACX Series routers.
Description	Configure a logical link-layer encapsulation type.
Options	<p>atm-ccc-cell-relay—Use ATM cell-relay encapsulation.</p> <p>atm-ccc-vc-mux—Use ATM virtual circuit (VC) multiplex encapsulation on CCC circuits. When you use this encapsulation type, you can configure the ccc family only.</p> <p>atm-cisco-nlpid—Use Cisco ATM network layer protocol identifier (NLPID) encapsulation. When you use this encapsulation type, you can configure the inet family only.</p> <p>atm-mlppp-llc—For ATM2 IQ interfaces only, use Multilink Point-to-Point (MLPPP) over AAL5 LLC. For this encapsulation type, your router must be equipped with a Link Services or Voice Services PIC. MLPPP over ATM encapsulation is not supported on ATM2 IQ OC48 interfaces.</p> <p>atm-nlpid—Use ATM NLPID encapsulation. When you use this encapsulation type, you can configure the inet family only.</p> <p>atm-ppp-llc—(ATM2 IQ interfaces and MX Series routers with MPC/MIC interfaces using the ATM MIC with SFP only) Use PPP over AAL5 LLC encapsulation.</p> <p>atm-ppp-vc-mux—(ATM2 IQ interfaces and MX Series routers with MPC/MIC interfaces using the ATM MIC with SFP only) Use PPP over ATM AAL5 multiplex encapsulation.</p> <p>atm-snap—(All interfaces including MX Series routers with MPC/MIC interfaces using the ATM MIC with SFP) Use ATM subnetwork attachment point (SNAP) encapsulation.</p> <p>atm-tcc-snap—Use ATM SNAP encapsulation on translational cross-connect (TCC) circuits.</p>

atm-tcc-vc-mux—Use ATM VC multiplex encapsulation on TCC circuits. When you use this encapsulation type, you can configure the **tcc** family only.

atm-vc-mux—(All interfaces including MX Series routers with MPC/MIC interfaces using the ATM MIC with SFP) Use ATM VC multiplex encapsulation. When you use this encapsulation type, you can configure the **inet** family only.

ether-over-atm-llc—(All IP interfaces including MX Series routers with MPC/MIC interfaces using the ATM MIC with SFP) For interfaces that carry IP traffic, use Ethernet over ATM LLC encapsulation. When you use this encapsulation type, you cannot configure multipoint interfaces.

ether-vpls-over-atm-llc—For ATM2 IQ interfaces only, use the Ethernet virtual private LAN service (VPLS) over ATM LLC encapsulation to bridge Ethernet interfaces and ATM interfaces over a VPLS routing instance (as described in RFC 2684, *Multiprotocol Encapsulation over ATM Adaptation Layer 5*). Packets from the ATM interfaces are converted to standard ENET2/802.3 encapsulated Ethernet frames with the frame check sequence (FCS) field removed.

ether-vpls-over-fr—For E1, T1, E3, T3, and SONET interfaces only, use the Ethernet virtual private LAN service (VPLS) over Frame Relay encapsulation to support Bridged Ethernet over Frame Relay encapsulated TDM interfaces for VPLS applications, per RFC 2427, *Multiprotocol Interconnect over Frame Relay*.



NOTE: The SONET/SDH OC3/STM1 (Multi-Rate) MIC with SFP, the Channelized SONET/SDH OC3/STM1 (Multi-Rate) MIC with SFP, and the DS3/E3 MIC do not support Ethernet over Frame Relay encapsulation.

ether-vpls-over-ppp—For E1, T1, E3, T3, and SONET interfaces only, use the Ethernet virtual private LAN service (VPLS) over Point-to-Point Protocol (PPP) encapsulation to support Bridged Ethernet over PPP-encapsulated TDM interfaces for VPLS applications.

ethernet—Use Ethernet II encapsulation (as described in RFC 894, *A Standard for the Transmission of IP Datagrams over Ethernet Networks*).

ethernet-ccc—Use Ethernet CCC encapsulation on Ethernet interfaces.

ethernet-vpls—Use Ethernet VPLS encapsulation on Ethernet interfaces that have VPLS enabled and that must accept packets carrying standard Tag Protocol ID (TPID) values.



NOTE: The built-in Gigabit Ethernet PIC on an M7i router does not support extended VLAN VPLS encapsulation.

ethernet-vpls-fr—Use in a VPLS setup when a CE device is connected to a PE device over a time-division multiplexing (TDM) link. This encapsulation type enables the PE device to terminate the outer layer 2 Frame Relay connection, use the 802.1p bits inside the inner Ethernet header to classify the packets, look at the MAC address from the Ethernet header, and use the MAC address to forward the packet into a given VPLS instance.

frame-relay-ccc—Use Frame Relay encapsulation on CCC circuits. When you use this encapsulation type, you can configure the **ccc** family only.

frame-relay-ether-type—Use Frame Relay ether type encapsulation for compatibility with Cisco Frame Relay. The physical interface must be configured with flexible-frame-relay encapsulation.

frame-relay-ether-type-tcc—Use Frame Relay ether type TCC for Cisco-compatible Frame Relay on TCC circuits to connect different media. The physical interface must be configured with flexible-frame-relay encapsulation.

frame-relay-ppp—Use PPP over Frame Relay circuits. When you use this encapsulation type, you can configure the **ppp** family only. J Series routers do not support frame-relay-ppp encapsulation.

frame-relay-tcc—Use Frame Relay encapsulation on TCC circuits for connecting different media. When you use this encapsulation type, you can configure the **tcc** family only.

gre-fragmentation—For adaptive services interfaces only, use GRE fragmentation encapsulation to enable fragmentation of IPv4 packets in GRE tunnels. This encapsulation clears the do not fragment (DF) bit in the packet header. If the packet's size exceeds the tunnel's maximum transmission unit (MTU) value, the packet is fragmented before encapsulation.

multilink-frame-relay-end-to-end—Use MLFR FRF.15 encapsulation. This encapsulation is used only on multilink, link services, and voice services interfaces and their constituent T1 or E1 interfaces, and is supported on LSQ and redundant LSQ interfaces.

multilink-ppp—Use MLPPP encapsulation. This encapsulation is used only on multilink, link services, and voice services interfaces and their constituent T1 or E1 interfaces.

ppp-over-ether—For underlying Ethernet interfaces on J Series routers, use PPP over Ethernet encapsulation. When you use this encapsulation type, you cannot configure the interface address. Instead, configure the interface address on the PPP interface. You also use PPP over Ethernet encapsulation to configure an underlying Ethernet interface for a dynamic PPPoE logical interface on M120 and M320 routers with Intelligent Queuing 2 (IQ2) PICs, and on MX Series routers with MPCs.

ppp-over-ether-over-atm-llc—(J Series routers and MX Series routers with MPCs using the ATM MIC with SFP only) For underlying ATM interfaces, use PPP over Ethernet over ATM LLC encapsulation. When you use this encapsulation type, you cannot configure the interface address. Instead, configure the interface address on the PPP interface.

vlan-bridge—Use Ethernet VLAN bridge encapsulation on Ethernet interfaces that have IEEE 802.1Q tagging, flexible-ethernet-services, and bridging enabled and that must accept packets carrying TPID 0x8100 or a user-defined TPID.

vlan-ccc—Use Ethernet virtual LAN (VLAN) encapsulation on CCC circuits. When you use this encapsulation type, you can configure the **ccc** family only.

vlan-vci-ccc—Use ATM-to-Ethernet interworking encapsulation on CCC circuits. When you use this encapsulation type, you can configure the **ccc** family only.

vlan-tcc—Use Ethernet VLAN encapsulation on TCC circuits. When you use this encapsulation type, you can configure the **tcc** family only.

vlan-vpls—Use Ethernet VLAN encapsulation on VPLS circuits.

Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
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Related Documentation

- Configuring Layer 2 Switching Cross-Connects Using CCC
- Configuring the Encapsulation for Layer 2 Switching TCCs
- Configuring Interface Encapsulation on Logical Interfaces
- Configuring MPLS LSP Tunnel Cross-Connects Using CCC
- Circuit and Translational Cross-Connects Overview
- Identifying the Access Concentrator
- Configuring ATM Interface Encapsulation
- Configuring VLAN Encapsulation
- Configuring Extended VLAN Encapsulation
- Configuring ISDN Logical Interface Properties
- Configuring ATM-to-Ethernet Interworking
- [Configuring Interface Encapsulation on PTX Series Packet Transport Switches on page 19](#)
- Configuring CCC Encapsulation for Layer 2 VPNs
- Configuring TCC Encapsulation for Layer 2 VPNs and Layer 2 Circuits
- Configuring ATM for Subscriber Access
- Junos Services Interfaces Configuration Release 12.3
- CoS on ATM IMA Pseudowire Interfaces Overview
- Configuring Policing on an ATM IMA Pseudowire

encapsulation (Physical Interface)

Syntax	encapsulation (atm-ccc-cell-relay atm-pvc cisco-hdlc cisco-hdlc-ccc cisco-hdlc-tcc ethernet-bridge ethernet-ccc ethernet-over-atm ethernet-tcc ethernet-vpls ethernet-vpls-fr ether-vpls-over-atm-llc ethernet-vpls-ppp extended-frame-relay-ccc extended-frame-relay-ether-type-tcc extended-frame-relay-tcc extended-vlan-bridge extended-vlan-ccc extended-vlan-tcc extended-vlan-vpls flexible-ethernet-services flexible-frame-relay frame-relay frame-relay-ccc frame-relay-ether-type frame-relay-ether-type-tcc frame-relay-port-ccc frame-relay-tcc generic-services multilink-frame-relay-uni-nni ppp ppp-ccc ppp-tcc vlan-ccc vlan-vci-ccc vlan-vpls);
Hierarchy Level	[edit interfaces <i>interface-name</i>], [edit interfaces rlsq <i>number:number</i>]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 11.1 for EX Series switches. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches (flexible-ethernet-services , ethernet-ccc , and ethernet-tcc options only).
Description	Specify the physical link-layer encapsulation type. Not all encapsulation types are supported on the switches. See the switch CLI.
Default	ppp —Use serial PPP encapsulation.
Options	<p>atm-ccc-cell-relay—Use ATM cell-relay encapsulation.</p> <p>atm-pvc—Use ATM PVC encapsulation.</p> <p>cisco-hdlc—Use Cisco-compatible High-Level Data Link Control (HDLC) framing.</p> <p>cisco-hdlc-ccc—Use Cisco-compatible HDLC framing on CCC circuits.</p> <p>cisco-hdlc-tcc—Use Cisco-compatible HDLC framing on TCC circuits for connecting different media.</p> <p>ethernet-bridge—Use Ethernet bridge encapsulation on Ethernet interfaces that have bridging enabled and that must accept all packets.</p> <p>ethernet-ccc—Use Ethernet CCC encapsulation on Ethernet interfaces that must accept packets carrying standard Tag Protocol ID (TPID) values. For 8-port, 12-port, and 48-port Fast Ethernet PICs, CCC is not supported.</p> <p>ethernet-over-atm—For interfaces that carry IPv4 traffic, use Ethernet over ATM encapsulation. When you use this encapsulation type, you cannot configure multipoint interfaces. As defined in RFC 2684, <i>Multiprotocol Encapsulation over ATM Adaptation Layer 5</i>, this encapsulation type allows ATM interfaces to connect to devices that support only bridge protocol data units (BPDUs). Junos OS does not completely support bridging, but accepts BPDU packets as a default gateway. If you use the router as an edge device, then the router acts as a default gateway. It accepts Ethernet LLC/SNAP frames with IP or ARP in the payload, and drops the rest. For packets destined to the Ethernet LAN, a route lookup is done using the destination</p>

IP address. If the route lookup yields a full address match, the packet is encapsulated with an LLC/SNAP and MAC header, and the packet is forwarded to the ATM interface.

ethernet-tcc—For interfaces that carry IPv4 traffic, use Ethernet TCC encapsulation on interfaces that must accept packets carrying standard TPID values. For 8-port, 12-port, and 48-port Fast Ethernet PICs, TCC is not supported.

ethernet-vpls—Use Ethernet VPLS encapsulation on Ethernet interfaces that have VPLS enabled and that must accept packets carrying standard TPID values. On M Series routers, except the M320 router, the 4-port Fast Ethernet TX PIC and the 1-port, 2-port, and 4-port, 4-slot Gigabit Ethernet PICs can use the Ethernet VPLS encapsulation type.

ethernet-vpls-fr—Use in a VPLS setup when a CE device is connected to a PE device over a time division multiplexing (TDM) link. This encapsulation type enables the PE device to terminate the outer layer 2 Frame Relay connection, use the 802.1p bits inside the inner Ethernet header to classify the packets, look at the MAC address from the Ethernet header, and use the MAC address to forward the packet into a given VPLS instance.

ethernet-vpls-ppp—Use in a VPLS setup when a CE device is connected to a PE device over a time division multiplexing (TDM) link. This encapsulation type enables the PE device to terminate the outer layer 2 PPP connection, use the 802.1p bits inside the inner Ethernet header to classify the packets, look at the MAC address from the Ethernet header, and use it to forward the packet into a given VPLS instance.

ether-vpls-over-atm-llc—For ATM intelligent queuing (IQ) interfaces only, use the Ethernet virtual private LAN service (VPLS) over ATM LLC encapsulation to bridge Ethernet interfaces and ATM interfaces over a VPLS routing instance (as described in RFC 2684, *Multiprotocol Encapsulation over ATM Adaptation Layer 5*). Packets from the ATM interfaces are converted to standard ENET2/802.3 encapsulated Ethernet frames with the frame check sequence (FCS) field removed.

extended-frame-relay-ccc—Use Frame Relay encapsulation on CCC circuits. This encapsulation type allows you to dedicate DLCIs 1 through 1022 to CCC.

extended-frame-relay-ether-type-tcc—Use extended Frame Relay ether type TCC for Cisco-compatible Frame Relay for DLCIs 1 through 1022. This encapsulation type is used for circuits with different media on either side of the connection.

extended-frame-relay-tcc—Use Frame Relay encapsulation on TCC circuits to connect different media. This encapsulation type allows you to dedicate DLCIs 1 through 1022 to TCC.

extended-vlan-bridge—Use extended VLAN bridge encapsulation on Ethernet interfaces that have IEEE 802.1Q VLAN tagging and bridging enabled and that must accept packets carrying TPID 0x8100 or a user-defined TPID.

extended-vlan-ccc—Use extended VLAN encapsulation on CCC circuits with Gigabit Ethernet and 4-port Fast Ethernet interfaces that must accept packets carrying 802.1Q values. For 8-port, 12-port, and 48-port Fast Ethernet PICs, extended VLAN CCC is not supported. For 4-port Gigabit Ethernet PICs, extended VLAN CCC is not supported.

extended-vlan-tcc—For interfaces that carry IPv4 traffic, use extended VLAN encapsulation on TCC circuits with Gigabit Ethernet interfaces on which you want to use 802.1Q tagging. For 4-port Gigabit Ethernet PICs, extended VLAN TCC is not supported.

extended-vlan-vpls—Use extended VLAN VPLS encapsulation on Ethernet interfaces that have VLAN 802.1Q tagging and VPLS enabled and that must accept packets carrying TPIDs 0x8100, 0x9100, and 0x9901. On M Series routers, except the M320 router, the 4-port Fast Ethernet TX PIC and the 1-port, 2-port, and 4-port, 4-slot Gigabit Ethernet PICs can use the Ethernet VPLS encapsulation type.



NOTE: The built-in Gigabit Ethernet PIC on an M7i router does not support extended VLAN VPLS encapsulation.

flexible-ethernet-services—For Gigabit Ethernet IQ interfaces and Gigabit Ethernet PICs with small form-factor pluggable transceivers (SFPs) (except the 10-port Gigabit Ethernet PIC and the built-in Gigabit Ethernet port on the M7i router), use flexible Ethernet services encapsulation when you want to configure multiple per-unit Ethernet encapsulations. Aggregated Ethernet bundles can use this encapsulation type. This encapsulation type allows you to configure any combination of route, TCC, CCC, Layer 2 virtual private networks (VPNs), and VPLS encapsulations on a single physical port. If you configure flexible Ethernet services encapsulation on the physical interface, VLAN IDs from 1 through 511 are no longer reserved for normal VLANs.

flexible-frame-relay—For IQ interfaces only, use flexible Frame Relay encapsulation when you want to configure multiple per-unit Frame Relay encapsulations. This encapsulation type allows you to configure any combination of TCC, CCC, and standard Frame Relay encapsulations on a single physical port. Also, each logical interface can have any DLCI value from 1 through 1022.

frame-relay—Use Frame Relay encapsulation.

frame-relay-ccc—Use Frame Relay encapsulation on CCC circuits.

frame-relay-ether-type—Use Frame Relay ether type encapsulation for compatibility with the Cisco Frame Relay.

frame-relay-ether-type-tcc—Use Frame Relay ether type TCC for Cisco-compatible Frame Relay on TCC circuits to connect different media.

frame-relay-port-ccc—Use Frame Relay port CCC encapsulation to transparently carry all the DLCIs between two customer edge (CE) routers without explicitly configuring each DLCI on the two provider edge (PE) routers with Frame Relay transport. When you use this encapsulation type, you can configure the **ccc** family only.

frame-relay-tcc—Use Frame Relay encapsulation on TCC circuits to connect different media.

generic-services—Use generic services encapsulation for services with a hierarchical scheduler.

multilink-frame-relay-uni-nni—Use MLFR UNI NNI encapsulation. This encapsulation is used on link services, voice services interfaces functioning as FRF.16 bundles, and their constituent T1 or E1 interfaces, and is supported on LSQ and redundant LSQ interfaces.

ppp—Use serial PPP encapsulation.

ppp-ccc—Use serial PPP encapsulation on CCC circuits. When you use this encapsulation type, you can configure the **ccc** family only.

ppp-tcc—Use serial PPP encapsulation on TCC circuits for connecting different media. When you use this encapsulation type, you can configure the **tcc** family only.

vlan-ccc—Use Ethernet VLAN encapsulation on CCC circuits.

vlan-vci-ccc—Use ATM-to-Ethernet interworking encapsulation on CCC circuits. When you use this encapsulation type, you can configure the **ccc** family only. All logical interfaces configured on the Ethernet interface must also have the encapsulation type set to **vlan-vci-ccc**.

vlan-vpls—Use VLAN VPLS encapsulation on Ethernet interfaces with VLAN tagging and VPLS enabled. Interfaces with VLAN VPLS encapsulation accept packets carrying standard TPID values only. On M Series routers, except the M320 router, the 4-port Fast Ethernet TX PIC and the 1-port, 2-port, and 4-port, 4-slot Gigabit Ethernet PICs can use the Ethernet VPLS encapsulation type.



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NOTE: Label-switched interfaces (LSIs) do not support VLAN VPLS encapsulation. Therefore, you can only use VLAN VPLS encapsulation on a PE-router-to-CE-router interface and not a core-facing interface.
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Required Privilege	interface—To view this statement in the configuration.
Level	interface-control—To add this statement to the configuration.

Related Documentation

- Configuring Interface Encapsulation on Physical Interfaces
- Configuring CCC Encapsulation for Layer 2 VPNs
- Configuring Layer 2 Switching Cross-Connects Using CCC
- Configuring TCC Encapsulation for Layer 2 VPNs and Layer 2 Circuits
- Configuring ATM Interface Encapsulation
- Configuring ATM-to-Ethernet Interworking
- Configuring VLAN Encapsulation
- Configuring Extended VLAN Encapsulation
- Configuring Encapsulation for Layer 2 Wholesale VLAN Interfaces
- Configuring Interfaces for Layer 2 Circuits
- [Configuring Interface Encapsulation on PTX Series Packet Transport Switches on page 19](#)
- Configuring an MPLS-Based Layer 2 VPN (CLI Procedure)
- Configuring MPLS LSP Tunnel Cross-Connects Using CCC
- Configuring TCC
- Configuring VPLS Interface Encapsulation
- Configuring Interfaces for VPLS Routing
- Defining the Encapsulation for Switching Cross-Connects
- Understanding Encapsulation on an Interface

flexible-vlan-tagging

Syntax	flexible-vlan-tagging;
Hierarchy Level	[edit interfaces <i>ge-fpc/pic/port</i>], [edit interfaces <i>et-fpc/pic/port</i>], [edit interfaces <i>ps0</i>]
Release Information	Statement introduced in Junos OS Release 8.1. Support for aggregated Ethernet added in Junos OS Release 9.0. Statement introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.
Description	<p>Support simultaneous transmission of 802.1Q VLAN single-tag and dual-tag frames on logical interfaces on the same Ethernet port, and on pseudowire logical interfaces.</p> <p>This statement is supported on M Series and T Series routers, for Fast Ethernet and Gigabit Ethernet interfaces only on Gigabit Ethernet IQ2 and IQ2-E, IQ, and IQE PICs, and for aggregated Ethernet interfaces with member links in IQ2, IQ2-E, and IQ PICs or in MX Series DPCs, or on Ethernet interfaces for PTX Series Packet Transport Switches.</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">Configuring Mixed TaggingConfiguring Flexible VLAN Tagging on PTX Series Packet Transport Switches on page 18

forwarding-classes (Class-of-Service)

Syntax	<pre>forwarding-classes { class queue-num <i>queue-number</i> priority (high low); queue <i>queue-number</i> <i>class-name</i> priority (high low) [policing-priority (premium normal)]; }</pre>
Hierarchy Level	[edit class-of-service]
Release Information	<p>Statement introduced before Junos OS Release 7.4.</p> <p>policing-priority option introduced in Junos OS Release 9.5.</p> <p>Statement introduced on PTX Series Packet Transport Switches in Junos OS Release 12.1.</p>
Description	Associate the forwarding class with a queue name and number. For M320, MX Series, and T Series routers only, you can configure fabric priority queuing by including the priority statement. For Enhanced IQ PICs, you can include the policing-priority option.



NOTE: The **priority** and **policing-priority** options are not supported on PTX Series Packet Transport Switches.

The statements are explained separately.

Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Forwarding Classes • Forwarding Classes and Fabric Priority Queues • Example: Configuring CoS for a PBB Network on MX Series Routers • Configuring Layer 2 Policers on IQE PICs • Classifying Packets by Egress Interface

forwarding-mode (PTX Series Packet Transport Switches)

Syntax	<code>forwarding-mode { sa-multicast }</code>
Hierarchy Level	<code>[edit chassis fpc slot pic slot port port-number]</code>
Release Information	Statement introduced in Junos OS Release 12.1X48R4.
Description	<p>Configure interoperability between 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and P1-PTX-2-100GE-CFP.</p> <p>The remaining statement is explained separately.</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring the Interoperability Between the 100-Gigabit Ethernet PICs P1-PTX-2-100GE-CFP and PD-1CE-CFP-FPC4 on page 36• Interoperability Between the 100-Gigabit Ethernet PICs PD-1CE-CFP-FPC4 and PF-1CGE-CFP• Configuring the Interoperability Between the 100-Gigabit Ethernet PICs PF-1CGE-CFP and PD-1CE-CFP-FPC4

fru-poweron-sequence

Syntax	<code>fru-poweron-sequence fru-poweron-sequence;</code>
Hierarchy Level	[edit chassis]
Release Information	Statement introduced in Junos OS Release 10.0. Statement introduced in Junos OS Release 12.1 for PTX Series packet transport switches. Statement introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers. Statement introduced in Junos OS Release 12.3 for T640, T1600, and T4000 routers.
Description	(MX Series 3D Universal Edge Routers only) Configure the power-on sequence for the DPCs in the chassis for routers with the enhanced AC Power Entry Module (PEM). (T640 routers, T1600 routers, T4000 routers, MX2020 routers, and PTX Series packet transport switches) Configure the power-on sequence for Flexible PIC Concentrators (FPCs) installed in the chassis.
Options	(MX Series 3D Universal Edge Routers only) fru-poweron-sequence —Power-on sequence for the DPCs in the chassis. The numbers indicate the slot number of the DPCs.



NOTE: If the power-on sequence is not configured by including the `fru-poweron-sequence` statement, Junos OS uses the `/var/log/poweron_seq.log` file to determine the power-on sequence for the last power-on operation for the DPCs and the same sequence is used. If the `/var/log/boot_seq.log` file, is not available, Junos OS uses the ascending order of the slot numbers of the DPCs as the sequence to power on the DPCs.

(T640 routers, T1600 routers, T4000 routers, MX2020 routers, and PTX Series packet transport switches) **fru-poweron-sequence**—Power-on sequence for the FPCs in the chassis. The numbers indicate the slot number of the FPCs.



NOTE:

- If the configured sequence contains invalid numbers, Junos OS considers only the valid numbers in the sequence. The invalid numbers are silently discarded.
- If the power-on sequence is not configured by including the `fru-poweron-sequence` statement, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power on the FPCs.

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">• Configuring the Power-On Sequence for DPCs on MX Series Routers with the Enhanced AC PEM• Configuring the Power-On Sequence for FPCs on PTX Series Packet Transport Switches on page 31• Configuring the Power-On Sequence for FPCs on T640, T1600, and T4000 Routers |
|------------------------------|---|

hold-interval (OAM)

Syntax	hold-interval <i>minutes</i> ;
Hierarchy Level	[edit protocols oam ethernet connectivity-fault-management maintenance-domain <i>domain-name</i> maintenance-association <i>ma-name</i> continuity-check]
Release Information	Statement introduced in Junos OS Release 8.4. Statement introduced in junos os release 12.1X48 for PTX Series Packet Transport Switches.
Description	The time to wait before flushing the maintenance association end point (MEP) database, if no updates occur.
Options	<i>minutes</i> —Time to wait, in minutes.
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">• Continuity Check Protocol• Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22

level

Syntax	<code>level <i>number</i>;</code>
Hierarchy Level	[edit protocols oam ethernet connectivity-fault-management maintenance-domain domain-name]
Release Information	Statement introduced in Junos OS Release 8.4. Statement introduced in junos os release 12.1X48 for PTX Series Packet Transport Switches.
Description	A number used in CFM messages to identify the maintenance association.
Options	<i>number</i> —A number used to identify the maintenance domain to which the CFM message belongs. Range: 0 through 7
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"> Configuring the Maintenance Domain Level Example: Configuring Connectivity Fault Management for a PBB Network on MX Series Routers Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22

loss-threshold

Syntax	<code>loss-threshold <i>number</i>;</code>
Hierarchy Level	[edit protocols oam ethernet connectivity-fault-management maintenance-domain <i>domain-name</i> maintenance-association <i>ma-name</i> continuity-check]
Release Information	Statement introduced in Junos OS Release 8.4. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.
Description	Specify the number of continuity check messages lost before marking the remote MEP as down.
Options	<i>number</i> —The number of continuity check messages that can be lost before the remote MEP is considered down.
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"> Continuity Check Protocol Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22

maintenance-domain

Syntax `maintenance-domain domain-name {`
 `bridge-domain name <vlan-id [vlan-ids]>;`
 `instance vpls-instance-name;`
 `level number;`
 `maintenance-association ma-name {`
 `protect-maintenance-association protect-ma-name;`
 `remote-maintenance-association remote-ma-name;`
 `short-name-format (character-string | vlan | 2octet | rfc-2685-vpn-id);`
 `continuity-check {`
 `hold-interval minutes;`
 `interval (10m | 10s | 1m | 1s | 100ms);`
 `loss-threshold number`
 `}`
 `mep mep-id {`
 `auto-discovery;`
 `direction (up | down);`
 `interface interface-name (protect | working);`
 `lowest-priority-defect (all-defects | err-xcon | mac-rem-err-xcon | no-defect |`
 `rem-err-xcon | xcon);`
 `priority number;`
 `remote-mep mep-id {`
 `action-profile profile-name;`
 `sla-iterator-profile profile-name {`
 `data-tlv-size size;`
 `iteration-count count-value;`
 `priority priority-value;`
 `}`
 `}`
 `}`
 `mip-half-function(none | default | explicit);`
 `name-format (character-string | none | dns | mac+2oct);`
 `}`
 `virtual-switch name {`
 `bridge-domain name <vlan-id [vlan-ids]>;`
 `}`
`}`

Hierarchy Level [edit protocols [oam](#) ethernet connectivity-fault-management]

Release Information Statement introduced in Junos OS Release 8.4.
 Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.

Description Configure the name of the maintenance domain in IEEE-compliant format.

Options *domain-name*—Name of the maintenance domain.
 The remaining statements are explained separately.

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"> • Creating the Maintenance Domain • Configuring a Maintenance Endpoint • Example: Configuring Connectivity Fault Management for a PBB Network on MX Series Routers • Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22 |
|------------------------------|---|

maximum-links

Syntax	<code>maximum-links <i>maximum-links-limit</i>;</code>
Hierarchy Level	[edit chassis aggregated-devices]
Release Information	Statement introduced in Junos OS Release 11.1 for T Series routers. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches. Statement introduced in Junos OS Release 12.2 for the M Series and MX Series routers.
Description	Configure the maximum links limit for aggregated devices.
Options	<i>maximum-links-limit</i> —Maximum links limit for aggregated devices. Range: 16, 32; (PTX Series systems only in Junos OS Release 12.3) 64
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"> • Configuring Junos OS for Supporting Aggregated Devices • Configuring an Aggregated Ethernet Interface

mtu

Syntax	<code>mtu bytes;</code>
Hierarchy Level	<pre>[edit interfaces <i>interface-name</i>], [edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i> family <i>family</i>], [edit interfaces <i>interface-range name</i>], [edit logical-systems <i>logical-system-name</i> interfaces <i>interface-name</i> unit <i>logical-unit-number</i> family <i>family</i>], [edit logical-systems <i>logical-system-name</i> protocols l2circuit local-switching interface <i>interface-name</i> backup-neighbor <i>address</i>], [edit logical-systems <i>logical-system-name</i> protocols l2circuit neighbor <i>address</i> interface <i>interface-name</i>], [edit logical-systems <i>logical-system-name</i> protocols l2circuit neighbor <i>address</i> interface <i>interface-name</i> backup-neighbor <i>address</i>], [edit logical-systems <i>logical-system-name</i> routing-instances <i>routing-instance-name</i> protocols vpls neighbor <i>address</i> backup-neighbor <i>address</i>], [edit protocols l2circuit local-switching interface <i>interface-name</i> backup-neighbor <i>address</i>], [edit protocols l2circuit neighbor <i>address</i> interface <i>interface-name</i>], [edit protocols l2circuit neighbor <i>address</i> interface <i>interface-name</i> backup-neighbor <i>address</i>], [edit routing-instances <i>routing-instance-name</i> protocols vpls neighbor <i>address</i> backup-neighbor <i>address</i>]</pre>
Release Information	<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 12.1X48 for PTX Series Packet Transport Switches.</p> <p>Statement introduced in Junos OS Release 12.2 for ACX Series Universal Access Routers.</p>
Description	<p>Specify the maximum transmission unit (MTU) size for the media or protocol. The default MTU size depends on the device type. Changing the media MTU or protocol MTU causes an interface to be deleted and added again.</p> <p>To route jumbo data packets on the routed VLAN interface (RVI) on EX Series switches, you must configure the jumbo MTU size on the member physical interfaces and also on the RVI itself (the <code>vlan</code> interface).</p>



CAUTION: For EX Series switches, setting or deleting the jumbo MTU size on the RVI (the `vlan` interface) while the switch is transmitting packets might cause packets to be dropped.



NOTE: If a packet whose size is larger than the configured MTU size is received on the receiving interface, the packet is eventually dropped. The value considered for MRU (maximum receive unit) size is also the same as the MTU size configured on that interface.



NOTE: Not all devices allow you to set an MTU value, and some devices have restrictions on the range of allowable MTU values. You cannot configure an MTU for management Ethernet interfaces (fxp0, em0, or me0) or for loopback, multilink, and multicast tunnel devices.

For more information about configuring MTU for specific interfaces and router or switch combinations, see *Configuring the Media MTU*.

Options *bytes*—MTU size.

Range: 256 through 9192 bytes, 256 through 9500 bytes (Junos OS 12.1X48R2 for PTX Series systems)

Default: 1500 bytes (INET, INET6, and ISO families), 1448 bytes (MPLS), 1514 bytes (EX Series switch interfaces)

Required Privilege interface—To view this statement in the configuration.

Level interface-control—To add this statement to the configuration.

- Related Documentation**
- [Configuring Gigabit Ethernet Interfaces \(CLI Procedure\)](#)
 - [Configuring Interfaces for Layer 2 Circuits](#)
 - [Configuring the Media MTU](#)
 - [Configuring Routed VLAN Interfaces \(CLI Procedure\)](#)
 - [Setting the Protocol MTU](#)

name-format

Syntax	name-format (character-string none dns mac+2oct);
Hierarchy Level	[edit protocols oam ethernet connectivity-fault-management maintenance-domain domain-name]
Release Information	Statement introduced in Junos OS Release 8.4. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.
Description	Specify the format of the maintenance domain name.
Options	character-string —The name is an ASCII character string. none —The maintenance domain name is not used. dns —The name is in domain name service (DNS) format. For example: www.juniper.net. mac+2oct —Name is the MAC address plus a two-octet maintenance association identifier. For example: 08:00:22:33:44:55.100. Default: character-string
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">• Creating a Maintenance Association• Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22

oam

```

Syntax  oam {
        ethernet {
            connectivity-fault-management {
                action-profile profile-name {
                    default-actions {
                        interface-down;
                    }
                }
            }
            performance-monitoring {
                delegate-server-processing;
                hardware-assisted-timestamping;
                sla-iterator-profiles {
                    profile-name {
                        disable;
                        calculation-weight {
                            delay delay-weight;
                            delay-variation delay-variation-weight;
                        }
                        cycle-time milliseconds;
                        iteration-period connections;
                        measurement-type (loss | statistical-frame-loss | two-way-delay);
                    }
                }
            }
            linktrace {
                age (30m | 10m | 1m | 30s | 10s);
                path-database-size path-database-size;
            }
            maintenance-domain domain-name {
                level number;
                name-format (character-string | none | dns | mac+2octet);
                maintenance-association ma-name {
                    short-name-format (character-string | vlan | 2octet | rfc-2685-vpn-id);
                    protect-maintenance-association protect-ma-name;
                    remote-maintenance-association remote-ma-name;
                    continuity-check {
                        convey-loss-threshold;
                        hold-interval minutes;
                        interface-status-tlv;
                        interval (10m | 10s | 1m | 1s | 100ms);
                        loss-threshold number;
                        port-status-tlv;
                    }
                }
                mep mep-id {
                    auto-discovery;
                    direction (up | down);
                    interface interface-name (protect | working);
                    lowest-priority-defect (all-defects | err-xcon | mac-rem-err-xcon | no-defect |
                        rem-err-xcon | xcon );
                    priority number;
                    remote-mep mep-id {
                        action-profile profile-name;
                    }
                }
            }
        }
    }

```

```
        sla-iterator-profile profile-name {
            data-tlv-size size;
            iteration-count count-value;
            priority priority-value;
        }
    }
}
}
}
}
link-fault-management {
    action-profile profile-name {
        action {
            link-down;
            send-critical-event;
            syslog;
        }
        event {
            link-adjacency-loss;
            link-event-rate {
                frame-error count;
                frame-period count;
                frame-period-summary count;
                symbol-period count;
            }
            protocol-down;
        }
    }
}
interface interface-name {
    apply-action-profile
    link-discovery (active | passive);
    pdu-interval interval;
    pdu-threshold threshold-value;
    remote-loopback;
    event-thresholds {
        frame-error count;
        frame-period count;
        frame-period-summary count;
        symbol-period count;
    }
    negotiation-options {
        allow-remote-loopback;
        no-allow-link-events;
    }
}
}
}
}
```

Hierarchy Level [edit protocols]

Release Information Statement introduced in Junos OS Release 8.2.
Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.

Description	For Ethernet interfaces on M320, M120, MX Series, and T Series routers and PTX Series Packet Transport Switches, provide IEEE 802.3ah Operation, Administration, and Maintenance (OAM) support. The remaining statements are explained separately.
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"> • IEEE 802.3ah OAM Link-Fault Management Overview • Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22

protocol (Schedulers)

Syntax	protocol (any non-tcp tcp);
Hierarchy Level	[edit class-of-service schedulers <i>scheduler-name</i> drop-profile-map]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches. Statement introduced in Junos OS Release 12.2 for ACX Series Routers.
Description	Specify the protocol type for the specified scheduler.
Options	any —Accept any protocol type. non-tcp —(ACX Series Routers, M Series and T Series (except T4000) routers only) Accept any protocol type other than TCP/IP.



NOTE: On ACX Series Routers, when you configure the non-tcp option, only the any option is supported for loss-priority.

	tcp —(ACX Series Routers, M Series and T Series (except T4000) routers only) Accept TCP/IP protocol type.
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"> • Configuring Schedulers

recovered-clock

Syntax	<code>recovered-clock { port <i>port-number</i>; }</code>
Hierarchy Level	<code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>]</code>
Release Information	Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.
Description	Select the port where the synchronous clock may be recovered.
Options	<i>port-number</i> —Port number where the synchronous clock may be recovered.
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">• Clock Sources for PTX Series Packet Transport Switches on page 25• Configuring an External Clock Synchronization Interface for PTX Series Packet Transport Switches on page 28• synchronization on page 137

sa-multicast (PTX Series Packet Transport Switches)

Syntax	sa-multicast;
Hierarchy Level	[edit chassis fpc slot pic slot port <i>port-number</i> forwarding-mode]
Release Information	Statement introduced in Junos OS Release 12.1X48R4.
Description	Configure source address (SA) multicast bit mode on the 100-Gigabit Ethernet PIC P1-PTX-2-100GE-CFP to enable interoperability with 100-Gigabit Ethernet PIC PD-ICE-CFP-FPC4.



NOTE: When SA multicast bit steering mode is configured on a PTX Series Packet Transport Switch 100-Gigabit Ethernet port, VLANs are not supported for that port.

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"> • Interoperability Between the 100-Gigabit Ethernet PICs PD-ICE-CFP-FPC4 and P1-PTX-2-100GE-CFP on page 35 • Configuring the Interoperability Between the 100-Gigabit Ethernet PICs P1-PTX-2-100GE-CFP and PD-ICE-CFP-FPC4 on page 36

short-name-format

Syntax	short-name-format (character-string vlan 2octet rfc-2685-vpn-id);
Hierarchy Level	[edit protocols oam ethernet connectivity-fault-management maintenance-domain <i>domain-name</i> maintenance-association <i>ma-name</i>]
Release Information	Statement introduced in Junos OS Release 8.4. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.
Description	Specify the name format of the maintenance association name.
Options	character-string —The name is an ASCII character string. vlan —The primary VLAN identifier. 2octet —A number in the range 0 through 65,535. rfc-2685-vpn-id —A VPN identifier that complies with RFC 2685. Default: character-string



.....
NOTE: The PTX Series Packet Transport Switches support the **vlan** and **2octet** options only.
.....

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">• Creating a Maintenance Association• Configuring Ethernet 802.1ag OAM on PTX Series Packet Transport Switches on page 22

source-address-filter

Syntax	<pre>source-address-filter { mac-address; }</pre>
Hierarchy Level	[edit interfaces <i>interface-name</i> aggregated-ether-options], [edit interfaces <i>interface-name</i> fastether-options], [edit interfaces <i>interface-name</i> gigether-options]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 12.1X48 for PTX Packet Transport Switches.
Description	For aggregated Ethernet, Fast Ethernet, Gigabit Ethernet, Gigabit Ethernet IQ interfaces, and Gigabit Ethernet PICs with SFPs (except the 10-port Gigabit Ethernet PIC and the built-in Gigabit Ethernet port on the M7i router), specify the MAC addresses from which the interface can receive packets. For this statement to have any effect, you must include the source-filtering statement in the configuration to enable source address filtering. This statement is not supported on the J Series Services Routers.
Options	<p>mac-address—MAC address filter. You can specify the MAC address as <i>nn:nn:nn:nn:nn:nn</i> or <i>nnnn.nnnn.nnnn</i>, where <i>n</i> is a decimal digit. To specify more than one address, include multiple mac-address options in the source-address-filter statement.</p> <p>If you enable the VRRP on a Fast Ethernet or Gigabit Ethernet interface, as described in VRRP and VRRP for IPv6 Overview, and if you enable MAC source address filtering on the interface, you must include the virtual MAC address in the list of source MAC addresses that you specify in the source-address-filter statement. MAC addresses ranging from 00:00:5e:00:01:00 through 00:00:5e:00:01:ff are reserved for VRRP, as defined in RFC 3768, <i>Virtual Router Redundancy Protocol</i>. When you configure the VRRP group, the group number must be the decimal equivalent of the last hexadecimal byte of the virtual MAC address.</p> <p>On untagged Gigabit Ethernet interfaces, you should not configure the source-address-filter statement and the accept-source-mac statement simultaneously. On tagged Gigabit Ethernet interfaces, you should not configure the source-address-filter statement and the accept-source-mac statement with an identical MAC address specified in both filters.</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"> Enabling Ethernet MAC Address Filtering Configuring MAC Filtering on PTX Series Packet Transport Switches on page 17 source-filtering on page 136

source-filtering

Syntax	(source-filtering no-source-filtering);
Hierarchy Level	[edit interfaces <i>interface-name</i> aggregated-ether-options], [edit interfaces <i>interface-name</i> fastether-options], [edit interfaces <i>interface-name</i> gigether-options]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 12.1X48 for PTX Packet Transport Switches.
Description	<p>For aggregated Ethernet, Fast Ethernet, Gigabit Ethernet, and Gigabit Ethernet IQ interfaces only, enable the filtering of MAC source addresses, which blocks all incoming packets to that interface. To allow the interface to receive packets from specific MAC addresses, include the source-address-filter statement.</p> <p>If the remote Ethernet card is changed, the interface is no longer able to receive packets from the new card because it has a different MAC address.</p>
Default	Source address filtering is disabled.
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">• Enabling Ethernet MAC Address Filtering• Configuring MAC Filtering on PTX Series Packet Transport Switches on page 17• accept-source-mac on page 106• source-address-filter on page 135

synchronization (M Series, T Series, and PTX Series)

Syntax	<pre>synchronization { primary (external-a external-b fpc-slot-number gps-0-10mhz gps-0-5mhz gps-1-10mhz gps-1-5mhz bits-a bits-b); secondary (external-a external-b fpc-slot-number gps-0-10mhz gps-0-5mhz gps-1-10mhz gps-1-5mhz bits-a bits-b); signal-type (t1 e1); switching-mode (revertive non-revertive); transmitter-enable; validation-interval seconds; y-cable-line-termination; }</pre>
Hierarchy Level	[edit chassis]
Release Information	<p>Statement introduced in Junos OS Release 7.6.</p> <p>Statement introduced in Junos OS Release 9.3 for M120 routers.</p> <p>Statement introduced in Junos OS Release 10.2 for T320, T640, and T1600 routers.</p> <p>Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.</p>
Description	(M320, M40e, M120, T320, T640, and T1600 routers and PTX Series Packet Transport Switches only) Configure an external synchronization interface to synchronize the internal Stratum 3 clock to an external source, and then synchronize the chassis interface clock to that source.
Options	<p>primary—First external timing source specified in the configuration hierarchy. This statement has the following suboptions:</p> <ul style="list-style-type: none"> external-a—Use external-a as the primary clock synchronization source. external-b—Use external-b as the primary clock synchronization source. fpc-slot-number—Use fpc-slot-number as the primary clock synchronization source. For the PTX5000 Packet Transport Switch, replace <i>slot-number</i> with a value from 0 through 7. gps-0-10mhz—Use gps-0-10mhz as the primary clock synchronization source. gps-0-5mhz—Use gps-0-5mhz as the primary clock synchronization source. gps-1-10mhz—Use gps-1-10mhz as the primary clock synchronization source. gps-1-5mhz—Use gps-1-5mhz as the primary clock synchronization source. bits-a—Use bits-a as the primary clock synchronization source. bits-b—Use bits-b as the primary clock synchronization source. <p>secondary—Second external timing source specified in the configuration hierarchy.</p> <ul style="list-style-type: none"> external-a—Use external-a as the secondary clock synchronization source. external-b—Use external-b as the secondary clock synchronization source.

- **fpc-slot-number**—Use **fpc-slot-number** as the secondary clock synchronization source. For the PTX5000 Packet Transport Switch, replace *slot-number* with a value from 0 to 7.
- **gps-0-10mhz**—Use **gps-0-10mhz** as the secondary clock synchronization source.
- **gps-0-5mhz**—Use **gps-0-5mhz** as the secondary clock synchronization source.
- **gps-1-10mhz**—Use **gps-1-10mhz** as the secondary clock synchronization source.
- **gps-1-5mhz**—Use **gps-1-5mhz** as the secondary clock synchronization source.
- **bits-a**—Use **bits-a** as the secondary clock synchronization source.
- **bits-b**—Use **bits-b** as the secondary clock synchronization source.

signal-type—Specify the line encoding mode for interfaces: either **t1** or **e1**. For the M40e router, only the **t1 signal-type** mode is supported.

Default: t1

switching-mode—Specify **revertive** if a lower-priority synchronization can be switched to a valid, higher-priority synchronization.

Default: non-revertive

transmitter-enable—(M320 routers only) Control whether the diagnostic timing signal is transmitted.

validation-interval—Validate the synchronized deviation. If revertive switching is enabled and a higher-priority clock is validated, the clock module is directed to the higher-priority clock, and all configured and active synchronizations are validated. The validation timer resumes after the current validation interval expires. This feature is not supported on PTX Series Packet Transport Switches.

Range: (M320, M40e, T320, T640, T1600 routers) 90 through 86,400 seconds. (M120 routers) 30 through 86,400 seconds.

Default: (M320, M40e, T320, T640, T1600 routers) 90 seconds. (M120 routers) 30 seconds

y-cable-line-termination—(M320 routers only) Specify that a single signal be wired to both Control Boards (CBs) using a Y-cable.

Required Privilege	interface—To view this statement in the configuration.
Level	interface-control—To add this statement to the configuration.

Related Documentation	<ul style="list-style-type: none">• Configuring the Junos OS to Support an External Clock Synchronization Interface for M Series and T Series Routers
------------------------------	---

vlan-tags (Stacked VLAN Tags)

Syntax	<code>vlan-tags inner <i>tpid.vlan-id</i> inner-range <i>vid1—vid2</i> outer <i>tpid.vlan-id</i>;</code>
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i>], [edit logical-systems <i>logical-system-name</i> interfaces <i>interface-name</i> unit <i>logical-unit-number</i>]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.
Description	For Gigabit Ethernet IQ and IQE interfaces only, bind TPIDs and 802.1Q VLAN tag IDs to a logical interface.



NOTE: The inner-range *vid1—vid2* option is supported on MX Series with IQE PICs only.

Options	<p>inner <i>tpid.vlan-id</i>—A TPID and a valid VLAN identifier.</p> <p>Range: (most routers) For VLAN ID, 1 through 4094. VLAN ID 0 is reserved for tagging the priority of frames.</p> <p>Range: (PTX Series) For VLAN ID, 0 through 4094.</p> <p>inner-range <i>vid1—vid2</i>—For MX Series routers with Enhanced IQ (IQE) PICs only; specify a range of VLAN IDs where <i>vid1</i> is the start of the range and <i>vid2</i> is the end of the range.</p> <p>Range: For VLAN ID, 1 through 4094. VLAN ID 0 is reserved for tagging the priority of frames.</p> <p>outer <i>tpid.vlan-id</i>—A TPID and a valid VLAN identifier.</p> <p>Range: (most routers) For VLAN ID, 1 through 511 for normal interfaces, and 512 through 4094 for VLAN CCC interfaces. VLAN ID 0 is reserved for tagging the priority of frames.</p> <p>Range: (PTX Series) For VLAN ID, 0 through 511 for normal interfaces, and 512 through 4094 for VLAN CCC interfaces.</p>
----------------	---



NOTE: Configuring inner-range with the entire *vlan-id* range consumes system resources and is not a best practice. It should be used only when a subset of VLAN IDs of inner tag (not the entire range) needs to be associated with a logical interface. If you specify the entire range (1–4094), it has the same result as not specifying a range; however, it consumes Packet Forwarding Engine resources such as VLAN lookup table entries, and so on.

The following examples illustrate this further:

```
[edit interfaces interface-name]
```

```
stacked-vlan-tagging;  
unit number {  
    vlan-tags outer vid inner-range 1-4094;  
}  
  
[edit interfaces interface-name]  
vlan-tagging;  
unit number {  
    vlan-id vid;  
}
```

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">• Configuring Dual VLAN Tags• Configuring Flexible VLAN Tagging on PTX Series Packet Transport Switches on page 18• stacked-vlan-tagging
------------------------------	--

Differences Between PTX Series and T Series

- [COS Feature Differences Between PTX Series Packet Transport Switches and T Series Matrix Routers on page 141](#)
- [Firewall and Policing Differences Between PTX Series Packet Transport Switches and T Series Matrix Routers on page 143](#)

COS Feature Differences Between PTX Series Packet Transport Switches and T Series Matrix Routers

This topic provides a list of Class of Service features available on PTX Packet Transport Switches and compares them with Class of Service features on T Series routers.

Classifiers

- T Series routers support VRF table labels for Layer 3 VPNs. On PTX Series Packet Transport Switches, this feature is not supported.
- On T Series routers, IEEE 802.1 classifiers cannot co-exist with Layer 3 classifiers. On PTX Series Packet Transport Switches, these classifiers can co-exist.
- On T Series routers, IEEE classifiers are supported by using intelligent PICs. These PICs have the flexibility of classifying traffic based on inner or outer VLAN tags. On PTX Series Packet Transport Switches, IEEE classification is always based on outer VLAN tags.

Rewrite

- PTX Series Packet Transport Switches do not support rewrite of both **exp** and **inet-precedence** fields using:
 - exp protocol mpls-any
 - exp protocol mpls-inet-both
 - exp protocol mpls-inet-both-non-vpn
- PTX Series Packet Transport Switches support rewrite of both dscp and dscp-ipv6 . On T Series routers, the dscp and dscp-ipv6 rewrite feature is not supported.

- PTX Series Packet Transport Switches also support layer 2 rewrite of 802.1p and 802.1ad, to either the outer vlan tag, or both outer and inner vlan tags.

Forwarding Class

- On T Series routers, you can override the default fabric priority queuing of egress traffic by including the **priority** statement at the following hierarchy level: .

```
[class-of-service forwarding-classes queue queue-number class-name]  
priority (high |low);
```

On the PTX Series Packet Transport Switch, fabric priority queuing is not supported; therefore, the **priority** statement for **forwarding-classes** is not supported.

Tri-color Marking

- On T Series routers, the **copy-plp-all** statement needs to be configured to support tricolor marking. On the PTX Series Packet Transport Switches, tricolor marking is enabled by default.

Schedulers

- T Series routers, which use egress queuing architecture, support chassis and fabric schedulers. Alternatively, PTX Series Packet Transport Switches support a Virtual Output Queuing (VOQ) architecture that does not require fabric schedulers. With the VOQ architecture, packets are queued and dropped in the ingress during congestion.
- On T Series routers, high priority queues have precedence to acquire excess bandwidth and may consume all excess bandwidth. On PTX Series Packet Transport Switches, excess bandwidth is shared based on the ratio of configured transfer rate. Therefore, all priority queues get a share of excess bandwidth.
- On T Series routers, strict-high priority queues and high priority queues are assigned the same hardware priority. On PTX Series Packet Transport Switches, strict-high priority queues and high priority queues are assigned different hardware priorities.
- On T Series routers, if a strict-high priority queue is oversubscribed, it can block all other queues except high priority queues. On PTX Series Packet Transport Switches, if a strict-high priority queue is oversubscribed, it can block all other queues including high priority queues.
- To restrict the bandwidth of strict-high **priority** queues, the **transmit-rate rate-limit** configuration statement has been implemented for PTX Series Packet Transport Switches.
- On both T Series routers and PTX Series Packet Transport Switches, if a strict-high priority queue is oversubscribed and results in oversubscription of the guaranteed bandwidth, the distribution of bandwidth that is not taken up by strict-high priority queues is undetermined. T Series routers and PTX Series Packet Transport Switches differently when distributing this unused bandwidth.

Buffer Size and Latency

- On T Series routers, memory allocation dynamic (MAD) is enabled by default and can be disabled. On PTX Series Packet Transport Switches, MAD cannot be disabled.
- On T Series routers, the maximum delay bandwidth buffering configured per queue is 50 MS. On the PTX, the maximum delay bandwidth buffering configured per queue is 100 MS.
- On T Series routers, the maximum latency associated with a packet is fairly consistent and independent of the number of sources sending the traffic to an interface. On the PTX Series Packet Transport Switch, over-provisioning is possible. When traffic is sent from multiple Packet Forwarding Engines, the latency is about 10%-15% higher than when traffic is sent from one Packet Forwarding Engine.
- On T Series routers, a high priority queue has lower latency than a low priority queue with the same configured transfer rate and same offered load. On PTX Series Packet Transport Switches, there is no latency difference.

Drop Profile

- The Queuing and Memory Interfaces ASIC does not support drop-profile assignments for a queue based on the protocol. As a consequence, the **protocol (any-non-tcp-tcp)** option is not supported for the **drop-profile-map** configuration statement on PTX Series Packet Transport Switches.

Interface Queue Statistics (show interfaces queue output)

- On T Series routers, transmitted byte counters are computed using Layer 3 packet length. On PTX Series Packet Transport Switches, transmitted byte counters are computed using Layer 2 packet length (excluding CRC).
- On the PTX Series Packet Transport Switches, tail-dropped counters are always zero. All the packet drops will be shown as random early detection (RED-dropped) in the output for the **show interfaces queue** CLI command.
- On T Series routers, the Tail-dropped counters and the RED-dropped counters are displayed separately in the output.

Related Documentation

- [Understanding CoS CLI Configuration Statements on PTX Series Packet Transport Switches on page 51](#)

Firewall and Policing Differences Between PTX Series Packet Transport Switches and T Series Matrix Routers

This topic provides a list of firewall and policier features available on PTX Packet Transport Switches and compares them with firewall and policing features on T Series routers.

Firewall Filters

Junos OS firewall and policing software on PTX Series Packet Transport Switches supports IPv4 filters, IPv6 filters, MPLS filters, CCC filters, interface policing, LSP policing, MAC filtering, ARP policing, L2 policing, and other features. Exceptions are noted below.

- PTX Series Packet Transport Switches do not support:
 - Filter Based Forwarding
 - Egress Forwarding Table Filters
 - Forwarding Table Filters for MPLS/CCC
 - Family VPLS
- PTX Series Packet Transport Switches do not support nested firewall filters. The **filter** statement at the **[edit firewall family *family-name* filter *filter-name* term *term-name*]** hierarchy level is disabled.
- Because no service PICs are present in PTX Series Packet Transport Switches, service filters are not supported for both IPv4 and IPv6 traffic. The **service-filter** statement at **[edit firewall family (inet | inet6)]** hierarchy level is disabled.
- The PTX Series Packet Transport Switches exclude simple filters. These filters are supported on Gigabit Ethernet intelligent queuing (IQ2) and Enhanced Queuing Dense Port Concentrator (EQ DPC) interfaces only. The **simple-filter** statement at the **[edit firewall family inet]** hierarchy level is disabled.
- Physical interface filtering is not supported. The **physical-interface-filter** statement at the **[edit firewall family *family-name* filter *filter-name*]** hierarchy level is disabled.
- The prefix action feature is not supported on PTX Series Packet Transport Switches. The **prefix-action** statement at **[edit firewall family inet]** hierarchy level is disabled.
- On T Series routers, you can collect a variety of information about traffic passing through the device by setting up one or more accounting profiles that specify some common characteristics of the data. The PTX Series Packet Transport Switches do not support accounting configurations for firewall filters. The **accounting-profile** statement at the **[edit firewall family *family-name* filter *filter-name*]** hierarchy level is disabled.
- The **reject** action is not supported on the loopback (**lo0**) interface. If you apply a filter to the **lo0** interface and the filter includes a **reject** action, an error message appears.
- PTX Series Packet Transport Switches do not support aggregated ethernet logical interface match conditions. However, child link interface matching is supported.
- PTX Series Packet Transport Switches displays both counts if two different terms in a filter have the same match condition but they have different counts. T Series routers display one count only.
- PTX Series Packet Transport Switches do not have separate policer instances when a filter is bound to multiple interfaces. Use the **interface-specific** configuration statement to create the configuration.

- On PTX Series Packet Transport Switches, when an ingress interface has CCC encapsulation, packets coming in through the ingress CCC interface will not be processed by the egress filters.
- For CCC encapsulation, the PTX Series Packet Transport Switches append an extra 8 bytes for egress Layer 2 filtering. The T Series routers do not. Therefore, egress counters on PTX Series Packet Transport Switches show an extra eight bytes for each packet which impacts policer accuracy.
- On PTX Series Packet Transport Switches, output for the **show pfe statistics traffic** CLI command includes the packets discarded by DMAC and SMAC filtering. On T Series routers, the command output does not include these discarded packets because MAC filters are implemented in the PIC and not in the FPC.
- The last-fragment packet that goes through a PTX firewall cannot be matched by the **is-fragment** matching condition. This feature is supported on T Series routers.

A possible workaround on PTX Series Packet Transport Switches is to configure two separate terms with same the actions: one term contains a match to **is-fragment** and the other term contains a match to **fragment-offset -except 0**.

- On PTX Series Packet Transport Switches, MAC pause frames are generated when packet discards exceed 100 Mbps. This occurs only for frame sizes that are less than 105 bytes.

Traffic Policiers

Junos OS firewall and policing software on PTX Series Packet Transport Switches supports IPv4 filters, IPv6 filters, MPLS filters, CCC filters, interface policing, LSP policing, MAC filtering, ARP policing, L2 policing, and other features. Exceptions are noted below.

- PTX Series Packet Transport Switches support ARP policing. T Series routers do not.
- PTX Series Packet Transport Switches do not support LSP policing.
- PTX Series Packet Transport Switches do not support the **hierarchical-policer** configuration statement. .
- PTX Series Packet Transport Switches do not support the **interface-set** configuration statement. This statement groups a number of interfaces into a single, named interface set.
- PTX Series Packet Transport Switches do not support the following policer types for both normal policers and three-color policers:
 - **logical-bandwidth-policer** — Policer uses logical interface bandwidth.
 - **physical-interface-policer** — Policer is a physical interface policer.
 - **shared-bandwidth-policer** — Share policer bandwidth among bundle links.
- When a policer action and forwarding-class, loss-priority actions are configured within the same rule (a *Multifield Classification*), the PTX Series Packet Transport Switches work differently than T Series routers. As shown below, you can configure two rules in the filter to make the PTX filter behave the same as the T Series filter:

PTX Series configuration:

```
rule-1 {  
  match: {x, y, z}  
  action: {forwarding-class, loss-prio, next}  
}  
rule-2 {  
  match: {x, y, z}  
  action: {policer}  
}
```

T Series configuration:

```
rule-1 {  
  match: {x, y, z}  
  action: {forwarding-class, loss-prio, policer}  
}
```

Related Documentation

- *Junos OS Firewall Filters and Traffic Policers Configuration Guide*

PART 3

Administration

- [Managing PTX Series Packet Transport Switches on page 149](#)
- [Managing the Boot Sequence on page 159](#)
- [Monitoring Commands for PTX Series Packet Transport Switches on page 163](#)

CHAPTER 13

Managing PTX Series Packet Transport Switches

request chassis ccg

Syntax	<code>request chassis ccg (offline online) slot <i>slot-number</i></code>
Release Information	Command introduced in Junos OS 12.1 for the PTX Series Packet Transport Switches.
Description	(PTX Series Packet Transport Switches) Control the operation of the Centralized Clock Generator (CCG).
Options	<p>offline—Take the CCG offline.</p> <p>online—Bring the CCG online.</p> <p>slot <i>slot-number</i>—CCG slot number. Replace <i>slot-number</i> with a value from 0 through 1.</p>
Required Privilege Level	maintenance
List of Sample Output	request chassis ccg on page 150
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

`request chassis ccg`

```
user@host> request chassis ccg offline slot 1
CCG 1 is  offline, Backup CCG 0 is now online.
```


request chassis clock master switch

Syntax	request chassis clock master switch
Release Information	Command introduced in Junos OS Release 12.1.
Description	(PTX Series Packet Transport Switches only) Control which Centralized Clock Generator (CCG) is the master.
Options	This command has no options.
Additional Information	<p>By default, the CCG in slot 0 (CCG0) is the master and the CCG in slot 1 (CCG1) is the backup. 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. To change the default master CCG, include the ccg statement at the [edit chassis redundancy] hierarchy level in the configuration. For more information, see the Junos OS System Basics Configuration Guide.</p> <p>The configurations on the two CCGs do not have to be the same, and they are not automatically synchronized. If you configure both CCGs as masters, when the chassis software restarts for any reason, the CCG in slot 0 becomes the master and the one in slot 1 becomes the backup.</p> <p>The switchover from the primary CCG to the backup CCG is immediate.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none"> • show chassis environment on page 177
List of Sample Output	request chassis clock master switch on page 151
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis clock master switch user@host> request chassis clock master switch
 CCG master switch initiated, use "show chassis environment ccg" to verify

request chassis fpc

Syntax	request chassis fpc (offline online restart) slot <i>slot-number</i>
Syntax (TX Matrix and TX Matrix Plus Routers)	request chassis fpc (offline online restart) slot <i>slot-number</i> <lcc <i>number</i> >
Syntax (MX Series Routers)	request chassis fpc (offline online restart) slot <i>slot-number</i> <all-members> <local> <member <i>member-id</i> >
Syntax (MX2020 3D Universal Edge Routers)	request chassis fpc (offline online restart) slot <i>slot-number</i>
Syntax (MX2010 3D Universal Edge Routers)	request chassis fpc (offline online restart) slot <i>slot-number</i>
Syntax (QFabric System)	request chassis fpc <interconnect-device <i>name</i> slot <i>slot-number</i> (offline online)> <(offline online) interconnect-device <i>name</i> slot <i>slot-number</i> > <slot <i>slot-number</i> interconnect-device <i>name</i> (offline online)>
Syntax (PTX Series Packet Transport Switches)	request chassis fpc (offline online restart) slot <i>slot-number</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 11.3 for QFX Series. Command introduced in Junos OS 12.1 for PTX Series Packet Transport Switches. 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.
Description	(M20, M40, M40e, M120, M160, M320, MX Series, and T Series routers, QFabric systems, EX Series switches, and PTX Series Packet Transport Switches only) Control the operation of the Flexible PIC Concentrator (FPC). For information about the meaning of “FPCs” on the switches, see EX Series Switches Hardware and CLI Terminology Mapping.
Options	offline —Take the FPC offline. online —Bring the FPC online. interconnect-device <i>name</i> —(QFabric systems only) Bring the Flexible Port Concentrator (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 Flexible Port Concentrator (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 Dense Port Concentrator (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 Dense Port Concentrator (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 Dense Port Concentrator (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.
- 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 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. 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.
- PTX5000 Packet Transport Switch—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, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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 470](#)
- show chassis fpc-feb-connectivity
- [show chassis fabric fpcs on page 390](#)
- 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 155](#)
- [request chassis fpc \(MX Series Routers with Media Services Blade \[MSB\]\) on page 155](#)
- [request chassis fpc \(MX2020 Router\) on page 155](#)
- [request chassis fpc \(MX2010 Router\) on page 155](#)

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 synchronization switch

Syntax	request chassis synchronization switch
Syntax (M Series, T Series)	request chassis synchronization switch (external-a external-b)
Syntax (PTX Series)	request chassis synchronization switch (bits-a bits-b fpc-slot-number gps-0-10mhz gps-0-5mhz gps-1-10mhz gps-1-5mhz)
Release Information	Command introduced in Junos OS Release 7.6. Command introduced in Junos OS Release 8.3 for M40e routers. Command introduced in Junos OS Release 9.3 for M120 routers. Command introduced in Junos OS Release 10.2 for T320, T640, and T1600 routers. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.
Description	(M320, M40e, M120, T320, T640, and T1600 routers and PTX Packet Transport Switches only) Change the external clock source used for chassis synchronization.
Options	<p>external-a—(Routing matrix only) Change the synchronization source to external source A.</p> <p>external-b—(Routing matrix only) Change the synchronization source to external source B.</p> <p>bits-a—(PTX Series only) Change the synchronization source to the BITS external source A.</p> <p>bits-b—(PTX Series only) Change the synchronization source to the BITS external source B.</p> <p>fpc-slot-number—(PTX Series only) Change the synchronization source to an FPC in the slot specified. For the PTX5000 Packet Transport Switch, replace <i>slot-number</i> with a value from 0 through 7.</p> <p>gps-0-10mhz—(PTX Series only) Change the synchronization source to the 10 MHz GPS source on CCG port 0.</p> <p>gps-0-5mhz—(PTX Series only) Change the synchronization source to the 5 MHz GPS source on CCG port 0.</p> <p>gps-1-10mhz—(PTX Series only) Change the synchronization source to the 10 MHz GPS source on CCG port 1.</p> <p>gps-1-5mhz—(PTX Series only) Change the synchronization source to the 5 Hz GPS source on CCG port 1.</p>
Required Privilege Level	maintenance

Related Documentation	<ul style="list-style-type: none">• show chassis synchronization on page 659• Configuring Clock Synchronization Interface for MX Series Routers• Supported Time Synchronization Standard
List of Sample Output	request chassis synchronization switch (M Series, T Series) on page 157 request chassis synchronization switch (PTX Series) on page 157
Output Fields	When you enter this command, you are provided feedback on the status of your request. Not configured indicates that the source is not configured. Present indicates that the source is configured and present. Qualified indicates that the source is being used for synchronization.

Sample Output

[request chassis synchronization switch \(M Series, T Series\)](#)

```
user@host> request chassis synchronization switch external-a
switching to external-a, status: qualified
```

[request chassis synchronization switch \(PTX Series\)](#)

```
user@host> request chassis synchronization switch fpc-2
switching to fpc-2, status: qualified
```


Managing the Boot Sequence

- Boot Sequence (M Series, MX Series, T Series, TX Matrix, TX Matrix Plus, and PTX Series Routing Engines) on page 159

Boot Sequence (M Series, MX Series, T Series, TX Matrix, TX Matrix Plus, and PTX Series Routing Engines)



NOTE: For information about which Routing Engines are supported by each device, see http://www.juniper.net/techpubs/en_US/release-independent/junos/topics/reference/general/routing-engine-m-mx-t-series-support-by-chassis.html.

The M Series, MX Series (except for the MX80 routers), T Series, and TX Matrix routers with a Routing Engine that has a hard disk attempt to boot from the storage media in the following order:

1. Removable media emergency boot device, such as a PC Card (if present)
2. CompactFlash card (if present)
3. Hard disk

The M Series and MX Series with a Routing Engine that has a solid-state drive (SSD) attempt to boot from the storage media in the following order:

1. USB media emergency boot device (if present)
2. CompactFlash card
3. Solid-state drive (SSD) in the SSD slot 1 or SSD slot 2 (if present)

MX80 routers attempt to boot from the storage media in the following order:

1. USB media emergency boot device
2. Dual, internal NAND flash device (first *da0*, then *da1*)

The T series routers with a Routing Engine that has a solid-state drive (SSD), TX Matrix Plus routers, and TX Matrix Plus routers with 3D SIBs attempt to boot from the storage media in the following order:

1. USB media emergency boot device
2. CompactFlash card (if present)
3. Solid-state drive (SSD) in the Disk 1 slot (if present)



NOTE: The Disk 2 slot is not currently supported.

4. Storage media available on the LAN

The PTX Series Packet Transport Switches attempt to boot from the storage media in the following order:

1. USB media emergency boot device
2. CompactFlash card
3. Solid-state drive (SSD) in the Disk 1 slot (if present)
4. Storage media available on the LAN



NOTE: Do not insert an emergency boot device during normal operations. The router does not operate normally when it is booted from an emergency boot device.

If the router boots from an alternate boot device, Junos OS displays a message indicating this when you log in to the router. For example, the following message shows that the software booted from the hard disk (`/dev/ad1s1a`):

```
login: username
Password: password
Last login: date on terminal
```

```
--- Junos 8.0 R1 built date
```

```
---
```

```
--- NOTICE: System is running on alternate media device (/dev/ad2s1a).
```

This situation results when the router detects a problem with the primary boot device—usually the CompactFlash card—that prevents it from booting, and consequently boots from the alternate boot device (the hard disk drive). When this happens, the primary boot device is removed from the list of candidate boot devices. The problem is usually a serious hardware error. We recommend you contact the Juniper Networks Technical Assistance Center (JTAC).

When the router boots from the alternate boot device, the software and configuration are only as current as the most recent **request system snapshot** command. However, if the **mirror-flash-on-disk** command was enabled, then the hard disk drive contains a synchronized, mirror image of the compact flash drive and therefore the current software and configuration.

Related Documentation

- [Routing Engine Specifications](#)

CHAPTER 15

Monitoring Commands for PTX Series Packet Transport Switches

show chassis alarms

Syntax	show chassis alarms
Syntax (TX Matrix Routers)	show chassis alarms <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers and TX Matrix Plus router with 3D SIBs)	show chassis alarms <lcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Routers)	show chassis alarms <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis alarms
Syntax (MX2020 3D Universal Edge Routers)	show chassis alarms
Syntax (QFX Series)	show chassis alarms <interconnect-device <i>name</i> > <node-device <i>name</i> >
Syntax (PTX Series Packet Transport Switches)	show chassis alarms
Syntax (ACX Series Universal Access Routers)	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 for the TX Matrix Plus router introduced in Junos OS Release 9.6. 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 Switches. Command introduced in Junos OS Release 12.2 for the ACX Series Universal Access 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 13.1 for TX Matrix Plus router with 3D SIBs.
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, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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.
- scc**—(TX Matrix router only) (Optional) Show information about the TX Matrix router (switch-card chassis).
- sfc *number***—(TX Matrix Plus router and TX matrix Plus router with 3D SIBs only) (Optional) Show information about the respective TX Matrix Plus router or TX Matrix Plus router with 3D SIBs, which is the switch-fabric chassis. Replace *number* variable with 0.

Additional Information You cannot clear the alarms for chassis components. Instead, you must remedy the cause of the alarm. When a chassis alarm 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.

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 sonic 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)

As per the above table, 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 **1000101111**. The LSB in this case is 1, which means that this is a major alarm. After removing the LSB, you are left with **100010111**, 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/>	
Chip Type: M Chip	Code
CMALARM_MCHIP_ECC_UNCORRECT_ERR	128
<hr/>	
Chip Type: N Chip	Code
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/>	
Chip Type: R Chip	Code
CMALARM_RCHIP_SRAM_PARITY_ERR	512
<hr/>	
Chip Type: R Chip	Code
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 = $(\text{Error Code})/2$

**Required Privilege
Level**

view

**Related
Documentation**

- [Configuring an Alarm Entry and Its Attributes](#)
- [Chassis Conditions That Trigger Alarms](#)

List of Sample Output

[show chassis alarms \(Alarms Active\) on page 171](#)
[show chassis alarms \(No Alarms Active\) on page 171](#)
[show chassis alarms \(Fan Tray\) on page 171](#)
[show chassis alarms \(MX2020 Router\) on page 171](#)
[show chassis alarms \(MX2010 Router\) on page 171](#)
[show chassis alarms \(T4000 Router\) on page 171](#)
[show chassis alarms \(Unreachable Destinations Present on a T Series Router\) on page 171](#)
[show chassis alarms \(FPC Offline Due to Unreachable Destinations on a T Series Router\) on page 172](#)
[show chassis alarms \(SCG Absent on a T Series Router\) on page 173](#)
[show chassis alarms \(Alarms Active on a TX Matrix Router\) on page 173](#)
[show chassis alarms \(TX Matrix Plus router with 3D SIBs\) on page 173](#)
[show chassis alarms \(Alarms on a T4000 Router After the enhanced-mode Statement is Enabled\) on page 174](#)

[show chassis alarms \(Backup Routing Engine\) on page 174](#)
[show chassis alarms \(Alarms Active on the QFX Series\) on page 174](#)
[show chassis alarms node-device \(Alarms Active on the QFabric System\) on page 174](#)
[show chassis alarms \(Alarms Active on the QFabric System\) on page 175](#)
[show chassis alarms \(Alarms Active on an EX8200 Switch\) on page 175](#)
[show chassis alarms \(Alarms Active on a PTX5000 Packet Transport Switch\) on page 175](#)
[show chassis alarms \(Alarms Active on an ACX2000 Universal Access Router\) on page 176](#)

Output Fields [Table 14 on page 170](#) lists the output fields for the **show chassis alarms** command. Output fields are listed in the approximate order in which they appear.

Table 14: 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: Minor or Major .
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 (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 (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 (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)

```
user@host> show chassis alarms
10 alarms currently active
Alarm time      Class  Description
```

**Destinations Present
on a T Series Router)**

```
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**

```
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
```

Destinations on a T Series Router)

```

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
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 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 Temperature Warm
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 Temperature Warm
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

```

show chassis alarms (Alarms on a T4000 Router After the enhanced-mode Statement is Enabled)

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 are 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 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 (Alarms Active on the QFX Series)

```

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)

```

user@switch> show chassis alarms node-device ED3691
node-device ED3694
3 alarms currently active

```


Active on the QFabric System)

Alarm time	Class	Description
2011-08-24 16:04:15 UTC	Major	ED3694:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC	Major	ED3694:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC	Major	ED3694 PEM 0 is not supported/powered

show chassis alarms (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms
IC-A0001:
```

```
-----
1 alarms currently active
Alarm time      Class  Description
2011-08-24 16:04:15 UTC  Minor  Backup RE Active
```

```
ED3694:
```

```
-----
3 alarms currently active
Alarm time      Class  Description
2011-08-24 16:04:15 UTC  Major  ED3694:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC  Major  ED3694:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC  Major  ED3694 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  ED3691 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 (Alarms Active on a

```
user@switch> show chassis alarms
```

```
23 alarms currently active
```

**PTX5000 Packet
Transport Switch)**

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
(Alarms Active on an
ACX2000 Universal
Access 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 environment

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 and TX Matrix Plus router with 3D SIBs)	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 (MX2020 3D Universal Edge Routers)	show chassis environment <adc <i>adc-slot-number</i> > <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <monitored> <psm <i>psm-slot-number</i> > <routing-engine <i>re-slot-number</i> > <sfb <i>sfb-slot-number</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis environment <adc <i>adc-slot-number</i> > <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <monitored> <psm <i>psm-slot-number</i> > <routing-engine <i>re-slot-number</i> > <sfb <i>sfb-slot-number</i> >

Syntax (EX Series Switch)	show chassis environment <all-members> <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <local> <member <i>member-id</i> > <routing-engine <i>re-slot-number</i> >
Syntax (EX Series Switch)	show chassis environment <all-members> <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <local> <member <i>member-id</i> > <power-supply-unit <i>psu-slot-number</i> > <routing-engine <i>slot-number</i> >
Syntax (QFX Series)	show chassis environment <cb <i>slot-number</i> <interconnect-device <i>name</i> >> <fpc <i>slot-number</i> <interconnect-device <i>name</i> >> <interconnect-device <i>name</i> <slot-number> <node-device <i>name</i> > <pem <i>slot-number</i> (interconnect-device <i>name</i> <i>slot-number</i>) (node-device <i>name</i>)> <routing-engine <i>name</i> <interconnect-device <i>name</i> <i>slot-number</i> >>
Syntax (PTX Series Packet Transport Switches)	show chassis environment <cb <i>cb-slot-number</i> > <ccg <i>ccg-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <monitored> <pdu <i>pdu-slot-number</i> > <routing-engine <i>re-slot-number</i> > <sib <i>sib-slot-number</i> >
Syntax (ACX Series Universal Access Routers)	show chassis environment <cb <i>cb-slot-number</i> > <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</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 11.1 for QFX Series. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches. monitored option added in Junos OS Release 12.1 for PTX Series Packet Transport Switches. Command introduced in Junos OS Release 12.1 for T4000 Core Routers. Command introduced in Junos OS Release 12.2 for ACX Series Universal Access 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. pem option introduced in Junos OS Release 12.3 for ACX4000 Universal Access Routers. Command introduced in Junos OS Release 13.1 for TX Matrix Plus router with 3D SIBs.

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.

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 T1600 routers. On a TX Matrix Plus router with 3D SIBs, display environmental information about the TX Matrix Plus router with 3D SIBs and its attached T1600 or T4000 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*—(MX2020 and MX2010 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 routers, replace ***adc-slot-number*** with a value from 0 through 9.

cb *cb-slot-number*—(ACX Series Universal Access Routers, EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2020 routers, MX2010 routers, PTX Series Packet Transport Switches, QFX Series, and T Series routers, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs only) (Optional) Display chassis environmental information for the Control Board. On devices other than EX Series switches, replace ***cb-slot*** with 0 or 1. For the EX Series switches, see EX Series Switches Hardware and CLI Terminology Mapping for information on CB slot numbering.

cip *cip-slot-number*—(TX Matrix Plus routers and TX Matrix Plus routers with 3D SIBs) (Optional) Display chassis environmental information for the Connection Interface Panel. 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.

fpc *fpc-slot*—(EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2010 routers, MX2020 routers, PTX Series Packet Transport Switches, QFX Series, QFX3500 switches, QFabric systems, T Series routers, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (Optional) Display chassis environmental information for a specified Flexible PIC Concentrator. For MX2010 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 EX Series Switches Hardware and CLI Terminology Mapping for information on FPC numbering.

fpm—(M120, M320, and M40e routers, MX2010 routers, MX2020 routers, PTX Series, Packet Transport Switches, T Series routers, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs 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.

monitored—(MX2020 routers and PTX Series Packet Transport Switches only) (Optional) Display chassis environmental information for monitored temperatures only. Temperatures that are not included in temperature alarm computations are not displayed.

lcc *number*—(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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) (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* variable with a value of 0 or 1. For EX Series switches, see member for member ID values.

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 Access Routers, M120, M320, and M40e routers, MX Series 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*—(MX2020 and MX2010 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 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. See EX Series Switches Hardware and CLI Terminology Mapping for detailed information.

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](#).

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*—(MX2020 and MX2010 routers only) (Optional) Display chassis environmental information for the power supply module. Replace *sfb-slot-number* with a value from 0 through 7.

sfc *number*—(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 *number* variable with 0.

sib *sib-slot-number*—(M320 routers, PTX Series Packet Transport Switches, 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

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- [show chassis environment cb on page 233](#)
- [show chassis environment ccg on page 252](#)
- `show chassis environment cip`
- [show chassis environment fpc on page 254](#)

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List of Sample Output

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Output Fields [Table 15 on page 183](#) lists the output fields for the **show chassis environment** command. Output fields are listed in the approximate order in which they appear.

Table 15: show chassis environment Output Fields

Field Name	Field Description
Class	<p>Information about the category or class of chassis component:</p> <ul style="list-style-type: none"> • Power: Power information: <ul style="list-style-type: none"> • (M5, M10, M20, and M40 routers and EX Series switches only) Power supply status: OK, Testing, (during initial power-on), Failed, or Absent. • (M7i, M10i, M40e, M120, M160, M320, and T Series routers and EX Series switches only) Power Entry Modules status: OK, Testing, (during initial power-on), Check, Failed, or Absent. • (PTX Series only) Power information is reported in PDU or PSM combinations. The status is: OK, Testing, (during initial power-on), Check, Failed, or Absent. • Temp: Temperature of air flowing through the chassis in degrees Celsius (C) and Fahrenheit (F). On PTX Series Packet Transport Switches and MX2010 and MX2020 Routers, multiple cooling zones are supported. FRU temperatures in each zone are coordinated with the fan speed of fan trays in those zones. • Pic: On ACX4000 Routers, multiple temperature channels on a MIC. The status is: OK and the Measurement is in degrees Celsius (C) and Fahrenheit (F). • Fan: Fan status: OK, Testing (during initial power-on), Failed, or Absent. On PTX Series Packet Transport Switches and MX2010 and MX2020 Routers, multiple fan trays are supported. Fan status is reported in Fan Tray or Fan combinations. Measurement indicates actual fan RPM (PTX and MX2010 and MX2020 Routers only). • Misc: Information about other components of the chassis. <ul style="list-style-type: none"> • On some routers, this field indicates the status of one or more additional components. • On the M40e, M160, and M320 router, Misc includes CIP (Connector Interface Panel). OK indicates that the CIP is present. Absent indicates that the CIP is not present. • On T Series routers, Misc includes CIP and SPMB (Switch Processor Mezzanine Board). OK indicates that the CIP or SPMB is present. Absent indicates that the CIP or SPMB is not present. • On PTX Series Packet Transport Switches, Misc includes the SPMB (Switch Processor Mezzanine Board). The SPMB is located on the control boards. OK indicates that the control board is present. Absent indicates that the control board is not present.
Item	(MX2010 and MX2020 Routers) Information about the chassis component: Routing Engines, Controls Boards (CBs), Switch Fabric Boards (SFBs), PICs, Flexible PIC Concentrators (FPCs), and Adapter Cards (ADCs).

Table 15: show chassis environment Output Fields (*continued*)

Field Name	Field Description
Status	<p>(MX2010 and MX2020 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">• OK: The fans are operational.• Testing: The fans are being tested during initial power-on.• Failed: The fans have failed or the fans are not spinning.• Absent: The fan tray is not installed. <p>If the Class is Power, the power supply status can be:</p> <ul style="list-style-type: none">• OK: The power component is operational.• Testing: The power component is being tested during initial power-on.• Check: There is insufficient power---that is, fewer than the minimum required feeds are connected.• Failed: The inputs leads have failed.• Absent: The power component is not installed.
Measurement	<p>(MX2010 and MX2020 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 (J2300
Router)

```
user@host> show chassis environment
Class Item              Status      Measurement
Temp  Routing Engine        OK          40 degrees C / 104 degrees F
Fan   Fan                 OK
```

show chassis
environment (J4300 or
J6300 Router)

```
user@host> show chassis environment
Class Item              Status      Measurement
Temp  Routing Engine        OK          41 degrees C / 105 degrees F
Fan   Fan 0                OK
      Fan 1                OK
```

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	

```
user@host> show chassis environment
```

show chassis environment (M40 Router)

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
Fans	FPM CMB	OK	28 degrees C / 82 degrees F
	FPM Display	OK	28 degrees C / 82 degrees F
	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
Misc	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 Absent
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 (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)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	40 degrees C / 104 degrees F

Router with Enhanced
MX SCB)

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> 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)

user@host> show chassis environment

Class	Item	Status	Measurement
Temp	PEM 0	OK	35 degrees C / 95 degrees F

Router with Enhanced
MX SCB)

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)

user@host> show chassis environment

Class	Item	Status	Measurement
Temp	PEM 0	Absent	

Router with Enhanced
MX SCB)

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
	FPC 10 IA 1 TSensor	OK	43 degrees C / 109 degrees F
	FPC 10 IA 1 Chip	OK	42 degrees C / 107 degrees F
Fans	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 (MX2020 Router)

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user@host> show chassis environment
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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 (MX2010 Router)

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user@host> show chassis environment
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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
	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 (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 (T640 Router)

```
user@host> 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	
Fans	FPM GBUS	OK	23 degrees C / 73 degrees F
	FPM Display	Absent	
	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
Misc	Middle Blower	OK	Spinning at normal speed
	Top Blower	OK	Spinning at normal speed
	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> show chassis environment
scc-re0:
```

```
-----
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
```

```
lcc0-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 (TI600 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
sfc0-re0:
-----
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`

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

Matrix Plus router with
3D SIBs)

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 (QFX Series)

```
user@switch> show chassis environment
Class Item                               Status      Measurement
Power FPC 0 Power Supply 0              OK
      FPC 0 Power Supply 1              OK
Temp  FPC 0 Sensor TopLeft I            OK          26 degrees C / 78 degrees F
      FPC 0 Sensor TopRight I           OK          24 degrees C / 75 degrees F
      FPC 0 Sensor TopLeft E            OK          30 degrees C / 86 degrees F
      FPC 0 Sensor TopRight E           OK          30 degrees C / 86 degrees F
      FPC 0 Sensor TopMiddle I          OK          30 degrees C / 86 degrees F
      FPC 0 Sensor TopMiddle E          OK          38 degrees C / 100 degrees F
      FPC 0 Sensor Bottom I             OK          34 degrees C / 93 degrees F
      FPC 0 Sensor Bottom E             OK          38 degrees C / 100 degrees F
      FPC 0 Sensor Die Temp             OK          38 degrees C / 100 degrees F
      FPC 0 Sensor Mgmt Brd I           OK          24 degrees C / 75 degrees F
      FPC 0 Sensor Switch I             OK          28 degrees C / 82 degrees F
Fans  FPC 0 Fan 1 (left)                 Failed
      FPC 0 Fan 2 (right)               OK          Spinning at normal speed
      FPC 0 Fan 3 (middle)              OK          Spinning at normal speed
```

```
user@switch> show chassis environment interconnect-device IC-A0004
```

show chassis
environment

Class	Item	Status	Measurement
	CB 0		
	CB 0 L Intake	OK	30 degrees C / 86 degrees F

interconnect-device
(QFabric System)

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

```
user@switch> show chassis environment node-device node1
Class Item                               Status Measurement
Power node1 Power Supply 0              Absent
```

node-device (QFabric System)

Fans	node1 Power Supply 1	Absent
	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

```
user@switch> show chassis environment
Class Item          Status Measurement
Temp PDU 0          OK
```

(PTX5000 Packet Transport Switch)

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 Intake	OK	39 degrees C / 102 degrees F
SIB 0 Exhaust	OK	37 degrees C / 98 degrees F
SIB 0 Junction	OK	43 degrees C / 109 degrees F
SIB 1 Intake	OK	39 degrees C / 102 degrees F
SIB 1 Exhaust	OK	36 degrees C / 96 degrees F
SIB 1 Junction	OK	46 degrees C / 114 degrees F
SIB 2 Intake	OK	37 degrees C / 98 degrees F
SIB 2 Exhaust	OK	37 degrees C / 98 degrees F
SIB 2 Junction	OK	42 degrees C / 107 degrees F
SIB 3 Intake	OK	40 degrees C / 104 degrees F
SIB 3 Exhaust	OK	40 degrees C / 104 degrees F
SIB 3 Junction	OK	45 degrees C / 113 degrees F
SIB 4 Intake	OK	47 degrees C / 116 degrees F
SIB 4 Exhaust	OK	44 degrees C / 111 degrees F
SIB 4 Junction	OK	58 degrees C / 136 degrees F
SIB 5 Intake	OK	58 degrees C / 136 degrees F
SIB 5 Exhaust	OK	43 degrees C / 109 degrees F
SIB 5 Junction	OK	71 degrees C / 159 degrees F
SIB 6 Intake	OK	57 degrees C / 134 degrees F
SIB 6 Exhaust	OK	42 degrees C / 107 degrees F
SIB 6 Junction	OK	65 degrees C / 149 degrees F
SIB 7 Intake	OK	58 degrees C / 136 degrees F
SIB 7 Exhaust	OK	42 degrees C / 107 degrees F
SIB 7 Junction	OK	66 degrees C / 150 degrees F
SIB 8 Intake	OK	57 degrees C / 134 degrees F
SIB 8 Exhaust	OK	42 degrees C / 107 degrees F
SIB 8 Junction	OK	70 degrees C / 158 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
(ACX2000 Universal
Access 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**

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.

(ACX4000 Universal
Access Router)

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	OK	32 degrees C / 89 degrees F
	Heater off		
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 cb

Syntax	show chassis environment cb <slot>
Syntax (TX Matrix Routers)	show chassis environment cb <lcc number scc> <slot>
Syntax (TX Matrix Plus Routers)	show chassis environment cb <lcc number sfc number > <slot>
Syntax (MX Series Routers)	show chassis environment cb <slot> <all-members> <local> <member member-id>
Syntax (MX2010 3D Universal Edge Routers)	show chassis environment cb <slot>
Syntax (MX2020 3D Universal Edge Routers)	show chassis environment cb <slot>
Syntax (QFabric System)	show chassis environment cb <slot interconnect-device interconnect-device-name> < interconnect-device interconnect-device-name slot>
Release Information	<p>Command introduced before Junos Release 7.4.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.</p> <p>Command introduced in Junos OS Release 12.1 for T4000 Core Routers.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos Release 9.6.</p> <p>Command introduced in Junos OS Release 11.3 for the 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>
Description	(M120, M320, MX Series, and T Series routers, EX8200 switches, and PTX Series Packet Transport Switches only) Display environmental information about the Control Boards (CBs). For information about the meaning of “CBs” on the switches, see EX Series Switches Hardware and CLI Terminology Mapping.
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 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 the CBs on the Interconnect device.

lcc *number*—(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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 Switches, 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
- Switching Control Board Redundancy
- Routing Engine and Switching Control Board Redundancy Configuration Statements

List of Sample Output

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[show chassis environment cb \(M320 Router\) on page 237](#)
[show chassis environment cb \(MX80 Router\) on page 237](#)
[show chassis environment cb \(MX240 Router\) on page 238](#)
[show chassis environment cb \(MX240 Router with Enhanced MX SCB\) on page 238](#)

[show chassis environment cb \(MX480 Router\) on page 239](#)
[show chassis environment cb \(MX480 Router with Enhanced MX SCB\) on page 239](#)
[show chassis environment cb \(MX960 Router\) on page 240](#)
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[show chassis environment cb \(QFabric System\) on page 251](#)

Output Fields Table 16 on page 235 lists the output fields for the **show chassis environment cb** command. Output fields are listed in the approximate order in which they appear.

Table 16: show chassis environment cb Output Fields

Field Name	Field Description
State	<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"> • Online—CB is online and running. • Offline—CB is powered down. <p>NOTE: On the EX8208 switch, the installation can include three CBs. See EX Series Switches Hardware and CLI Terminology Mapping.</p>
Temperature	<p>Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the CB.</p> <ul style="list-style-type: none"> • Temperature Intake—Measures the temperature of the air intake to cool the power supplies. • Temperature Exhaust—Measures the temperature of the hot air exhaust. <p>NOTE: On the MX2010 and MX2020 routers, the intake temperature measures the temperature of the air intake to cool the Control Board (CB). The MX2010 and MX2020 routers include intake and exhaust temperatures for multiple zones (Intake A, Intake B, Intake C, Exhaust A, Exhaust B, and TCBC).</p>
Power	<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>
BUS Revision	<p>Revision level of the generic bus device. (Not on switches.)</p>
FPGA Revision	<p>Revision level of the field-programmable gate array (FPGA). (Not on switches.)</p>

Table 16: show chassis environment cb Output Fields (*continued*)

Field Name	Field Description
PMBus device (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">• Expected voltage• Measured voltage• Measured current• Calculated power

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
(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**

```
user@host> show chassis environment cb
CB 0 status:
State                               Online Standby
```


**(MX240 Router with
Enhanced MX SCB)**

```

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
device      Expected    Measured    Measured    Calculated
              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**

```

user@host> show chassis environment cb
CB 0 status:
State                               Online Master

```

**(MX480 Router with
Enhanced MX SCB)**

```

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 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
(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**

```

user@host> show chassis environment cb
CB 0 status:
State                               Online Master

```

**(MX960 Router with
Enhanced MX SCB)**

```

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
device      Expected    Measured    Measured    Calculated
            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
(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
    ...

```

```
1cc0-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**

```
user@host> show chassis environment cb
sfc0-re0:
-----
```

(TX Matrix Plus
Router)

```

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

```

```

1cc0-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

```

```

lcc2-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

```

```

lcc3-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
```

```
user@host> show chassis environment cb
CB 0 status:
State                     Online Master
```

(PTX5000 Packet Transport Switch)

```

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
(QFabric System)**

```

user@switch> show chassis environment cb interconnect-device IC-123 0
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 ccg

Syntax	<code>show chassis environment ccg</code> <code><slot></code>
Release Information	Command introduced in Junos OS Release 12.1.
Description	(PTX Series Packet Transport Switches only) Display environmental information about the Centralized Clock Generators (CCGs).
Options	none —Display environmental information about all CCGs on the PTX Packet Transport Switch. slot —(Optional) Display environmental information about the specified CCG. Replace <i>slot</i> with 0 or 1.
Required Privilege Level	view
List of Sample Output	show chassis environment ccg (PTX5000) on page 253
Output Fields	Table 17 on page 252 lists the output fields for the show chassis environment ccg command. Output fields are listed in the approximate order in which they appear.

Table 17: show chassis environment cb Output Fields

Field Name	Field Description
State	Status of the CCG: Online - Master clock , Online - Standby , or Offline . If two CCGs are installed and online, one is functioning as the master clock, and the other is the standby clock.
Temperature	Temperature of the air flowing past the CCG.
Power	Power required and measured on the CCG. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
BUS Revision	Revision level of the generic bus device.

Sample Output

`show chassis
environment ccg
(PTX5000)`

```
user@host> show chassis environment ccg
CCG 0 status:
  State                Online - Master clock
  Temperature          31 degrees C / 87 degrees F
  Power
    1.2 V bias         1200 mV
    1.8 V              1799 mV
    3.3 V              3300 mV
    3.3 V bias         3300 mV
  Bus Revision         103
CCG 1 status:
  State                Offline
  Power               Disabled
  Temperature          31 degrees C / 87 degrees F
  Power
    1.2 V bias         1198 mV
    1.8 V              161 mV
    3.3 V              451 mV
    3.3 V bias         3311 mV
  Bus Revision         103
```

show chassis environment fpc

Syntax	show chassis environment fpc <slot>
Syntax (TX Matrix and TX Matrix Plus Routers)	show chassis environment fpc <fcc number> <slot>
Syntax (MX Series Routers)	show chassis environment fpc <slot> <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis environment fpc <slot>
Syntax (MX2020 3D Universal Edge Routers)	show chassis environment fpc <slot>
Syntax (QFX Series)	show chassis environment fpc <fpc-slot> interconnect-device <i>name</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 QFX Series. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches. 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.
Description	(M40e, M120, M160, M320, MX Series, T Series routers, EX Series, QFX Series, and PTX Series switches only) Display environmental information about Flexible PIC Concentrators (FPCs).
Options	none —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 T1600 routers. all-members —(MX Series routers only) (Optional) Display environmental information for the FPCs in all the members of the Virtual Chassis configuration. interconnect-device <i>name</i> —(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device. fcc <i>number</i> —(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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 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.

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 T1600 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.
- 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 Switch—Replace **fpc-slot** with 0 through 7.

Required Privilege Level view

- Related Documentation**
- [request chassis fpc on page 152](#)
 - [show chassis fpc on page 470](#)
 - 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 258](#)
 - [show chassis environment fpc \(M160 Router\) on page 258](#)
 - [show chassis environment fpc \(M320 Router\) on page 259](#)
 - [show chassis environment fpc \(MX2020 Router\) on page 260](#)
 - [show chassis environment fpc \(MX2010 Router\) on page 262](#)
 - [show chassis environment fpc \(MX240 Router\) on page 265](#)
 - [show chassis environment fpc \(MX480 Router\) on page 266](#)
 - [show chassis environment fpc \(MX960 Router\) on page 266](#)
 - [show chassis environment fpc \(MX480 Router with 100-Gigabit Ethernet CFP\) on page 268](#)
 - [show chassis environment fpc \(MX240, MX480, MX960 with Application Services Modular Line Card\) on page 270](#)
 - [show chassis environment fpc \(T320, T640, and T1600 Routers\) on page 270](#)
 - [show chassis environment fpc \(T4000 Router\) on page 271](#)
 - [show chassis environment fpc lcc \(TX Matrix Router\) on page 276](#)
 - [show chassis environment fpc lcc \(TX Matrix Plus Router\) on page 277](#)
 - [show chassis environment fpc \(QFX Series\) on page 278](#)
 - [show chassis environment fpc interconnect-device \(QFabric Systems\) on page 278](#)
 - [show chassis environment fpc 0 \(PTX5000 Packet Transport Switch\) on page 279](#)
 - [show chassis environment FPC 1 \(MX Routers with Media Services Blade \[MSB\]\) on page 280](#)

Output Fields [Table 18 on page 257](#) lists the output fields for the **show chassis environment fpc** command. Output fields are listed in the approximate order in which they appear.

Table 18: show chassis environment fpc Output Fields

Field Name	Field Description
State	<p>Status of the FPC:</p> <ul style="list-style-type: none"> • Unknown—FPC is not detected by the router. • Empty—No FPC is present. • Present—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. • Ready—FPC is in intermediate or transition state. • Announce online—Intermediate state during which the FPC is coming up but not yet online, and the chassis manager acknowledges the chassisd FPC online initiative. • Online—FPC is online and running. • Offline—FPC is powered down. • Diagnostics—FPC is set to operate in diagnostics mode.
Temperature	(M40e and M160 routers and QFX Series only) Temperature of the air flowing past the FPC.
PMB Temperature	(PTX Series only) Temperature of the air flowing past the PMB (bottom of the FPC).
Temperature Intake	(M320 routers, MX2010 routers, MX2020 routers, and PTX Series only) Temperature of the air flowing into the chassis.
Temperature Top	(T Series routers only) Temperature of the air flowing past the top of the FPC.
Temperature Exhaust	<p>(M120 and M320 routers, MX2010 routers, MX2020 routers, and PTX Series only) Temperature of the air flowing out of the chassis.</p> <p>The PTX Series Packet Transport Switches, and the MX2010 and MX2020 routers include exhaust temperatures for multiple zones (Exhaust A and Exhaust B).</p>
Temperature Bottom	(T Series routers only) Temperature of the air flowing past the bottom of the FPC.
TL <i>n</i> Temperature	(PTX Series only) Temperature of the air flowing past the specified TL area of the packet forwarding engine (PFE) on the FPC.
TQ <i>n</i> Temperature	(PTX Series only) Temperature of the air flowing past the specified TQ area of the packet forwarding engine (PFE) on the FPC.
Temperature MMBO	(T640 router only) Temperature of the air flowing past the type 3 FPC.
Temperature MMB1	(M320 and T Series routers only) Temperature of the air flowing past the type 1, type 2, and type 3 FPC.
Power	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.
CMB Revision or BUS revision	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

user@host> show chassis environment fpc
```

**show chassis
environment fpc (M160
Router)**

```
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 TSen  45 degrees C / 113 degrees F
Temperature PLX Switch Chip  47 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
(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**

```
user@host> show chassis environment fpc
FPC 0 status:
  State           Online
  Temperature Intake 32 degrees C / 89 degrees F
```

100-Gigabit Ethernet
CFP)

```

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**

user@host> show chassis environment fpc

FPC 0 status:

State	Online
-------	--------

(T320, T640, and T1600 Routers)

```

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
XM0	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 0
(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`

`user@host> show chassis environment fpc lcc 0
lcc0-re0:`

(TX Matrix Plus Router)

```

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)**

```

user@switch> show chassis environment fpc 0
FPC 0 status:
State                               Online
Temperature                         42 degrees C / 107 degrees F

```

**show chassis
environment fpc**

```

user@switch> show chassis environment fpc interconnect-device interconnect1 0
FC 0 FPC 0 status:
State                               Online

```


**interconnect-device
(QFabric Systems)**

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 0**

```
user@switch> show chassis environment fpc 0
FPC 0 status:
State                Online
```

(PTX5000 Packet Transport Switch)

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 FPC1(MX)**

```
user@switch> show chassis environment fpc 1
FPC 1 status:
State                               Online
```

Routers with Media Services Blade [MSB])

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 fpm

Syntax	show chassis environment fpm
Syntax (TX Matrix Routers)	show chassis environment fpm <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers)	show chassis environment fpm <lcc <i>number</i> sfc <i>number</i> >
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>sfc 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 Switches.</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 MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p>
Description	(M40e, M120, M160, M320, MX Series, and T Series routers and the PTX Series Packet Transport Switches only) Display environmental information about the front panel module in the router.
Options	<p>none—(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 T1600 routers.</p> <p>lcc <i>number</i>—(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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">• 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. <p>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).</p> <p>sfc <i>number</i>—(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).</p>

Required Privilege Level view

Related Documentation

- request chassis fpm resync

List of Sample Output

[show chassis environment fpm \(M40e and M160 Routers\) on page 284](#)
[show chassis environment fpm \(M320 Router\) on page 285](#)
[show chassis environment fpm \(MX2010 Router\) on page 285](#)
[show chassis environment fpm \(MX2020 Router\) on page 285](#)
[show chassis environment fpm \(MX240 Router\) on page 285](#)
[show chassis environment fpm \(MX480 Router\) on page 285](#)
[show chassis environment fpm \(T Series Routers\) on page 285](#)
[show chassis environment fpm lcc \(TX Matrix Router\) on page 285](#)
[show chassis environment fpm scc \(TX Matrix Router\) on page 286](#)
[show chassis environment fpm sfc \(TX Matrix Plus Router\) on page 286](#)
[show chassis environment fpm \(T4000 Core Router\) on page 287](#)
[show chassis environment fpm \(PTX5000 Packet Transport Switch\) on page 288](#)

Output Fields Table 19 on page 283 lists the output fields for the **show chassis environment fpm** command. Output fields are listed in the approximate order in which they appear.

Table 19: show chassis environment fpm Output Fields

Field Name	Field Description
State	FPM status: <ul style="list-style-type: none"> • Online—FPM is online and running. • Offline—FPM is powered down.
FPM CMB Voltage	(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.
FPM GBUS Voltage	(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.
FPM I2CS Voltage	(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.
FPM Display Voltage	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.
FPM CMB Temperature	(M40e and M160 routers only) Temperature of the air flowing past the FPM CMB device
FPM GBUS Temperature	(M320 and T Series routers only) Temperature of the air flowing past the FPM GBUS device.
FPM I2CS Temperature	(PTX Series only) Temperature of the air flowing past the FPM I2CS device.

Table 19: show chassis environment fpm Output Fields (*continued*)

Field Name	Field Description
FPM Display Temperature	Temperature of the air flowing past the FPM display.
CMB Revision	(M40e and M160 routers only) Revision level of the CMB device.
GBUS Revision	(M320 and T Series routers only) Revision level of the GBUS device.
I2CS Revision	(MX2010 routers, MX2020 routers, and PTX Series only) Revision level of the I2CS device.

Sample Output

**show chassis
environment fpm**

```
user@host> show chassis environment fpm
FPM status:
  State                Online
```

(M40e and M160 Routers)

```

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
(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**

```
user@host> show chassis environment fpm sfc
sfc0-re0:
```


(TX Matrix Plus Router)

```

-----
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

```

```

1cc0-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

```

```

1cc1-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 Switch)**

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 monitored

Syntax	show chassis environment monitored
Release Information	Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches. 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.
Description	<p>(PTX Series Packet Transport Switches, and MX2010 and MX2020 routers) Display status information for monitored temperatures.</p> <p>On the PTX Series Packet Transport Switches, and on MX2010 and MX2020 routers, you can configure which temperatures are monitored for computing temperature alarms. Use this command to display only the temperatures that are monitored. Temperatures that are not included in the temperature alarm computations are not displayed.</p>
Options	This command has no options.
Required Privilege Level	view
List of Sample Output	show chassis environment monitored (PTX5000 Packet Transport Switch) on page 289 show chassis environment monitored (MX2010 Router) on page 290 show chassis environment monitored (MX2020 Router) on page 293
Output Fields	Table 20 on page 289 lists the output fields for the show chassis environment monitored command. Output fields are listed in the approximate order in which they appear.

Table 20: show chassis environment monitored Output Fields

Field Name	Field Description
Item	<p>Chassis component:</p> <ul style="list-style-type: none"> (PTX Series Packet Transport Switches, and MX2010 and MX2020 routers)—Information about the chassis, Routing Engines, Control Boards (CBs), Switch Interface Boards (SIBs), PICs, and Flexible PIC Concentrators (FPCs).
Status	Status of the specified item. Status can be OK or Alarm .
Measurement	Temperature of the air flowing past the specified chassis component. Temperature is displayed in degrees Celsius (C) and degrees Fahrenheit (F).

Sample Output

show chassis
environment
monitored (PTX5000)

```

user@host> show chassis environment monitored
Class Item                               Status      Measurement
-----
Routing Engine 0 CPU                     OK          71 degrees C / 159 degrees F
Routing Engine 1 CPU                     OK          62 degrees C / 143 degrees F

```

**Packet Transport
Switch)**

CB 0 Exhaust A	OK	45 degrees C / 113 degrees F
CB 0 Exhaust B	OK	41 degrees C / 105 degrees F
CB 1 Exhaust A	OK	39 degrees C / 102 degrees F
CB 1 Exhaust B	OK	36 degrees C / 96 degrees F

**show chassis
environment**

```
user@host > show chassis environment monitored
```

Class	Item	Status	Measurement
Temp	CB 0 IntakeA-Zone0	OK	37 degrees C / 98 degrees F

monitored (MX2010 Router)

CB 0 IntakeB-Zone1	OK	31 degrees C / 87 degrees F
CB 0 IntakeC-Zone0	OK	39 degrees C / 102 degrees F
CB 0 ExhaustA-Zone0	OK	36 degrees C / 96 degrees F
CB 0 ExhaustB-Zone1	OK	32 degrees C / 89 degrees F
CB 0 TCBC-Zone0	OK	34 degrees C / 93 degrees F
CB 1 IntakeA-Zone0	OK	36 degrees C / 96 degrees F
CB 1 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
CB 1 IntakeC-Zone0	OK	38 degrees C / 100 degrees F
CB 1 ExhaustA-Zone0	OK	36 degrees C / 96 degrees F
CB 1 ExhaustB-Zone1	OK	30 degrees C / 86 degrees F
CB 1 TCBC-Zone0	OK	33 degrees C / 91 degrees F
SPMB 0 Intake	OK	30 degrees C / 86 degrees F
SPMB 1 Intake	OK	28 degrees C / 82 degrees F
Routing Engine 0 CPU	OK	32 degrees C / 89 degrees F
Routing Engine 1 CPU	Present	
SFB 0 Intake-Zone0	OK	46 degrees C / 114 degrees F
SFB 0 Exhaust-Zone1	OK	38 degrees C / 100 degrees F
SFB 0 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 0 IntakeB-Zone1	OK	31 degrees C / 87 degrees F
SFB 0 Exhaust-Zone0	OK	39 degrees C / 102 degrees F
SFB 0 SFB-XF2-Zone1	OK	44 degrees C / 111 degrees F
SFB 0 SFB-XF1-Zone0	OK	47 degrees C / 116 degrees F
SFB 0 SFB-XF0-Zone0	OK	56 degrees C / 132 degrees F
SFB 1 Intake-Zone0	OK	34 degrees C / 93 degrees F
SFB 1 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 1 IntakeA-Zone0	OK	29 degrees C / 84 degrees F
SFB 1 IntakeB-Zone1	OK	29 degrees C / 84 degrees F
SFB 1 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 1 SFB-XF2-Zone1	OK	42 degrees C / 107 degrees F
SFB 1 SFB-XF1-Zone0	OK	40 degrees C / 104 degrees F
SFB 1 SFB-XF0-Zone0	OK	42 degrees C / 107 degrees F
SFB 2 Intake-Zone0	OK	33 degrees C / 91 degrees F
SFB 2 Exhaust-Zone1	OK	33 degrees C / 91 degrees F
SFB 2 IntakeA-Zone0	OK	28 degrees C / 82 degrees F
SFB 2 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 2 Exhaust-Zone0	OK	31 degrees C / 87 degrees F
SFB 2 SFB-XF2-Zone1	OK	41 degrees C / 105 degrees F
SFB 2 SFB-XF1-Zone0	OK	39 degrees C / 102 degrees F
SFB 2 SFB-XF0-Zone0	OK	42 degrees C / 107 degrees F
SFB 3 Intake-Zone0	OK	33 degrees C / 91 degrees F
SFB 3 Exhaust-Zone1	OK	33 degrees C / 91 degrees F
SFB 3 IntakeA-Zone0	OK	29 degrees C / 84 degrees F
SFB 3 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 3 Exhaust-Zone0	OK	31 degrees C / 87 degrees F
SFB 3 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 3 SFB-XF1-Zone0	OK	40 degrees C / 104 degrees F
SFB 3 SFB-XF0-Zone0	OK	42 degrees C / 107 degrees F
SFB 4 Intake-Zone0	OK	34 degrees C / 93 degrees F
SFB 4 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 4 IntakeA-Zone0	OK	29 degrees C / 84 degrees F
SFB 4 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 4 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 4 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 4 SFB-XF1-Zone0	OK	42 degrees C / 107 degrees F
SFB 4 SFB-XF0-Zone0	OK	43 degrees C / 109 degrees F
SFB 5 Intake-Zone0	OK	34 degrees C / 93 degrees F
SFB 5 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 5 IntakeA-Zone0	OK	30 degrees C / 86 degrees F
SFB 5 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 5 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 5 SFB-XF2-Zone1	OK	41 degrees C / 105 degrees F

SFB 5 SFB-XF1-Zone0	OK	41 degrees C / 105 degrees F
SFB 5 SFB-XF0-Zone0	OK	44 degrees C / 111 degrees F
SFB 6 Intake-Zone0	OK	35 degrees C / 95 degrees F
SFB 6 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 6 IntakeA-Zone0	OK	30 degrees C / 86 degrees F
SFB 6 IntakeB-Zone1	OK	29 degrees C / 84 degrees F
SFB 6 Exhaust-Zone0	OK	33 degrees C / 91 degrees F
SFB 6 SFB-XF2-Zone1	OK	44 degrees C / 111 degrees F
SFB 6 SFB-XF1-Zone0	OK	43 degrees C / 109 degrees F
SFB 6 SFB-XF0-Zone0	OK	46 degrees C / 114 degrees F
SFB 7 Intake-Zone0	OK	39 degrees C / 102 degrees F
SFB 7 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 7 IntakeA-Zone0	OK	34 degrees C / 93 degrees F
SFB 7 IntakeB-Zone1	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
SFB 7 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 7 SFB-XF1-Zone0	OK	47 degrees C / 116 degrees F
SFB 7 SFB-XF0-Zone0	OK	52 degrees C / 125 degrees F
FPC 0 Intake	OK	36 degrees C / 96 degrees F
FPC 0 Exhaust A	OK	42 degrees C / 107 degrees F
FPC 0 Exhaust B	OK	51 degrees C / 123 degrees F
FPC 0 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 0 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 0 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 2 Chip	OK	45 degrees C / 113 degrees F
FPC 0 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 3 Chip	OK	46 degrees C / 114 degrees F
FPC 0 MQ 0 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 0 Chip	OK	41 degrees C / 105 degrees F
FPC 0 MQ 1 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 1 Chip	OK	44 degrees C / 111 degrees F
FPC 0 MQ 2 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 2 Chip	OK	38 degrees C / 100 degrees F
FPC 0 MQ 3 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 3 Chip	OK	41 degrees C / 105 degrees F
FPC 1 Intake	OK	34 degrees C / 93 degrees F
FPC 1 Exhaust A	OK	46 degrees C / 114 degrees F
FPC 1 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 1 LU 0 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 0 Chip	OK	55 degrees C / 131 degrees F
FPC 1 LU 1 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 1 Chip	OK	44 degrees C / 111 degrees F
FPC 1 LU 2 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 2 Chip	OK	50 degrees C / 122 degrees F
FPC 1 LU 3 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 3 Chip	OK	58 degrees C / 136 degrees F
FPC 1 XM 0 TSen	OK	45 degrees C / 113 degrees F
FPC 1 XM 0 Chip	OK	52 degrees C / 125 degrees F
FPC 1 XF 0 TSen	OK	45 degrees C / 113 degrees F
FPC 1 XF 0 Chip	OK	63 degrees C / 145 degrees F
FPC 1 PLX Switch TSen	OK	45 degrees C / 113 degrees F
FPC 1 PLX Switch Chip	OK	47 degrees C / 116 degrees F
FPC 8 Intake	OK	32 degrees C / 89 degrees F
FPC 8 Exhaust A	OK	44 degrees C / 111 degrees F
FPC 8 Exhaust B	OK	37 degrees C / 98 degrees F
FPC 8 LU 0 TCAM TSen	OK	41 degrees C / 105 degrees F
FPC 8 LU 0 TCAM Chip	OK	49 degrees C / 120 degrees F
FPC 8 LU 0 TSen	OK	41 degrees C / 105 degrees F
FPC 8 LU 0 Chip	OK	52 degrees C / 125 degrees F

FPC 8 MQ 0 TSen	OK	41 degrees C / 105 degrees F
FPC 8 MQ 0 Chip	OK	47 degrees C / 116 degrees F
FPC 8 LU 1 TCAM TSen	OK	39 degrees C / 102 degrees F
FPC 8 LU 1 TCAM Chip	OK	42 degrees C / 107 degrees F
FPC 8 LU 1 TSen	OK	39 degrees C / 102 degrees F
FPC 8 LU 1 Chip	OK	46 degrees C / 114 degrees F
FPC 8 MQ 1 TSen	OK	39 degrees C / 102 degrees F
FPC 8 MQ 1 Chip	OK	45 degrees C / 113 degrees F
FPC 9 Intake	OK	34 degrees C / 93 degrees F
FPC 9 Exhaust A	OK	41 degrees C / 105 degrees F
FPC 9 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 9 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 9 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 9 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 9 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 3 Chip	OK	47 degrees C / 116 degrees F
FPC 9 MQ 0 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 0 Chip	OK	42 degrees C / 107 degrees F
FPC 9 MQ 1 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 1 Chip	OK	44 degrees C / 111 degrees F
FPC 9 MQ 2 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 2 Chip	OK	38 degrees C / 100 degrees F
FPC 9 MQ 3 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 3 Chip	OK	40 degrees C / 104 degrees F
ADC 0 Intake	OK	35 degrees C / 95 degrees F
ADC 0 Exhaust	OK	44 degrees C / 111 degrees F
ADC 0 ADC-XF1	OK	48 degrees C / 118 degrees F
ADC 0 ADC-XF0	OK	59 degrees C / 138 degrees F
ADC 1 Intake	OK	34 degrees C / 93 degrees F
ADC 1 Exhaust	OK	45 degrees C / 113 degrees F
ADC 1 ADC-XF1	OK	53 degrees C / 127 degrees F
ADC 1 ADC-XF0	OK	56 degrees C / 132 degrees F
ADC 8 Intake	OK	35 degrees C / 95 degrees F
ADC 8 Exhaust	OK	41 degrees C / 105 degrees F
ADC 8 ADC-XF1	OK	52 degrees C / 125 degrees F
ADC 8 ADC-XF0	OK	55 degrees C / 131 degrees F
ADC 9 Intake	OK	33 degrees C / 91 degrees F
ADC 9 Exhaust	OK	42 degrees C / 107 degrees F
ADC 9 ADC-XF1	OK	55 degrees C / 131 degrees F
ADC 9 ADC-XF0	OK	56 degrees C / 132 degrees F

show chassis environment

```
user@host > show chassis environment monitored
```

Class	Item	Status	Measurement
Temp	CB 0 IntakeA-Zone0	OK	44 degrees C / 111 degrees F

monitored (MX2020 Router)

CB 0 IntakeB-Zone1	OK	34 degrees C / 93 degrees F
CB 0 IntakeC-Zone0	OK	46 degrees C / 114 degrees F
CB 0 ExhaustA-Zone0	OK	44 degrees C / 111 degrees F
CB 0 ExhaustB-Zone1	OK	36 degrees C / 96 degrees F
CB 0 TCBC-Zone0	OK	39 degrees C / 102 degrees F
CB 1 IntakeA-Zone0	OK	46 degrees C / 114 degrees F
CB 1 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
CB 1 IntakeC-Zone0	OK	47 degrees C / 116 degrees F
CB 1 ExhaustA-Zone0	OK	45 degrees C / 113 degrees F
CB 1 ExhaustB-Zone1	OK	42 degrees C / 107 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	43 degrees C / 109 degrees F
Routing Engine 0 CPU	OK	34 degrees C / 93 degrees F
Routing Engine 1 CPU	OK	42 degrees C / 107 degrees F
SFB 0 Intake-Zone0	OK	52 degrees C / 125 degrees F
SFB 0 Exhaust-Zone1	OK	45 degrees C / 113 degrees F
SFB 0 IntakeA-Zone0	OK	47 degrees C / 116 degrees F
SFB 0 IntakeB-Zone1	OK	38 degrees C / 100 degrees F
SFB 0 Exhaust-Zone0	OK	49 degrees C / 120 degrees F
SFB 0 SFB-XF2-Zone1	OK	59 degrees C / 138 degrees F
SFB 0 SFB-XF1-Zone0	OK	65 degrees C / 149 degrees F
SFB 0 SFB-XF0-Zone0	OK	65 degrees C / 149 degrees F
SFB 1 Intake-Zone0	OK	53 degrees C / 127 degrees F
SFB 1 Exhaust-Zone1	OK	45 degrees C / 113 degrees F
SFB 1 IntakeA-Zone0	OK	48 degrees C / 118 degrees F
SFB 1 IntakeB-Zone1	OK	39 degrees C / 102 degrees F
SFB 1 Exhaust-Zone0	OK	48 degrees C / 118 degrees F
SFB 1 SFB-XF2-Zone1	OK	60 degrees C / 140 degrees F
SFB 1 SFB-XF1-Zone0	OK	64 degrees C / 147 degrees F
SFB 1 SFB-XF0-Zone0	OK	66 degrees C / 150 degrees F
SFB 2 Intake-Zone0	OK	54 degrees C / 129 degrees F
SFB 2 Exhaust-Zone1	OK	46 degrees C / 114 degrees F
SFB 2 IntakeA-Zone0	OK	48 degrees C / 118 degrees F
SFB 2 IntakeB-Zone1	OK	39 degrees C / 102 degrees F
SFB 2 Exhaust-Zone0	OK	50 degrees C / 122 degrees F
SFB 2 SFB-XF2-Zone1	OK	63 degrees C / 145 degrees F
SFB 2 SFB-XF1-Zone0	OK	67 degrees C / 152 degrees F
SFB 2 SFB-XF0-Zone0	OK	67 degrees C / 152 degrees F
SFB 3 Intake-Zone0	OK	54 degrees C / 129 degrees F
SFB 3 Exhaust-Zone1	OK	46 degrees C / 114 degrees F
SFB 3 IntakeA-Zone0	OK	50 degrees C / 122 degrees F
SFB 3 IntakeB-Zone1	OK	40 degrees C / 104 degrees F
SFB 3 Exhaust-Zone0	OK	50 degrees C / 122 degrees F
SFB 3 SFB-XF2-Zone1	OK	64 degrees C / 147 degrees F
SFB 3 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 3 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 4 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 4 Exhaust-Zone1	OK	48 degrees C / 118 degrees F
SFB 4 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 4 IntakeB-Zone1	OK	42 degrees C / 107 degrees F
SFB 4 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 4 SFB-XF2-Zone1	OK	63 degrees C / 145 degrees F
SFB 4 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 4 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 5 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 5 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 5 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 5 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 5 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 5 SFB-XF2-Zone1	OK	65 degrees C / 149 degrees F

SFB 5 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 5 SFB-XF0-Zone0	OK	71 degrees C / 159 degrees F
SFB 6 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 6 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 6 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 6 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 6 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 6 SFB-XF2-Zone1	OK	64 degrees C / 147 degrees F
SFB 6 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 6 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 7 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 7 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 7 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 7 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 7 Exhaust-Zone0	OK	52 degrees C / 125 degrees F
SFB 7 SFB-XF2-Zone1	OK	66 degrees C / 150 degrees F
SFB 7 SFB-XF1-Zone0	OK	67 degrees C / 152 degrees F
SFB 7 SFB-XF0-Zone0	OK	70 degrees C / 158 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	60 degrees C / 140 degrees F
FPC 0 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 0 Chip	OK	59 degrees C / 138 degrees F
FPC 0 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 1 Chip	OK	61 degrees C / 141 degrees F
FPC 0 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 2 Chip	OK	52 degrees C / 125 degrees F
FPC 0 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 3 Chip	OK	52 degrees C / 125 degrees F
FPC 0 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 0 MQ 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 0 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 0 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 0 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 0 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 0 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 1 Intake	OK	39 degrees C / 102 degrees F
FPC 1 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 1 Exhaust B	OK	55 degrees C / 131 degrees F
FPC 1 LU 0 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 0 Chip	OK	54 degrees C / 129 degrees F
FPC 1 LU 1 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 1 Chip	OK	56 degrees C / 132 degrees F
FPC 1 LU 2 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 2 Chip	OK	49 degrees C / 120 degrees F
FPC 1 LU 3 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 3 Chip	OK	50 degrees C / 122 degrees F
FPC 1 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 1 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 1 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 1 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 3 Chip	OK	45 degrees C / 113 degrees F
FPC 2 Intake	OK	39 degrees C / 102 degrees F
FPC 2 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 2 Exhaust B	OK	58 degrees C / 136 degrees F
FPC 2 LU 0 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 0 Chip	OK	57 degrees C / 134 degrees F

FPC 2 LU 1 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 1 Chip	OK	63 degrees C / 145 degrees F
FPC 2 LU 2 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 2 LU 3 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 3 Chip	OK	52 degrees C / 125 degrees F
FPC 2 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 2 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 2 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 2 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 3 Intake	OK	41 degrees C / 105 degrees F
FPC 3 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 3 Exhaust B	OK	58 degrees C / 136 degrees F
FPC 3 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 0 Chip	OK	59 degrees C / 138 degrees F
FPC 3 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 1 Chip	OK	61 degrees C / 141 degrees F
FPC 3 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 3 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 3 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 0 Chip	OK	51 degrees C / 123 degrees F
FPC 3 MQ 1 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 3 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 3 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 3 Chip	OK	50 degrees C / 122 degrees F
FPC 4 Intake	OK	41 degrees C / 105 degrees F
FPC 4 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 4 Exhaust B	OK	59 degrees C / 138 degrees F
FPC 4 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 0 Chip	OK	60 degrees C / 140 degrees F
FPC 4 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 4 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 4 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 4 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 4 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 4 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 4 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 5 Intake	OK	42 degrees C / 107 degrees F
FPC 5 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 5 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 5 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 0 Chip	OK	61 degrees C / 141 degrees F
FPC 5 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 5 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 2 Chip	OK	56 degrees C / 132 degrees F

FPC 5 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 5 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 5 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 5 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 2 Chip	OK	50 degrees C / 122 degrees F
FPC 5 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 6 Intake	OK	42 degrees C / 107 degrees F
FPC 6 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 6 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 6 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 6 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 6 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 6 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 6 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 0 Chip	OK	58 degrees C / 136 degrees F
FPC 6 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 1 Chip	OK	61 degrees C / 141 degrees F
FPC 6 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 2 Chip	OK	51 degrees C / 123 degrees F
FPC 6 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 3 Chip	OK	51 degrees C / 123 degrees F
FPC 7 Intake	OK	42 degrees C / 107 degrees F
FPC 7 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 7 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 7 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 7 LU 0 Chip	OK	59 degrees C / 138 degrees F
FPC 7 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 7 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 7 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 7 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 7 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 7 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 7 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 7 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 8 Intake	OK	42 degrees C / 107 degrees F
FPC 8 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 8 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 8 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 0 Chip	OK	63 degrees C / 145 degrees F
FPC 8 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 8 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 8 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 8 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 0 Chip	OK	53 degrees C / 127 degrees F

FPC 8 MQ 1 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 1 Chip	OK	58 degrees C / 136 degrees F
FPC 8 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 8 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 9 Intake	OK	43 degrees C / 109 degrees F
FPC 9 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 9 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 9 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 0 Chip	OK	61 degrees C / 141 degrees F
FPC 9 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 1 Chip	OK	63 degrees C / 145 degrees F
FPC 9 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 2 Chip	OK	55 degrees C / 131 degrees F
FPC 9 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 9 MQ 0 TSen	OK	52 degrees C / 125 degrees F
FPC 9 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 9 MQ 1 TSen	OK	52 degrees C / 125 degrees F
FPC 9 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 9 MQ 2 TSen	OK	52 degrees C / 125 degrees F
FPC 9 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 9 MQ 3 TSen	OK	52 degrees C / 125 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	48 degrees C / 118 degrees F
FPC 10 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 10 LU 0 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 0 Chip	OK	54 degrees C / 129 degrees F
FPC 10 LU 1 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 1 Chip	OK	58 degrees C / 136 degrees F
FPC 10 LU 2 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 10 LU 3 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 10 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 10 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 10 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 10 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 11 Intake	OK	39 degrees C / 102 degrees F
FPC 11 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 11 Exhaust B	OK	51 degrees C / 123 degrees F
FPC 11 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 11 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 11 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 2 Chip	OK	49 degrees C / 120 degrees F
FPC 11 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 11 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 0 Chip	OK	47 degrees C / 116 degrees F
FPC 11 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 11 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 2 Chip	OK	45 degrees C / 113 degrees F

FPC 11 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 12 Intake	OK	39 degrees C / 102 degrees F
FPC 12 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 12 Exhaust B	OK	50 degrees C / 122 degrees F
FPC 12 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 0 Chip	OK	51 degrees C / 123 degrees F
FPC 12 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 12 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 12 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 12 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 12 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 12 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 12 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 3 Chip	OK	47 degrees C / 116 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	51 degrees C / 123 degrees F
FPC 13 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 13 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 13 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 13 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 3 Chip	OK	48 degrees C / 118 degrees F
FPC 13 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 0 Chip	OK	47 degrees C / 116 degrees F
FPC 13 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 13 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 13 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 14 Intake	OK	41 degrees C / 105 degrees F
FPC 14 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 14 Exhaust B	OK	50 degrees C / 122 degrees F
FPC 14 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 14 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 14 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 14 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 14 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 14 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 14 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 14 LU 3 Chip	OK	50 degrees C / 122 degrees F
FPC 14 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 14 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 14 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 14 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 3 Chip	OK	50 degrees C / 122 degrees F
FPC 15 Intake	OK	42 degrees C / 107 degrees F
FPC 15 Exhaust A	OK	51 degrees C / 123 degrees F

FPC 15 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 15 LU 0 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 0 Chip	OK	55 degrees C / 131 degrees F
FPC 15 LU 1 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 1 Chip	OK	59 degrees C / 138 degrees F
FPC 15 LU 2 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 2 Chip	OK	50 degrees C / 122 degrees F
FPC 15 LU 3 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 15 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 15 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 1 Chip	OK	60 degrees C / 140 degrees F
FPC 15 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 2 Chip	OK	52 degrees C / 125 degrees F
FPC 15 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 3 Chip	OK	53 degrees C / 127 degrees F
FPC 16 Intake	OK	44 degrees C / 111 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	56 degrees C / 132 degrees F
FPC 16 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 2 Chip	OK	50 degrees C / 122 degrees F
FPC 16 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 3 Chip	OK	50 degrees C / 122 degrees F
FPC 16 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 16 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 16 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 2 Chip	OK	49 degrees C / 120 degrees F
FPC 16 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 3 Chip	OK	52 degrees C / 125 degrees F
FPC 17 Intake	OK	45 degrees C / 113 degrees F
FPC 17 Exhaust A	OK	52 degrees C / 125 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	61 degrees C / 141 degrees F
FPC 17 LU 2 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 17 LU 3 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 3 Chip	OK	55 degrees C / 131 degrees F
FPC 17 MQ 0 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 17 MQ 1 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 1 Chip	OK	57 degrees C / 134 degrees F
FPC 17 MQ 2 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 2 Chip	OK	51 degrees C / 123 degrees F
FPC 17 MQ 3 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 3 Chip	OK	54 degrees C / 129 degrees F
FPC 18 Intake	OK	46 degrees C / 114 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	58 degrees C / 136 degrees F
FPC 18 LU 1 TSen	OK	56 degrees C / 132 degrees F

FPC 18 LU 1 Chip	OK	63 degrees C / 145 degrees F
FPC 18 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 18 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 18 MQ 0 TSen	OK	54 degrees C / 129 degrees F
FPC 18 MQ 0 Chip	OK	57 degrees C / 134 degrees F
FPC 18 MQ 1 TSen	OK	54 degrees C / 129 degrees F
FPC 18 MQ 1 Chip	OK	62 degrees C / 143 degrees F
FPC 18 MQ 2 TSen	OK	54 degrees C / 129 degrees F
FPC 18 MQ 2 Chip	OK	53 degrees C / 127 degrees F
FPC 18 MQ 3 TSen	OK	54 degrees C / 129 degrees F
FPC 18 MQ 3 Chip	OK	56 degrees C / 132 degrees F
FPC 19 Intake	OK	49 degrees C / 120 degrees F
FPC 19 Exhaust A	OK	56 degrees C / 132 degrees F
FPC 19 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 19 LU 0 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 0 Chip	OK	63 degrees C / 145 degrees F
FPC 19 LU 1 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 1 Chip	OK	69 degrees C / 156 degrees F
FPC 19 LU 2 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 2 Chip	OK	61 degrees C / 141 degrees F
FPC 19 LU 3 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 3 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 0 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 0 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 1 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 1 Chip	OK	64 degrees C / 147 degrees F
FPC 19 MQ 2 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 2 Chip	OK	59 degrees C / 138 degrees F
FPC 19 MQ 3 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 3 Chip	OK	60 degrees C / 140 degrees F
ADC 0 Intake	OK	40 degrees C / 104 degrees F
ADC 0 Exhaust	OK	50 degrees C / 122 degrees F
ADC 0 ADC-XF1	OK	58 degrees C / 136 degrees F
ADC 0 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 1 Intake	OK	38 degrees C / 100 degrees F
ADC 1 Exhaust	OK	48 degrees C / 118 degrees F
ADC 1 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 1 ADC-XF0	OK	61 degrees C / 141 degrees F
ADC 2 Intake	OK	36 degrees C / 96 degrees F
ADC 2 Exhaust	OK	50 degrees C / 122 degrees F
ADC 2 ADC-XF1	OK	53 degrees C / 127 degrees F
ADC 2 ADC-XF0	OK	59 degrees C / 138 degrees F
ADC 3 Intake	OK	39 degrees C / 102 degrees F
ADC 3 Exhaust	OK	49 degrees C / 120 degrees F
ADC 3 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 3 ADC-XF0	OK	62 degrees C / 143 degrees F
ADC 4 Intake	OK	39 degrees C / 102 degrees F
ADC 4 Exhaust	OK	49 degrees C / 120 degrees F
ADC 4 ADC-XF1	OK	60 degrees C / 140 degrees F
ADC 4 ADC-XF0	OK	61 degrees C / 141 degrees F
ADC 5 Intake	OK	38 degrees C / 100 degrees F
ADC 5 Exhaust	OK	52 degrees C / 125 degrees F
ADC 5 ADC-XF1	OK	55 degrees C / 131 degrees F
ADC 5 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 6 Intake	OK	39 degrees C / 102 degrees F
ADC 6 Exhaust	OK	51 degrees C / 123 degrees F
ADC 6 ADC-XF1	OK	58 degrees C / 136 degrees F
ADC 6 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 7 Intake	OK	39 degrees C / 102 degrees F

ADC 7 Exhaust	OK	52 degrees C / 125 degrees F
ADC 7 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 7 ADC-XF0	OK	68 degrees C / 154 degrees F
ADC 8 Intake	OK	39 degrees C / 102 degrees F
ADC 8 Exhaust	OK	50 degrees C / 122 degrees F
ADC 8 ADC-XF1	OK	64 degrees C / 147 degrees F
ADC 8 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 9 Intake	OK	41 degrees C / 105 degrees F
ADC 9 Exhaust	OK	50 degrees C / 122 degrees F
ADC 9 ADC-XF1	OK	60 degrees C / 140 degrees F
ADC 9 ADC-XF0	OK	62 degrees C / 143 degrees F
ADC 10 Intake	OK	46 degrees C / 114 degrees F
ADC 10 Exhaust	OK	53 degrees C / 127 degrees F
ADC 10 ADC-XF1	OK	66 degrees C / 150 degrees F
ADC 10 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 11 Intake	OK	46 degrees C / 114 degrees F
ADC 11 Exhaust	OK	53 degrees C / 127 degrees F
ADC 11 ADC-XF1	OK	63 degrees C / 145 degrees F
ADC 11 ADC-XF0	OK	64 degrees C / 147 degrees F
ADC 12 Intake	OK	47 degrees C / 116 degrees F
ADC 12 Exhaust	OK	53 degrees C / 127 degrees F
ADC 12 ADC-XF1	OK	65 degrees C / 149 degrees F
ADC 12 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 13 Intake	OK	48 degrees C / 118 degrees F
ADC 13 Exhaust	OK	55 degrees C / 131 degrees F
ADC 13 ADC-XF1	OK	65 degrees C / 149 degrees F
ADC 13 ADC-XF0	OK	67 degrees C / 152 degrees F
ADC 14 Intake	OK	49 degrees C / 120 degrees F
ADC 14 Exhaust	OK	57 degrees C / 134 degrees F
ADC 14 ADC-XF1	OK	68 degrees C / 154 degrees F
ADC 14 ADC-XF0	OK	72 degrees C / 161 degrees F
ADC 15 Intake	OK	50 degrees C / 122 degrees F
ADC 15 Exhaust	OK	56 degrees C / 132 degrees F
ADC 15 ADC-XF1	OK	68 degrees C / 154 degrees F
ADC 15 ADC-XF0	OK	68 degrees C / 154 degrees F
ADC 16 Intake	OK	51 degrees C / 123 degrees F
ADC 16 Exhaust	OK	57 degrees C / 134 degrees F
ADC 16 ADC-XF1	OK	67 degrees C / 152 degrees F
ADC 16 ADC-XF0	OK	68 degrees C / 154 degrees F
ADC 17 Intake	OK	51 degrees C / 123 degrees F
ADC 17 Exhaust	OK	57 degrees C / 134 degrees F
ADC 17 ADC-XF1	OK	69 degrees C / 156 degrees F
ADC 17 ADC-XF0	OK	69 degrees C / 156 degrees F
ADC 18 Intake	OK	52 degrees C / 125 degrees F
ADC 18 Exhaust	OK	58 degrees C / 136 degrees F
ADC 18 ADC-XF1	OK	67 degrees C / 152 degrees F
ADC 18 ADC-XF0	OK	72 degrees C / 161 degrees F
ADC 19 Intake	OK	50 degrees C / 122 degrees F
ADC 19 Exhaust	OK	58 degrees C / 136 degrees F
ADC 19 ADC-XF1	OK	68 degrees C / 154 degrees F
ADC 19 ADC-XF0	OK	71 degrees C / 159 degrees F

show chassis environment pdu

Syntax	<code>show chassis environment pdu</code> <code><slot></code>
Release Information	Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.
Description	<p>(PTX Series Packet Transport Switches only) Display Power Distribution Unit (PDU) environmental status information.</p> <p>On the PTX Series Packet Transport Switches, the power supply consists of Power Distribution Units (PDUs) that contain Power Supply Modules (PSMs). There are four PSMs for each PDU and each PSM provides power to a specific set of FRUs.</p> <ul style="list-style-type: none"> • PSM 0: Fan Trays • PSM 1: Routing Engines, CBs, SIBs, FPD, and CCGs • PSM 2: FPCs • PSM 3: FPCs <p>This arrangement of PDUs and PSMs provide a modular power management design. Depending on which FRUs are present in the chassis, the required number of PSMs change enabling you to use only as much power as required to power the chassis.</p>
Options	<p>none—Display environmental information about all PDUs.</p> <p>slot —(Optional) Display environmental information about an individual PDU. For the PTX5000 Packet Transport Switch, replace slot with 0 or 1.</p>
Required Privilege Level	view
List of Sample Output	show chassis environment pdu (PTX5000 Packet Transport Switch) on page 304
Output Fields	Table 21 on page 303 lists the output fields for the show chassis environment pdu command. Output fields are listed in the approximate order in which they appear.

Table 21: show chassis environment pdu Output Fields

Field Name	Field Description
PDU slot status	Number of the PDU slot.
PDU - State	Status of the PDU. Status can be Online , Present , or Absent .
PDU - Hours Used	Number of hours the PDU has been operational.
PDU - Firmware Version	Version level of the firmware running on the PDU.
PSM number status	PSM number. PSMs are numbered 0 through 3 .

Table 21: show chassis environment pdu Output Fields (*continued*)

Field Name	Field Description
PSM - State	Status of the PSM. Status can be Online , Present , or Absent .
PSM - Temperature	Temperature of the air flowing past the PSM.
PSM - Fans	Status of the cooling fans associated with the PSM.
PSM - AC Input	Status of the AC input for the specified component
PSM - AC Output	Status of the AC output for the specified component.
PSM - DC input	Status of the DC input for the specified component.
PSM - DC output	Status of the DC output for the specified component.
PSM - Hours Used	Number of hours the PSM has been operational.
PSM - Firmware Version	Version level of the firmware running on the PSM.

Sample Output

**show chassis
environment pdu**

```
user@host> show chassis environment pdu 0
PDU 0 status:
  State                Online
```

(PTX5000 Packet Transport Switch)

```

Hours Used                4281
Firmware Version (MCU1)   00.02
Firmware Version (MCU2)   00.02
Firmware Version (MCU3)   00.02
Firmware Version (MCU4)   00.02
PDU 0 PSM 0 status:
  State                   Online
  Temperature             OK    32 degrees C / 89 degrees F
  Fans                   OK
  DC Input               OK
  DC Output              OK
  Hours Used             2864
  Firmware Version       00.04
PDU 0 PSM 1 status:
  State                   Online
  Temperature             OK    30 degrees C / 86 degrees F
  Fans                   OK
  DC Input               OK
  DC Output              OK
  Hours Used             3540
  Firmware Version       00.04
PDU 0 PSM 2 status:
  State                   Online
  Temperature             OK    29 degrees C / 84 degrees F
  Fans                   OK
  DC Input               OK
  DC Output              OK
  Hours Used             3711
  Firmware Version       00.04
PDU 0 PSM 3 status:
  State                   Online
  Temperature             OK    29 degrees C / 84 degrees F
  Fans                   OK
  DC Input               OK
  DC Output              OK
  Hours Used             4243
  Firmware Version       00.04

```

show chassis environment routing-engine

Syntax	show chassis environment routing-engine <slot>
Syntax (TX Matrix Routers)	show chassis environment routing-engine <lcc number scc> <slot>
Syntax (TX Matrix Plus Routers)	show chassis environment routing-engine <lcc number sfc number> <slot>
Syntax (MX2010 3D Universal Edge Routers)	show chassis environment routing-engine <slot>
Syntax (MX Series Routers)	show chassis environment routing-engine <slot> <all-members> <local> <member member-id>
Syntax (MX2020 3D Universal Edge Routers)	show chassis environment routing-engine <slot>
Syntax (QFX Series)	show chassis environment routing-engine interconnect-device <i>name</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 11.1 for the QFX Series. Command introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Switches. Command introduced in Junos OS Release 12.1 for the 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.
Description	Display Routing Engine environmental status information.
Options	none —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 T1600 routers. all-members —(MX Series routers only) (Optional) Display environmental information about the Routing Engines in all member routers in the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems only) (Optional) Display environmental information about the Routing Engines for the Interconnect device.

lcc *number*—(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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 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.

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, MX2020 routers, and T Series routers, replace *slot* with 0 or 1. On M5, M7i, M10, and M40 routers and on the J Series router, 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 Switches, replace *slot* with 0 or 1.

Required Privilege Level

view

Related Documentation

- request chassis routing-engine master
- [show chassis routing-engine on page 627](#)

List of Sample Output

[show chassis environment routing-engine \(Nonredundant\) on page 308](#)
[show chassis environment routing-engine \(Redundant\) on page 308](#)
[show chassis environment routing-engine \(MX2010 Router\) on page 308](#)
[show chassis environment routing-engine \(MX2020 Router\) on page 309](#)

[show chassis environment routing-engine \(TX Matrix Plus Router\) on page 309](#)
[show chassis environment routing-engine \(T4000 Core Router\) on page 309](#)
[show chassis environment routing-engine \(QFX Series\) on page 309](#)
[show chassis environment routing-engine interconnect-device \(QFabric System\) on page 309](#)
[show chassis environment routing-engine \(PTX5000 Packet Transport Switch\) on page 310](#)

Output Fields Table 22 on page 308 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 22: show chassis environment routing-engine Output Fields

Field Name	Field Description
Routing engine slot status	Number of the Routing Engine slot: 0 or 1.
State	Status of the Routing Engine: <ul style="list-style-type: none"> • Online Master—Routing Engine is online, operating as Master. • Online Standby—Routing Engine is online, operating as Standby. • Offline—Routing Engine is offline.
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**

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master

```

```

routing-engine          Temperature          37 degrees C / 98 degrees F
(MX2010 Router)         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            user@host> show chassis environment routing-engine
environment
routing-engine          Routing Engine 0 status:
(MX2020 Router)         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            user@host> show chassis environment routing-engine
environment              sfc0-re0:
routing-engine (TX      -----
Matrix Plus Router)
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            user@host> show chassis environment routing-engine
environment              Routing Engine 0 status:
routing-engine (T4000   State                   Online Master
Core Router)            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            user@switch> show chassis environment routing-engine
environment              Routing Engine 0 status:
routing-engine (QFX     State                   Online Master
Series)                  Temperature             42 degrees C / 107 degrees F

```

```

show chassis            user@switch> show chassis environment routing-engine interconnect-device interconnect1
environment              routing-engine interconnect-device interconnect1
routing-engine          Routing Engine 0 status:
                        State                   Online Standby

```

**interconnect-device
(QFabric System)**

```
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 Switch)**

```
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 sib

Syntax	show chassis environment sib <slot>
Syntax (TX Matrix router)	show chassis environment sib <lcc number scc> <slot>
Syntax (TX Matrix Plus router and TX Matrix Plus router with 3D SIBs)	show chassis environment sib <sib-slot> <lcc number sfc number> <f13 sib-slot> <f2s sib-slot/sib-f2s-slot-number>
Release Information	Command introduced before Junos OS Release 7.4. sfc option introduced in Junos OS Release 9.6. for the TX Matrix Plus router. Command introduced in Junos OS 12.1 for the PTX Series Packet Transport Switches. Command introduced in Junos OS 12.1 for the T4000 Core Routers. Command introduced in Junos OS Release 13.1 for TX Matrix Plus router with 3D SIBs.
Description	(M320, T Series, TX Matrix, and TX Matrix Plus routers, TX Matrix Plus router with 3D SIBs, and PTX Packet Transport Switches only) Display Switch Interface Boards (SIB) environmental information.
Options	<p>none—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 and TX Matrix Plus router with 3D SIBs, display environmental information about all SIBs on the TX Matrix Plus router and its attached T1600 or T4000 routers .</p> <p>f13 sib-slot—(TX Matrix Plus routers and TX Matrix Plus router with 3D SIBs only) (Optional) Display SIB F13 environmental information only. Replace sib-slot with one of the following values: 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12. (Slots 2, 5, 10, 13, 14, and 15 are unused).</p> <p>f2s sib-slot/sib-f2s-slot-number—(TX Matrix Plus routers and TX Matrix Plus router with 3D SIBs only) (Optional) Display SIB F2s environmental information only. Replace sib-slot with a value from 0 through 4, followed by a sib-f2s-slot-number value of 0, 2, 4 or 6.</p> <p>lcc number—(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (Optional) Line-card chassis number. Replace number with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 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 environmental information about the SIB in the TX Matrix router (switch-card chassis).

sfc—(TX Matrix Plus routers and TX Matrix Plus router with 3D SIBs only) (Optional) On a TX Matrix Plus router, display environmental information about the SIB in the TX Matrix Plus router (switch-fabric chassis). On a TX Matrix Plus router with 3D SIBs, display environmental information about the SIB in the TX Matrix Plus router with 3D SIBs.

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 Switch, replace **sib-slot** with a value from 0 through 8.

Required Privilege Level view

Related Documentation

- request chassis sib
- [show chassis sibs on page 647](#)
- Configuring the 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 314](#)
- [show chassis environment sib 1 \(T640 Router\) on page 314](#)
- [show chassis environment sib 1 \(T4000 Router\) on page 315](#)
- [show chassis environment sib scc \(TX Matrix Router\) on page 315](#)
- [show chassis environment sib \(TX Matrix Plus Router\) on page 316](#)
- [show chassis environment sib sfc \(TX Matrix Plus Router\) on page 326](#)
- [show chassis environment sib f13 \(TX Matrix Plus Router\) on page 332](#)
- [show chassis environment sib f2s \(TX Matrix Plus Router\) on page 332](#)
- [show chassis environment sib \(TX Matrix Plus router with 3D SIBs\) on page 333](#)
- [show chassis environment sib \(PTX5000 Packet Transport Switch\) on page 336](#)

Output Fields [Table 23 on page 313](#) lists the output fields for the **show chassis environment sib** command. Output fields are listed in the approximate order in which they appear.

Table 23: show chassis environment sib Output Fields

Field Name	Field Description
SIB slot status	<p>SIB slot number:</p> <ul style="list-style-type: none"> • 0 through 3 on an M320 router. • 0 or 2 on a T320 router. • 0 through 4 on a T640, T1600, T4000, or TX Matrix router. • 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12 for F13 SIBs on a TX Matrix Plus router and TX Matrix Plus routers with 3D SIBs. (Slots 2, 5, 10, 13, 14, and 15 are unused). • 0 through 4, followed by 0, 2, 4, or 6 for F2S SIBs on a TX Matrix Plus router and TX Matrix Plus routers with 3D SIBs. For example, SIB F2S 0/4. • 0 through 8 on a PTX5000 Packet Transport Switch.
State	<p>Status of the SIB:</p> <ul style="list-style-type: none"> • Online—SIB is online and running. • Offline—SIB is powered down. • Spare (T640, T1600, T4000, and TX Matrix routers only)—SIB is redundant and will move to active state if one of the working SIBs fails. <p>Only four of the SIBs are active at any time. The fifth one is marked Spare. It is activated if there is a fault on one of the active SIBs.</p> <p>Online standby (TX Matrix Plus router and TX Matrix Plus router with 3D SIBs only).</p>
Temperature	<p>Temperature of the air flowing past the SIB.</p> <p>On PTX Series Packet Transport Switches, separate temperatures are displayed for Intake, Exhaust, and Junction.</p>
Power	<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`

```
user@host> show chassis environment sib
sfc0-re0:
```

(TX Matrix Plus
Router)

```

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`

```

user@host> show chassis environment sib sfc
sfc0-re0:
-----

```


(TX Matrix Plus
Router)

```

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**

```

user@host> show chassis environment sib f2s 0/2
SIB F2S 0/2 status:
State                Online - Standby

```

(TX Matrix Plus
Router)

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

```
user@host> show chassis environment sib
sfc0-re0:
-----
```

Matrix Plus router with
3D SIBs)

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...]
lcc2-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`

```
user@host> show chassis environment sib
SIB 0 status:
  State                Online
```

(PTX5000 Packet Transport Switch)

Intake Temperature	39 degrees C / 102 degrees F
Exhaust Temperature	37 degrees C / 98 degrees F
Junction Temperature	43 degrees C / 109 degrees F
Power	
1.0 V	1000 mV
1.5 V	1499 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	3298 mV
SIB 1 status:	
State	Online
Intake Temperature	39 degrees C / 102 degrees F
Exhaust Temperature	36 degrees C / 96 degrees F
Junction Temperature	45 degrees C / 113 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	900 mV
2.5 V	2499 mV
3.3 V bias	3321 mV
SIB 2 status:	
State	Online
Intake Temperature	37 degrees C / 98 degrees F
Exhaust Temperature	37 degrees C / 98 degrees F
Junction Temperature	41 degrees C / 105 degrees F
Power	
1.0 V	999 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	3339 mV
SIB 3 status:	
State	Online
Intake Temperature	40 degrees C / 104 degrees F
Exhaust Temperature	40 degrees C / 104 degrees F
Junction Temperature	45 degrees C / 113 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	2500 mV
3.3 V bias	3328 mV
SIB 4 status:	
State	Online
Intake Temperature	47 degrees C / 116 degrees F
Exhaust Temperature	45 degrees C / 113 degrees F
Junction Temperature	57 degrees C / 134 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	3333 mV
SIB 5 status:	
State	Online
Intake Temperature	57 degrees C / 134 degrees F
Exhaust Temperature	43 degrees C / 109 degrees F
Junction Temperature	71 degrees C / 159 degrees F
Power	
1.0 V	1000 mV
1.5 V	1499 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
SIB 6 status:	
State	Online
Intake Temperature	57 degrees C / 134 degrees F
Exhaust Temperature	42 degrees C / 107 degrees F
Junction Temperature	66 degrees C / 150 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	899 mV
2.5 V	2500 mV
3.3 V bias	3311 mV
SIB 7 status:	
State	Online
Intake Temperature	58 degrees C / 136 degrees F
Exhaust Temperature	42 degrees C / 107 degrees F
Junction Temperature	67 degrees C / 152 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	900 mV
2.5 V	2499 mV
3.3 V bias	3307 mV
SIB 8 status:	
State	Online
Intake Temperature	57 degrees C / 134 degrees F
Exhaust Temperature	43 degrees C / 109 degrees F
Junction Temperature	71 degrees C / 159 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	2500 mV
3.3 V bias	3332 mV

show chassis ethernet-switch

Syntax	show chassis ethernet-switch <errors <port>>
Syntax (EX8200 Switch)	show chassis ethernet-switch <statistics <port> switch <number>
Syntax (T4000 Router)	show chassis ethernet-switch <errors <port> statistics <port>>
Syntax (TX Matrix Router)	show chassis ethernet-switch <errors <port> statistics <port>> <lcc <number> scc>
Syntax (TX Matrix Plus Router)	show chassis ethernet-switch <errors <port> switch <number> <lcc number sfc number> <statistics <port> switch <number>
Syntax (MX Series Router)	show chassis ethernet-switch <all-members> <errors <port>> <local> <member member-id>
Syntax (MX2010 3D Universal Edge Routers)	show chassis ethernet-switch <errors <port> statistics <port>>
Syntax (MX2020 3D Universal Edge Routers)	show chassis ethernet-switch <errors <port> statistics <port>>
Syntax (PTX Series Packet Transport Switches)	show chassis ethernet-switch <errors <port>> <statistics <port>> <port-state <port>>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.4 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 12.1 for PTX Series Packet Transport Switches. 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.
Description	(M10i, M40e, M120, M160, M320, MX Series, and T Series routers and EX8200 and PTX Series switches only) Display information about the ports on the Control Board (CB) Ethernet switch.
Options	none —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 T1600 routers.

all-members—(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on all the members of the Virtual Chassis configuration.

errors—(Optional) Display the numbers and types of errors accumulated on all ports of the Ethernet switch.

errors *port*—(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 ***port*** with a value from 0 through 15. On the TX Matrix Plus router and EX8200 switch, replace ***port*** with a value from 0 through 27. On the PTX Series Packet Transport Switches, replace ***port*** with a value from 0 through 25. On the T4000 routers, MX2020 routers, and MX2010 routers, replace ***port*** with a value from 0 through 27.

errors switch *number*—(TX Matrix Plus router only) (Optional) Display the numbers and types of errors accumulated on the specified switch. Replace ***number*** with a value from 0 through 2.

lcc *number*—(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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 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.

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 Switches, replace ***port*** with a value from 0 through 25. On the T4000 routers, MX2020 routers, and MX2010 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

- [show chassis ethernet-switch on page 346](#)
- [show chassis ethernet-switch \(MX2010 Router\) on page 346](#)
- [show chassis ethernet-switch statistics \(MX2010 Router\) on page 348](#)
- [show chassis ethernet-switch \(MX2020 Router\) on page 355](#)
- [show chassis ethernet-switch statistics \(MX2020 Router\) on page 358](#)
- [show chassis ethernet-switch \(TX Matrix Router\) on page 366](#)
- [show chassis ethernet-switch errors on page 367](#)
- [show chassis ethernet-switch statistics on page 368](#)
- [show chassis ethernet-switch errors \(TX Matrix Plus Router\) on page 368](#)
- [show chassis ethernet-switch sfc errors \(TX Matrix Plus Router\) on page 369](#)
- [show chassis ethernet-switch statistics \(TX Matrix Plus Router\) on page 370](#)
- [show chassis ethernet-switch \(T4000 Router\) on page 375](#)
- [show chassis ethernet-switch errors \(T4000 Router\) on page 375](#)
- [show chassis ethernet-switch \(PTX5000 Packet Transport Switch\) on page 376](#)
- [show chassis ethernet-switch statistics \(PTX5000 Packet Transport Switch\) on page 378](#)
- [show chassis ethernet-switch port-state \(PTX5000 Packet Transport Switch\) on page 382](#)

Output Fields [Table 24 on page 342](#) lists the output fields for the **show chassis ethernet-switch** command. Output fields are listed in the approximate order in which they appear.

Table 24: show chassis ethernet-switch Output Fields

Field Name	Field Description
Link is good on port <i>n</i> connected to device	Information about the link between each port on the CB's Ethernet switch and one of the following devices: <ul style="list-style-type: none"> FPC0 (Flexible PIC Concentrator 0) through FPC7 Local controller Routing Engine Other Routing Engine (on a system with two Routing Engines) SPMB (Switch Processor Mezzanine Board) (TX Matrix router only) LCC0 (line-card chassis 0) through LCC3
or	
Link is good on Fast Ethernet port <i>n</i> connected to device	
or	
Link is good on Gigabit Ethernet port <i>n</i> connected to device	
or	
Link is down on Gigabit Ethernet port connected to device	
Speed is	Speed at which the Ethernet link is running: 10 Mb or 100 Mb . When the device is RE or Other RE on the TX Matrix router, the speed is 1000 Mb . NOTE: Irrespective of the device, the speed is 1000 Mb on the MX2010 and MX2020 routers.
Duplex is	Duplex type of the Ethernet link: full or half .
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 no-concatenate statement at the [edit chassis] 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, 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, 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.

Table 24: show chassis ethernet-switch Output Fields (*continued*)

Field Name	Field Description
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 <i>FPCn</i> (statistics output only)	
TX Packets 64 Octets	(MX2010 and MX2020 routers) Number of packets of size 64 octets transmitted.
TX Packets 65 - 127 Octets	(MX2010 and MX2020 routers) Number of packets of size 65 through 127 octets transmitted.
TX Packets 128 - 255 Octets	(MX2010 and MX2020 routers) Number of packets of size 128 through 255 octets transmitted.
TX Packets 256 - 511 Octets	(MX2010 and MX2020 routers) Number of packets of size 256 through 511 octets transmitted.
TX Packets 512 - 1023 Octets	(MX2010 and MX2020 routers) Number of packets of size 512 through 1023 octets transmitted.
TX Packets 1024 - 1518 Octets	(MX2010 and MX2020 routers) Number of packets of size 1024 through 1518 octets transmitted.
TX Packets 1519 - 2047 Octets	(MX2010 and MX2020 routers) Number of packets of size 1519 through 2047 octets transmitted.
TX Packets 2048 - 4095 Octets	(MX2010 and MX2020 routers) Number of packets of size 2048 through 4095 octets transmitted.
TX Packets 4096 - 9216 Octets	(MX2010 and MX2020 routers) Number of packets of size 4096 through 9216 octets transmitted.
TX 1519 - 1522 Good Vlan frms	(MX2010 and MX2020 routers) Number of transmitted frames of size 1519 through 1522 octets that are good VLAN frames.
TX Octets	Number of octets sent.
TX Unicast packets	Number of unicast packets sent.
TX Multicast packets	Number of multicast packets sent.
TX Broadcast packets	Number of broadcast packets sent.
TX Single Collision frames	(MX2010 and MX2020 routers) Number of packets sent after one collision.
TX Mult. Collision frames	(MX2010 and MX2020 routers) Number of packets sent after multiple collisions.

Table 24: show chassis ethernet-switch Output Fields (*continued*)

Field Name	Field Description
TX Late collisions	Number of packets aborted during sending because of collisions after 64 bytes.
TX Excessive collisions	Number of packets not sent because of too many collisions.
TX Dropped packets	Number of transmitted packets that were dropped.
TX PAUSEMAC Ctrl Frames	Number of Media Access Control (MAC) frames containing PAUSE commands that were sent.
TX Oversize Packets	Number of oversize packets that were sent.
TX FCS Error Counter	Number of packets discarded because of frame check sequence errors.
TX Fragment Counter	Number of fragmented packets sent.
TX Byte Counter	Number of bytes sent.
TX Packet OK Counter	Number of viable packets sent.
TX Pause Packet Counter	Number of PAUSE packets sent.
RX Packets 64 Octets	(MX2010 and MX2020 routers) Number of packets of size 64 octets received.
RX Packets 65 - 127 Octets	(MX2010 and MX2020 routers) Number of packets of size 65 through 127 octets received.
RX Packets 128 - 255 Octets	(MX2010 and MX2020 routers) Number of packets of size 128 through 255 octets received.
RX Packets 256 - 511 Octets	(MX2010 and MX2020 routers) Number of packets of size 256 through 511 octets received.
RX Packets 512 - 1023 Octets	(MX2010 and MX2020 routers) Number of packets of size 512 through 1023 octets received.
RX Packets 1024 - 1518 Octets	(MX2010 and MX2020 routers) Number of packets of size 1024 through 1518 octets received.
RX Packets 1519 - 2047 Octets	(MX2010 and MX2020 routers) Number of packets of size 1519 through 2047 octets received.
RX Packets 2048 - 4095 Octets	(MX2010 and MX2020 routers) Number of packets of size 2048 through 4095 octets received.
RX Packets 4096 - 9216 Octets	(MX2010 and MX2020 routers) Number of packets of size 4096 through 9216 octets received.

Table 24: show chassis ethernet-switch Output Fields (*continued*)

Field Name	Field Description
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.
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
(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

```
user@host > show chassis ethernet-switch statistics
Displaying port statistics for switch 0
Statistics for port 0 connected to device FPC0:
```

statistics (MX2010 Router)

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 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	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 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	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 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	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 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 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 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              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

```
user@host > show chassis ethernet-switch statistics
Displaying port statistics for switch 0
Statistics for port 0 connected to device FPC0:
```


statistics (MX2020 Router)

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 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	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 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	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 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	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 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          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 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          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 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              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 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                          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 (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**

```
user@host> show chassis ethernet-switch errors
sfc0-re0:
```

(TX Matrix Plus
Router)

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

user@host> show chassis ethernet-switch errors switch sfc
sfc0-re0:

errors (TX Matrix Plus Router)

```
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**

```
user@host> show chassis ethernet-switch statistics
sfc0-re0:
```

statistics (TX Matrix Plus Router)

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 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 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 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           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

```
user@host> show chassis ethernet-switch
Displaying summary for switch 0
Link is good on XE port 2 connected to device: SPMB
```

(PTX5000 Packet
Transport Switch)

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**

```
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
```

Packet Transport
Switch)

```

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
Switch)**

```
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 degraded-fabric-reachability

Syntax	show chassis fabric degraded-fabric-reachability
Release Information	Command introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Switches.
Description	Display the current state of reachability between the Packet Forwarding Engines in the system.
Additional Information	
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show chassis fabric errors on page 385 • show chassis fabric reachability • degraded on page 107
List of Sample Output	show chassis fabric degraded-fabric-reachability on page 384
Output Fields	Table 25 on page 383 lists the output fields for the show chassis fabric degraded-fabric-reachability command. Output fields are listed in the approximate order in which they appear.

Table 25: show chassis fabric degraded-fabric-reachability Output Fields

Field Name	Field Description
FPC	Display fabric reachability for the displayed FPC slot.
PFE	Display fabric reachability for the displayed PFE slot on a per SIB and plane basis.
SIBx_Plane y	Display the SIB (x) and plane (y) where link errors occurred.
Link errors FPC/PFEs	Display the list of FPC and PFE slots that are unreachable for the displayed SIB and plane due to link errors.

Sample Output

```
show chassis fabric degraded-fabric-reachability
user@host> show chassis fabric degraded-fabric-reachability
Degraded Fabric reachability Information:
FPC #0
  PFE #0
    SIB0_Plane 0
      Link errors FPC/PFEs 2/0 5/0 5/1 5/2 5/3
    SIB0_Plane 1
      Link errors FPC/PFEs 2/0 5/0
  PFE #1
    SIB0_Plane 0
      Link errors FPC/PFEs 2/0 5/0 5/1 5/2 5/3
    SIB0_Plane 1
      Link errors FPC/PFEs 2/0 5/0
```

show chassis fabric errors

Syntax	show chassis fabric errors <fpc <i>slot-number</i> lcc <i>number</i> > <sib (<i>slot</i> f13 <i>sib-slot</i> f2s <i>sib-slot/sib-f2s-slot-number</i> lcc <i>number</i>)>
Syntax (PTX Series Packet Transport Switches)	show chassis fabric errors (autoheal fpc <i>slot-number</i> sib <i>sib-slot</i>)
Release Information	Command introduced in Junos OS Release 10.0. Command introduced in Junos OS Release 12.1X48 for the PTX Series Packet Transport Switches. Command introduced in Junos OS Release 13.1 for the TX Matrix Plus routers with 3D SIBs.
Description	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**—(PTX Series Packet Transport Switches 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. (PTX5000 Packet Transport Switches only)—Replace ***slot-number*** with a value from 0 through 7.
- (TX Matrix Plus routers only)—Replace ***slot-number*** with a value from 0 through 31. This option has the following suboptions:
- **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 ***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
```

(TX Matrix Plus routers with 3D SIBs only)—Replace *slot-number* with a value from **0** through **63**. This option has the following suboption:

- **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 *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.

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 and TX Matrix Plus routers with 3D SIBs) *sib-slot*—Specify a value ranging from **0** through **4**.
- (PTX Series Packet Transport Switches) *sib-slot*—Specify a value ranging from **0** through **8**.
- **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**.
- **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**.
- **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 388](#)
- [show chassis fabric errors \(F2S SIB Errors on a TX Matrix Plus Router\) on page 388](#)
- [show chassis fabric errors \(SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router\) on page 388](#)
- [show chassis fabric errors \(FPC Errors Specific to an LCC Connected to a TX Matrix Plus Router\) on page 388](#)
- [show chassis fabric errors \(SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router with 3D SIBs\) on page 389](#)
- [show chassis fabric errors fpc or sib \(PTX Series Packet Transport Switches\) on page 389](#)
- [show chassis fabric errors autoheal \(PTX Series Packet Transport Switches\) on page 389](#)

Output Fields Table 26 on page 387 lists the output fields for the `show chassis fabric errors` command. Output fields are listed in the approximate order in which they appear.

Table 26: show chassis fabric errors Output Fields

Field Name	Field Description
Time	Time the error was logged. (PTX Series Packet Transport Switches only) For the autoheal 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 26: show chassis fabric errors Output Fields (*continued*)

Field Name	Field Description
Error log of first 100 errors	Indicates the autoheal action taken on the SIB. The following actions can occur: <ul style="list-style-type: none"> • Req—A SIB autoheal request was made on a faulty SIB. • Action—Autohealing (taking the SIB offline and then online) is initiated. • 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. • Set info—Setting information to force skipping autoheal on the SIB so that no further attempts to autoheal the faulty SIB are made. • 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.
fpc slot number	(PTX5000 Packet Transport Switch only)—Range is 0 through 7.
sib slot number	(PTX Series Packet Transport Switches only)—Range is 0 through 8.
lcc number	Not supported on PTX Series Packet Transport Switches.

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)

```
user@host> show chassis fabric errors fpc 5 lcc 0
```

Specific to an LCC
Connected to a TX
Matrix Plus Router)

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 Switches)

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
2012-01-06 15:34:33 PST           Link errs on PFE 0, FPC 0, Plane 2
```

show chassis fabric
errors autoheal (PTX
Series Packet
Transport Switches)

user@host> show chassis fabric errors autoheal

```
Time                               Error log of first 100 errors
2012-04-13 10:35:48 PDT           Req: sib 2
2012-04-13 10:35:53 PDT           Action: SIB 2 (autohealing)
2012-04-13 10:35:54 PDT           Req: sib 3
2012-04-13 10:35:57 PDT           Action: SIB 3 (autohealing)
2012-04-13 10:35:59 PDT           Req: sib 5
2012-04-13 10:35:59 PDT           Action: SIB 5 (autohealing)
2012-04-13 10:37:01 PDT           Req: sib 2
2012-04-13 10:37:02 PDT           Denied: Sib 2 (time less than user configured)
2012-04-13 10:37:02 PDT           Set info: SIB 2 (skip autoheal)
2012-04-13 10:37:05 PDT           Clear info: SIB 2
```

show chassis fabric fpcs

Syntax	show chassis fabric fpcs <lcc <i>number</i> >
Syntax (MX Series Routers)	show chassis fabric fpcs <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis fabric fpcs
Syntax (MX2020 3D Universal Edge Routers)	show chassis fabric fpcs
Syntax (T4000 Core Router)	show chassis fabric fpcs
Syntax (PTX Series Packet Transport Switches)	show chassis fabric fpcs <slot <i>fpc-slot</i> >
Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs)	show chassis fabric fpcs <lcc <i>number</i> >
Release Information	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 12.1 for PTX Series Packet Transport Switches. 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 13.1 for TX Matrix Plus Router with 3D SIBs.
Description	(M320, MX Series, and T Series routers, EX8200 switches, and PTX Series Packet Transport Switches only) 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 T1600 routers connected to the TX Matrix Plus router. On a TX Matrix Plus router with 3D SIBs, display the switching fabric link states for the FPCs in all T1600 or T4000 routers connected to the TX Matrix Plus router with 3D SIBs. 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, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs 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 T1600 router (line-card chassis) that is connected to the TX Matrix Plus router. On a TX Matrix Plus router with 3D SIBs, display the switch fabric link state for the FPCs in the specified T1600 or T4000 router (line-card chassis) that is connected to the TX Matrix Plus router with 3D SIB. 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 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

List of Sample Output

- [show chassis fabric fpcs \(M320 Router\) on page 393](#)
- [show chassis fabric fpcs \(MX240 Router\) on page 393](#)
- [show chassis fabric fpcs \(MX480 Router\) on page 393](#)
- [show chassis fabric fpcs \(MX960 Router\) on page 394](#)
- [show chassis fabric fpcs \(MX240 with AS MLC Modular Carrier Card\) on page 396](#)
- [show chassis fabric fpcs \(MX480 with AS MLC Modular Carrier Card\) on page 396](#)
- [show chassis fabric fpcs \(MX960 with AS MLC Modular Carrier Card\) on page 397](#)
- [show chassis fabric fpcs \(MX2010 Router\) on page 399](#)
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- [show chassis fabric fpcs lcc \(TX Matrix Router with 3D SIBs\) on page 410](#)
- [show chassis fabric fpcs \(T1600 Router\) on page 411](#)
- [show chassis fabric fpcs \(T4000 Core Router\) on page 412](#)
- [show chassis fabric fpcs \(TX Matrix Plus Router\) on page 413](#)
- [show chassis fabric fpcs lcc \(TX Matrix Plus Router\) on page 421](#)

[show chassis fabric fpcs \(EX8200 Switch\) on page 421](#)

[show chassis fabric fpcs \(PTX Series Packet Transport Switches\) on page 422](#)

Output Fields Table 27 on page 392 lists the output fields for the **show chassis fabric fpcs** command. Output fields are listed in the approximate order in which they appear.

Table 27: show chassis fabric fpcs Output Fields

Field Name	Field Description
Fabric management FPC state	<p>Switching fabric link (link from SIB to FPC) state for each FPC:</p> <ul style="list-style-type: none"> • Unused—FPC is not present. (On MX240 and MX480 routers with AS- MLC modular carrier card only) the fabric plane from the pair that share physical links (1 and 5, and 3 and 7) is inactive. • Destination error on PFEs <i>list of PFE numbers</i>—Destination errors to the listed Packet Forwarding Engines. Indicates that the link is not carrying traffic to the listed Packet Forwarding Engines. <p>NOTE: In Junos OS Release 9.6 and later, the list of Packet Forwarding Engines with destination errors is displayed in the output.</p> <p>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.</p> <ul style="list-style-type: none"> • Links ok—Link between the spare SIB and FPC is eligible to carry traffic. • Link error—Link between the SIB and FPC has CRC errors. However, the link is still eligible to carry traffic. • Plane disabled—Fabric plane has been disabled for the following reasons: <ul style="list-style-type: none"> • Destination errors have exceeded the thresholds. • Run-time link errors have exceeded the thresholds. • Initialization time link errors detected, and link training was unsuccessful. • Plane Disabled, Links Error (PTX Series Packet Transport Switches only)—The plane is disabled because of link errors detected at the FPC RX. • Plane Disabled, Links Down (PTX Series Packet Transport Switches only)—The plane is disabled because of link errors detected at the SIB RX. • Plane enabled—Link between the active SIB and FPC is eligible to carry traffic. <p>NOTE: 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.</p> <ul style="list-style-type: none"> • Plane Enabled, Links OK (PTX Series Packet Transport Switches only)—The FPC CCL RX link is eligible to carry traffic.

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 (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**

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
```

MLC Modular Carrier Card)

```

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 (MX960 with AS**

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
```

MLC Modular Carrier Card

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 (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
        8   9  10  11  12  13  14  15  16  17  18  19  20  21
        0   1   2   3   4   5   6   7
    SIB #4
      Destination error on PFes
        8   9  10  11  12  13  14  15  16  17  18  19  20  21
        0   1   2   3   4   5   6   7
...

```

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
  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
        0   1   2   3   4   5   6   7
    SIB #4
      Destination error on PFes
        8   9  10  11  12  13  14  15  16  17  18  19  20  21
        0   1   2   3   4   5   6   7
...
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
lcc0-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
        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
        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
    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

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

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
```

lcc3-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
      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
```

show chassis fabric
fpcs lcc (TX Matrix
Plus Router)

```

SIB #1
    Links ok
SIB #2
    Links ok
SIB #3
    Links ok
SIB #4
    Links ok

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
        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 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

```

user@host> show chassis fabric fpcs
Fabric management FPC state

```

```
fpcs (EX8200 Switch)  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    user@host> show chassis fabric fpcs slot 0
fpcs (PTX Series)     Fabric management FPC state:
                       FPC #0
```


**Packet Transport
Switches)**

```
PFE #0
SIB0_Fcore0 (plane 0) Plane Enabled, Links OK
SIB0_Fcore1 (plane 1) Plane Enabled, Links OK
SIB1_Fcore0 (plane 2) Plane Disabled, Links Down
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
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 plane-location

Syntax	show chassis fabric plane-location
Syntax (MX Series Routers)	show chassis fabric plane-location <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis fabric plane-location
Syntax (MX2020 3D Universal Edge Routers)	show chassis fabric plane-location
Syntax (TX Matrix Plus and TX Matrix Plus with 3D SIBs)	show chassis fabric plane-location
Release Information	<p>Command introduced in Junos OS Release 8.0.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.</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 13.1 for TX Matrix Plus Routers with 3D SIBs.</p>
Description	<p>(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 EX Series Switches Hardware and CLI Terminology Mapping.</p> <p>(TX Matrix Plus routers and TX Matrix Plus routers with 3D SIBs only) Display the SIB location of each fabric plane.</p> <p>(PTX Series Packet Transport Switches only) Display the fabric plane location of each SIB.</p> <p>(MX2010 and MX2020 Routers only) Display the fabric plane location of each Switch Fabric Board (SFB).</p>
Options	<p>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.</p> <p>local—(MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the local Virtual Chassis member.</p> <p>member <i>member-id</i>—(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 <i>member-id</i> with a value of 0 or 1.</p>

Required Privilege Level view

List of Sample Output [show chassis fabric plane-location \(M120 Router\) on page 426](#)
[show chassis fabric plane-location \(MX240 and MX480 Routers\) on page 426](#)
[show chassis fabric plane-location \(MX960 Router\) on page 427](#)
[show chassis fabric plane-location \(MX2010 Router\) on page 427](#)
[show chassis fabric plane-location \(MX2020 Router\) on page 427](#)
[show chassis fabric plane-location \(TX Matrix Plus Router\) on page 427](#)
[show chassis fabric plane-location \(TX Matrix Plus Router with 3D SIBs\) on page 427](#)
[show chassis fabric plane-location \(EX8200 Switch\) on page 428](#)
[show chassis fabric plane-location \(PTX Series Packet Transport Switches\) on page 428](#)

Output Fields [Table 28 on page 425](#) 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 28: show chassis fabric plane-location Output Fields

Field Name	Field Description
Plane <i>n</i>	Plane number. (PTX Series Packet Transport Switches only) Plane numbers associated with the SIB. (MX2010 and MX2020 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.
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.
LCC SIB	(TX Matrix Plus routers with 3D SIBs only) Line-card chassis (LCC) SIB slot number.
SIB	(PTX Series Packet Transport Switches only) SIB number.
Switch Fabric Board <i>n</i>	(MX2010 and MX2020 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**

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0                               Control Board 0
```

(MX240 and MX480 Routers)

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
(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 (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

```
user@host> show chassis fabric plane-location
sfc0-re0
-----
```

**Matrix Plus Router with
3D SIBs)**

-----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 (PTX
Series Packet
Transport Switches)**

```

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 summary

Syntax	show chassis fabric summary
Release Information	<p>Command introduced in Junos OS Release 8.4.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Switches.</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>
Description	(MX Series routers and EX8200 switches only) Display the state of all fabric planes and the elapsed uptime.
Options	This command has no options.
Required Privilege Level	view
List of Sample Output	<p>show chassis fabric summary (MX240 Router) on page 432</p> <p>show chassis fabric summary (MX480 Router) on page 432</p> <p>show chassis fabric summary (MX960 Router) on page 432</p> <p>show chassis fabric summary (MX2010 Router) on page 432</p> <p>show chassis fabric summary (MX2020 Router) on page 432</p> <p>show chassis fabric summary (EX8200 Switch) on page 433</p> <p>show chassis fabric summary (PTX Series Packet Transport Switch) on page 433</p>
Output Fields	<p>Table 29 on page 429 lists the output fields for the show chassis fabric summary command. Output fields are listed in the approximate order in which they appear.</p>

Table 29: show chassis fabric summary Output Fields

Field Name	Field Description
Plane	(MX Series, MX2020 and MX2010 Routers only) Plane number.

Table 29: show chassis fabric summary Output Fields (*continued*)

Field Name	Field Description
State	<p>(MX Series) State of the SIB or FPC:</p> <ul style="list-style-type: none"> • Online—Switch Interface Board (SIB) is operational and running. <p>NOTE: On the Enhanced MX SCB with Trio MPC, a maximum of 4 planes are operational and running. On all the other SCBs with Trio MPC, all the planes are operational and running.</p> <ul style="list-style-type: none"> • Empty—SIB is powered down. • Check—SIB is in the Check state because of the following reasons: <ul style="list-style-type: none"> • SIB is not inserted properly. • Some 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. • Some 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"> • Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The show chassis fabric fpcs command shows Plane disabled as status for this link. • Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The show chassis fabric fpcs command shows Link error as the status for this link. <p>NOTE: The Check state does not apply to PTX Series Packet Transport Switches because there are no SIBs in the Check state.</p> <p>For information about link and destination errors, issue the show chassis fabric fpcs commands.</p> <ul style="list-style-type: none"> • Spare—SIB is redundant and will move to active state if one of the working SIBs fails. <p>NOTE: Spare does not apply to PTX Series Packet Transport Switches because there are no spare SIBs in the device.</p> <p>(MX2010 and MX2020 Routers) State of the SFB.</p> <ul style="list-style-type: none"> • Online—Switch Fabric Board (SFB) is operational and running. • Offline—Switch Fabric Board (SFB) is powered down. • Check—Switch Fabric Board (SFB) is in the check state.
Errors	<p>(PTX Series only) Indicates whether there is any error on the SIB.</p> <ul style="list-style-type: none"> • None—No errors • Link Errors—Fabric link errors were found on the SIB RX link. • Cell drops—Fabric cell drops were found on the SIB ASIC. • Link, Cell drops—Both Link errors and cell drops were detected on at least one of the FPC's fabric links. <p>NOTE: The Errors column is empty only when the FPC or SIB is offline.</p>

Table 29: show chassis fabric summary Output Fields (*continued*)

Field Name	Field Description
Uptime	(MX Series, MX2010 and MX2020 Routers) Elapsed time the plane has been online.

Sample Output

show chassis fabric summary (MX240 Router)

```
user@host> show chassis fabric summary
Plane  State  Uptime
0      Online 23 hours, 26 minutes, 54 seconds
1      Online 23 hours, 26 minutes, 54 seconds
2      Check 18 hours, 33 minutes, 42 seconds
3      Online 23 hours, 26 minutes, 54 seconds
4      Spare 23 hours, 26 minutes, 54 seconds
5      Spare 23 hours, 26 minutes, 54 seconds
6      Spare 23 hours, 26 minutes, 54 seconds
7      Spare 23 hours, 26 minutes, 54 seconds
```

show chassis fabric summary (MX480 Router)

```
user@host> show chassis fabric summary
Plane  State  Uptime
0      Online 8 hours, 45 minutes, 29 seconds
1      Online 8 hours, 45 minutes, 28 seconds
2      Online 8 hours, 45 minutes, 28 seconds
3      Online 8 hours, 45 minutes, 28 seconds
4      Spare 8 hours, 45 minutes, 28 seconds
5      Spare 8 hours, 45 minutes, 28 seconds
6      Spare 8 hours, 45 minutes, 28 seconds
7      Check 6 hours, 10 minutes, 12 seconds
```

show chassis fabric summary (MX960 Router)

```
user@host> show chassis fabric summary
Plane  State  Uptime
0      Online 3 hours, 7 minutes, 9 seconds
1      Online 3 hours, 7 minutes, 4 seconds
2      Online 3 hours, 6 minutes, 59 seconds
3      Online 3 hours, 6 minutes, 54 seconds
4      Empty
5      Empty
```

show chassis fabric summary (MX2010 Router)

```
user@host> show chassis fabric summary
Plane  State  Uptime
0      Online 1 day, 13 hours, 20 minutes, 10 seconds
1      Online 1 day, 13 hours, 19 minutes, 59 seconds
2      Online 1 day, 13 hours, 19 minutes, 49 seconds
3      Offline
4      Online 1 day, 13 hours, 19 minutes, 28 seconds
5      Check 1 day, 13 hours, 19 minutes, 17 seconds
6      Online 1 day, 13 hours, 19 minutes, 6 seconds
7      Online 1 hour, 43 minutes, 5 seconds
```

show chassis fabric summary (MX2020 Router)

```
user@host> show chassis fabric summary
Plane  State  Uptime
0      Online 8 hours, 24 minutes, 1 second
1      Online 8 hours, 47 minutes, 54 seconds
2      Online 8 hours, 47 minutes, 44 seconds
3      Online 8 hours, 47 minutes, 33 seconds
4      Online 8 hours, 47 minutes, 22 seconds
5      Online 8 hours, 47 minutes, 12 seconds
6      Online 8 hours, 47 minutes, 1 second
7      Online 8 hours, 46 minutes, 50 seconds
```

show chassis fabric summary (EX8200 Switch)

user@host> show chassis fabric summary

Plane	State	Uptime
0	Online	12 days, 50 minutes, 54 seconds
1	Online	12 days, 50 minutes, 53 seconds
2	Online	12 days, 50 minutes, 53 seconds
3	Online	12 days, 50 minutes, 52 seconds
4	Spare	12 days, 50 minutes, 49 seconds
5	Spare	12 days, 50 minutes, 47 seconds
6	Spare	12 days, 50 minutes, 47 seconds
7	Spare	12 days, 50 minutes, 46 seconds
8	Online	12 days, 50 minutes, 52 seconds
9	Online	12 days, 50 minutes, 50 seconds
10	Online	12 days, 50 minutes, 50 seconds
11	Online	12 days, 50 minutes, 49 seconds

show chassis fabric summary (PTX Series Packet Transport Switch)

user@host> show chassis fabric summary

FRU	State	Errors
SIB0	Online	None
SIB1	Online	Link Errors
SIB2	Online	None
SIB3	Online	Cell drops
SIB4	Offline	
SIB5	Online	None
SIB6	Online	Link, Cell drops
SIB7	Online	None
SIB8	Online	Link, Cell drops
FPC0	Online	None
FPC1	Online	Link Errors
FPC2	Online	None
FPC3	Offline	
FPC4	Online	None
FPC5	Online	None
FPC6	Empty	
FPC7	Empty	

show chassis fabric topology

Syntax	show chassis fabric topology <fcc <i>number</i> scc> <sib-slot>
Syntax (TX Matrix Router)	show chassis fabric topology <fcc <i>number</i> scc> <sib-slot>
Syntax (TX Matrix Plus Router with 3D SIBs)	show chassis fabric topology <fcc <i>number</i> sfc <i>number</i> > <sib-slot>
Syntax (TX Matrix Plus Router)	show chassis fabric topology <fcc <i>number</i> sfc <i>number</i> > <sib-slot>
Syntax (T4000 Core Router)	show chassis fabric topology <sib-slot>
Syntax (PTX Series Packet Transport Switches)	show chassis fabric topology
Release Information	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 12.1 for PTX Series Packet Transport Switches. Command introduced in Junos OS Release 13.1 for TX Matrix Plus router with 3D SIBs.
Description	(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 T1600 routers. (TX Matrix Plus routers with 3D SIBs only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router with 3D SIBs and the T1600 or T4000 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. (PTX Series Packet Transport Switches only) Display the input-output link topology.
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 T1600 routers.

(TX Matrix Plus routers with 3D SIB only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router with 3D SIBs and the T1600 or T4000 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.

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 T1600 router (line-card chassis) that is connected to the TX Matrix Plus router.

(TX Matrix Plus routers with 3D SIBs only) (Optional) Display the fabric topology state for a specified T1600 or T4000 LCC that is connected to a TX Matrix router with 3D SIBs.

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 and TX Matrix Plus routers with 3D SIBs 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 and TX Matrix Plus router with 3D SIBs, 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 439](#)
[show chassis fabric topology lcc on page 441](#)
[show chassis fabric topology \(TX Matrix Plus Router\) on page 442](#)
[show chassis fabric topology sfc \(TX Matrix Plus Router\) on page 443](#)

[show chassis fabric topology lcc \(TX Matrix Plus Router\) on page 444](#)

[show chassis fabric topology \(T4000 Core Router\) on page 445](#)

[show chassis fabric topology lcc \(TX Matrix Plus Router with 3D SIBs\) on page 446](#)

[show chassis fabric topology sfc \(TX Matrix Plus Router with 3D SIBs\) on page 448](#)

[show chassis fabric topology \(PTX Series Packet Transport Switches\) on page 453](#)

Output Fields Table 30 on page 436 lists the output fields for the **show chassis fabric topology** command. Output fields are listed in the approximate order in which they appear.

Table 30: show chassis fabric topology Output Fields

Field Name	Field Description
in-links	Fabric topology for receive side links.
out-links	Fabric topology for transmit side links.
state	<p>State of the fabric link:</p> <ul style="list-style-type: none"> • RESET—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. • UP—Link between the SIB and the FPC/DCP is up and running. • DOWN—Link between the SIB and the FPC/DCP is powered down. • FAULT—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"> • On-board F-chip is not operational. • Fiber-optic connector faults. • FPC connector faults. • SIB midplane connector faults. <p>NOTE: The following state descriptions are applicable only to PTX Series Packet Transport Switches.</p> <ul style="list-style-type: none"> • OK—The link between the SIB and the FPC is operational. • Down—The link between the SIB and the FPC is powered down. • Error—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"> • FPC midplane connector failure. • SIB midplane connector failure. • CCL link CRC error.

Table 30: show chassis fabric topology Output Fields (*continued*)

Out-Links: and In-Links (TX Matrix Plus router only)	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:
	<hr/> <ul style="list-style-type: none"> • VCSEL Status—Optical (VCSEL channel) link status for the corresponding electrical (HSL2) link. The states include: <ul style="list-style-type: none"> • OK—Optical signal power is good. • Error—Internal error. • LOS—Loss of Signal detected. • High Cur—The Tx Bias-current is higher than threshold on this channel. This is applicable only to Tx Channels. • Low Cur—The Tx Bias-current is lower than threshold on this channel. This is applicable only to Tx Channels. • HSL2 Channel—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. <hr/> <ul style="list-style-type: none"> • HSL2 Status —The status of the HSL2 Channel. Includes the following states: <ul style="list-style-type: none"> • Up—Channel is up. • Down—Channel is down. • Reset—Channel has been reset. • Fault—Channel has faults.
	The following is a sample output with description of the fields displayed in the output for Out-Links:
	<pre> Out-Links: ===== SF_30_13_FB_A(21,09) -> FPC7_B_SG(3,3,6)_FB_A(18,09) OK 203 Up </pre> <hr/>

Table 30: 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 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.

Sample Output

show chassis fabric
topology scc (TX
Matrix Router)

```
user@host> show chassis fabric topology scc
scc-re1:
```

```
-----
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
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

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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      -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

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show chassis fabric
topology lcc

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lcc0-re0:

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      fchip (mode)
in-links      state      out-links      state
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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

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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

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show chassis fabric topology (TX Matrix Plus Router)

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user@host> show chassis fabric topology
sfc0-re0:

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F13_SIB0

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Out-Links:

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SFC0_F13_SIB00	-> 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

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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
...

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show chassis fabric
topology sfc (TX
Matrix Plus Router)

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user@host> show chassis fabric topology sfc 0
sfc0-re0:

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F13_SIB0
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Out-Links:
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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

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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
...

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show chassis fabric
topology lcc (TX Matrix
Plus Router)

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user@host> show chassis fabric topology lcc 0
lcc0-re0:
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SIB0

=====

Out-Links:

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LCC00_ST_SIB_L00	-> SFC0_F13_SIB_00	VCSEL Status	HSL2 Channel	HSL2 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

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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
...

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show chassis fabric
topology (T4000 Core
Router)

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user@host> show chassis fabric topology 0
fchip (mode)

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In-links	State	Out-links	State
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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)

user@host> show chassis fabric topology lcc 6
lcc6-re0:

Plus Router with 3D
SIBs)

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

user@host> show chassis fabric topology sfc 0
sfc0-re0:

Matrix Plus Router with
3D SIBs)

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

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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

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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

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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

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**show chassis fabric
topology (PTX Series)**

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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#)

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Packet Transport Switches)

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
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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 fan

Syntax	show chassis fan
Syntax (ACX4000 Series Router)	show chassis fan
Syntax (MX Series Router)	show chassis fan <all-members> <local> <member <i>member-id</i> >
Syntax (T Series Routers)	show chassis fan
Syntax (MX2010 3D Universal Edge Router)	show chassis fan
Syntax (MX2020 3D Universal Edge Router)	show chassis fan
Syntax (QFabric Systems)	show chassis fan <interconnect-device <i>name</i> >
Syntax (TX Matrix Router)	show chassis fan <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Router and TX Matrix Plus router with 3D SIBs)	show chassis fan <lcc <i>number</i> sfc <i>number</i> >
Release Information	<p>Command introduced in Junos OS Release 10.0 on MX Series 3D Universal Edge Routers, M120 routers, and M320 routers, T320 routers, T640 routers, T1600 routers, TX Matrix Routers, and TX Matrix Plus routers.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 11.4 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.3 for PTX5000 Packet Transport Switches.</p> <p>Command introduced in Junos OS Release 12.1 for T4000 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 12.3 for ACX Series Routers.</p> <p>Command introduced in Junos OS Release 13.1 for TX Matrix Plus router with 3D SIBs.</p>
Description	(T Series routers, TX Matrix routers, TX Matrix Plus router, TX Matrix Plus router with 3D SIBs, M120 routers, M320 routers, MX2010 routers, MX2020 routers, MX Series 3D Universal Edge Routers, QFX3008-I Interconnect devices, EX Series switches, and PTX Series Packet Transport Switches only) Show information about the fan tray and fans.
Options	all-members —(MX Series routers only) (Optional) Display information about the fan tray and fans for all members of the Virtual Chassis configuration.

local—(MX Series routers only) (Optional) Display information about the fan tray and fans for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display information about the fan tray and fans for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* variable with a value 0 or 1.

interconnect-device *name*—(QFX3000-G QFabric systems only) (Optional) Display information about the fan tray and fans for the specified QFX3008-I Interconnect device.

lcc *number*—(TX Matrix, TX Matrix Plus routers and TX Matrix Plus router with 3D SIBs only) (Optional) On a TX Matrix router, display information about the fan tray and fans for the specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display information about the fan tray and fans for the specified T1600 router (line-card chassis) that is connected to a TX Matrix Plus router. On TX Matrix Plus router with 3D SIBs, display information about the fan tray and fans for the specified T1600 router and T4000 router that is connected to a TX Matrix Plus router with 3D SIBs.

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 router only) (Optional) Display information about the fan tray and fans for the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router and TX Matrix Plus router with 3D SIBs only) (Optional) Display information about the fan tray and fans for the TX Matrix Plus router or TX Matrix Plus router with 3D SIBs (switch-fabric chassis) respectively. Replace *number* variable with 0.

Required Privilege Level

view

List of Sample Output

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[show chassis fan \(QFabric Systems\) on page 460](#)
[show chassis fan \(EX Series Switches\) on page 461](#)
[show chassis fan \(T320 Router\) on page 462](#)
[show chassis fan \(T640 Router\) on page 462](#)
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[show chassis fan \(TX Matrix Router\) on page 463](#)

[show chassis fan \(TX Matrix Plus Router\) on page 464](#)
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[show chassis fan \(PTX5000 Packet Transport Switch\) on page 467](#)
[show chassis fan \(MX2010 Router\) on page 468](#)
[show chassis fan \(MX2020 Router\) on page 468](#)
[show chassis fan \(ACX4000 Router\) on page 468](#)

Output Fields Table 31 on page 459 lists the output fields for the **show chassis fan** command. Output fields are listed in the approximate order in which they appear.

Table 31: show chassis fan Output Fields

Field Name	Field Description
Item	Fan item identifier.
Status	Status of the fan: <ul style="list-style-type: none"> • OK-Fan is running properly and within the normal range. • Check-Fan is in Check state because of some fault or alarm condition.
RPM	(T Series routers, TX Matrix routers, TX Matrix Plus router, TX Matrix Plus router with 3D SIBs, MX Series 3D Universal Edge Routers, QFX3108 Interconnect devices, and EX Series switches only) Fan speed in revolutions per minute (RPM).
% RPM	(MX2010 routers, MX2020 routers, and PTX Series Packet Transport Switches only) Percentage of the fan speed being used.
Measurement	(T Series routers, TX Matrix routers, TX Matrix Plus router, TX Matrix Plus router with 3D SIBs, MX Series 3D Universal Edge Routers, QFX3108 Interconnect devices, and EX Series switches only) Fan speed status based on different chassis cooling requirements: <ul style="list-style-type: none"> • Spinning at high speed • Spinning at intermediate speed • Spinning at normal speed • Spinning at low speed (except EX Series switches) (MX2010 routers, MX2020 routers, and PTX Series Packet Transport Switches only) Fan speed in revolutions per minute (RPM) for each fan in the fan tray.

Sample Output

show chassis fan

user@host> **show chassis fan**

Item	Status	RPM	Measurement
Top Tray Fan 1	OK	3790	Spinning at normal speed
Top Tray Fan 2	OK	3769	Spinning at normal speed
Top Tray Fan 3	OK	3769	Spinning at normal speed
Top Tray Fan 4	OK	3790	Spinning at normal speed
Top Tray Fan 5	OK	3790	Spinning at normal speed
Top Tray Fan 6	OK	3769	Spinning at normal speed
Top Tray Fan 7	OK	3790	Spinning at normal speed
Top Tray Fan 8	OK	3769	Spinning at normal speed
Top Tray Fan 9	OK	3769	Spinning at normal speed
Top Tray Fan 10	OK	3790	Spinning at normal speed
Top Tray Fan 11	OK	3790	Spinning at normal speed
Top Tray Fan 12	OK	3769	Spinning at normal speed
Bottom Tray Fan 1	OK	2880	Spinning at normal speed
Bottom Tray Fan 2	OK	2912	Spinning at normal speed
Bottom Tray Fan 3	OK	2928	Spinning at normal speed
Bottom Tray Fan 4	OK	2896	Spinning at normal speed
Bottom Tray Fan 5	OK	2896	Spinning at normal speed
Bottom Tray Fan 6	OK	2928	Spinning at normal speed

show chassis fan
(QFabric Systems)

user@host> **show chassis fan interconnect-device *interconnect1***

Item	Status	RPM	Measurement
TFT 0 Fan 0	OK	2849	Spinning at normal speed
TFT 0 Fan 1	OK	2821	Spinning at normal speed
TFT 0 Fan 2	OK	2735	Spinning at normal speed
TFT 0 Fan 3	OK	2815	Spinning at normal speed
TFT 0 Fan 4	OK	2828	Spinning at normal speed
TFT 0 Fan 5	OK	2863	Spinning at normal speed
BFT 1 Fan 0	OK	2941	Spinning at normal speed
BFT 1 Fan 1	OK	3008	Spinning at normal speed
BFT 1 Fan 2	OK	3073	Spinning at normal speed
BFT 1 Fan 3	OK	2925	Spinning at normal speed
BFT 1 Fan 4	OK	2863	Spinning at normal speed
BFT 1 Fan 5	OK	2933	Spinning at normal speed
SFT 0 Fan 0 Rotor 0	OK	15472	Spinning at normal speed
SFT 0 Fan 0 Rotor 1	OK	14477	Spinning at normal speed
SFT 0 Fan 1 Rotor 0	OK	15561	Spinning at normal speed
SFT 0 Fan 1 Rotor 1	OK	14210	Spinning at normal speed
SFT 0 Fan 2 Rotor 0	OK	16167	Spinning at normal speed
SFT 0 Fan 2 Rotor 1	OK	14248	Spinning at normal speed
SFT 0 Fan 3 Rotor 0	OK	16463	Spinning at normal speed
SFT 0 Fan 3 Rotor 1	OK	14099	Spinning at normal speed
SFT 1 Fan 0 Rotor 0	OK	15083	Spinning at normal speed
SFT 1 Fan 0 Rotor 1	OK	13533	Spinning at normal speed
SFT 1 Fan 1 Rotor 0	OK	16071	Spinning at normal speed
SFT 1 Fan 1 Rotor 1	OK	14400	Spinning at normal speed
SFT 1 Fan 2 Rotor 0	OK	15517	Spinning at normal speed
SFT 1 Fan 2 Rotor 1	OK	14210	Spinning at normal speed
SFT 1 Fan 3 Rotor 0	OK	16413	Spinning at normal speed
SFT 1 Fan 3 Rotor 1	OK	14400	Spinning at normal speed
SFT 2 Fan 0 Rotor 0	OK	15297	Spinning at normal speed
SFT 2 Fan 0 Rotor 1	OK	14634	Spinning at normal speed
SFT 2 Fan 1 Rotor 0	OK	15561	Spinning at normal speed
SFT 2 Fan 1 Rotor 1	OK	14285	Spinning at normal speed

```

SFT 2 Fan 2 Rotor 0      OK      15835  Spinning at normal speed
SFT 2 Fan 2 Rotor 1      OK      14400  Spinning at normal speed
SFT 2 Fan 3 Rotor 0      OK      15789  Spinning at normal speed
SFT 2 Fan 3 Rotor 1      OK      14323  Spinning at normal speed
SFT 3 Fan 0 Rotor 0      OK      16314  Spinning at normal speed
SFT 3 Fan 0 Rotor 1      OK      14876  Spinning at normal speed
SFT 3 Fan 1 Rotor 0      OK      15835  Spinning at normal speed
SFT 3 Fan 1 Rotor 1      OK      14323  Spinning at normal speed
SFT 3 Fan 2 Rotor 0      OK      16265  Spinning at normal speed
SFT 3 Fan 2 Rotor 1      OK      14594  Spinning at normal speed
SFT 3 Fan 3 Rotor 0      OK      16071  Spinning at normal speed
SFT 3 Fan 3 Rotor 1      OK      14323  Spinning at normal speed
SFT 4 Fan 0 Rotor 0      OK      15652  Spinning at normal speed
SFT 4 Fan 0 Rotor 1      OK      14438  Spinning at normal speed
SFT 4 Fan 1 Rotor 0      OK      16167  Spinning at normal speed
SFT 4 Fan 1 Rotor 1      OK      14555  Spinning at normal speed
SFT 4 Fan 2 Rotor 0      OK      16023  Spinning at normal speed
SFT 4 Fan 2 Rotor 1      OK      14361  Spinning at normal speed
SFT 4 Fan 3 Rotor 0      OK      16216  Spinning at normal speed
SFT 4 Fan 3 Rotor 1      OK      14438  Spinning at normal speed
SFT 5 Fan 0 Rotor 0      OK      15297  Spinning at normal speed
SFT 5 Fan 0 Rotor 1      OK      14173  Spinning at normal speed
SFT 5 Fan 1 Rotor 0      OK      15472  Spinning at normal speed
SFT 5 Fan 1 Rotor 1      OK      13846  Spinning at normal speed
SFT 5 Fan 2 Rotor 0      OK      15340  Spinning at normal speed
SFT 5 Fan 2 Rotor 1      OK      13917  Spinning at normal speed
SFT 5 Fan 3 Rotor 0      OK      15835  Spinning at normal speed
SFT 5 Fan 3 Rotor 1      OK      13917  Spinning at normal speed
SFT 6 Fan 0 Rotor 0      OK      15743  Spinning at normal speed
SFT 6 Fan 0 Rotor 1      OK      14594  Spinning at normal speed
SFT 6 Fan 1 Rotor 0      OK      16167  Spinning at normal speed
SFT 6 Fan 1 Rotor 1      OK      14634  Spinning at normal speed
SFT 6 Fan 2 Rotor 0      OK      16167  Spinning at normal speed
SFT 6 Fan 2 Rotor 1      OK      14516  Spinning at normal speed
SFT 6 Fan 3 Rotor 0      OK      16666  Spinning at normal speed
SFT 6 Fan 3 Rotor 1      OK      14438  Spinning at normal speed
SFT 7 Fan 0 Rotor 0      OK      15517  Spinning at normal speed
SFT 7 Fan 0 Rotor 1      OK      14438  Spinning at normal speed
SFT 7 Fan 1 Rotor 0      OK      15517  Spinning at normal speed
SFT 7 Fan 1 Rotor 1      OK      14361  Spinning at normal speed
SFT 7 Fan 2 Rotor 0      OK      16167  Spinning at normal speed
SFT 7 Fan 2 Rotor 1      OK      14555  Spinning at normal speed
SFT 7 Fan 3 Rotor 0      OK      15697  Spinning at normal speed
SFT 7 Fan 3 Rotor 1      OK      14361  Spinning at normal speed

```

show chassis fan (EX Series Switches)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Fan 1	OK	3477	Spinning at normal speed
Fan 2	OK	3477	Spinning at normal speed
Fan 3	OK	3479	Spinning at normal speed
Fan 4	OK	3508	Spinning at normal speed
Fan 5	OK	3517	Spinning at normal speed
Fan 6	OK	3531	Spinning at normal speed
Fan 7	OK	3439	Spinning at normal speed
Fan 8	OK	3424	Spinning at normal speed
Fan 9	OK	3413	Spinning at normal speed
Fan 10	OK	3439	Spinning at normal speed
Fan 11	OK	3446	Spinning at normal speed
Fan 12	OK	3432	Spinning at normal speed

show chassis fan
(T320 Router)

user@host> show chassis fan

Item	Status	RPM	Measurement
Top Left Front fan	OK	2850	Spinning at normal speed
Top Left Middle fan	OK	2820	Spinning at normal speed
Top Left Rear fan	OK	2970	Spinning at normal speed
Top Right Front fan	OK	2790	Spinning at normal speed
Top Right Middle fan	OK	2640	Spinning at normal speed
Top Right Rear fan	OK	2790	Spinning at normal speed
Bottom Left Front fan	OK	2520	Spinning at normal speed
Bottom Left Middle fan	OK	2610	Spinning at normal speed
Bottom Left Rear fan	OK	2550	Spinning at normal speed
Bottom Right Front fan	OK	2610	Spinning at normal speed
Bottom Right Middle fan	OK	2880	Spinning at normal speed
Bottom Right Rear fan	OK	2790	Spinning at normal speed
Rear Tray Top fan	OK	2130	Spinning at normal speed
Rear Tray Second fan	OK	2190	Spinning at normal speed
Rear Tray Middle fan	OK	2250	Spinning at normal speed
Rear Tray Fourth fan	OK	2220	Spinning at normal speed
Rear Tray Bottom fan	OK	2280	Spinning at normal speed

show chassis fan
(T640 Router)

user@host> show chassis fan

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3450	Spinning at normal speed
Bottom Left Front fan	OK	3390	Spinning at normal speed
Bottom Left Middle fan	OK	3420	Spinning at normal speed
Bottom Left Rear fan	OK	3390	Spinning at normal speed
Bottom Right Front fan	OK	3390	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3390	Spinning at normal speed
Rear Tray Top fan	OK	5220	Spinning at normal speed
Rear Tray Second fan	OK	5220	Spinning at normal speed
Rear Tray Third fan	OK	5220	Spinning at normal speed
Rear Tray Fourth fan	OK	5220	Spinning at normal speed
Rear Tray Fifth fan	OK	5220	Spinning at normal speed
Rear Tray Sixth fan	OK	5220	Spinning at normal speed
Rear Tray Seventh fan	OK	5220	Spinning at normal speed
Rear Tray Bottom fan	OK	5220	Spinning at normal speed

show chassis fan
(T1600 Router)

user@host> show chassis fan

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3450	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3390	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3420	Spinning at normal speed
Bottom Left Rear fan	OK	3390	Spinning at normal speed
Bottom Right Front fan	OK	3390	Spinning at normal speed

Bottom Right Middle fan	OK	3420	Spinning at normal speed
Bottom Right Rear fan	OK	3390	Spinning at normal speed
Rear Tray Top fan	OK	5190	Spinning at normal speed
Rear Tray Second fan	OK	5190	Spinning at normal speed
Rear Tray Third fan	OK	5190	Spinning at normal speed
Rear Tray Fourth fan	OK	5190	Spinning at normal speed
Rear Tray Fifth fan	OK	5190	Spinning at normal speed
Rear Tray Sixth fan	OK	5190	Spinning at normal speed
Rear Tray Seventh fan	OK	5190	Spinning at normal speed
Rear Tray Bottom fan	OK	5190	Spinning at normal speed

show chassis fan (T4000 Core Router)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	5190	Spinning at high speed
Top Left Middle fan	OK	5220	Spinning at high speed
Top Left Rear fan	OK	5190	Spinning at high speed
Top Right Front fan	OK	5160	Spinning at high speed
Top Right Middle fan	OK	5190	Spinning at high speed
Top Right Rear fan	OK	5160	Spinning at high speed
Bottom Left Front fan	OK	6030	Spinning at high speed
Bottom Left Middle fan	OK	6090	Spinning at high speed
Bottom Left Rear fan	OK	6090	Spinning at high speed
Bottom Right Front fan	OK	6030	Spinning at high speed
Bottom Right Middle fan	OK	6060	Spinning at high speed
Bottom Right Rear fan	OK	6060	Spinning at high speed
Rear Tray Top fan	OK	10000	Spinning at high speed
Rear Tray Second fan	OK	10000	Spinning at high speed
Rear Tray Third fan	OK	10000	Spinning at high speed
Rear Tray Fourth fan	OK	10000	Spinning at high speed
Rear Tray Fifth fan	OK	10000	Spinning at high speed
Rear Tray Sixth fan	OK	10000	Spinning at high speed
Rear Tray Seventh fan	OK	10000	Spinning at high speed
Rear Tray Bottom fan	OK	10000	Spinning at high speed

show chassis fan (TX Matrix Router)

```
user@host> show chassis fan
scc-re0:
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3390	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3390	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3390	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3450	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3420	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed
Rear Tray Top fan	OK	3420	Spinning at normal speed
Rear Tray Second fan	OK	5190	Spinning at normal speed
Rear Tray Third fan	OK	5190	Spinning at normal speed
Rear Tray Fourth fan	OK	5190	Spinning at normal speed
Rear Tray Fifth fan	OK	3420	Spinning at normal speed
Rear Tray Sixth fan	OK	3420	Spinning at normal speed
Rear Tray Seventh fan	OK	3420	Spinning at normal speed
Rear Tray Bottom fan	OK	3420	Spinning at normal speed

```
lcc2-re0:
```

```
-----
Item              Status  RPM    Measurement
Top Left Front fan  OK      3420   Spinning at normal speed
Top Left Middle fan OK      3420   Spinning at normal speed
Top Left Rear fan   OK      3450   Spinning at normal speed
Top Right Front fan  OK      3420   Spinning at normal speed
Top Right Middle fan OK      3450   Spinning at normal speed
Top Right Rear fan   OK      3360   Spinning at normal speed
Bottom Left Front fan OK      3420   Spinning at normal speed
Bottom Left Middle fan OK      3480   Spinning at normal speed
Bottom Left Rear fan OK      3420   Spinning at normal speed
Bottom Right Front fan OK      3420   Spinning at normal speed
Bottom Right Middle fan OK      3390   Spinning at normal speed
Bottom Right Rear fan OK      3420   Spinning at normal speed
Rear Tray Top fan    OK      3420   Spinning at normal speed
Rear Tray Second fan OK      3420   Spinning at normal speed
Rear Tray Third fan  OK      3420   Spinning at normal speed
Rear Tray Fourth fan OK      3420   Spinning at normal speed
Rear Tray Fifth fan  OK      3420   Spinning at normal speed
Rear Tray Sixth fan  OK      3420   Spinning at normal speed
Rear Tray Seventh fan OK      3420   Spinning at normal speed
Rear Tray Bottom fan OK      3420   Spinning at normal speed
```

show chassis fan (TX
Matrix Plus Router)

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

```
-----
Item              Status  RPM    Measurement
Fan Tray 0 Fan 1   OK      4350   Spinning at normal speed
Fan Tray 0 Fan 2   OK      4380   Spinning at normal speed
Fan Tray 0 Fan 3   OK      4410   Spinning at normal speed
Fan Tray 0 Fan 4   OK      4380   Spinning at normal speed
Fan Tray 0 Fan 5   OK      4350   Spinning at normal speed
Fan Tray 0 Fan 6   OK      4380   Spinning at normal speed
Fan Tray 1 Fan 1   OK      4410   Spinning at normal speed
Fan Tray 1 Fan 2   OK      4380   Spinning at normal speed
Fan Tray 1 Fan 3   OK      4410   Spinning at normal speed
Fan Tray 1 Fan 4   OK      4380   Spinning at normal speed
Fan Tray 1 Fan 5   OK      4410   Spinning at normal speed
Fan Tray 1 Fan 6   OK      4410   Spinning at normal speed
Fan Tray 2 Fan 1   OK      4380   Spinning at normal speed
Fan Tray 2 Fan 2   OK      4380   Spinning at normal speed
Fan Tray 2 Fan 3   OK      4380   Spinning at normal speed
Fan Tray 2 Fan 4   OK      4410   Spinning at normal speed
Fan Tray 2 Fan 5   OK      4380   Spinning at normal speed
Fan Tray 2 Fan 6   OK      4410   Spinning at normal speed
Fan Tray 2 Fan 7   OK      4410   Spinning at normal speed
Fan Tray 2 Fan 8   OK      4380   Spinning at normal speed
Fan Tray 2 Fan 9   OK      4380   Spinning at normal speed
Fan Tray 3 Fan 1   OK      4350   Spinning at normal speed
Fan Tray 3 Fan 2   OK      4380   Spinning at normal speed
Fan Tray 3 Fan 3   OK      4410   Spinning at normal speed
Fan Tray 3 Fan 4   OK      4440   Spinning at normal speed
Fan Tray 3 Fan 5   OK      4380   Spinning at normal speed
Fan Tray 3 Fan 6   OK      4410   Spinning at normal speed
Fan Tray 3 Fan 7   OK      4410   Spinning at normal speed
Fan Tray 3 Fan 8   OK      4380   Spinning at normal speed
Fan Tray 3 Fan 9   OK      4410   Spinning at normal speed
Fan Tray 4 Fan 1   OK      4410   Spinning at normal speed
Fan Tray 4 Fan 2   OK      4410   Spinning at normal speed
Fan Tray 4 Fan 3   OK      4380   Spinning at normal speed
```

Fan Tray 4 Fan 4	OK	4380	Spinning at normal speed
Fan Tray 4 Fan 5	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 8	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 9	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 1	OK	4350	Spinning at normal speed
Fan Tray 5 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 3	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 4	OK	4350	Spinning at normal speed
Fan Tray 5 Fan 5	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 8	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 9	OK	4410	Spinning at normal speed

```
1cc0-re0:
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3450	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3420	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3420	Spinning at normal speed
Bottom Left Rear fan	OK	3390	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3390	Spinning at normal speed
Rear Tray Top fan	OK	7050	Spinning at normal speed
Rear Tray Second fan	OK	7050	Spinning at normal speed
Rear Tray Third fan	OK	7050	Spinning at normal speed
Rear Tray Fourth fan	OK	7050	Spinning at normal speed
Rear Tray Fifth fan	OK	7050	Spinning at normal speed
Rear Tray Sixth fan	OK	7050	Spinning at normal speed
Rear Tray Seventh fan	OK	7050	Spinning at normal speed
Rear Tray Bottom fan	OK	7050	Spinning at normal speed

show chassis fan (TX
Matrix Plus router with
3D SIBs)

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

Item	Status	RPM	Measurement
Fan Tray 0 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 2	OK	4860	Spinning at normal speed
Fan Tray 0 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 4	OK	4800	Spinning at normal speed
Fan Tray 0 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 6	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 1	OK	4800	Spinning at normal speed
Fan Tray 1 Fan 2	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 3	OK	4800	Spinning at normal speed
Fan Tray 1 Fan 4	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 5	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 6	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 1	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 2	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 5	OK	4830	Spinning at normal speed

Fan Tray 2 Fan 6	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 7	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 8	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 9	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 1	OK	4860	Spinning at normal speed
Fan Tray 3 Fan 2	OK	4860	Spinning at normal speed
Fan Tray 3 Fan 3	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 6	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 7	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 8	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 9	OK	4800	Spinning at normal speed
Fan Tray 4 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 2	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 6	OK	4860	Spinning at normal speed
Fan Tray 4 Fan 7	OK	4800	Spinning at normal speed
Fan Tray 4 Fan 8	OK	4860	Spinning at normal speed
Fan Tray 4 Fan 9	OK	4770	Spinning at normal speed
Fan Tray 5 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 2	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 4	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 5	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 6	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 7	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 8	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 9	Check	2010	

lcc0-re0:

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3390	Spinning at normal speed
Top Left Rear fan	OK	3390	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3450	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3390	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed
Rear Tray fan 1 (Top)	OK	7740	Spinning at normal speed
Rear Tray fan 2	OK	7740	Spinning at normal speed
Rear Tray fan 3	OK	7740	Spinning at normal speed
Rear Tray fan 4	OK	7740	Spinning at normal speed
Rear Tray fan 5	OK	7740	Spinning at normal speed
Rear Tray fan 6	OK	7740	Spinning at normal speed
Rear Tray fan 7	OK	7740	Spinning at normal speed
Rear Tray fan 8	OK	7740	Spinning at normal speed
Rear Tray fan 9	OK	7740	Spinning at normal speed
Rear Tray fan 10	OK	7740	Spinning at normal speed
Rear Tray fan 11	OK	7740	Spinning at normal speed
Rear Tray fan 12	OK	7740	Spinning at normal speed
Rear Tray fan 13	OK	7740	Spinning at normal speed
Rear Tray fan 14	OK	7740	Spinning at normal speed

```
Rear Tray fan 15          OK      7740    Spinning at normal speed
Rear Tray fan 16 (Bottom) OK      7740    Spinning at normal speed
```

```
lcc2-re0:
```

```
-----
Item              Status  RPM    Measurement
Top Left Front fan  OK      3420    Spinning at normal speed
Top Left Middle fan  OK      3390    Spinning at normal speed
Top Left Rear fan    OK      3420    Spinning at normal speed
Top Right Front fan  OK      3420    Spinning at normal speed
Top Right Middle fan  OK      3420    Spinning at normal speed
Top Right Rear fan   OK      3450    Spinning at normal speed
Bottom Left Front fan  OK      3420    Spinning at normal speed
Bottom Left Middle fan  OK      3390    Spinning at normal speed
Bottom Left Rear fan  OK      3420    Spinning at normal speed
Bottom Right Front fan  OK      3420    Spinning at normal speed
Bottom Right Middle fan  OK      3390    Spinning at normal speed
Bottom Right Rear fan  OK      3420    Spinning at normal speed
Rear Tray fan 1 (Top)  OK      7740    Spinning at normal speed
Rear Tray fan 2       OK      7740    Spinning at normal speed
Rear Tray fan 3       OK      7740    Spinning at normal speed
Rear Tray fan 4       OK      7740    Spinning at normal speed
Rear Tray fan 5       OK      7740    Spinning at normal speed
Rear Tray fan 6       OK      7740    Spinning at normal speed
Rear Tray fan 7       OK      7740    Spinning at normal speed
Rear Tray fan 8       OK      7740    Spinning at normal speed
Rear Tray fan 9       OK      7740    Spinning at normal speed
Rear Tray fan 10      OK      7740    Spinning at normal speed
Rear Tray fan 11      OK      7740    Spinning at normal speed
Rear Tray fan 12      OK      7740    Spinning at normal speed
Rear Tray fan 13      OK      7740    Spinning at normal speed
Rear Tray fan 14      OK      7740    Spinning at normal speed
Rear Tray fan 15      OK      7740    Spinning at normal speed
Rear Tray fan 16 (Bottom) OK      7740    Spinning at normal speed
```

show chassis fan
(PTX5000 Packet Transport Switch)

```
user@host> show chassis fan
user@host> show chassis fan
```

```
Item              Status  % RPM    Measurement
Fan Tray 0 Fan 1   OK      29%      2700 RPM
Fan Tray 0 Fan 2   OK      29%      2700 RPM
Fan Tray 0 Fan 3   OK      29%      2742 RPM
Fan Tray 0 Fan 4   OK      29%      2700 RPM
Fan Tray 0 Fan 5   OK      30%      2828 RPM
Fan Tray 0 Fan 6   OK      30%      2828 RPM
Fan Tray 0 Fan 7   OK      29%      2700 RPM
Fan Tray 0 Fan 8   OK      30%      2785 RPM
Fan Tray 0 Fan 9   OK      30%      2828 RPM
Fan Tray 0 Fan 10  OK      30%      2828 RPM
Fan Tray 0 Fan 11  OK      30%      2785 RPM
Fan Tray 0 Fan 12  OK      30%      2828 RPM
Fan Tray 0 Fan 13  OK      31%      2871 RPM
Fan Tray 0 Fan 14  OK      30%      2828 RPM
Fan Tray 1 Fan 1   OK      42%      3033 RPM
Fan Tray 1 Fan 2   OK      42%      3066 RPM
Fan Tray 1 Fan 3   OK      43%      3099 RPM
Fan Tray 1 Fan 4   OK      43%      3166 RPM
Fan Tray 1 Fan 5   OK      45%      3266 RPM
Fan Tray 1 Fan 6   OK      43%      3133 RPM
Fan Tray 2 Fan 1   OK      29%      2099 RPM
Fan Tray 2 Fan 2   OK      30%      2199 RPM
Fan Tray 2 Fan 3   OK      30%      2166 RPM
```

Fan Tray 2 Fan 4	OK	33%	2399 RPM
Fan Tray 2 Fan 5	OK	29%	2133 RPM
Fan Tray 2 Fan 6	OK	32%	2366 RPM

show chassis fan (MX2010 Router)

```
user@host > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 1	OK	37%	3360 RPM
Fan Tray 0 Fan 2	OK	38%	3480 RPM
Fan Tray 0 Fan 3	OK	37%	3360 RPM
Fan Tray 0 Fan 4	OK	37%	3360 RPM
Fan Tray 0 Fan 5	OK	38%	3480 RPM
Fan Tray 0 Fan 6	OK	37%	3360 RPM
Fan Tray 1 Fan 1	OK	38%	3480 RPM
Fan Tray 1 Fan 2	OK	40%	3600 RPM
Fan Tray 1 Fan 3	OK	38%	3480 RPM
Fan Tray 1 Fan 4	OK	38%	3480 RPM
Fan Tray 1 Fan 5	OK	38%	3480 RPM
Fan Tray 1 Fan 6	OK	38%	3480 RPM
Fan Tray 2 Fan 1	OK	38%	3480 RPM
Fan Tray 2 Fan 2	OK	41%	3720 RPM
Fan Tray 2 Fan 3	OK	38%	3480 RPM
Fan Tray 2 Fan 4	OK	38%	3480 RPM
Fan Tray 2 Fan 5	OK	38%	3480 RPM
Fan Tray 2 Fan 6	OK	38%	3480 RPM
Fan Tray 3 Fan 1	OK	38%	3480 RPM
Fan Tray 3 Fan 2	OK	40%	3600 RPM
Fan Tray 3 Fan 3	OK	40%	3600 RPM
Fan Tray 3 Fan 4	OK	40%	3600 RPM
Fan Tray 3 Fan 5	OK	40%	3600 RPM
Fan Tray 3 Fan 6	OK	38%	3480 RPM

show chassis fan (MX2020 Router)

```
user@host > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 1	OK	37%	3360 RPM
Fan Tray 0 Fan 2	OK	37%	3360 RPM
Fan Tray 0 Fan 3	OK	36%	3240 RPM
Fan Tray 0 Fan 4	OK	37%	3360 RPM
Fan Tray 0 Fan 5	OK	37%	3360 RPM
Fan Tray 0 Fan 6	OK	37%	3360 RPM
Fan Tray 1 Fan 1	OK	37%	3360 RPM
Fan Tray 1 Fan 2	OK	37%	3360 RPM
Fan Tray 1 Fan 3	OK	37%	3360 RPM
Fan Tray 1 Fan 4	OK	37%	3360 RPM
Fan Tray 1 Fan 5	OK	37%	3360 RPM
Fan Tray 1 Fan 6	OK	36%	3240 RPM
Fan Tray 2 Fan 1	OK	37%	3360 RPM
Fan Tray 2 Fan 2	OK	37%	3360 RPM
Fan Tray 2 Fan 3	OK	37%	3360 RPM
Fan Tray 2 Fan 4	OK	37%	3360 RPM
Fan Tray 2 Fan 5	OK	37%	3360 RPM
Fan Tray 2 Fan 6	OK	38%	3480 RPM
Fan Tray 3 Fan 1	OK	38%	3480 RPM
Fan Tray 3 Fan 2	OK	38%	3480 RPM
Fan Tray 3 Fan 3	OK	38%	3480 RPM
Fan Tray 3 Fan 4	OK	37%	3360 RPM
Fan Tray 3 Fan 5	OK	37%	3360 RPM
Fan Tray 3 Fan 6	OK	37%	3360 RPM

```
user@host > show chassis fan
```

show chassis fan
(ACX4000 Router)

Item	Status	RPM	Measurement
Fan 1	OK	4140	Spinning at normal speed
Fan 2	OK	4200	Spinning at normal speed

show chassis fpc

Syntax	show chassis fpc <detail <slot>> <pic-status <slot>>
Syntax (EX Series Switches)	show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <fpc-slot>
Syntax (T4000 Routers)	show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>>
Syntax (TX Matrix and TX Matrix Plus Routers)	show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <slot>
Syntax (MX Series Routers)	show chassis fpc <detail <slot>> <pic-status <slot>> <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis fpc <slot> detail <detail <slot>> <pic-status <slot>> <fpc-slot>
Syntax (MX2020 3D Universal Edge Routers)	show chassis fpc < slot> detail <detail <slot>> <pic-status <slot>> <fpc-slot>
Syntax (QFX Series)	show chassis fpc <detail> <interconnect-device <i>name</i> <fpc-slot <i>fpc-slot</i> >> <node-device <i>name</i> >
Syntax (PTX Series Packet Transport Switches)	show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <fpc-slot>
Syntax (ACX Series Universal Access Routers)	show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <fpc-slot>
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 QFX Series. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches. Command introduced in Junos OS Release 12.2 for ACX Series Universal Access 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.

Description Display status information about the installed Flexible PIC Concentrators (FPCs) and PICs.

Options **none**—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 T1600 routers in the routing matrix.



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	DRAM (MB)	Heap
Buffer					
0 offline		---FPC misconfiguration---			
1 offline		---FPC misconfiguration---			
2 offline		---FPC misconfiguration---			
3 Empty					
4 Empty					
5 Online	66	50	0	2816	29
27					

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 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 router 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 T1600 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.
- 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.
- 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.
- QFX Series:
 - QFX3500 switches—Replace **fpc-slot** with 0.
 - QFabric systems—Replace **fpc-slot** with 0 through 31 on the Interconnect device.
- PTX Series Packet Transport Switches:
 - PTX5000 Packet Transport Switch—Replace **fpc-slot** with a value from 0 through 7.
- ACX Series Universal Access Routers:
 - ACX1000 and ACX2000 Universal Access Routers—Replace **fpc-slot** with 0.

local—(MX Series routers only) (Optional) Display status information for all FPCs on the local Virtual Chassis member.

member member-id—(MX Series routers 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
```

lcc number—(TX Matrix router, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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 152](#)
- [show chassis fpc-feb-connectivity](#)
- [show chassis fabric fpcs on page 390](#)
- [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 479](#)
- [show chassis fpc \(M20 Router\) on page 479](#)
- [show chassis fpc detail \(M Series Routers\) on page 479](#)
- [show chassis fpc detail \(MX80 Router\) on page 479](#)
- [show chassis fpc \(MX240 Router\) on page 480](#)
- [show chassis fpc \(MX480 Router\) on page 480](#)
- [show chassis fpc \(MX480 Router with 100-Gigabit Ethernet CFP\) on page 480](#)
- [show chassis fpc pic-status \(MX480 Router with 100-Gigabit Ethernet CFP\) on page 480](#)
- [show chassis fpc \(MX960 Router\) on page 481](#)
- [show chassis fpc \(MX240, MX480, MX960 Routers with Application Services Modular Line Card\) on page 481](#)
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- [show chassis fpc \(MX2010 Routers\) on page 482](#)
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- [show chassis fpc \(Hardware Not Supported\) on page 482](#)
- [show chassis fpc detail \(Hardware Not Supported\) on page 483](#)
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- [show chassis fpc pic-status \(M Series Routers\) on page 483](#)
- [show chassis fpc pic-status \(M120 Router\) on page 484](#)
- [show chassis fpc pic-status \(MX240, MX480, and MX960 Routers with Application Services Modular Line Card\) on page 484](#)
- [show chassis fpc lcc \(TX Matrix Router\) on page 485](#)
- [show chassis fpc pic-status \(TX Matrix Router\) on page 485](#)
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- [show chassis fpc \(TX Matrix Plus Router\) on page 486](#)

[show chassis fpc lcc \(TX Matrix Plus Router\) on page 486](#)
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[show chassis fpc detail \(T1600 Router\) on page 490](#)
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[show chassis fpc pic-status \(ACX2000 Universal Access Router\) on page 496](#)
[show chassis FPC 1 \(MX Routers with Media Services Blade \[MSB\]\) on page 496](#)
[show chassis FPC 1 detail \(MX Routers with Media Services Blade \[MSB\]\) on page 496](#)

Output Fields [Table 32 on page 477](#) lists the output fields for the **show chassis fpc** command. Output fields are listed in the approximate order in which they appear.

Table 32: show chassis fpc Output Fields

Field Name	Field Description	Level of Output
Slot or Slot State	Slot number and state. The state can be one of the following conditions: <ul style="list-style-type: none"> • Dead—Held in reset because of errors. • Diag—Slot is being ignored while the FPC is running diagnostics. • Dormant—Held in reset. • Empty—No FPC is present. • Offline—(PTX Series Packet Transport Switches only) One of the following two states is displayed: <ul style="list-style-type: none"> • FPC offlined due to unreachable destinations • FPC Offlined due to degraded FPC action • Online—FPC is online and running. • Present—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 Hardware Not Supported or Hardware Not In Right Slot. The FPC is coming up but not yet online. • Probed—Probe is complete; awaiting restart of the Packet Forwarding Engine. • Probe-wait—Waiting to be probed. 	all levels
Logical slot	Slot number.	all levels
Temp (C) or Temperature	Temperature of the air passing by the FPC, in degrees Celsius or in both Celsius and Fahrenheit.	all levels all levels
Temperature (PTX Series)	On PTX Series Packet Transport Switches, temperature details are provided in degrees Celsius and Fahrenheit. Output includes: <ul style="list-style-type: none"> • Temperature (PMB)—Temperature of the air passing by the Processor Mezzanine Board (PMB) at the bottom of the FPC. • Temperature (Intake)—Temperature of the air flowing into the chassis. • Temperature (Exhaust)—Exhaust temperatures for multiple zones (Exhaust A and Exhaust B). • Temperature (TLn)—Temperature of the specified Lookup ASIC (TL) of the packet forwarding engine on the FPC. • Temperature (TQn)—Temperature of the specified Queuing and Memory Interface ASIC (TQ) of the packet forwarding engine on the FPC. 	detail
Total CPU Utilization (%)	Total percentage of CPU being used by the FPC's processor.	all levels
Interrupt CPU Utilization (%)	Of the total CPU being used by the FPC's processor, the percentage being used for interrupts.	none specified
Memory DRAM (MB)	Total DRAM, in megabytes, available to the FPC's processor.	none specified

Table 32: show chassis fpc Output Fields (*continued*)

Field Name	Field Description	Level of Output
Heap Utilization (%)	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). NOTE: On MX Series routers in a broadband edge environment, heap utilization levels higher than 70 percent can affect unified ISSU, router stability, or scaling capability.	none specified
Buffer Utilization (%)	Percentage of buffer space being used by the FPC's processor for buffering internal messages.	none specified
Total CPU DRAM	Amount of DRAM available to the FPC's CPU.	detail
Total RLDRAM	Amount of reduced latency dynamic random access memory (RLDRAM) available to the FPC CPU.	detail
Total DDR DRAM	Amount of double data rate dynamic random access memory (DDR DRAM) available to the FPC CPU.	detail
Total SRAM	Amount of static RAM (SRAM) used by the FPC's CPU.	detail
Total SDRAM	Total amount of memory used for storing packets and notifications.	detail
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

Sample Output

show chassis fpc (EX6210 Switch)

```
user@switch> show chassis fpc
```

Slot	State	Temp (C)	CPU Total	Utilization (%) 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 Total	Utilization (%) 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 (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 (MX240 Router)

```

user@host> show chassis fpc

```

Slot	State	Temp	CPU (C)	Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Empty							
1	Online		34	6	0	1024	18	30
2	Online		33	9	0	1024	24	30

show chassis fpc (MX480 Router)

```

user@host> show chassis fpc

```

Slot	State	Temp	CPU (C)	Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Empty							
1	Online		36	9	0	1024	17	57
2	Empty							
3	Empty							
4	Empty							
5	Empty							

show chassis fpc (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis fpc

```

Slot	State	Temp	CPU (C)	Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Online		33	4	0	2048	10	13
1	Online		36	7	0	2048	16	13
2	Online		29	6	0	1024	27	29
3	Online		33	0	0	0	0	0
4	Online		36	7	0	2048	19	13
5	Online		34	31	11	2048	14	13

show chassis fpc pic-status (MX480 Router with

```

user@host> show chassis fpc pic-status
Slot 1  Online      MPC Type 3
PIC 2   Online      1X100GE CFP
Slot 2  Online      DPCE 40x 1GE R EQ

```

100-Gigabit Ethernet CFP)

```

PIC 0 Online 10x 1GE(LAN) EQ
PIC 1 Online 10x 1GE(LAN) EQ
PIC 2 Online 10x 1GE(LAN) EQ
PIC 3 Online 10x 1GE(LAN) EQ
Slot 3 Online MPC Type 3
PIC 0 Online 1X100GE CFP
PIC 2 Online 1X100GE CFP
Slot 4 Online MPC Type 3
PIC 0 Online 1X100GE CFP
PIC 2 Online 1X100GE CFP
Slot 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 (MX960 Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Utilization (%)	DRAM (MB)	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 (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```

user@host> show chassis fpc 1

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Utilization (%)	DRAM (MB)	Heap	Buffer
1	Online	34	5	0	3072	5	13

show chassis fpc (MX240, MX480, MX960 with

```

user@host> show chassis fpc 1 detail
Slot 1 information:
State Online
Temperature 34

```

**Application Services
Modular Line Card**

```

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
(MX2010 Routers)**

```

user@host show chassis fpc
      Temp CPU Utilization (%) Memory  Utilization (%)
Slot State      (C) Total  Interrupt  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
(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 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

```

user@host> show chassis fpc
show chassis fpc

```

(Hardware Not Supported)

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`

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
```

Application Services
Modular Line Card)

```

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 (%)		Memory DRAM (MB)	Utilization (%)	
			Total	Interrupt		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 Utilization (%)		Memory DRAM (MB)	Utilization (%)	
			Total	Interrupt		Heap	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 Utilization (%)		Memory DRAM (MB)	Utilization (%)	
			Total	Interrupt		Heap	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 Utilization (%)		Memory DRAM (MB)	Utilization (%)	
			Total	Interrupt		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	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 (T1600 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 (T1600 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 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

regress@stymphalian# run show chassis fpc

Slot State      Temp CPU Utilization (%) Memory Utilization (%)
      (C) Total Interrupt DRAM (MB) 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)

```

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:
Temp
Slot State          (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
3 Online        (C) 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**

```

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+

```

**interconnect-device
(QFabric System)**

```

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 Switch)**

```

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	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

```

user@host> show chassis fpc detail
Slot 2 information:

```


(PTX5000 Packet Transport Switch)

```

State
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
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
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)

```

user@host> show chassis fpc pic-status
Slot 2  Online      FPC
PIC 0   Online      24x 10GE(LAN) SFP+

```

Packet Transport Switch)

```

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
(ACX2000 Universal
Access Router)**

```

user@host> show chassis fpc

```

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 0
(ACX2000 Universal
Access 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
Access 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 Access
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])**

```

user@switch> show chassis fpc 1

```

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

```

show chassis hardware

Syntax	show chassis hardware <detail extensive> <clei-models> <models>
Syntax (EX Series)	show chassis hardware <clei-models> <detail extensive> <models>
Syntax (T4000 Router)	show chassis hardware <clei-models> <detail extensive> <models>
Syntax (TX Matrix Router)	show chassis hardware <clei-models> <detail extensive> <models> <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Router TX Matrix Plus router with 3D SIBs)	show chassis hardware <clei-models> <detail extensive> <models> <lcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Routers)	show chassis hardware <detail extensive> <clei-models> <models> <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis hardware <clei-models> <detail extensive> <models>
Syntax (MX2020 3D Universal Edge Routers)	show chassis hardware <clei-models> <detail extensive> <models>
Syntax (QFX Series)	show chassis hardware <detail extensive> <clei-models> <interconnect-device <i>name</i> > <node-device <i>name</i> > <models>

Syntax (PTX Series Packet Transport Switches)	show chassis hardware <detail extensive> <clei-models> <models>
Syntax (ACX Series Universal Access Routers)	show chassis hardware <detail extensive> <clei-models> <models>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>models option introduced in Junos OS Release 8.2.</p> <p>Command introduced in Junos OS Release 9.0 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 Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Access 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 13.1 for TX Matrix Plus router with 3D SIBs.</p>
Description	<p>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.</p> <p>In the EX Series switch command output, FPC refers to the following:</p> <ul style="list-style-type: none"> On EX2200 switches, EX3200 switches, EX4200 standalone switches, and EX4500 switches—Refers to the switch; FPC <i>number</i> is always 0. On EX4200 switches in a Virtual Chassis configuration—Refers to the member of a Virtual Chassis; FPC <i>number</i> equals the member ID, from 0 through 9. On EX8208 and EX8216 switches—Refers to a line card; FPC <i>number</i> equals the slot number for the line card. <p>On a QFX3500 standalone switch, both the FPC and FPC <i>number</i> are always 0.</p> <p>On Type 5 FPC on T4000 routers, there are no top temperature sensor or bottom temperature sensor parameters. Instead, fan intake temperature sensor and fan exhaust temperature sensors parameters are displayed.</p>
Options	<p>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 T1600 routers. For a TX Matrix Plus router with 3D SIBs, display information about the TX Matrix Plus router with 3D SIBs and its attached T1600 or T4000 routers.</p> <p>clei-models—(Optional) Display Common Language Equipment Identifier (CLEI) barcode and model number for orderable field-replaceable units (FRUs).</p> <p>detail—(Optional) Include RAM and disk information in output.</p> <p>extensive—(Optional) Display ID EEPROM information.</p>

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, TX Matrix Plus routers and TX Matrix Plus router with 3D SIBs 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 T1600 router (line-card chassis) that is connected to the TX Matrix Plus router. On a TX Matrix Plus router with 3D SIBs, display hardware information for a specified T1600 or T4000 router (line-card chassis) that is connected to the TX Matrix Plus router with 3D SIBs.

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 only) (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.

scc—(TX Matrix router only) (Optional) Display hardware information for the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router and TX Matrix Plus router with 3D SIBs only) (Optional) Display hardware information for the TX Matrix Plus router or TX Matrix Plus router with 3D SIBs (switch-fabric chassis) respectively. Replace *number* variable with 0.

Additional Information The **show chassis hardware detail** command now displays DIMM information for the following Routing Engines:

Table 33: 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

Required Privilege Level view

Related Documentation • [show chassis power on page 613](#)

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Output Fields [Table 34 on page 502](#) lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.

Table 34: show chassis hardware Output Fields

Field Name	Field Description	Level of Output
Item	<p>Chassis component:</p> <ul style="list-style-type: none"> (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. See EX Series Switches Hardware and CLI Terminology Mapping. (MX Series routers)—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). (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. (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. (QFX Series)—Information about the chassis, 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). (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). (MX2010 and MX2020 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. 	All levels

Table 34: show chassis hardware Output Fields (*continued*)

Field Name	Field Description	Level of Output
Version	Revision level of the chassis component.	All levels
Part number	Part number of the chassis component.	All levels
Serial number	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
Assb ID or Assembly ID	(extensive keyword only) Identification number that describes the FRU hardware.	extensive
Assembly Version	(extensive keyword only) Version number of the FRU hardware.	extensive
Assembly Flags	(extensive keyword only) Flags.	extensive
FRU model number	(clei-models , extensive , and models keyword only) Model number of the FRU hardware component.	none specified
CLEI code	(clei-models and extensive 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
EEPROM Version	ID EEPROM version used by the hardware component: 0x00 (version 0), 0x01 (version 1), or 0x02 (version 2).	extensive
Description	<p>Brief description of the hardware item:</p> <ul style="list-style-type: none"> • Type of power supply. • Type of PIC. If the PIC type is not supported on the current software release, the output states Hardware Not Supported. • Type of FPC: FPC Type 1, FPC Type 2, FPC Type 3, FPC Type 4, or FPC TypeOC192. <p>On EX Series switches, a brief description of the FPC.</p> <p>On the J Series routers, the FPC type corresponds to the Physical Interface Module (PIM). The following list shows the PIM abbreviation in the output and the corresponding PIM name.</p> <ul style="list-style-type: none"> • 2x FE—Either two built-in Fast Ethernet interfaces (fixed PIM) or dual-port Fast Ethernet PIM • 4x FE—4-port Fast Ethernet ePIM • 1x GE Copper—Copper Gigabit Ethernet ePIM (one 10-Mbps, 100-Mbps, or 1000-Mbps port) • 1x GE SFP—SFP Gigabit Ethernet ePIM (one fiber port) • 4x GE Base PIC—Four built-in Gigabit Ethernet ports on a J4350 or J6350 chassis (fixed PIM) • 2x Serial—Dual-port serial PIM • 2x T1—Dual-port T1 PIM • 2x E1—Dual-port E1 PIM 	All levels

Table 34: show chassis hardware Output Fields (*continued*)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> • 2x CT1E1—Dual-port channelized T1/E1 PIM • 1x T3—T3 PIM (one port) • 1x E3—E3 PIM (one port) • 4x BRI S/T—4-port ISDN BRI S/T PIM • 4x BRI U—4-port ISDN BRI U PIM • 1x ADSL Annex A—ADSL 2/2+ Annex A PIM (one port, for POTS) • 1x ADSL Annex B—ADSL 2/2+ Annex B PIM (one port, for ISDN) • 2x SHDSL (ATM)—G SHDSL PIM (2-port two-wire module or 1-port four-wire module) • 1x TGM550—TGM550 Telephony Gateway Module (Avaya VoIP gateway module with one console port, two analog LINE ports, and two analog TRUNK ports) • 1x DS1 TIM510—TIM510 E1/T1 Telephony Interface Module (Avaya VoIP media module with one E1 or T1 trunk termination port and ISDN PRI backup) • 4x FXS, 4x FXO, TIM514—TIM514 Analog Telephony Interface Module (Avaya VoIP media module with four analog LINE ports and four analog TRUNK ports) • 4x BRI TIM521—TIM521 BRI Telephony Interface Module (Avaya VoIP media module with four ISDN BRI ports) • Crypto Accelerator Module—For enhanced performance of cryptographic algorithms used in IP Security (IPsec) services • MPC M16x10GE—16-port 10-Gigabit Module Port Concentrator that supports SFP+ optical transceivers. (Not on EX Series switches.) • For hosts, the Routing Engine type. • For small form-factor pluggable transceiver (SFP) modules, the type of fiber: LX, SX, LH, or T. • LCD description for EX Series switches (except EX2200 switches). • MPC2—1-port MPC2 that supports two separate slots for MICs. • MPC3E—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. • 100GBASE-LR4, pluggable CFP optics • Supports the Enhanced MX Switch Control Board with fabric redundancy and existing SCBs without fabric redundancy. • Interoperates with existing MX Series line cards, including Flexible Port Concentrators (FPC), Dense Port Concentrators (DPCs), and Modular Port Concentrators (MPCs). • LCD description for MX Series routers 	

Sample Output

show chassis hardware
(EX8216 Switch)

```
user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis          REV 06             CY0109220035  EX8216
Midplane         REV 06      710-016845  BA0909120112  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		CHAS-BP-T640-S
FPM Display	REV 05	710-002897		CRAFT-T640-S
CIP	REV 06	710-002895		CIP-L-T640-S
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-S0N-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 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
```

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 (J6350 Router)

```
user@host> show chassis hardware
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              JN1090E07ADB JSR6350
Midplane             REV 03   710-014593  NP1265
System IO            REV 01   710-016210  NN9950        JX350 System IO
Crypto Module        REV 08   710-015273  NM6509        Crypto Acceleration
Routing Engine       248 MB  256MB  CKS           RE-J6350-3400
ad0                  00102006C24A00000039 Compact
Flash
FPC 0                FPC
PIC 0                4x GE Base PIC
FPC 1                REV 06   750-010355  AI07030023    FPC
PIC 0                2x T1
FPC 3                REV 06   750-011148  AJ06520151    FPC
PIC 0                2x E1
FPC 6                REV 06   750-013492  NC4170        FPC
PIC 0                4x FE
Power Supply 0
```

**show chassis hardware
(J6300 Router)**

user@host> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN000164AB	J6300
Midplane	REV 02.04	710-010001	CORE99570	
System IO	REV 02.00	710-010003	CORE100848	System IO board
Routing Engine	RevX2.6	750-010006	IWGS40735390	RE-J.3
FPC 0				FPC
PIC 0				2x FE
FPC 1	RevX2.0	750-011380	N3960005	FPC
PIC 0				1xADSL pic Annex A
FPC 2	RevX2.0	750-011380	N3960002	FPC
PIC 0				1xADSL pic Annex B
FPC 3	REV 03	750-010354	N0780028	FPC
PIC 0				1x T3

**show chassis hardware
(M7i Router)**

user@host> 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	PAD5EER	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

user@host> show chassis hardware

Hardware inventory:

(M10 Router)

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-20C3-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> 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	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 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 126CT505S07635C	00110 Compact Flash
ad2 38154 MB		HTE541040G9SA00	MPBBT0X2HS2E3M	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)

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user@host> show chassis hardware models
Hardware inventory:
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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> 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)

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user@host> show chassis hardware detail
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Hardware inventory:
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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)

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user@host> show chassis hardware
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Hardware inventory:
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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)

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user@host> show chassis hardware models
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Hardware inventory:
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Item	Version	Part number	CLEI code	FRU model number
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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	Routing Engine
TFEB 0		BUILTIN	BUILTIN	Forwarding Engine
Processor				
QXM 0	REV 05	711-028408	ZA9136	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 24	750-028392	YX9820	3D 20x 1GE(LAN) SFP
PIC 0		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	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	1x 10GE XFP
PIC 3		BUILTIN	BUILTIN	1x 10GE XFP
Fan Tray				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	Routing Engine
TFEB 0		BUILTIN	BUILTIN	Forwarding Engine
Processor				
QXM 0	REV 05	711-028408	ZA9053	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 24	750-028392	YX9436	3D 20x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031851	AM1107SUFQW	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Fan Tray				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	Routing Engine
TFEB 0		BUILTIN	BUILTIN	Forwarding Engine
Processor				
QXM 0	REV 05	711-028408	ZA9048	MPC QXM
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
Xcvr 0	REV 01	740-014279	M7067UPP	XFP-10G-LR
Xcvr 1		NON-JNPR	K9J02UN	XFP-10G-LR
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 24	750-028392	YX3504	3D 20x 1GE(LAN) SFP

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 (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

user@host> show chassis hardware detail

Item	Version	Part number	Serial number	Description
Chassis			JN11279B4AFC	MX240 Backplane

Displaying DIMM information)

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
(MX960 Router)**

user@host> show chassis hardware

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
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
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```
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	P9P0XXH	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-U
Xcvr 2	REV 01	740-011613	PAJ4Y5B	SFP-SX
Xcvr 6	REV 01	740-011782	P9M0U3M	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)

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Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
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Router with Enhanced
MX SCB)

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-SFP
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
detail (MX960 Router)

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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	NR0WT5925N77	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
(MX2010 Router)

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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	ACA11388	Power Midplane
FPM Board	REV 06	711-032349	ZX8744	Front Panel Display
PSM 4 Module	REV 0C	740-033727	VK00254	DC 52V Power Supply
PSM 5 Module	REV 0B	740-033727	VG00015	DC 52V Power Supply
PSM 6 Module	REV 0B	740-033727	VH00097	DC 52V Power Supply
PSM 7 Module	REV 0C	740-033727	VJ00151	DC 52V Power Supply
PSM 8 Module	REV 0C	740-033727	VJ00149	DC 52V Power Supply
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	CAA6135	PMB Board
SPMB 1	REV 02	711-041855	CAA6137	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
PIC 0		BUILTIN	BUILTIN	10X10GE SFPP
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 SFPP
PIC 2		BUILTIN	BUILTIN	10X10GE SFPP
Xcvr 0	REV 01	740-031980	AJCOJML	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

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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	ACA11677	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
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	03D206A01018	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

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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11E233DAFK	MX2010

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:


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Address 0x00: 7f b0 02 ff 05 57 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
Address 0x20: 4a 4e 31 31 45 32 33 33 44 41 46 4b 00 00 00
Address 0x30: 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
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
Midplane      REV 26   750-044636   ABAB9357           Lower Backplane
Jedec Code:   0x7fb0           EEPROM Version:   0x02
P/N:          750-044636       S/N:             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 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
Midplane 1    REV 01   711-044557   ABAB8643           Upper Backplane
Jedec Code:   0x7fb0           EEPROM Version:   0x01
P/N:          711-044557       S/N:             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:             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 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 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

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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:           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
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
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
  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 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:          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:          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:          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 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:          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          H MPC PMB 2G
Jedec Code:  0x7fb0    EEPROM Version: 0x01
P/N:         711-035209    S/N:          S/N CAAB9842
Assembly ID: 0x0b04    Assembly Version: 01.08
Date:        05-17-2012    Assembly Flags: 0x00
Version:     REV 08
ID: H MPC 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 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          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:          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
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
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	00000000000000000000000000000000
PSM 8	REV 0C	740-033727	0000000000	00000000000000000000000000000000
PDM 0	REV 0B	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 (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				
PSM 15	REV 01	740-045050	1E02224005M	DC 52V Power Supply
Module				
PSM 16	REV 01	740-045050	1E02224006S	DC 52V Power Supply
Module				
PSM 17	REV 01	740-045050	1E02224005Z	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	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	CAA6141	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	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 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	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 4	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 5	REV 30	750-028467	ABBN0316	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABB11082	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	AK80NLG	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

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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	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	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 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	AJQQQ5G	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	ABBN6556	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	AK80LFC	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

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models (MX2020
Router)

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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)

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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 (MX Series routers with ATM MIC)

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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

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 I2C Hex Data:

Application Services
Modular Line Card)

```

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
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
Address 0x70: ff ff ff 5e 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:            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 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 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 00
MIC 0          REV 01    750-037214    ZH3764          AS-MS
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-037214      S/N:            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 00
Address 0x60: 00 00 00 00 00 00 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f6 c0 03 e1 bc 00 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
(T320 Router)

user@host> 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-S0N-SMIR
FPC 6	REV 03	710-001721		T640-FPC3
PIC 1	REV 01	750-009553		PC-40C48-S0N-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				T640
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 ff ff ff
  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:           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

user@host> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
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GB line card chassis
(LCC) Routing Engine)

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
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

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user@host> show chassis hardware detail
Hardware inventory:
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detail (T4000 Router)					
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)

user@host> show chassis hardware models

Hardware inventory:

Router)

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)

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user@host> show chassis hardware lcc 0
lcc0-re0:
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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:

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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 04    710-004396   RB0014         TX Matrix
FPM GBUS      REV 04    710-004617   HW9141         SCC Midplane
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)
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show chassis hardware
(T1600 Router)

user@host> **show chassis hardware**

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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
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
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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	P9P0XV4	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)

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sfc0-re0:

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

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Hardware inventory:
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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, SMR
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

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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	P9M0U3Z	SFP-SX
Xcvr 5	REV 01	740-011782	P9M0U0C	SFP-SX
Xcvr 6	REV 01	740-011782	P9M0TLG	SFP-SX
Xcvr 7	REV 01	740-011782	P9M0U0F	SFP-SX
Xcvr 8	REV 01	740-011613	PFA6LAP	SFP-SX
Xcvr 9	REV 01	740-011782	PCH2P0U	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:

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
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:

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:	S/N TS4027
Assembly ID:	0x0962		Assembly Version:	01.05
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			
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 Display	REV 03	710-024027	DX0282	TXP FPM Display
Jedec Code:	0x7fb0		EEPROM Version:	0x01
P/N:	710-024027		S/N:	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			
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			
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			
CIP 0	REV 04	710-023792	DW4889	TXP CIP
Jedec Code:	0x7fb0		EEPROM Version:	0x01
P/N:	710-023792		S/N:	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

**show chassis hardware
clei-models (TX Matrix
Plus Router)**

user@host> show chassis hardware clei-models
sfc0-re0:

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:

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

lcc1-re0:

Hardware inventory:

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			FANTRAY-T-S
Fan Tray 2			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
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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

lcc0-re0:

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

show chassis hardware
models (TX Matrix
Plus Router)

Fan Tray 2

Rear Fan Tray

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user@host> show chassis hardware models
sfc0-re0:
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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:

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
SIB 4	REV 08	710-022594	DW8064	SIB-TXP-T1600-S
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T-S
Fan Tray 2				FANTRAY-TXP-R-S

lcc1-re0:

Hardware inventory:

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

lcc2-re0:

Hardware inventory:

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-SON-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
Fan Tray 1				FANTRAY-T-S
Fan Tray 2				FANTRAY-TXP-R-S

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lcc3-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	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:
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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

lcc0-re0:

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1B23FEAHA	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:

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1B3975AHA	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
Routing Engine 1	REV 07	740-026941	P737F-002938	RE-DUO-1800
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
clei-models \(TX Matrix\)](#)

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user@host> show chassis hardware clei-models
sfc0-re0:
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Plus router with 3D
SIBs)

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
PEM 1	Rev 06	740-027463	IPUPAFGKTA	PWR-TXP-7-60-DC-S
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 15	710-022606		CB-TXP-S
CB 1	REV 15	710-022606		CB-TXP-S
SIB F13 0	REV 10	750-035002	PROTOXCLEI	750-035002
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	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	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	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	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	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		NON-JNPR		
SIB F2S 0/0	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/2	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/4	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/6	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/0	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/2	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/4	REV 08	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/6	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/0	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/2	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/4	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/6	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/0	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/2	REV 01	711-034977	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/4	REV 08	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:

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 07	740-026941		RE-DUO-C1800-8G-S
Routing Engine 1	REV 06	740-026941		RE-DUO-C1800-8G-S
CB 0	REV 11	710-022597		CB-LCC-S
CB 1	REV 11	710-022597		CB-LCC-S
FPC 5	REV 17	710-013037		T1600-FPC4-ES
PIC 0	REV 18	750-017405		PD-4XGE-XFP
FPC 7	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T-S
Fan Tray 2				FANTRAY-TXP3D-LCC-R-S

lcc2-re0:

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-027486	IPMJ700DRD	CHAS-BP-T1600-S
FPM Display	REV 03	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 07	740-026941		RE-DUO-C1800-8G-S
Routing Engine 1	REV 07	740-026941		RE-DUO-C1800-8G-S
CB 0	REV 11	710-022597		CB-LCC-S
CB 1	REV 11	710-022597		CB-LCC-S
FPC 1	REV 01	710-033873	IPUCAMFCTD	T640-FPC3-ES
FPC 5	REV 04	710-033871	IPUCAMBCTE	T1600-FPC4-ES
PIC 1	REV 20	750-017405		PD-4XGE-XFP
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D

Xcvr 6	REV 01	740-047547	CXP-TXP-3D
Fan Tray 0			FANTRAY-T-S
Fan Tray 1			FANTRAY-T-S
Fan Tray 2			FANTRAY-TXP3D-LCC-R-S

show chassis hardware
detail (TX Matrix Plus
router with 3D SIBs)

user@host> show chassis hardware detail
sfc0-re0:

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Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              REV 05    710-022574   JN11CAAA4AHB   TXP
Midplane             REV 09    710-024027   EH3138         SFC Midplane
FPM Display          REV 12    710-023792   EF6349         TXP FPM Display
CIP 0                REV 12    710-023792   EG5294         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
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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:

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)

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user@host> show chassis hardware lcc 0
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

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

user@host> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN112D865AFA	MX960

SFP+ Optics [MX Series Routers])

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])

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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	HMPD 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	HMPD 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-AF0
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-AF0
Fan Tray 0				QFX Fan Tray, Back to
Front Airflow				
Fan Tray 1				QFX Fan Tray, Back to
Front Airflow				
Fan Tray 2				QFX Fan Tray, Back to
Front Airflow				

show chassis hardware detail (QFX3500 Switches)

```
user@switch> show chassis hardware detail
```

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			JN000TEST5	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
Fan Tray 1
QFX Fan Tray
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 interconnect-device (QFabric Systems)

```

user@switch> show chassis hardware interconnect-device interconnect1
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis       REV 07
Midplane      REV 07   750-021261   BH0208188289   QFX_olive
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 Switch)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 03   711-031896   ABAC5589      PTX5000
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	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

user@switch> show chassis hardware clei-models

**show chassis hardware
clei-models (PTX5000
Packet Transport
Switch)**

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
detail (PTX5000)**

user@switch> show chassis hardware detail

Hardware inventory:

Item	Version	Part number	Serial number	Description
------	---------	-------------	---------------	-------------

Packet Transport Switch)

Chassis				JN11D1FD7AJA	PTX5000
Midplane				ABAC5589	Midplane-8S
FPM		REV 03	711-031896	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 models (PTX5000 Packet Transport Switch)

user@switch> 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 extensive (PTX5000)

user@switch> show chassis hardware extensive

Hardware inventory:

Item	Version	Part number	Serial number	Description
------	---------	-------------	---------------	-------------

Packet Transport Switch)

```

.....
PDU 0          Rev 04   740-032019   UE0003          DC Power Dist Unit
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-032019      S/N:              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
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 00
Address 0x70: 00 00 00 a3 ff 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:              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
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
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 20 01 00 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
(MX Routers with
Media Services Blade
[MSB])

user@switch> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1100FB1AFB	MX480
Midplane	REV 05	710-017414	TR3310	MX480 Midplane
FPM Board	REV 02	710-017254	KG1872	Front Panel Display
PEM 2	Rev 02	740-017343	QCS0812A00N	DC Power Entry Module
PEM 3	Rev 02	740-017343	QCS0812A00U	DC Power Entry Module
Routing Engine 0	REV 07	740-015113	1000740938	RE-S-1300
CB 0	REV 03	710-021523	KF4630	MX SCB
FPC 1	REV 11	750-037207	ZW9726	AS-MCC
CPU	REV 04	711-038173	ZW4819	AS-MCC PMB
MIC 0	REV 06	750-037214	ZW3574	AS-MSC
PIC 0		BUILTIN	BUILTIN	AS-MSC
MIC 1	REV 00	750-037211		AS-MXC
PIC 2		BUILTIN	BUILTIN	AS-MXC

show chassis hardware
extensive (MX Routers)

user@switch> show chassis hardware extensive

```

FPC 1          REV 11   750-037207   ZW9726          AS-MCC
Jedec Code:    0x7fb0          EEPROM Version:    0x02

```

with Media Services
Blade [MSB])

```

P/N:          750-037207          S/N:          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
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
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:          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
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
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:          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
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
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
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 00 ff ff ff
Address 0x30: ff 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 c0 02 e6 6c 7f b0 02 ff 0a 44 01 06
          PIC 2                BUILTIN        BUILTIN        AS-MXC
```

show chassis power

Syntax	show chassis power
Syntax (MX Series Router)	show chassis power <all-members> <local> <member <i>member-id</i> >
Syntax (MX2020 3D Universal Edge Routers)	show chassis power
Syntax (PTX Series)	show chassis power <detail>
Syntax (MX2010 3D Universal Edge Routers)	show chassis power
Release Information	Command introduced in Junos OS Release 10.0. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches. 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.
Description	(MX Series 3D Universal Edge Routers and PTX Series Packet Transport Switches only) Display power limits and usage information for the AC or DC power sources. <ul style="list-style-type: none"> On the MX Series 3D Universal Edge Routers, power is supplied by Power Entry Modules (PEMs).



NOTE: The new high-capacity (4100 W) 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.

- On the MX2020 3D Universal Edge Routers, the power system consists of three components: the power supply modules (PSMs), the power distribution module (PDM), and the power midplane. The power feed is connected to the PDM. The PDM delivers power to the power midplane. The power midplane supplies power to the PSMs. The MX2020 router chassis provides 3+3 (2500W/80A) or 4+4 (2100W/60A) PSM redundancy for the critical FRUs with two power zones.
- On the MX2010 3D Universal Edge Routers, the power system consists of three components: the power supply modules (PSMs), the power distribution module (PDM), and the power midplane. The power feed is connected to the PDM. The PDM delivers power to the power midplane. The power midplane supplies power to the PSMs. Unlike

the MX2020 router chassis, the MX2010 router chassis does not provide redundancy for the critical FRUs because there is only one power zone.

- On the PTX Series Packet Transport Switches, power is supplied by power distribution units (PDUs). Each PDU contains up to four Power Supply Modules (PSMs).

Options **none**—Display basic power usage information for the AC and DC power sources.

all-members—(MX Series routers only) (Optional) Display power usage information for all members of the Virtual Chassis configuration.

detail—(PTX Series only) (Optional) Include power usage for specific FRUs.

local—(MX Series routers only) (Optional) Display power usage information for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display power usage 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.

Required Privilege Level view

Related Documentation

- [show chassis power sequence on page 625](#)
- Checklist for Monitoring Power Supplies

List of Sample Output [show chassis power \(MX960 Router with DC PEM\) on page 618](#)
[show chassis power \(MX960 Router with AC PEM\) on page 618](#)
[show chassis power \(MX480 Router with AC PEM\) on page 619](#)
[show chassis power \(MX240 Router with DC PEM\) on page 619](#)
[show chassis power \(MX2010 Router\) on page 620](#)
[show chassis power \(MX2020 Router\) on page 621](#)
[show chassis power \(PTX5000 Packet Transport Switch\) on page 623](#)
[show chassis power detail \(PTX5000 Packet Transport Switch\) on page 623](#)

Output Fields [Table 35 on page 615](#) lists the output fields for the **show chassis power** command. Output fields are listed in the approximate order in which they appear.

Table 35: show chassis power Output Fields

Field Name	Field Description	Level of Output
PEM number	<p>(MX Series routers only) AC or DC PEM number on the chassis. The following output fields are displayed for the PEM:</p> <ul style="list-style-type: none"> • State—State of the PEM: <ul style="list-style-type: none"> • Online—PEM is present in the slot and online. • Empty—PEM is not present in the slot. • Present—PEM is present in the slot, but not online. • AC/DC Input—OK or Check—State of the AC or DC input power feed with the number of active and expected feeds (one or two). For a DC input power feed, this output field also displays the reference voltage input with maximum input voltage displayed in mV (in parentheses) for the AC or DC PEM. • Capacity—Actual power input capacity with maximum capacity displayed (in parentheses) in watts. <p>NOTE: The maximum capacity for AC and DC PEMs is:</p> <ul style="list-style-type: none"> • MX960 AC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • MX960 DC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • MX480 AC PEM—2520 W if it is high-line. 1450 W if it is low-line. • MX480 DC PEM—2400 W if the DIP switch is off. 2600 W if the DIP switch is on. • MX240 AC PEM—2520 W if it is high-line. 1450 W if it is low-line. • MX240 DC PEM—2400 W if the DIP switch is off. 2600 W if the DIP switch is on. • DC Output—DC power output in Watts for the specified zone, at the specified amps and voltage (A @ V), and load and percentage utilization of the maximum capacity) for the zone. 	All levels

Table 35: show chassis power Output Fields (*continued*)

Field Name	Field Description	Level of Output
System	<p>(MX Series, MX2020, and MX2010 routers only) Overall power statistics for the system zone.</p> <p>The following output fields are displayed for MX Series routers:</p> <ul style="list-style-type: none"> • <i>Zone number</i>: <ul style="list-style-type: none"> • Capacity—Maximum power capacity applicable for the zone, in watts. • Allocated power—Actual capacity allocated for the zone, in watts, with remaining power displayed in parentheses. • Actual usage—Actual power usage for the zone, in watts. • Total system capacity—Cumulative power capacity of all the zones, in watts. • Total remaining capacity—Difference between the Total system capacity and cumulative Allocated power of all the zones, in watts. <p>The following output fields are displayed for MX2010 and MX2020 routers:</p> <ul style="list-style-type: none"> • Capacity—Maximum power capacity applicable for the zone, in watts. • Allocated power—Actual capacity allocated for the zone, in watts, with remaining power displayed in parentheses. • Actual usage—Actual power usage for the zone, in watts. <p>NOTE: For MX2020 routers, there are two power subsystems (Lower Zone and Upper Zone) and the listed output fields are displayed for each zone.</p>	All levels
Total Power	(PTX Series only) Total power used by the switch (displayed in watts).	All levels
PDU number	(PTX Series only) ID number of the power distribution unit (PDU) on the chassis..	All levels

Table 35: show chassis power Output Fields (*continued*)

Field Name	Field Description	Level of Output
PSM number	<p>(PTX Series, MX2020 routers, and MX2010 routers only) ID number of the Power Supply Unit contained in the PDU.</p> <p>(PTX Series) The following output fields are displayed for each PSM:</p> <ul style="list-style-type: none"> • Input (V)—Voltage supplied to the PSM. • Used (W)—Actual power usage for the PSM (measured in watts). <p>(MX2010 and MX2020 routers) The following output fields are displayed for each PSM:</p> <ul style="list-style-type: none"> • State—State of the PSM: <ul style="list-style-type: none"> • Online—PSM is present in the slot and online. • Empty—PSM is not present in the slot. • Present—PSM is present in the slot but not online. • DC Input—State of the DC input power feed with the number of active or expected feeds (in parentheses). • Capacity—Actual power input capacity and maximum capacity (in parentheses) displayed in watts. <p>NOTE: The maximum capacity for AC and DC PSMs is:</p> <ul style="list-style-type: none"> • MX2010/MX2020 AC PSM—2500 W. • MX2010/MX2020 DC PSM—2100 W if the DIP switch is at 60A settings. 2500 W if the DIP switch is at 80A settings. • DC Output—DC power output in watts for the specified zone at the specified amperes and voltage (A at V), and load and percentage utilization of the maximum capacity for the zone. 	All levels
Item	<p>(PTX Series only) (detail keyword only) Actual power usage (measured in watts) for individual FRUs.</p> <p>PTX Switches include the following FRUs:</p> <ul style="list-style-type: none"> • Fan Tray <i>n</i>—Power usage for the specified fan tray. • REn/CBn—Power usage for the specified Routing Engines and Control Boards • SIB/CCG/FPD—Power usage for the Switch Interface Board, Centralized Clock Generator, and Front Panel Display (craft interface). • FPC <i>n</i>—Power usage for the FPC in the slot specified. 	detail

Sample Output

show chassis power
(MX960 Router with
DC PEM)

```
user@host> show chassis power
PEM 0:
  State:      Online
  DC input:   OK (2 feed expected, 2 feed connected)
  DC input:   48.0 V input (57000 mV)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  513 W (zone 0, 9 A at 57 V, 12% of capacity)

PEM 1:
  State:      Online
  DC input:   OK (2 feed expected, 2 feed connected)
  DC input:   48.0 V input (57000 mV)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  228 W (zone 1, 4 A at 57 V, 5% of capacity)

PEM 2:
  State:      Online
  DC input:   OK (2 feed expected, 2 feed connected)
  DC input:   48.0 V input (57000 mV)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  513 W (zone 0, 9 A at 57 V, 12% of capacity)

PEM 3:
  State:      Online
  DC input:   OK (2 feed expected, 2 feed connected)
  DC input:   48.0 V input (57000 mV)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  342 W (zone 1, 6 A at 57 V, 8% of capacity)

System:
  Zone 0:
    Capacity:      4100 W (maximum 4100 W)
    Allocated power: 1680 W (2420 W remaining)
    Actual usage:   1026 W
  Zone 1:
    Capacity:      4100 W (maximum 4100 W)
    Allocated power: 1263 W (2837 W remaining)
    Actual usage:   570 W
  Total system capacity: 8200 W (maximum 8200 W)
  Total remaining power: 5257 W
```

show chassis power
(MX960 Router with
AC PEM)

```
user@host> show chassis power
PEM 0:
  State:      Online
  AC input:   OK (2 feed expected, 2 feed connected)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  0 W (zone 0, 0 A at 56 V, 0% of capacity)

PEM 1:
  State:      Present
  AC input:   Check (2 feed expected, 1 feed connected)
  Capacity:   1700 W (maximum 4100 W)

PEM 2:
  State:      Empty
  Input:      Absent
```

```

PEM 3:
  State:      Online
  AC input:   OK (1 feed expected, 1 feed connected)
  Capacity:   1700 W (maximum 1700 W)

```

```

System:
  Zone 0:
    Capacity:      4100 W (maximum 4100 W)
    Allocated power: 540 W (3560 W remaining)
    Actual usage:   0 W
  Zone 1:
    Capacity:      0 W (maximum 0 W)
    Allocated power: 0 W (0 W remaining)
    Actual usage:   0 W
  Total system capacity: 4100 W (maximum 4100 W)
  Total remaining power: 3560 W

```

show chassis power (MX480 Router with AC PEM)

```

user@host> show chassis power
PEM 0:
  State:      Online
  AC input:   OK (1 feed expected, 1 feed connected)
  Capacity:   2520 W (maximum 2520 W)
  DC output:  472 W (zone 0, 8 A at 59 V, 18% of capacity)

```

```

PEM 1:
  State:      Online
  AC input:   OK (1 feed expected, 1 feed connected)
  Capacity:   2520 W (maximum 2520 W)
  DC output:  472 W (zone 0, 8 A at 59 V, 18% of capacity)

```

```

PEM 2:
  State:      Online
  AC input:   OK (1 feed expected, 1 feed connected)
  Capacity:   2520 W (maximum 2520 W)
  DC output:  118 W (zone 0, 2 A at 59 V, 4% of capacity)

```

```

PEM 3:
  State:      Empty
  Input:      Absent

```

```

System:
  Maximum capacity: 5040 W
  Allocated capacity: 1675 W (33% of maximum)
  Remaining capacity: 3365 W
  Actual usage:     1062 W

```

show chassis power (MX240 Router with DC PEM)

```

user@host> show chassis power
PEM 0:
  State:      Online
  DC input:   OK (1 feed expected, 1 feed connected)
  DC input:   48.0 V input (53500 mV)
  Capacity:   2400 W (maximum 2400 W)
  DC output:  318 W (zone 0, 6 A at 53 V, 13% of capacity)

```

```

PEM 1:
  State:      Online
  DC input:   OK (1 feed expected, 1 feed connected)
  DC input:   48.0 V input (54000 mV)
  Capacity:   2400 W (maximum 2400 W)
  DC output:  0 W (zone 0, 0 A at 54 V, 0% of capacity)

```

PEM 2:
State: Online
DC input: OK (1 feed expected, 1 feed connected)
DC input: 48.0 V input (52500 mV)
Capacity: 2400 W (maximum 2400 W)
DC output: 312 W (zone 0, 6 A at 52 V, 13% of capacity)

PEM 3:
State: Online
DC input: OK (1 feed expected, 1 feed connected)
DC input: 48.0 V input (55000 mV)
Capacity: 2400 W (maximum 2400 W)
DC output: 0 W (zone 0, 0 A at 55 V, 0% of capacity)

System:
Maximum capacity: 2400 W
Allocated capacity: 1270 W (52% of maximum)
Remaining capacity: 1130 W
Actual usage: 630 W

show chassis power (MX2010 Router)

```
user@host > show chassis power
PSM 0:
  State: Online
  DC input: OK (INP0 feed expected, INP0 feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 1022.06 W (19.75 A at 51.75 V, 40.88% of capacity)

PSM 1:
  State: Online
  DC input: OK (INP0 feed expected, INP0 feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 996.19 W (19.25 A at 51.75 V, 39.85% of capacity)

PSM 2:
  State: Online
  DC input: OK (INP0 feed expected, INP0 feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 1022.06 W (19.75 A at 51.75 V, 40.88% of capacity)

PSM 3:
  State: Online
  DC input: OK (INP0 feed expected, INP0 feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 1004.25 W (19.50 A at 51.50 V, 40.17% of capacity)

PSM 4:
  State: Online
  DC input: OK (INP0 feed expected, INP0 feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 996.19 W (19.25 A at 51.75 V, 39.85% of capacity)

PSM 5:
  State: Online
  DC input: OK (INP0 feed expected, INP0 feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 1017.12 W (19.75 A at 51.50 V, 40.69% of capacity)

PSM 6:
  State: Online
  DC input: OK (INP0 feed expected, INP0 feed connected)
```

Capacity: 2500 W (maximum 2500 W)
 DC output: 1009.12 W (19.50 A at 51.75 V, 40.37% of capacity)

PSM 7:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2500 W (maximum 2500 W)
 DC output: 996.19 W (19.25 A at 51.75 V, 39.85% of capacity)

PSM 8:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2500 W (maximum 2500 W)
 DC output: 1004.25 W (19.50 A at 51.50 V, 40.17% of capacity)

System:

Capacity: 22500 W (maximum 22500 W)
 Allocated power: 12888 W (9612 W remaining)
 Actual usage: 9067.44 W

show chassis power (MX2020 Router)

user@host > show chassis power

PSM 0:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2500 W (maximum 2500 W)
 DC output: 858.44 W (Lower Zone, 16.75 A at 51.25 V, 34.34% of capacity)

PSM 1:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2500 W (maximum 2500 W)
 DC output: 854.25 W (Lower Zone, 16.75 A at 51.00 V, 34.17% of capacity)

PSM 2:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2500 W (maximum 2500 W)
 DC output: 858.44 W (Lower Zone, 16.75 A at 51.25 V, 34.34% of capacity)

PSM 3:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2500 W (maximum 2500 W)
 DC output: 867.00 W (Lower Zone, 17.00 A at 51.00 V, 34.68% of capacity)

PSM 4:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2500 W (maximum 2500 W)
 DC output: 871.25 W (Lower Zone, 17.00 A at 51.25 V, 34.85% of capacity)

PSM 5:

State: Empty
 Input: Absent

PSM 6:

State: Empty
 Input: Absent

PSM 7:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 867.00 W (Lower Zone, 17.00 A at 51.00 V, 34.68% of capacity)

PSM 8:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 879.75 W (Lower Zone, 17.25 A at 51.00 V, 35.19% of capacity)

PSM 9:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 10:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 615.00 W (Upper Zone, 12.00 A at 51.25 V, 29.29% of capacity)

PSM 11:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 12:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 13:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 612.00 W (Upper Zone, 12.00 A at 51.00 V, 29.14% of capacity)

PSM 14:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 627.81 W (Upper Zone, 12.25 A at 51.25 V, 29.90% of capacity)

PSM 15:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 627.81 W (Upper Zone, 12.25 A at 51.25 V, 29.90% of capacity)

PSM 16:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 615.00 W (Upper Zone, 12.00 A at 51.25 V, 29.29% of capacity)

PSM 17:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)

Capacity: 2100 W (maximum 2500 W)
 DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

System:

Upper Zone:

Capacity: 18900 W (maximum 22500 W)
 Allocated power: 12900 W (6000 W remaining)
 Actual usage: 5596.62 W

Lower Zone:

Capacity: 17500 W (maximum 17500 W)
 Allocated power: 12900 W (4600 W remaining)
 Actual usage: 6056.12 W

Total system capacity: 36400 W (maximum 40000 W)
 Total remaining power: 10600 W

**show chassis power
 (PTX5000 Packet
 Transport Switch)**

```
user@host> show chassis power
Chassis Power      Input(V)      Used(W)
Total Power                               4006
PDU 0
  PSM 0
    Input 1          54          149
  PSM 1
    Input 1          54          377
  PSM 2
    Input 1          54          745
  PSM 3
    Input 1          54          715
PDU 1
  PSM 0
    Input 1          54          246
  PSM 1
    Input 1          54          332
  PSM 2
    Input 1          54          721
  PSM 3
    Input 1          54          721
```

**show chassis power
 detail (PTX5000)**

```
user@host> show chassis power detail
Chassis Power      Input(V)      Used(W)
```

Packet Transport Switch)

Total Power		3997
PDU 0		1975
PSM 0		
Input 1	54	136
PSM 1		
Input 1	54	377
PSM 2		
Input 1	54	741
PSM 3		
Input 1	54	721
PDU 1		2022
PSM 0		
Input 1	54	235
PSM 1		
Input 1	54	332
PSM 2		
Input 1	54	726
PSM 3		
Input 1	54	729
Item	Used(W)	
Fan Tray 0	49	
Fan Tray 1	127	
Fan Tray 2	117	
RE0/CB0	109	
RE1/CB1	100	
SIB/CCG/FPD	375	
FPC 0	381	
FPC 1	0	
FPC 2	447	
FPC 3	560	
FPC 4	0	
FPC 5	448	
FPC 6	379	
FPC 7	388	

show chassis power sequence

Syntax	show chassis power sequence
Release Information	<p>Command introduced in Junos OS Release 10.0.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.</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>
Description	<p>(MX Series 3D Universal Edge Routers only) Show power-on sequence for the chassis Dense Port Concentrators (DPCs).</p> <p>(PTX Series Packet Transport Switches, MX2010 and MX2020 routers only) Show power-on sequence for FPCs installed in the chassis.</p>
Options	This command has no options.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show chassis power on page 613
List of Sample Output	<p>show chassis power sequence (MX Series) on page 626</p> <p>show chassis power sequence (MX2010 Routers) on page 626</p> <p>show chassis power sequence (MX2020 Routers) on page 626</p> <p>show chassis power sequence (PTX5000 Packet Transport Switch) on page 626</p>
Output Fields	<p>Table 36 on page 625 lists the output fields for the show chassis power sequence command. Output fields are listed in the approximate order in which they appear.</p>

Table 36: show chassis power sequence Output Fields

Field Name	Field Description
Chassis FRU Power Sequence	<p>(MX Series) Power-on sequence for the DPCs in the chassis. The numbers indicate the slot number of the DPCs.</p> <p>(PTX Series, MX2010 and MX2020 routers only) Power-on sequence for the FPCs in the chassis. The numbers indicate the slot number of the FPC.</p>

Sample Output

show chassis power
sequence (MX Series)

```
user@host> show chassis power sequence
Chassis FRU Power Sequence: 3 4 5 6 7 8 9 10 11 0 1 2
```

show chassis power
sequence (MX2010
Routers)

```
user@host > show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7 8 9
```

show chassis power
sequence (MX2020
Routers)

```
user@host > show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
```

show chassis power
sequence (PTX5000
Packet Transport
Switch)

```
user@host> show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7
```

show chassis routing-engine

Syntax	show chassis routing-engine <bios <i>slot</i> >
Syntax (EX Series Switches)	show chassis routing-engine < <i>slot</i> >
Syntax (T Series routers)	show chassis routing-engine <bios <i>slot</i> >
Syntax (TX Matrix Routers)	show chassis routing-engine <bios <i>slot</i> > <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers)	show chassis routing-engine <bios <i>slot</i> > <lcc <i>number</i> sfc <i>number</i> >
Syntax (QFX Series)	show chassis routing-engine <interconnect-device <i>name</i> > <node-device <i>name</i> >
Syntax (MX Series Routers)	show chassis routing-engine <bios <i>slot</i> > <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis routing-engine <bios <i>slot</i> >
Syntax (MX2020 3D Universal Edge Routers)	show chassis routing-engine <bios <i>slot</i> >
Syntax (ACX Series Universal Access Routers)	show chassis routing-engine
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>sfc option introduced for the TX Matrix Plus router in Junos OS Release in 9.6.</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 Access 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>
Description	Display the status of the Routing Engine.

- Options** **none**—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 T1600 routers.
- 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.
- 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 T1600 router (line-card chassis) that is connected to the TX Matrix Plus router. On a TX Matrix Plus router with 3D SIBs, display Routing Engine information for a specified T1600 or T4000 router (line-card chassis) that is connected to the TX Matrix Plus router.
- 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.
- 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.

Required Privilege Level view

Related Documentation

- [request chassis routing-engine master](#)
- [Configuring Routing Engine Redundancy](#)
- [Switching the Global Master and Backup Roles in a Virtual Chassis Configuration](#)

List of Sample Output [show chassis routing-engine \(M5 Router\) on page 632](#)
[show chassis routing-engine \(M10 Router\) on page 632](#)

[show chassis routing-engine \(M20 Router\) on page 632](#)
[show chassis routing-engine \(M40 Router\) on page 633](#)
[show chassis routing-engine \(M120 Router\) on page 633](#)
[show chassis routing-engine \(M160 Router\) on page 634](#)
[show chassis routing-engine \(MX240 Router\) on page 635](#)
[show chassis routing-engine \(MX480 Router\) on page 635](#)
[show chassis routing-engine \(MX960 Router\) on page 635](#)
[show chassis routing-engine \(MX2010 Router\) on page 636](#)
[show chassis routing-engine \(MX2020 Router\) on page 636](#)
[show chassis routing-engine \(T320 router\) on page 637](#)
[show chassis routing-engine \(T640 router\) on page 638](#)
[show chassis routing-engine \(T1600 router\) on page 638](#)
[show chassis routing-engine \(T4000 router\) on page 639](#)
[show chassis routing-engine \(TX Matrix Router\) on page 640](#)
[show chassis routing-engine lcc \(TX Matrix Router\) on page 641](#)
[show chassis routing-engine bios \(TX Matrix Router\) on page 641](#)
[show chassis routing-engine \(TX Matrix Plus Router\) on page 642](#)
[show chassis routing-engine lcc \(TX Matrix Plus Router\) on page 643](#)
[show chassis routing-engine bios \(TX Matrix Plus Router\) on page 644](#)
[show chassis routing-engine \(QFX Series\) on page 644](#)
[show chassis routing-engine \(PTX Series Packet Transport Switch\) on page 644](#)
[show chassis routing-engine \(ACX2000 Universal Access Router\) on page 645](#)
[show chassis routing-engine \(ACX1000 Universal Access Router\) on page 645](#)

Output Fields [Table 37 on page 629](#) lists the output fields for the **show chassis routing-engine** command. Output fields are listed in the approximate order in which they appear.

Table 37: 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: Master , Backup , or Disabled .
Election priority	(Systems with multiple Routing Engines) Election priority for the Routing Engine: Master or Backup .
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.

Table 37: show chassis routing-engine Output Fields (*continued*)

Field Name	Field Description
CPU utilization	Information about the Routing Engine's CPU utilization: <ul style="list-style-type: none">• User—Percentage of CPU time being used by user processes.• Background—Percentage of CPU time being used by background processes.• Kernel—Percentage of CPU time being used by kernel processes.• Interrupt—Percentage of CPU time being used by interrupts.• Idle—Percentage of CPU time that is idle.
Model	Routing Engine model number.
Serial ID	(Systems with multiple Routing Engines) Identification number of the Routing Engine in this slot.
Start time	Time at which the Routing Engine started running.
Uptime	How long the Routing Engine has been running.
Routing Engine BIOS Version	BIOS version being run by the Routing Engine.

Table 37: 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"> • power cycle/failure—Halt of the Routing Engine using the halt 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 request system halt 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. • watchdog—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. • reset-button reset—(Not available on the J Series router or EX Series switch) Reboot due to pressing of the reset button on the Routing Engine. • power-button hard power off—Reboot due to pressing of the power button on the chassis. A powering down of the software also occurs if you enter the request system power-off command. You can enter this command to power down the chassis or specific Routing Engines; you can then restart the software. • misc hardware reason—Reboot due to miscellaneous hardware reasons. • thermal shutdown—Reboot due to the router or switch reaching a critical temperature at which point it is unsafe to continue operations. • hard disk failure—Reboot due to a hard disk or solid-state drive (SSD) failure. • reset from debugger—Reboot due to reset from the debugger. • chassis control reset—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 restart chassis-control command. • bios auto recovery reset—Reboot due to a BIOS auto-recovery reset. • could not be determined—Reboot due to an undetermined reason. • Router rebooted after a normal shutdown—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 request system reboot command. You can enter this command to reboot the chassis or specific Routing Engines.
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
(MX240 Router)**

```
user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Backup
  Election priority       Master (default)
  Temperature             40 degrees C / 104 degrees F
  CPU temperature         47 degrees C / 116 degrees F
  DRAM                    3584 MB
  Memory utilization      7 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                0 percent
    Interrupt             0 percent
    Idle                  100 percent
  Model                   RE-S-2000
  Serial ID               1000703522
  Start time              2007-12-19 10:35:40 PST
  Uptime                  16 days, 3 hours, 15 minutes, 23 seconds
  Last reboot reason      Router rebooted after a normal shutdown
```

**show chassis
routing-engine
(MX480 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                    2048 MB
  Memory utilization      13 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                2 percent
    Interrupt             0 percent
    Idle                  98 percent
  Model                   RE-S-1300
  Serial ID               1000697044
  Start time              2008-01-04 06:46:08 PST
  Uptime                  8 hours, 17 minutes, 16 seconds
  Last reboot reason      Router rebooted after a normal shutdown
```

**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         37 degrees C / 98 degrees F
  DRAM                    2048 MB
  Memory utilization      18 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                4 percent
    Interrupt             0 percent
    Idle                  96 percent
```

```

Model                RE-S-1300
Serial ID            1000617944
Start time           2006-10-26 12:37:13 PDT
Uptime               6 days, 4 hours, 59 minutes, 40 seconds
Last reboot reason   Router rebooted after a normal shutdown
Load averages:       1 minute   5 minute   15 minute
                     0.16       0.08       0.02

```

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             3 degrees C / 37 degrees F
  CPU temperature         3 degrees C / 37 degrees F
  DRAM                    17152 MB
  Memory utilization      13 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                4 percent
    Interrupt             2 percent
    Idle                  95 percent
  Model                   RE-S-1800x4
  Serial ID               9009099704
  Start time              2012-10-02 14:33:32 PDT
  Uptime                  14 hours, 39 minutes, 39 seconds
  Last reboot reason      Router rebooted after a normal shutdown.
  Load averages:         1 minute   5 minute   15 minute
                        0.06       0.05       0.01

```

Routing Engine status:

```

Slot 1:
  Current state           Backup
  Election priority       Backup (default)
  Temperature             1 degrees C / 33 degrees F
  CPU temperature         2 degrees C / 35 degrees F
  DRAM                    17152 MB
  Memory utilization      11 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                0 percent
    Interrupt             0 percent
    Idle                  100 percent
  Model                   RE-S-1800x4
  Serial ID               9009099706
  Start time              2012-10-02 10:36:06 PDT
  Uptime                  18 hours, 36 minutes, 57 seconds
  Last reboot reason      Router rebooted after a normal shutdown.
  Load averages:         1 minute   5 minute   15 minute
                        0.01       0.00       0.00

```

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             6 degrees C / 42 degrees F
  CPU temperature         6 degrees C / 42 degrees F

```

```

DRAM                                17152 MB
Memory utilization                    14 percent
CPU utilization:
  User                               1 percent
  Background                         0 percent
  Kernel                             7 percent
  Interrupt                           2 percent
  Idle                               91 percent
Model                                RE-S-1800x4
Serial ID                            9009089704
Start time                           2012-10-02 11:05:24 PDT
Uptime                               2 days, 15 hours, 49 minutes, 13 seconds
Last reboot reason                    Router rebooted after a normal shutdown.
Load averages:                       1 minute   5 minute   15 minute
                                      0.10       0.05       0.01

Routing Engine status:
Slot 1:
  Current state                       Backup
  Election priority                   Backup (default)
  Temperature                         7 degrees C / 44 degrees F
  CPU temperature                     5 degrees C / 41 degrees F
  DRAM                                17152 MB
  Memory utilization                  12 percent
  CPU utilization:
    User                             0 percent
    Background                       0 percent
    Kernel                           0 percent
    Interrupt                         0 percent
    Idle                             99 percent
  Model                              RE-S-1800x4
  Serial ID                          9009094138
  Start time                         2012-10-02 11:09:57 PDT
  Uptime                             2 days, 15 hours, 44 minutes, 27 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 (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

```

user@host> show chassis routing-engine


```
show chassis
routing-engine (T1600
router)
```

```
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

```

user@host> show chassis routing-engine bios

**show chassis
routing-engine bios
(TX Matrix Router)**

```
scc-re0:
-----
Routing Engine BIOS Version: V1.0.0
lcc0-re0:
-----
Routing Engine BIOS Version: V1.0.17
lcc2-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

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, 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
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, 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 (PTX)**

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

```
Routing Engine status:
```

```
Slot 0:
```

Series Packet
Transport Switch)

```

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
(ACX2000 Universal
Access 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

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature           36 degrees C / 96 degrees F

```

**(ACX1000 Universal
Access Router)**

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 sibs

Syntax	show chassis sibs
Syntax (TX Matrix Router)	show chassis sibs <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs)	show chassis sibs <lcc <i>number</i> sfc <i>number</i> >
Syntax (PTX Series Packet Transport Switches)	show chassis sibs <detail> < <i>slot</i> >
Release Information	<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 Switches.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>detail and sib-slot options introduced for the PTX Packet Transport Switch in Junos OS Release 12.1</p>
Description	(M320 and T Series routers only) Display Switch Interface Boards (SIBs) status information.
Options	<p>none—(TX Matrix routers, TX Matrix Plus routers, and TX Matrix Plus routers with 3D SIBs 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 T1600 or T4000 routers.</p> <p>detail—(PTX Series) (Optional) Display detailed SIB status information.</p> <p>lcc <i>number</i>—(TX Matrix routers, TX Matrix Plus routers, and TX Matrix Plus routers with 3D SIBs only) (Optional) On a TX Matrix router, display SIB status information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display SIB status information for a specified router that is connected to the TX Matrix Plus router. On a TX Matrix Plus router, display SIB status information for a specified router that is connected to the TX Matrix Plus router with 3D SIBs.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 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, TX Matrix Plus routers with 3D SIBs only) (Optional) Display SIB status information for the TX Matrix Plus router (or switch-fabric chassis). 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
- show chassis spmb sibs
- [show chassis environment sib on page 311](#)
- 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 652](#)
[show chassis sibs \(T4000 Router\) on page 652](#)
[show chassis sibs \(TX Matrix Router\) on page 652](#)
[show chassis sibs \(T1600 Router\) on page 652](#)
[show chassis sibs \(TX Matrix Plus Router\) on page 652](#)
[show chassis sibs \(TX Matrix Plus Router with 3D SIBs\) on page 654](#)
[show chassis sibs sfc \(TX Matrix Plus Router\) on page 655](#)
[show chassis sibs sfc \(TX Matrix Plus Router with 3D SIBs\) on page 656](#)
[show chassis sibs lcc \(TX Matrix Plus Router\) on page 657](#)
[show chassis sibs lcc \(TX Matrix Plus Router with 3D SIBs\) on page 657](#)
[show chassis sibs \(M320 Router\) on page 657](#)
[show chassis sibs \(PTX Series\) on page 657](#)
[show chassis sibs \(PTX Series\) on page 658](#)

Output Fields

[Table 38 on page 648](#) lists the output fields for the **show chassis sibs** command. Output fields are listed in the approximate order in which they appear.

Table 38: show chassis sibs Output Fields

Field Name	Field Description
Slot	SIB slot number.

Table 38: show chassis sibs Output Fields (*continued*)

Field Name	Field Description
Type	(TX Matrix Plus router and TX Matrix Plus router with 3D SIBs only) SIB type.
Uptime	How long the SIB has been up and running.
State	<p>SIB status:</p> <ul style="list-style-type: none"> • Activating—SIB is coming online; this is a transitional state. • Deactivating—SIB is going offline; this is a transitional state. • Connected—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. • Disconnected—SIBs on all T640 routers on the TX Matrix router (switch-card chassis) are in the Disconnected 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 Disconnected state, because a SIB on the SFC has gone offline. <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"> • Online—SIB is operational and running. • Offline—SIB is powered down. <p>NOTE: If a SIB transitions to the Offline state, the command displays an appropriate reason in the output. For instance, if the SIB is taken offline using the request chassis sib command, the show chassis sibs command displays --- Offlined by cli command --- in the output.</p> <ul style="list-style-type: none"> • Spare—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic. <p>NOTE: Spare does not apply to PTX Series Packet Transport Switches, as there are no spare SIBs.</p> <ul style="list-style-type: none"> • Empty—No SIB is present. • Fault—SIB is in an alarmed state in which the SIB's plane is not operational for one of the following reasons: <ul style="list-style-type: none"> • Onboard fabric ASIC is not operational. • Fiber-optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Check—SIB is in an alarmed state due to link errors or destination errors. A SIB can transition to the Check state from the online or spare state. <p>The Check state can be caused by the following reasons:</p> <ul style="list-style-type: none"> • Unsupported FPC installed on a router. • SIB not inserted properly (such as bent pins). • Destination errors are detected on the SIB. In this case, the Packet Forwarding Engine stops using the SIB to send traffic

Table 38: show chassis sibs Output Fields (*continued*)

Field Name	Field Description
	<p>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.</p> <p>NOTE: For SIBs in the Check state, the output displays some additional information:</p> <ul style="list-style-type: none"> In Junos OS Release 9.6 and later, the Check state message shows the number of Packet Forwarding Engines in the plane having destination errors. For example, Check (10 destination errors) 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 Check state because of link errors only, the Check state message shows Check (0 destination errors). In Junos OS Release 9.5 and earlier, the Check state message shows Check (destination errors) 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 Check state because of link errors only, the Check state message shows Check (no destination errors). <p>If the SIB is in a Check state, because of destination errors, the CLI displays an additional line in the output, use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details.</p> <ul style="list-style-type: none"> 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"> Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The show chassis fabric fpcs command shows Plane disabled as status for this link. Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The show chassis fabric fpcs command shows Link error as the status for this link. <p>NOTE: The Check state does not apply to PTX Series Packet Transport Switches.</p> <ul style="list-style-type: none"> SFC Error—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the Fault 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 SFC Error state. This state indicates that the F13 SIB to which the LCC SIB is connected has errors. <p>NOTE: The Connected, Disconnected, and SFC Error states are only applicable to the SIBs on an LCC.</p> <ul style="list-style-type: none"> Invalid—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.

Table 38: show chassis sibs Output Fields (*continued*)

Field Name	Field Description
NOTE: The Invalid state is applicable to TX Matrix Plus routers only.	
Fabric links	<p>Indicates status of fabric links on the SIB.</p> <ul style="list-style-type: none"> • Active—All Fabric links on SIB are active. Errors detected on the SIB's Fabric links, if any, are reported in the Errors column. • Unused—All Fabric links on the SIB are not used for fabric traffic.
Errors	<p>Indicates if there is any error on the SIB.</p> <ul style="list-style-type: none"> • None—No errors • Link Errors—Fabric link errors were found on SIB RX link. • Cell drops—Fabric cell drops were found on the SIB ASIC. • Link Errors, Cell drops—Both Link errors and cell drops were detected on atleast one of the SIB's Fabric links.
Link Errors	Link Errors —indicate the number of links which are marked faulty because the errors on them have crossed threshold.
Cable Errors	Cable Errors —Indicate the number of mandatory cables that are not connected, or in up state for that plane
Destination Errors	Destination Errors —Indicate the number of destinations that are not reachable on this plane.

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		NONE	NONE	
2	Invalid		NONE	NONE	
3	Online	SIB F13	NONE	NONE	1 hour,
53 minutes, 19 seconds					
4	Empty		NONE	NONE	
5	Invalid		NONE	NONE	
6	Online	SIB F13	NONE	NONE	1 hour,
53 minutes, 8 seconds					
7	Empty		NONE	NONE	
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	NONE	NONE	NONE	12 minutes, 56 seconds
1	Online	SIB F13	NONE	NONE	NONE	12 minutes, 39 seconds
2	Invalid		NONE	NONE	NONE	
3	Spare	SIB F13	NONE	NONE	NONE	
4	Spare	SIB F13	NONE	NONE	NONE	
5	Invalid		NONE	NONE	NONE	
6	Online	SIB F13	NONE	NONE	NONE	15 minutes, 27 seconds
7	Online	SIB F13	NONE	NONE	NONE	15 minutes, 10 seconds
8	Online	SIB F13	NONE	NONE	NONE	14 minutes, 45 seconds
9	Online	SIB F13	NONE	NONE	NONE	14 minutes, 28 seconds
10	Invalid		NONE	NONE	NONE	
11	Online	SIB F13	NONE	NONE	NONE	14 minutes, 3 seconds
12	Online	SIB F13	NONE	NONE	NONE	13 minutes, 45 seconds
0/0	Online	SIB F2S	-n/a-	NONE	NONE	13 minutes, 43 seconds
0/2	Online	SIB F2S	-n/a-	NONE	NONE	13 minutes, 17 seconds
0/4	Online	SIB F2S	-n/a-	NONE	NONE	13 minutes, 15 seconds
0/6	Online	SIB F2S	-n/a-	NONE	NONE	13 minutes, 13 seconds
1/0	Spare	SIB F2S	-n/a-	NONE	NONE	
1/2	Spare	SIB F2S	-n/a-	NONE	NONE	
1/4	Spare	SIB F2S	-n/a-	NONE	NONE	
1/6	Spare	SIB F2S	-n/a-	NONE	NONE	
2/0	Online	SIB F2S	-n/a-	NONE	NONE	15 minutes, 50 seconds
2/2	Online	SIB F2S	-n/a-	NONE	NONE	15 minutes, 48 seconds
2/4	Online	SIB F2S	-n/a-	NONE	NONE	15 minutes, 46 seconds
2/6	Online	SIB F2S	-n/a-	NONE	NONE	15 minutes, 44 seconds

lcc0-re0:

Slot	State	Cable errors	Link errors	Destination errors	Uptime
0	Connected	NONE	NONE	NONE	2 days, 23 hours, 45 minutes, 45 seconds


```

1  Offline          NONE          NONE          NONE          --- Offlined
by cli command ---
2  Online           NONE          NONE          NONE          2 days, 23
hours, 46 minutes, 20 seconds
3  Online           NONE          NONE          NONE          2 days, 23
hours, 46 minutes, 13 seconds
4  Online           NONE          NONE          NONE          2 days, 23
hours, 46 minutes, 6 seconds
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            NONE          NONE          NONE
2  Invalid          NONE          NONE          NONE
3  Online           SIB F13      NONE          NONE          12 hours,
6 minutes, 22 seconds
4  Empty            NONE          NONE          NONE
5  Invalid          NONE          NONE          NONE
6  Online           SIB F13      NONE          NONE          12 hours,
6 minutes, 11 seconds
7  Empty            NONE          NONE          NONE
8  Online           SIB F13      NONE          NONE          12 hours,
6 minutes
9  Empty            NONE          NONE          NONE
10 Invalid          NONE          NONE          NONE
11 Online           SIB F13      NONE          NONE          12 hours,
5 minutes, 49 seconds
12 Empty            NONE          NONE          NONE
13 Invalid          NONE          NONE          NONE
14 Invalid          NONE          NONE          NONE
15 Invalid          NONE          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 sfc
(TX Matrix Plus Router
with 3D SIBs)

```

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

```

```

-----
Slot State      Type      Cable errors Link errors Destination
errors Uptime
0 Online        SIB F13   NONE        NONE        NONE
13 minutes, 35 seconds
1 Online        SIB F13   NONE        NONE        NONE
13 minutes, 18 seconds
2 Invalid
3 Spare        SIB F13   NONE        NONE        NONE
4 Spare        SIB F13   NONE        NONE        NONE
5 Invalid
6 Online        SIB F13   NONE        NONE        NONE
16 minutes, 6 seconds
7 Online        SIB F13   NONE        NONE        NONE
15 minutes, 49 seconds
8 Online        SIB F13   NONE        NONE        NONE
15 minutes, 24 seconds
9 Online        SIB F13   NONE        NONE        NONE
15 minutes, 7 seconds
10 Invalid
11 Online       SIB F13   NONE        NONE        NONE
14 minutes, 42 seconds
12 Online       SIB F13   NONE        NONE        NONE
14 minutes, 24 seconds
13 Invalid
14 Invalid
15 Invalid
0/0 Online       SIB F2S   -n/a-       NONE        NONE
14 minutes, 22 seconds
0/2 Online       SIB F2S   -n/a-       NONE        NONE
13 minutes, 56 seconds
0/4 Online       SIB F2S   -n/a-       NONE        NONE
13 minutes, 54 seconds
0/6 Online       SIB F2S   -n/a-       NONE        NONE
13 minutes, 52 seconds
1/0 Spare        SIB F2S   -n/a-       NONE        NONE
1/2 Spare        SIB F2S   -n/a-       NONE        NONE
1/4 Spare        SIB F2S   -n/a-       NONE        NONE
1/6 Spare        SIB F2S   -n/a-       NONE        NONE
2/0 Online       SIB F2S   -n/a-       NONE        NONE
16 minutes, 29 seconds
2/2 Online       SIB F2S   -n/a-       NONE        NONE
16 minutes, 27 seconds
2/4 Online       SIB F2S   -n/a-       NONE        NONE
16 minutes, 25 seconds
2/6 Online       SIB F2S   -n/a-       NONE        NONE
16 minutes, 23 seconds
3/0 Online       SIB F2S   -n/a-       NONE        NONE
15 minutes, 47 seconds

```

3/2	Online	SIB F2S	-n/a-	NONE	NONE
	15 minutes, 45 seconds				
3/4	Online	SIB F2S	-n/a-	NONE	NONE
	15 minutes, 43 seconds				
3/6	Online	SIB F2S	-n/a-	NONE	NONE
	15 minutes, 41 seconds				
4/0	Online	SIB F2S	-n/a-	NONE	NONE
	15 minutes, 4 seconds				
4/2	Online	SIB F2S	-n/a-	NONE	NONE
	15 minutes, 2 seconds				
4/4	Online	SIB F2S	-n/a-	NONE	NONE
	15 minutes				
4/6	Online	SIB F2S	-n/a-	NONE	

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	None
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 synchronization

Syntax	show chassis synchronization <extensive> <backup master>
Release Information	Command introduced in Junos OS Release 7.6 for M320 routers. Command introduced in Junos OS Release 8.3 for M40e routers. Command introduced in Junos OS Release 9.3 for M120 routers. Command introduced in Junos OS Release 10.2 for T320, T640, and T1600 routers. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches. Command introduced in Junos OS Release 12.2 for ACX Series routers.
Description	(ACX Series, M320, M40e, M120, T320, T640, and T1600 routers and PTX Series Packet Transport Switches only) Display information about the external clock source currently used for chassis synchronization.
Options	extensive —(Optional) Display clock synchronization information in detail. backup —(Optional) Display clock synchronization information about the backup clock. master —(Optional) Display clock synchronization information about the master clock.
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none"> • request chassis synchronization switch on page 156 • Configuring Clock Synchronization Interface for MX Series Routers • show chassis synchronization (MX Series Routers) • Supported Time Synchronization Standard • Configuring External Clock Synchronization for ACX Series Routers
List of Sample Output	show chassis synchronization on page 661 show chassis synchronization master on page 661 show chassis synchronization backup on page 661 show chassis synchronization extensive on page 661 show chassis synchronization (T320, T640, and T1600 Routers) on page 661 show chassis synchronization (PTX Series Packet Transport Switches) on page 662 show chassis synchronization extensive (ACX Series Routers) on page 662
Output Fields	Table 39 on page 660 lists the output fields for the show chassis synchronization command. Output fields are listed in the approximate order in which they appear. show chassis synchronizations show chassis synchronizations show chassis synchronization

Table 39: show chassis synchronization Output Fields

Field Name	Field Description
Current state	Indicates current status of external clock sources: <ul style="list-style-type: none"> • backup—Source is currently the backup clock source. • master—Source is currently the master clock source. • Online-Master—(PTX Series Packet Transport Switches) Source is the master clock. Source is online. • Online-Standby—(PTX Series Packet Transport Switches) Source is the standby (backup) clock. Source is online.
Current clock state	Indicates current source of external synchronization: <ul style="list-style-type: none"> • internal—Source is providing its own clocking. • locked to master CB—(M320, M40e, and M120 routers) Source is locked to master clock source. • locked to master SCG—(T320, T640, and T1600 routers) Source is locked to master clock source. • locked to master CCG—(PTX Series Packet Transport Switches) Source is locked to master clock source.
Selected for	Number of seconds this clock has been the master or backup clock source.
Selected since	Timestamp for establishment as master or backup clock source.
Deviation (in ppm)	Difference in clock timing, in parts per million (ppm).
Last deviation (in ppm)	Previous difference in clock timing, if any, in ppm.
Configured sources	Information about clock sources eligible for selection as master clock.
Source	Information about external clock sources.
Priority	Indicates priority of external clock sources: <ul style="list-style-type: none"> • primary—Source is a primary reference. • secondary—Source is a secondary reference.
Deviation (in ppm)	Current difference in clock timing, in ppm: <ul style="list-style-type: none"> • measuring—Establishing source deviation. • number—Deviation in ppm.
Last deviation (in ppm)	Previous difference in clock timing, in ppm: <ul style="list-style-type: none"> • number—Deviation in ppm.
Status	Indicates status of external sources: <ul style="list-style-type: none"> • present—Source is configured and present. • qualified—Source is eligible for synchronization source.

Sample Output

show chassis synchronization

```
user@host> show chassis synchronization
Clock Synchronization Status :
  Clock module on CB 0
    Current state           : master
    Current clock state     : internal
    Selected for            : 18 hours, 12 minutes, 43 seconds
    Selected since          : 2008-09-10 03:27:47 PDT
    Deviation (in ppm)      : +0.00
    Last deviation (in ppm): +0.00
  Clock Synchronization Status :
    Clock module on CB 1
      Current state         : backup
      Current clock state   : locked to master CB
      Selected for          : 1 day, 12 hours, 49 minutes, 20 seconds
      Selected since        : 2008-09-09 08:51:10 PDT
```

show chassis synchronization master

```
user@host> show chassis synchronization master
Clock Synchronization Status :
  Clock module on CB 0
    Current state           : master
    Current clock state     : internal
    Selected for            : 8 days, 21 minutes, 12 seconds
    Selected since          : 2008-08-27 21:05:40 PDT
    Deviation (in ppm)      : +0.00
    Last deviation (in ppm): +0.00
```

show chassis synchronization backup

```
user@host> show chassis synchronization backup
Clock Synchronization Status :
  Clock module on CB 1
    Current state           : backup
    Current clock state     : locked to master CB
    Selected for            : 34 days, 20 hours, 17 minutes, 8 seconds
    Selected since          : 2008-08-01 01:22:16 PDT
```

show chassis synchronization extensive

```
user@host> show chassis synchronization extensive
Clock Synchronization Status :
  Clock module on CB 0
    Current state           : master
    Current clock state     : internal
    Selected for            : 8 days, 36 minutes, 29 seconds
    Selected since          : 2008-08-27 21:05:40 PDT
    Deviation (in ppm)      : +0.00
    Last deviation (in ppm): +0.00
  Clock Synchronization Status :
    Clock module on CB 1
      Current state         : backup
      Current clock state   : locked to master CB
      Selected for          : 34 days, 20 hours, 19 minutes, 53 seconds
      Selected since        : 2008-08-01 01:22:16 PDT
```

show chassis synchronization (T320,

```
user@host> show chassis synchronization
Clock Synchronization Status :
  Clock module on SCG 0
```

T640, and T1600 Routers)

```

Current state           : master
Current clock state     : locked to external-a
  Selected for          : 2 hours, 28 minutes, 4 seconds
  Selected since        : 2006-02-17 01:12:58 PST
Configured sources
  Source      Priority  Deviation    Last deviation  Status
                  (in ppm)    (in ppm)
  external-a  primary   measuring    -0.10           in-use
  external-b  secondary -0.10        -0.10           qualified
Clock Synchronization Status :
Clock module on SCG 1
  Current state         : backup
  Current clock state   : locked to master SCG
  Selected for          : 19 hours, 49 minutes, 14 seconds
  Selected since        : 2006-02-16 07:51:48 PST
Configured sources
  Source      Priority  Deviation    Last deviation  Status
                  (in ppm)    (in ppm)
  external-a  primary   -0.25        -0.25           qualified
  external-b  secondary -0.25        -0.25           qualified

```

show chassis synchronization (PTX Series Packet Transport Switches)

```

user@host> show chassis synchronization
Clock Synchronization Status :
Clock module on CCG 0
  Current state         : Online - Master
  Current clock state   : internal
  Selected for          : 1 hour, 24 minutes, 21 seconds
  Selected since        : 2011-03-21 15:59:37 PDT
  Deviation (in ppm)    : +0.51
  Last deviation (in ppm): +0.51
Clock Synchronization Status :
Clock module on CCG 1
  Current state         : Online - Standby
  Current clock state   : locked to master CCG
  Selected for          : 1 hour, 39 minutes, 12 seconds
  Selected since        : 2011-03-21 15:44:46 PDT

```

show chassis synchronization extensive (ACX Series Routers)

```

user@host> show chassis synchronization extensive
Current clock status : Locked
Clock locked to      : Primary
Configured sources:
Interface           : ce1-0/0/4
Status              : Primary                               Index      : 132
Clock source state   : Clk qualified   Priority      : Default(8)
Configured QL        : PRC              ESMC QL      : Unknown
Clock source type     : ifd              Clock Event : Clock locked
Kernel flags         : Up,pri,

```


show chassis temperature-thresholds

Syntax	show chassis temperature-thresholds
Syntax (TX Matrix Routers)	show chassis temperature-thresholds <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers and TX Matrix Plus router with 3D SIBs)	show chassis temperature-thresholds <lcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Routers)	show chassis temperature-thresholds <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis temperature-thresholds
Syntax (MX2020 3D Universal Edge Routers)	show chassis temperature-thresholds
Syntax (QFX Series)	show chassis temperature-thresholds <interconnect-device <i>name</i> > <node-device <i>name</i> >
Release Information	<p>Command introduced in Junos OS Release 8.0.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc command introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1 for T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.</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 13.1 for TX Matrix Plus router with 3D SIBs.</p>
Description	Display chassis temperature threshold settings, in degrees Celsius.
Options	<p>none—Display the temperature threshold details.</p> <p>all-members—(MX Series routers only) (Optional) Display the chassis temperature threshold settings of all member routers in the Virtual Chassis configuration.</p> <p>interconnect-device <i>name</i>—(QFabric systems only) (Optional) Display the chassis temperature threshold settings of the Interconnect device.</p> <p>lcc <i>number</i>—(TX Matrix, TX Matrix Plus routers, and TX Matrix Plus routers with 3D SIBs only) (Optional) On a TX Matrix router, display the temperature threshold details of a specified T640 router (line-card chassis) that is connected to a TX Matrix router.</p>

On a TX Matrix Plus router, display the temperature threshold details of a specified T1600 router (line-card chassis) that is connected to a TX Matrix Plus router. On a TX Matrix Plus routers with 3D SIBs, display the temperature threshold details of a specified T4000 or T1600 routers (line-card chassis) connected in a routing matrix. 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 chassis temperature threshold settings of the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the chassis temperature threshold settings of 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 chassis temperature threshold settings of the Node device.

scc—(TX Matrix routers only) (Optional) Display the temperature threshold details of the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus routers and TX Matrix Plus routers only) (Optional) On TX Matrix Plus routers, display the temperature threshold details of the TX Matrix Plus router, which is the switch-fabric chassis. Replace *number* with 0. On TX Matrix Plus routers with 3D SIBs display the temperature threshold details of the TX Matrix Plus router with 3D SIBs, which is the switch-fabric chassis.

Required Privilege Level

view

Related Documentation

- Defining Alarm Thresholds for System Temperature Sensors

List of Sample Output

[show chassis temperature-thresholds on page 666](#)
[show chassis temperature-thresholds \(MX240, MX480, MX960 Routers with Application Services Modular Line Card\) on page 666](#)
[show chassis temperature-thresholds \(MX2010 Router\) on page 667](#)
[show chassis temperature-thresholds \(MX2020 Router\) on page 669](#)
[show chassis temperature-thresholds \(T4000 Core Routers\) on page 672](#)
[show chassis temperature-thresholds \(TX Matrix Plus Router\) on page 672](#)
[show chassis temperature-thresholds lcc \(TX Matrix Plus Router\) on page 674](#)
[show chassis temperature-thresholds sfc \(TX Matrix Plus Router\) on page 674](#)

[show chassis temperature-thresholds \(TX Matrix Plus routers with 3D SIBs\) on page 675](#)
[show chassis temperature-thresholds \(QFX3500 Switch and QFX3600\) on page 677](#)
[show chassis temperature-thresholds interconnect-device \(QFabric System\) on page 678](#)
[show chassis temperature-thresholds \(PTX5000 Packet Transport Switch\) on page 678](#)
[show chassis temperature-thresholds \(MX Routers with Media Services Blade \[MSB\]\) on page 679](#)

Output Fields Table 40 on page 665 lists the output fields for the **show chassis temperature-thresholds** command. Output fields are listed in the approximate order in which they appear.

Table 40: show chassis temperature-thresholds Output Fields

Field name	Field Description
Item	Chassis component. If per FRU per slot thresholds are configured, the components about which information is displayed include the chassis, the Routing Engines, FPCs, and FEBs. If per FRU per slot thresholds are not configured, the components about which information is displayed include the chassis and the Routing Engines.
Fan speed	<p>NOTE: On the QFX3500 switch and QFX3600 switch, there are four fan speeds: low, medium-low, medium-high, and high. The fan speed changes at the threshold when going from a low speed to a higher speed. When the fan speed changes from a higher speed to a lower speed, the temperature changes two degrees below the threshold.</p> <p>Temperature threshold settings, in degrees Celsius, for the fans to operate at normal and high speeds.</p> <ul style="list-style-type: none"> • Normal—The fans operate at normal speed if the component is at or below this temperature and all the fans are present and functioning normally. • High—The fans operate at high speed if the component has exceeded this temperature or a fan has failed or is missing. <p>NOTE: For MX480 Routers, there are three fan speeds: Low, Medium, and High.</p> <p>An alarm is not triggered until the temperature exceeds the threshold settings for a yellow alarm or a red alarm.</p>
Yellow alarm	<p>Temperature threshold settings, in degrees Celsius, that trigger a yellow alarm.</p> <ul style="list-style-type: none"> • Normal—The temperature that must be exceeded on the component to trigger a yellow alarm when the fans are running at full speed. • Bad fan—The temperature that must be exceeded on the component to trigger a yellow alarm when one or more fans have failed or are missing.
Red alarm	<p>Temperature threshold settings, in degrees Celsius, that trigger a red alarm.</p> <ul style="list-style-type: none"> • Normal—The temperature that must be exceeded on the component to trigger a red alarm when the fans are running at full speed. • Bad fan—The temperature that must be exceeded on the component to trigger a red alarm when one or more fans have failed or are missing.
Fire Shutdown	(T4000 routers, TX Matrix Plus router with 3D SIBs, and PTX Series Packet Transport Switches only)—Temperature threshold settings, in degrees Celsius, for the network device to shut down.

Sample Output

show chassis
temperature-thresholds

user@host> show chassis temperature-thresholds

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65
Routing Engine 0	70	80	95	95	110	110
Routing Engine 1	70	80	95	95	110	110
FPC 0	55	60	75	65	90	80
FPC 1	55	60	75	65	90	80
FPC 2	55	60	75	65	90	80
FPC 3	55	60	75	65	90	80
FPC 4	55	60	75	65	90	80
FPC 5	55	60	75	65	90	80
FPC 6	55	60	75	65	90	80
FPC 7	55	60	75	65	90	80
FPC 8	55	60	75	65	90	80
FPC 9	55	60	75	65	90	80
FPC 10	55	60	75	65	90	80
FPC 11	55	60	75	65	90	80

show chassis
temperature-thresholds
(MX240, MX480,
MX960 Routers with

user@host> show chassis temperature-thresholds

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)		Fire Shutdown (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan	Normal	Bad fan

Application Services
Modular Line Card)

Normal							
Chassis default	48	54	65	55	75	65	
100							
Routing Engine 0	70	80	95	95	110	110	
112							
Routing Engine 1	70	80	95	95	110	110	
112							
FPC 0	55	60	75	65	90	80	
95							
FPC 1	55	60	75	65	90	80	
95							
FPC 2	55	60	75	65	90	80	
95							
FPC 4	55	60	75	65	90	80	
95							
FPC 5	55	60	75	65	90	80	
95							

show chassis
temperature-thresholds
(MX2010 Router)

```
user@host> show chassis temperature-thresholds
```

Item	Fan speed		Yellow alarm		Red alarm		Fire Shutdown	
	(degrees C)		(degrees C)		(degrees C)		(degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan	Normal	
Routing Engine 0	70	80	95	95	110	110	112	
Routing Engine 1	70	80	95	95	110	110	112	
CB 0 IntakeA-Zone0	60	65	78	75	85	80	95	
CB 0 IntakeB-Zone1	60	65	78	75	85	80	95	
CB 0 IntakeC-Zone0	60	65	78	75	85	80	95	
CB 0 ExhaustA-Zone0	60	65	78	75	85	80	95	
CB 0 ExhaustB-Zone1	60	65	78	75	85	80	95	
CB 0 TCBC-Zone0	60	65	78	75	85	80	95	
CB 1 IntakeA-Zone0	60	65	78	75	85	80	95	
CB 1 IntakeB-Zone1	60	65	78	75	85	80	95	
CB 1 IntakeC-Zone0	60	65	78	75	85	80	95	
CB 1 ExhaustA-Zone0	60	65	78	75	85	80	95	
CB 1 ExhaustB-Zone1	60	65	78	75	85	80	95	
CB 1 TCBC-Zone0	60	65	78	75	85	80	95	
SPMB 0 Intake	56	62	75	63	83	76	95	
SPMB 1 Intake	56	62	75	63	83	76	95	
SFB 0 Intake-Zone0	56	62	75	63	82	70	87	
SFB 0 Exhaust-Zone1	56	62	75	63	82	70	87	
SFB 0 IntakeA-Zone0	56	62	75	63	82	70	87	
SFB 0 IntakeB-Zone1	56	62	75	63	82	70	87	
SFB 0 Exhaust-Zone0	56	62	75	63	82	70	87	
SFB 0 SFB-XF2-Zone1	70	80	90	90	107	107	115	
SFB 0 SFB-XF1-Zone0	70	80	90	90	107	107	115	
SFB 0 SFB-XF0-Zone0	70	80	90	90	107	107	115	
SFB 1 Intake-Zone0	56	62	75	63	82	70	87	
SFB 1 Exhaust-Zone1	56	62	75	63	82	70	87	
SFB 1 IntakeA-Zone0	56	62	75	63	82	70	87	
SFB 1 IntakeB-Zone1	56	62	75	63	82	70	87	
SFB 1 Exhaust-Zone0	56	62	75	63	82	70	87	
SFB 1 SFB-XF2-Zone1	70	80	90	90	107	107	115	
SFB 1 SFB-XF1-Zone0	70	80	90	90	107	107	115	
SFB 1 SFB-XF0-Zone0	70	80	90	90	107	107	115	
SFB 2 Intake-Zone0	56	62	75	63	82	70	87	
SFB 2 Exhaust-Zone1	56	62	75	63	82	70	87	
SFB 2 IntakeA-Zone0	56	62	75	63	82	70	87	
SFB 2 IntakeB-Zone1	56	62	75	63	82	70	87	
SFB 2 Exhaust-Zone0	56	62	75	63	82	70	87	
SFB 2 SFB-XF2-Zone1	70	80	90	90	107	107	115	
SFB 2 SFB-XF1-Zone0	70	80	90	90	107	107	115	

SFB 2 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 3 Intake-Zone0	56	62	75	63	82	70	87
SFB 3 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 3 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 3 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 3 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 3 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 3 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 3 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 4 Intake-Zone0	56	62	75	63	82	70	87
SFB 4 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 4 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 4 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 4 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 4 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 4 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 4 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 5 Intake-Zone0	56	62	75	63	82	70	87
SFB 5 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 5 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 5 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 5 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 5 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 5 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 5 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 6 Intake-Zone0	56	62	75	63	82	70	87
SFB 6 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 6 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 6 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 6 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 6 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 6 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 6 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 7 Intake-Zone0	56	62	75	63	82	70	87
SFB 7 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 7 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 7 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 7 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 7 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 7 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 7 SFB-XF0-Zone0	70	80	90	90	107	107	115
FPC 0	55	60	75	65	95	80	100
FPC 1	55	60	75	65	90	80	95
FPC 2	55	60	75	65	95	80	100
FPC 3	55	60	75	65	90	80	95
FPC 4	55	60	75	65	90	80	95
FPC 5	55	60	75	65	95	80	100
FPC 6	55	60	75	65	90	80	95
FPC 7	55	60	75	65	95	80	100
FPC 8	55	60	75	65	90	80	95
FPC 9	55	60	75	65	95	80	100
ADC 0 Intake	56	62	75	63	83	76	95
ADC 0 Exhaust	56	62	75	63	83	76	95
ADC 0 ADC-XF1	70	80	90	90	107	107	115
ADC 0 ADC-XF0	70	80	90	90	107	107	115
ADC 1 Intake	56	62	75	63	83	76	95
ADC 1 Exhaust	56	62	75	63	83	76	95
ADC 1 ADC-XF1	70	80	90	90	107	107	115
ADC 1 ADC-XF0	70	80	90	90	107	107	115
ADC 2 Intake	56	62	75	63	83	76	95
ADC 2 Exhaust	56	62	75	63	83	76	95

ADC 2 ADC-XF1	70	80	90	90	107	107	115
ADC 2 ADC-XF0	70	80	90	90	107	107	115
ADC 3 Intake	56	62	75	63	83	76	95
ADC 3 Exhaust	56	62	75	63	83	76	95
ADC 3 ADC-XF1	70	80	90	90	107	107	115
ADC 3 ADC-XF0	70	80	90	90	107	107	115
ADC 4 Intake	56	62	75	63	83	76	95
ADC 4 Exhaust	56	62	75	63	83	76	95
ADC 4 ADC-XF1	70	80	90	90	107	107	115
ADC 4 ADC-XF0	70	80	90	90	107	107	115
ADC 5 Intake	56	62	75	63	83	76	95
ADC 5 Exhaust	56	62	75	63	83	76	95
ADC 5 ADC-XF1	70	80	90	90	107	107	115
ADC 5 ADC-XF0	70	80	90	90	107	107	115
ADC 6 Intake	56	62	75	63	83	76	95
ADC 6 Exhaust	56	62	75	63	83	76	95
ADC 6 ADC-XF1	70	80	90	90	107	107	115
ADC 6 ADC-XF0	70	80	90	90	107	107	115
ADC 7 Intake	56	62	75	63	83	76	95
ADC 7 Exhaust	56	62	75	63	83	76	95
ADC 7 ADC-XF1	70	80	90	90	107	107	115
ADC 7 ADC-XF0	70	80	90	90	107	107	115
ADC 8 Intake	56	62	75	63	83	76	95
ADC 8 Exhaust	56	62	75	63	83	76	95
ADC 8 ADC-XF1	70	80	90	90	107	107	115
ADC 8 ADC-XF0	70	80	90	90	107	107	115
ADC 9 Intake	56	62	75	63	83	76	95
ADC 9 Exhaust	56	62	75	63	83	76	95
ADC 9 ADC-XF1	70	80	90	90	107	107	115
ADC 9 ADC-XF0	70	80	90	90	107	107	115

show chassis
temperature-thresholds
(MX2020 Router)

Item	Fan speed		Yellow alarm		Red alarm		Fire Shutdown
	(degrees C)		(degrees C)		(degrees C)		(degrees C)
	Normal	High	Normal	Bad fan	Normal	Bad fan	Normal
Routing Engine 0	70	80	95	95	110	110	112
Routing Engine 1	70	80	95	95	110	110	112
CB 0 IntakeA-Zone0	60	65	78	75	85	80	95
CB 0 IntakeB-Zone1	60	65	78	75	85	80	95
CB 0 IntakeC-Zone0	60	65	78	75	85	80	95
CB 0 ExhaustA-Zone0	60	65	78	75	85	80	95
CB 0 ExhaustB-Zone1	60	65	78	75	85	80	95
CB 0 TCBC-Zone0	60	65	78	75	85	80	95
CB 1 IntakeA-Zone0	60	65	78	75	85	80	95
CB 1 IntakeB-Zone1	60	65	78	75	85	80	95
CB 1 IntakeC-Zone0	60	65	78	75	85	80	95
CB 1 ExhaustA-Zone0	60	65	78	75	85	80	95
CB 1 ExhaustB-Zone1	60	65	78	75	85	80	95
CB 1 TCBC-Zone0	60	65	78	75	85	80	95
SPMB 0 Intake	56	62	75	63	83	76	95
SPMB 1 Intake	56	62	75	63	83	76	95
SFB 0 Intake-Zone0	56	62	75	63	82	70	87
SFB 0 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 0 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 0 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 0 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 0 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 0 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 0 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 1 Intake-Zone0	56	62	75	63	82	70	87

SFB 1 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 1 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 1 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 1 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 1 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 1 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 1 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 2 Intake-Zone0	56	62	75	63	82	70	87
SFB 2 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 2 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 2 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 2 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 2 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 2 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 2 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 3 Intake-Zone0	56	62	75	63	82	70	87
SFB 3 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 3 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 3 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 3 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 3 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 3 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 3 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 4 Intake-Zone0	56	62	75	63	82	70	87
SFB 4 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 4 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 4 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 4 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 4 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 4 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 4 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 5 Intake-Zone0	56	62	75	63	82	70	87
SFB 5 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 5 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 5 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 5 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 5 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 5 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 5 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 6 Intake-Zone0	56	62	75	63	82	70	87
SFB 6 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 6 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 6 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 6 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 6 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 6 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 6 SFB-XF0-Zone0	70	80	90	90	107	107	115
SFB 7 Intake-Zone0	56	62	75	63	82	70	87
SFB 7 Exhaust-Zone1	56	62	75	63	82	70	87
SFB 7 IntakeA-Zone0	56	62	75	63	82	70	87
SFB 7 IntakeB-Zone1	56	62	75	63	82	70	87
SFB 7 Exhaust-Zone0	56	62	75	63	82	70	87
SFB 7 SFB-XF2-Zone1	70	80	90	90	107	107	115
SFB 7 SFB-XF1-Zone0	70	80	90	90	107	107	115
SFB 7 SFB-XF0-Zone0	70	80	90	90	107	107	115
FPC 0	55	60	75	65	90	80	95
FPC 1	55	60	75	65	90	80	95
FPC 2	55	60	75	65	90	80	95
FPC 3	55	60	75	65	90	80	95
FPC 4	55	60	75	65	90	80	95
FPC 5	55	60	75	65	90	80	95

FPC 6	55	60	75	65	90	80	95
FPC 7	55	60	75	65	90	80	95
FPC 8	55	60	75	65	90	80	95
FPC 9	55	60	75	65	90	80	95
FPC 10	55	60	75	65	90	80	95
FPC 11	55	60	75	65	90	80	95
FPC 12	55	60	75	65	90	80	95
FPC 13	55	60	75	65	90	80	95
FPC 14	55	60	75	65	90	80	95
FPC 15	55	60	75	65	90	80	95
FPC 16	55	60	75	65	90	80	95
FPC 17	55	60	75	65	90	80	95
FPC 18	55	60	75	65	90	80	95
FPC 19	55	60	75	65	90	80	95
ADC 0 Intake	56	62	75	63	83	76	95
ADC 0 Exhaust	56	62	75	63	83	76	95
ADC 0 ADC-XF1	70	80	90	90	107	107	115
ADC 0 ADC-XF0	70	80	90	90	107	107	115
ADC 1 Intake	56	62	75	63	83	76	95
ADC 1 Exhaust	56	62	75	63	83	76	95
ADC 1 ADC-XF1	70	80	90	90	107	107	115
ADC 1 ADC-XF0	70	80	90	90	107	107	115
ADC 2 Intake	56	62	75	63	83	76	95
ADC 2 Exhaust	56	62	75	63	83	76	95
ADC 2 ADC-XF1	70	80	90	90	107	107	115
ADC 2 ADC-XF0	70	80	90	90	107	107	115
ADC 3 Intake	56	62	75	63	83	76	95
ADC 3 Exhaust	56	62	75	63	83	76	95
ADC 3 ADC-XF1	70	80	90	90	107	107	115
ADC 3 ADC-XF0	70	80	90	90	107	107	115
ADC 4 Intake	56	62	75	63	83	76	95
ADC 4 Exhaust	56	62	75	63	83	76	95
ADC 4 ADC-XF1	70	80	90	90	107	107	115
ADC 4 ADC-XF0	70	80	90	90	107	107	115
ADC 5 Intake	56	62	75	63	83	76	95
ADC 5 Exhaust	56	62	75	63	83	76	95
ADC 5 ADC-XF1	70	80	90	90	107	107	115
ADC 5 ADC-XF0	70	80	90	90	107	107	115
ADC 6 Intake	56	62	75	63	83	76	95
ADC 6 Exhaust	56	62	75	63	83	76	95
ADC 6 ADC-XF1	70	80	90	90	107	107	115
ADC 6 ADC-XF0	70	80	90	90	107	107	115
ADC 7 Intake	56	62	75	63	83	76	95
ADC 7 Exhaust	56	62	75	63	83	76	95
ADC 7 ADC-XF1	70	80	90	90	107	107	115
ADC 7 ADC-XF0	70	80	90	90	107	107	115
ADC 8 Intake	56	62	75	63	83	76	95
ADC 8 Exhaust	56	62	75	63	83	76	95
ADC 8 ADC-XF1	70	80	90	90	107	107	115
ADC 8 ADC-XF0	70	80	90	90	107	107	115
ADC 9 Intake	56	62	75	63	83	76	95
ADC 9 Exhaust	56	62	75	63	83	76	95
ADC 9 ADC-XF1	70	80	90	90	107	107	115
ADC 9 ADC-XF0	70	80	90	90	107	107	115
ADC 10 Intake	56	62	75	63	83	76	95
ADC 10 Exhaust	56	62	75	63	83	76	95
ADC 10 ADC-XF1	70	80	90	90	107	107	115
ADC 10 ADC-XF0	70	80	90	90	107	107	115
ADC 11 Intake	56	62	75	63	83	76	95
ADC 11 Exhaust	56	62	75	63	83	76	95
ADC 11 ADC-XF1	70	80	90	90	107	107	115

ADC 11	ADC-XF0	70	80	90	90	107	107	115
ADC 12	Intake	56	62	75	63	83	76	95
ADC 12	Exhaust	56	62	75	63	83	76	95
ADC 12	ADC-XF1	70	80	90	90	107	107	115
ADC 12	ADC-XF0	70	80	90	90	107	107	115
ADC 13	Intake	56	62	75	63	83	76	95
ADC 13	Exhaust	56	62	75	63	83	76	95
ADC 13	ADC-XF1	70	80	90	90	107	107	115
ADC 13	ADC-XF0	70	80	90	90	107	107	115
ADC 14	Intake	56	62	75	63	83	76	95
ADC 14	Exhaust	56	62	75	63	83	76	95
ADC 14	ADC-XF1	70	80	90	90	107	107	115
ADC 14	ADC-XF0	70	80	90	90	107	107	115
ADC 15	Intake	56	62	75	63	83	76	95
ADC 15	Exhaust	56	62	75	63	83	76	95
ADC 15	ADC-XF1	70	80	90	90	107	107	115
ADC 15	ADC-XF0	70	80	90	90	107	107	115
ADC 16	Intake	56	62	75	63	83	76	95
ADC 16	Exhaust	56	62	75	63	83	76	95
ADC 16	ADC-XF1	70	80	90	90	107	107	115
ADC 16	ADC-XF0	70	80	90	90	107	107	115
ADC 17	Intake	56	62	75	63	83	76	95
ADC 17	Exhaust	56	62	75	63	83	76	95
ADC 17	ADC-XF1	70	80	90	90	107	107	115
ADC 17	ADC-XF0	70	80	90	90	107	107	115
ADC 18	Intake	56	62	75	63	83	76	95
ADC 18	Exhaust	56	62	75	63	83	76	95
ADC 18	ADC-XF1	70	80	90	90	107	107	115
ADC 18	ADC-XF0	70	80	90	90	107	107	115
ADC 19	Intake	56	62	75	63	83	76	95
ADC 19	Exhaust	56	62	75	63	83	76	95
ADC 19	ADC-XF1	70	80	90	90	107	107	115
ADC 19	ADC-XF0	70	80	90	90	107	107	115

show chassis temperature-thresholds (T4000 Core Routers)

```
user@host> show chassis temperature-thresholds
```

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)		Fire Shutdown (degrees C)
	Normal	High	Normal	Bad fan	Normal	Bad fan	Normal
Chassis default	48	54	65	55	75	65	100
Routing Engine 0	55	65	85	85	100	100	102
Routing Engine 1	55	65	85	85	100	100	102
FPC 0	63	68	75	70	90	83	95
FPC 3	63	68	75	70	90	83	95
FPC 5	56	62	75	63	83	76	95
FPC 6	63	68	75	70	90	83	95
SIB 0	64	70	76	72	87	84	95
SIB 1	64	70	76	72	87	84	95
SIB 2	64	70	76	72	87	84	95
SIB 3	64	70	76	72	87	84	95
SIB 4	64	70	76	72	87	84	95

show chassis temperature-thresholds

```
user@host> show chassis temperature-thresholds
sfc0-re0:
-----
```

(TX Matrix Plus Router)

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65
Routing Engine 0	55	65	85	85	100	100
Routing Engine 1	55	65	85	85	100	100
SIB F13 0	64	70	76	72	90	84
SIB F13 3	64	70	76	72	90	84
SIB F13 6	64	70	76	72	90	84
SIB F13 8	64	70	76	72	90	84
SIB F13 11	64	70	76	72	90	84
SIB F13 12	64	70	76	72	90	84
SIB F2S 16	64	70	76	72	90	84
SIB F2S 17	64	70	76	72	90	84
SIB F2S 18	64	70	76	72	90	84
SIB F2S 19	64	70	76	72	90	84
SIB F2S 20	64	70	76	72	90	84
SIB F2S 21	64	70	76	72	90	84
SIB F2S 22	64	70	76	72	90	84
SIB F2S 23	64	70	76	72	90	84
SIB F2S 24	64	70	76	72	90	84
SIB F2S 25	64	70	76	72	90	84
SIB F2S 26	64	70	76	72	90	84
SIB F2S 27	64	70	76	72	90	84
SIB F2S 28	64	70	76	72	90	84
SIB F2S 29	64	70	76	72	90	84
SIB F2S 30	64	70	76	72	90	84
SIB F2S 31	64	70	76	72	90	84
SIB F2S 32	64	70	76	72	90	84
SIB F2S 33	64	70	76	72	90	84
SIB F2S 34	64	70	76	72	90	84
SIB F2S 35	64	70	76	72	90	84

lcc0-re0:

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65
Routing Engine 0	55	65	85	85	100	100
Routing Engine 1	55	65	85	85	100	100
FPC 1	56	62	75	63	83	76
FPC 3	56	62	75	63	83	76
FPC 4	56	62	75	63	83	76
FPC 6	56	62	75	63	83	76
FPC 7	56	62	75	63	83	76
SIB 0	48	54	65	60	80	75
SIB 1	48	54	65	60	80	75
SIB 2	48	54	65	60	80	75
SIB 3	48	54	65	60	80	75
SIB 4	48	54	65	60	80	75

lcc1-re0:

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65
Routing Engine 0	55	65	85	85	100	100
Routing Engine 1	55	65	85	85	100	100
FPC 1	56	62	75	63	83	76

```

FPC 3          56    62    75    63    83    76
FPC 4          56    62    75    63    83    76
FPC 6          56    62    75    63    83    76
...

```

**show chassis
temperature-thresholds
lcc (TX Matrix Plus
Router)**

```

user@host> show chassis temperature-thresholds lcc 1
lcc1-re0:

```

```

-----
Item              Fan speed      Yellow alarm      Red alarm
                  (degrees C)      (degrees C)      (degrees C)
                  Normal  High    Normal  Bad fan  Normal  Bad fan
Chassis default   48    54    65      55      75      65
Routing Engine 0   55    65    85      85     100     100
Routing Engine 1   55    65    85      85     100     100
FPC 1             56    62    75      63      83      76
FPC 3             56    62    75      63      83      76
FPC 4             56    62    75      63      83      76
FPC 6             56    62    75      63      83      76
SIB 0             48    54    65      60      80      75
SIB 1             48    54    65      60      80      75
SIB 2             48    54    65      60      80      75
SIB 3             48    54    65      60      80      75
SIB 4             48    54    65      60      80      75

```

**show chassis
temperature-thresholds**

```

user@host> show chassis temperature-thresholds sfc 0
sfc0-re0:

```

```

-----

```

sfc (TX Matrix Plus Router)

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65
Routing Engine 0	55	65	85	85	100	100
Routing Engine 1	55	65	85	85	100	100
SIB F13 0	64	70	76	72	90	84
SIB F13 3	64	70	76	72	90	84
SIB F13 6	64	70	76	72	90	84
SIB F13 8	64	70	76	72	90	84
SIB F13 11	64	70	76	72	90	84
SIB F13 12	64	70	76	72	90	84
SIB F2S 16	64	70	76	72	90	84
SIB F2S 17	64	70	76	72	90	84
SIB F2S 18	64	70	76	72	90	84
SIB F2S 19	64	70	76	72	90	84
SIB F2S 20	64	70	76	72	90	84
SIB F2S 21	64	70	76	72	90	84
SIB F2S 22	64	70	76	72	90	84
SIB F2S 23	64	70	76	72	90	84
SIB F2S 24	64	70	76	72	90	84
SIB F2S 25	64	70	76	72	90	84
SIB F2S 26	64	70	76	72	90	84
SIB F2S 27	64	70	76	72	90	84
SIB F2S 28	64	70	76	72	90	84
SIB F2S 29	64	70	76	72	90	84
SIB F2S 30	64	70	76	72	90	84
SIB F2S 31	64	70	76	72	90	84
SIB F2S 32	64	70	76	72	90	84
SIB F2S 33	64	70	76	72	90	84
SIB F2S 34	64	70	76	72	90	84
SIB F2S 35	64	70	76	72	90	84

**show chassis
temperature-thresholds**

```
user@host> show chassis temperature-thresholds
sfc0-re0:
```

```
-----
```

(TX Matrix Plus routers
with 3D SIBs)

Shutdown	Fan speed		Yellow alarm		Red alarm		Fire
(degrees C)	(degrees C)		(degrees C)		(degrees C)		
Item	Normal	High	Normal	Bad fan	Normal	Bad fan	
Normal							
Chassis default	48	54	65	55	75	65	
100							
Routing Engine 0	70	75	90	87	102	97	
115							
Routing Engine 1	70	75	90	87	102	97	
115							
SIB F13 0 Board	60	65	78	75	85	80	
95							
SIB F13 0 XF Junction	64	70	82	74	105	100	
107							
SIB F13 3 Board	60	65	78	75	85	80	
95							
SIB F13 3 XF Junction	64	70	82	74	105	100	
107							
SIB F13 6 Board	60	65	78	75	85	80	
95							
SIB F13 6 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 16 Board	60	65	78	75	85	80	
95							
SIB F2S 16 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 17 Board	60	65	78	75	85	80	
95							
SIB F2S 17 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 18 Board	60	65	78	75	85	80	
95							
SIB F2S 18 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 19 Board	60	65	78	75	85	80	
95							
SIB F2S 19 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 20 Board	60	65	78	75	85	80	
95							
SIB F2S 20 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 21 Board	60	65	78	75	85	80	
95							
SIB F2S 21 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 22 Board	60	65	78	75	85	80	
95							
SIB F2S 22 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 23 Board	60	65	78	75	85	80	
95							
SIB F2S 23 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 24 Board	60	65	78	75	85	80	
95							
SIB F2S 24 XF Junction	64	70	82	74	105	100	
107							
SIB F2S 25 Board	60	65	78	75	85	80	

```

95
SIB F2S 25 XF Junction      64   70   82   74   105   100
107
SIB F2S 26 Board           60   65   78   75   85    80
95
SIB F2S 26 XF Junction     64   70   82   74   105   100
107
SIB F2S 27 Board           60   65   78   75   85    80
95
SIB F2S 27 XF Junction     64   70   82   74   105   100
107

```

```
lcc0-re0:
```

```

-----
Shutdown                               Fan speed      Yellow alarm    Red alarm      Fire
(degrees C)                           (degrees C)    (degrees C)    (degrees C)
Item                                  Normal  High  Normal  Bad fan  Normal  Bad fan
Normal
Chassis default                     48    54    65     55     75     65
100
Routing Engine 0                     55    65    85     85    100    100
102
Routing Engine 1                     55    65    85     85    100    100
102
FPC 4                               56    62    75     63     83     76
95
FPC 7                               63    68    75     70     90     83
95
SIB 0                               64    70    76     72     87     84
95
SIB 0 ASIC Junction                 63    68    75     70    105    100
107
SIB 1                               64    70    76     72     87     84
95
SIB 1 ASIC Junction                 63    68    75     70    105    100
107
SIB 2                               64    70    76     72     87     84
95
SIB 2 ASIC Junction                 63    68    75     70    105    100
107

```

```
show chassis
temperature-thresholds
```

```
user@switch> show chassis temperature-thresholds
```

```

Fan speed      Yellow alarm    Red alarm
(degrees C)    (degrees C)    (degrees C)

```

(QFX3500 Switch and QFX3600)

Item	Normal	High	Normal	Bad fan	Normal	Bad fan
FPC Sensor TopLeft I	48	56	53	43	56	46
FPC Sensor TopRight I	46	54	51	41	54	44
FPC Sensor TopLeft E	58	65	62	52	65	55
FPC Sensor TopRight E	56	64	61	51	64	54
FPC Sensor TopMiddle I	58	64	61	51	64	54
FPC Sensor TopMiddle E	67	74	71	61	74	64
FPC Sensor Bottom I	59	67	64	54	67	57
FPC Sensor Bottom E	66	73	70	60	73	63
FPC Sensor Die Temp	69	75	72	62	75	65
FPC Sensor Mgmt Brd I	46	54	51	41	54	44
FPC Sensor Switch I	56	63	60	50	63	53

**show chassis
temperature-thresholds
interconnect-device
(QFabric System)**

```
user@switch> show chassis temperature-thresholds interconnect-device interconnect1
```

Item	Fan speed		Yellow alarm		Red alarm	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65

**show chassis
temperature-thresholds**

```
user@switch> show chassis temperature-thresholds
```

```
user@switch> show chassis temperature-thresholds
```

Fan speed	Yellow alarm	Red alarm	Fire Shutdown
-----------	--------------	-----------	---------------

(PTX5000 Packet Transport Switch)

Item	(degrees C)		(degrees C)		(degrees C)		(degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan	Normal	Normal
Routing Engine 0	70	75	90	87	102	97	115	
Routing Engine 1	70	75	90	87	102	97	115	
CB 0 Exhaust A	60	65	78	75	85	80	95	
CB 0 Exhaust B	60	65	78	75	85	80	95	
CB 1 Exhaust A	60	65	78	75	85	80	95	
CB 1 Exhaust B	20	25	65	60	80	75	100	
FPC 1 Exhaust A	60	65	78	75	85	80	95	
FPC 1 Exhaust B	60	65	78	75	85	80	95	
FPC 1 TL0	70	75	90	87	102	97	115	
FPC 1 TQ0	70	75	90	87	102	97	115	
FPC 1 TL1	70	75	90	87	102	97	115	
FPC 1 TQ1	70	75	90	87	102	97	115	
FPC 1 TL2	70	75	90	87	102	97	115	
FPC 1 TQ2	70	75	90	87	102	97	115	
FPC 1 TL3	70	75	90	87	102	97	115	
FPC 1 TQ3	70	75	90	87	102	97	115	
FPC 2 Exhaust A	60	65	78	75	85	80	95	
FPC 2 Exhaust B	60	65	78	75	85	80	95	
FPC 2 TL0	70	75	90	87	102	97	115	
FPC 2 TQ0	70	75	90	87	102	97	115	
FPC 2 TL1	70	75	90	87	102	97	115	
FPC 2 TQ1	70	75	90	87	102	97	115	
FPC 2 TL2	70	75	90	87	102	97	115	
FPC 2 TQ2	70	75	90	87	102	97	115	
FPC 2 TL3	70	75	90	87	102	97	115	
FPC 2 TQ3	70	75	90	87	102	97	115	
PIC 2/0 Ambient	60	65	78	75	85	80	95	
PIC 2/0 cfp-2/0/1	60	65	70	67	75	72	85	
PIC 2/1 Ambient	60	65	78	75	85	80	95	
SIB 0 Exhaust	60	65	78	75	85	80	95	
SIB 0 Junction	70	75	90	87	102	97	115	
SIB 1 Exhaust	60	65	78	75	85	80	95	
SIB 1 Junction	70	75	90	87	102	97	115	
SIB 2 Exhaust	60	65	78	75	85	80	95	
SIB 2 Junction	70	75	90	87	102	97	115	
SIB 3 Exhaust	60	65	78	75	85	80	95	
SIB 3 Junction	70	75	90	87	102	97	115	
SIB 4 Exhaust	60	65	78	75	85	80	95	
SIB 4 Junction	70	75	90	87	102	97	115	
SIB 5 Exhaust	60	65	78	75	85	80	95	
SIB 5 Junction	70	75	90	87	102	97	115	
SIB 6 Exhaust	60	65	78	75	85	80	95	
SIB 6 Junction	70	75	90	87	102	97	115	
SIB 7 Exhaust	60	65	78	75	85	80	95	
SIB 7 Junction	70	75	90	87	102	97	115	
SIB 8 Exhaust	60	65	78	75	85	80	95	
SIB 8 Junction	70	75	90	87	102	97	115	

show chassis
temperature-thresholds
(MX Routers with

```
user@switch> show chassis temperature-thresholds
Fan speed      Yellow alarm    Red alarm      Fire Shutdown
(degrees C)    (degrees C)    (degrees C)    (degrees C)
```

**Media Services Blade
[MSB])**

Item	Normal	High	Normal	Bad fan	Normal	Bad fan
Normal						
Chassis default	48	54	65	55	75	65
100						
Routing Engine 0	70	80	95	95	110	110
112						
Routing Engine 1	70	80	95	95	110	110
112						
FPC 0	55	60	75	65	90	80
95						
FPC 1	55	60	75	65	90	80
95						
FPC 2	55	60	75	65	90	80
95						
FPC 4	55	60	75	65	90	80
95						
FPC 5	55	60	75	65	90	80
95						

show chassis zones (PTX Series Packet Transport Switches)

Syntax	<code>show chassis zones</code> <code><detail></code>
Release Information	Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.
Description	(PTX5000 Packet Transport Switch only) Display the status of the two cooling system zones of the chassis. Zone 0 consists of the Routing Engine, Control Board, SIB, PMB, and the CCG, and is cooled by the vertical fan tray. Zone 1 consists of the eight (0–7) FPCs, and their respective PICs, and is cooled by the horizontal fan trays. The vertical fan tray is located at the front of the chassis. One horizontal fan tray is located at the front top of the chassis, and another is located at the front bottom of the chassis.
Options	detail —(Optional) Display status of each FRU and fan belonging to the cooling system zones.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show chassis fan on page 457 • show chassis temperature-thresholds on page 663
List of Sample Output	show chassis zones (PTX5000 Packet Transport Switch) on page 682 show chassis zones detail (PTX5000 Packet Transport Switch) on page 682
Output Fields	Table 41 on page 681 lists the output fields for the show chassis zones detail command.

Table 41: show chassis zones detail Output Fields

Field Name	Field Description
Item	Chassis component: <ul style="list-style-type: none"> • (PTX Series Packet Transport Switches)—Information about the chassis, Routing Engines, Control Boards (CBs), Switch Interface Boards (SIBs), PICs, and Flexible PIC Concentrators (FPCs).
Status	Status of the specified item. Status can be OK , Absent , or Offline .
Measurement	Fan tray speed utilization in percentage.

Sample Output

show chassis zones (PTX5000 Packet Transport Switch)

```
user@host> show chassis zones
ZONE 0 Status
  Driving FRU           Routing Engine 1
  Temperature           62 degrees C / 143 degrees F
  Condition             OK
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle       0

ZONE 1 Status
  Driving FRU           FPC 0 TL0
  Temperature           71 degrees C / 159 degrees F
  Condition             OK
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle       0
```

show chassis zones detail (PTX5000 Packet Transport Switch)

```
user@host> show chassis zones detail
ZONE 0 Status
Item                Status                Measurement
CB 0                OK
CB 1                OK
Routing Engine 0    OK
Routing Engine 1    OK
SIB 0              OK
SIB 1              OK
SIB 2              OK
SIB 3              OK
SIB 4              OK
SIB 5              Absent
SIB 6              Absent
SIB 7              Absent
SIB 8              Absent
Fan Tray 0         OK                      Spinning at 30% fan tray speed

ZONE 1 Status
Item                Status                Measurement
FPC 0              OK
FPC 1              OK
FPC 2              OK
FPC 3              OK
FPC 4              OK
FPC 5              Absent
FPC 6              Offline
FPC 7              OK
Fan Tray 1         OK                      Spinning at 33% fan tray speed
Fan Tray 2         OK                      Spinning at 36% fan tray speed
```

show interfaces (PTX Series Packet Transport Switches)

Syntax	<pre>show interfaces et-<i>fpc/pic/port</i> <brief detail extensive terse> <descriptions> <media> <snmp-index <i>snmp-index</i>> <statistics></pre>
Release Information	<p>Command introduced in Junos OS Release 8.0.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.</p>
Description	(PTX Series Packet Transport Switches only) Display status information about the specified Ethernet interface.
Options	<p>et-<i>fpc/pic/port</i>—Display standard information about the specified Ethernet interface.</p> <p>brief detail extensive terse—(Optional) Display the specified level of output.</p> <p>descriptions—(Optional) Display interface description strings.</p> <p>media —(Optional) Display media-specific information about network interfaces.</p> <p>snmp-index <i>snmp-index</i>—(Optional) Display information for the specified SNMP index of the interface.</p> <p>statistics—(Optional) Display static interface statistics.</p>
Required Privilege Level	view
List of Sample Output	<p>show interfaces brief (PTX5000 Packet Transport Switch) on page 693</p> <p>show interfaces extensive (PTX5000 Packet Transport Switch) on page 693</p> <p>show interfaces terse (PTX5000 Packet Transport Switch) on page 695</p>
Output Fields	See Table 42 on page 684 for the output fields for the show interfaces (PTX Series Packet Transport Switches) command.

Table 42: show interfaces PTX Series Output Fields

Field Name	Field Description	Level of Output
Physical Interface		
Physical interface	Name of the physical interface.	All levels
Enabled	State of the interface. Possible values are described in the “Enabled Field” section under Common Output Fields Description.	All levels
Interface index	Index number of the physical interface, which reflects its initialization sequence.	detail extensive none
SNMP ifIndex	SNMP index number for the physical interface.	detail extensive none
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive
Link-level type	Encapsulation being used on the physical interface.	All levels
MTU	Maximum transmission unit size on the physical interface.	All levels
Speed	Speed at which the interface is running.	All levels
BPDU Error	Bridge protocol data unit (BPDU) errors (if any).	All levels
MAC-Rewrite	MAC Rewrite errors (if any).	All levels
Loopback	Loopback status: Enabled or Disabled . If loopback is enabled, type of loopback: Local or Remote .	All levels
Source filtering	Source filtering status: Enabled or Disabled .	All levels
Flow control	Flow control status: Enabled or Disabled .	All levels
Device flags	Information about the physical device. Possible values are described in the “Device Flags” section under Common Output Fields Description.	All levels
Interface flags	Information about the interface. Possible values are described in the “Interface Flags” section under Common Output Fields Description.	All levels
Link flags	Information about the link. Possible values are described in the “Links Flags” section under Common Output Fields Description.	All levels
CoS queues	Number of CoS queues configured.	detail extensive none
Hold-times	Current interface hold-time up and hold-time down, in milliseconds.	detail extensive
Current address	Configured MAC address.	detail extensive none
Hardware address	Hardware MAC address.	detail extensive none

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
Last flapped	Date, time, and how long ago the interface went from down to up. The format is Last flapped: year-month-day hour:minute:second:timezone (hour:minute:second ago) . For example, Last flapped: 2002-04-26 10:52:40 PDT (04:33:20 ago) .	detail extensive none
Statistics last cleared	Time when the statistics for the interface were last set to zero.	detail extensive
Traffic statistics	<p>Number and rate of bytes and packets received and transmitted on the physical interface.</p> <ul style="list-style-type: none"> • Input bytes—Number of bytes received on the interface. • Output bytes—Number of bytes transmitted on the interface. • Input packets—Number of packets received on the interface. • Output packets—Number of packets transmitted on the interface. <p>NOTE: Input bytes and output bytes are counted as layer 3 packet length.</p>	detail extensive
Input errors	<p>Input errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious:</p> <ul style="list-style-type: none"> • Errors—Sum of the incoming frame aborts and FCS errors. • Drops—Number of packets dropped by the input queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC's RED mechanism. • Framing errors—Number of packets received with an invalid frame checksum (FCS). • Runts—Number of frames received that are smaller than the runt threshold. • Policed discards—Number of frames that the incoming packet match code discarded because they were not recognized or not of interest. Usually, this field reports protocols that the Junos OS does not handle. • L3 incompletes—Number of incoming packets discarded because they failed Layer 3 (usually IPv4) sanity checks of the header. For example, a frame with less than 20 bytes of available IP header is discarded. L3 incomplete errors can be ignored by configuring the ignore-l3-incompletes statement. • L2 channel errors—Number of times the software did not find a valid logical interface for an incoming frame. • L2 mismatch timeouts—Number of malformed or short packets that caused the incoming packet handler to discard the frame as unreadable. • FIFO errors—Number of FIFO errors in the receive direction that are reported by the ASIC on the PIC. If this value is ever nonzero, the PIC is probably malfunctioning. • Resource errors—Sum of transmit drops. 	extensive

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
Output errors	<p>Output errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious:</p> <ul style="list-style-type: none"> • Carrier transitions—Number of times the interface has gone from down to up. This number does not normally increment quickly, increasing only when the cable is unplugged, the far-end system is powered down and then up, or another problem occurs. If the number of carrier transitions increments quickly (perhaps once every 10 seconds), the cable, the far-end system, or the PIC or PIM is malfunctioning. • Errors—Sum of the outgoing frame aborts and FCS errors. • Drops—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC's RED mechanism. • Collisions—Number of Ethernet collisions. The Gigabit Ethernet PIC supports only full-duplex operation, so for Gigabit Ethernet PICs, this number should always remain 0. If it is nonzero, there is a software bug. • Aged packets—Number of packets that remained in shared packet SDRAM so long that the system automatically purged them. The value in this field should never increment. If it does, it is most likely a software bug or possibly malfunctioning hardware. • FIFO errors—Number of FIFO errors in the send direction as reported by the ASIC on the PIC. If this value is ever nonzero, the PIC is probably malfunctioning. • HS link CRC errors—Number of errors on the high-speed links between the ASICs responsible for handling the router interfaces. • MTU errors—Number of packets whose size exceeded the MTU of the interface. • Resource errors—Sum of transmit drops. 	extensive
Egress queues	Total number of egress queues supported on the specified interface.	detail extensive
Queue counters (Egress)	<p>CoS queue number and its associated user-configured forwarding class name.</p> <ul style="list-style-type: none"> • Queued packets—Number of queued packets. • Transmitted packets—Number of transmitted packets. • Dropped packets—Number of packets dropped by the ASIC's RED mechanism. 	detail extensive
Ingress queues	Total number of ingress queues supported on the specified interface.	extensive
Queue counters (Ingress)	<p>CoS queue number and its associated user-configured forwarding class name.</p> <ul style="list-style-type: none"> • Queued packets—Number of queued packets. • Transmitted packets—Number of transmitted packets. • Dropped packets—Number of packets dropped by the ASIC's RED mechanism. 	extensive

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
Active alarms and Active defects	<p>Ethernet-specific defects that can prevent the interface from passing packets. When a defect persists for a certain amount of time, it is promoted to an alarm. Based on the router configuration, an alarm can ring the red or yellow alarm bell on the router, or turn on the red or yellow alarm LED on the craft interface. These fields can contain the value None or Link.</p> <ul style="list-style-type: none"> • None—There are no active defects or alarms. • Link—Interface has lost its link state, which usually means that the cable is unplugged, the far-end system has been turned off, or the PIC is malfunctioning. 	detail extensive none
MAC statistics	<p>Receive and Transmit statistics reported by the PIC's MAC subsystem, including the following:</p> <ul style="list-style-type: none"> • Total octets and total packets—Total number of octets and packets. • Unicast packets, Broadcast packets, and Multicast packets—Number of unicast, broadcast, and multicast packets. • CRC/Align errors—Total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, and had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a nonintegral number of octets (Alignment Error). • FIFO error—Number of FIFO errors that are reported by the ASIC on the PIC. If this value is ever nonzero, the PIC or a cable is probably malfunctioning. • MAC control frames—Number of MAC control frames. • MAC pause frames—Number of MAC control frames with pause operational code. • Oversized frames—Number of frames that exceed 1518 octets. • Jabber frames—Number of frames that were longer than 1518 octets (excluding framing bits, but including FCS octets), and had either an FCS error or an alignment error. This definition of jabber is different from the definition in IEEE-802.3 section 8.2.1.5 (10BASE5) and section 10.3.1.4 (10BASE2). These documents define jabber as the condition in which any packet exceeds 20 ms. The allowed range to detect jabber is from 20 ms to 150 ms. • Fragment frames—Total number of packets that were less than 64 octets in length (excluding framing bits, but including FCS octets), and had either an FCS error or an alignment error. Fragment frames normally increment because both runts (which are normal occurrences caused by collisions) and noise hits are counted. • VLAN tagged frames—Number of frames that are VLAN tagged. The system uses the TPID of 0x8100 in the frame to determine whether a frame is tagged or not. • Code violations—Number of times an event caused the PHY to indicate "Data reception error" or "invalid data symbol error." 	extensive

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
Filter statistics	<p>Receive and Transmit statistics reported by the PIC's MAC address filter subsystem. The filtering is done by the content-addressable memory (CAM) on the PIC. The filter examines a packet's source and destination MAC addresses to determine whether the packet should enter the system or be rejected.</p> <ul style="list-style-type: none"> • Input packet count—Number of packets received from the MAC hardware that the filter processed. • Input packet rejects—Number of packets that the filter rejected because of either the source MAC address or the destination MAC address. • Input DA rejects—Number of packets that the filter rejected because the destination MAC address of the packet is not on the accept list. It is normal for this value to increment. When it increments very quickly and no traffic is entering the router from the far-end system, either there is a bad ARP entry on the far-end system, or multicast routing is not on and the far-end system is sending many multicast packets to the local router (which the router is rejecting). • Input SA rejects—Number of packets that the filter rejected because the source MAC address of the packet is not on the accept list. The value in this field should increment only if source MAC address filtering has been enabled. If filtering is enabled, if the value increments quickly, and if the system is not receiving traffic that it should from the far-end system, it means that the user-configured source MAC addresses for this interface are incorrect. • Output packet count—Number of packets that the filter has given to the MAC hardware. • Output packet pad count—Number of packets the filter padded to the minimum Ethernet size (60 bytes) before giving the packet to the MAC hardware. Usually, padding is done only on small ARP packets, but some very small IP packets can also require padding. If this value increments rapidly, either the system is trying to find an ARP entry for a far-end system that does not exist or it is misconfigured. • Output packet error count—Number of packets with an indicated error that the filter was given to transmit. These packets are usually aged packets or are the result of a bandwidth problem on the FPC hardware. On a normal system, the value of this field should not increment. • CAM destination filters, CAM source filters—Number of entries in the CAM dedicated to destination and source MAC address filters. There can only be up to 64 source entries. If source filtering is disabled, which is the default, the values for these fields should be 0. 	extensive

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
Autonegotiation information	<p>Information about link autonegotiation.</p> <ul style="list-style-type: none"> • Negotiation status: <ul style="list-style-type: none"> • Incomplete—Ethernet interface has the speed or link mode configured. • No autonegotiation—Remote Ethernet interface has the speed or link mode configured, or does not perform autonegotiation. • Complete—Ethernet interface is connected to a device that performs autonegotiation and the autonegotiation process is successful. • Link partner status—OK when Ethernet interface is connected to a device that performs autonegotiation and the autonegotiation process is successful. • Link partner: <ul style="list-style-type: none"> • Link mode—Depending on the capability of the attached Ethernet device, either Full-duplex or Half-duplex. • Flow control—Types of flow control supported by the remote Ethernet device. For Fast Ethernet interfaces, the type is None. For Gigabit Ethernet interfaces, types are Symmetric (link partner supports PAUSE on receive and transmit), Asymmetric (link partner supports PAUSE on transmit), and Symmetric/Asymmetric (link partner supports both PAUSE on receive and transmit or only PAUSE receive). • Remote fault—Remote fault information from the link partner—Failure indicates a receive link error. OK indicates that the link partner is receiving. Negotiation error indicates a negotiation error. Offline indicates that the link partner is going offline. • Local resolution—Information from the link partner: <ul style="list-style-type: none"> • Flow control—Types of flow control supported by the remote Ethernet device. For Gigabit Ethernet interfaces, types are Symmetric (link partner supports PAUSE on receive and transmit), Asymmetric (link partner supports PAUSE on transmit), and Symmetric/Asymmetric (link partner supports both PAUSE on receive and transmit or only PAUSE receive). • Remote fault—Remote fault information. Link OK (no error detected on receive), Offline (local interface is offline), and Link Failure (link error detected on receive). 	extensive
Packet Forwarding Engine configuration	<p>Information about the configuration of the Packet Forwarding Engine:</p> <ul style="list-style-type: none"> • Destination slot—FPC slot number. 	extensive

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
CoS information	<p>Information about the CoS queue for the physical interface.</p> <ul style="list-style-type: none"> • CoS transmit queue—Queue number and its associated user-configured forwarding class name. • Bandwidth %—Percentage of bandwidth allocated to the queue. • Bandwidth bps—Bandwidth allocated to the queue (in bps). • Buffer %—Percentage of buffer space allocated to the queue. • Buffer usec—Amount of buffer space allocated to the queue, in microseconds. This value is nonzero only if the buffer size is configured in terms of time. • Priority—Queue priority: low or high. • Limit—Displayed if rate limiting is configured for the queue. Possible values are none and exact. If exact is configured, the queue transmits only up to the configured bandwidth, even if excess bandwidth is available. If none is configured, the queue transmits beyond the configured bandwidth if bandwidth is available. 	extensive
Logical Interface		
Logical interface	Name of the logical interface.	All levels
Index	Index number of the logical interface, which reflects its initialization sequence.	detail extensive none
SNMP ifIndex	SNMP interface index number for the logical interface.	detail extensive none
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive
Flags	Information about the logical interface. Possible values are described in the “Logical Interface Flags” section under Common Output Fields Description.	All levels

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
VLAN-Tag	<p>Rewrite profile applied to incoming or outgoing frames on the outer (Out) VLAN tag or for both the outer and inner (In) VLAN tags.</p> <ul style="list-style-type: none"> • push—An outer VLAN tag is pushed in front of the existing VLAN tag. • pop—The outer VLAN tag of the incoming frame is removed. • swap—The outer VLAN tag of the incoming frame is overwritten with the user-specified VLAN tag information. • push—An outer VLAN tag is pushed in front of the existing VLAN tag. • push-push—Two VLAN tags are pushed in from the incoming frame. • swap-push—The outer VLAN tag of the incoming frame is replaced by a user-specified VLAN tag value. A user-specified outer VLAN tag is pushed in front. The outer tag becomes an inner tag in the final frame. • swap-swap—Both the inner and the outer VLAN tags of the incoming frame are replaced by the user-specified VLAN tag value. • pop-swap—The outer VLAN tag of the incoming frame is removed, and the inner VLAN tag of the incoming frame is replaced by the user-specified VLAN tag value. The inner tag becomes the outer tag in the final frame. • pop-pop—Both the outer and inner VLAN tags of the incoming frame are removed. 	brief detail extensive none
Demux	<p>IP demultiplexing (demux) value that appears if this interface is used as the demux underlying interface. The output is one of the following:</p> <ul style="list-style-type: none"> • Source Family Inet • Destination Family Inet 	detail extensive none
Encapsulation	Encapsulation on the logical interface.	All levels
Protocol	Protocol family. Possible values are described in the “Protocol Field” section under Common Output Fields Description.	detail extensive none
MTU	Maximum transmission unit size on the logical interface.	detail extensive none
Maximum labels	Maximum number of MPLS labels configured for the MPLS protocol family on the logical interface.	detail extensive none
Traffic statistics	<p>Number and rate of bytes and packets received and transmitted on the specified interface set.</p> <ul style="list-style-type: none"> • Input bytes, Output bytes—Number of bytes received and transmitted on the interface set • Input packets, Output packets—Number of packets received and transmitted on the interface set. <p>NOTE: Input bytes and output bytes are counted as layer 3 packet length.</p>	detail extensive
IPv6 transit statistics	Number of IPv6 transit bytes and packets received and transmitted on the logical interface if IPv6 statistics tracking is enabled.	extensive
Local statistics	Number and rate of bytes and packets destined to the router.	extensive

Table 42: show interfaces PTX Series Output Fields (*continued*)

Field Name	Field Description	Level of Output
Transit statistics	Number and rate of bytes and packets transiting the switch.	extensive
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive
Route Table	Route table in which the logical interface address is located. For example, 0 refers to the routing table inet.0.	detail extensive none
Flags	Information about protocol family flags. Possible values are described in the “Family Flags” section under Common Output Fields Description.	detail extensive
Donor interface	(Unnumbered Ethernet) Interface from which an unnumbered Ethernet interface borrows an IPv4 address.	detail extensive none
Preferred source address	(Unnumbered Ethernet) Secondary IPv4 address of the donor loopback interface that acts as the preferred source address for the unnumbered Ethernet interface.	detail extensive none
Input Filters	Names of any input filters applied to this interface. If you specify a precedence value for any filter in a dynamic profile, filter precedence values appear in parentheses next to all interfaces.	detail extensive
Output Filters	Names of any output filters applied to this interface. If you specify a precedence value for any filter in a dynamic profile, filter precedence values appear in parentheses next to all interfaces.	detail extensive
Mac-Validate Failures	Number of MAC address validation failures for packets and bytes. This field is displayed when MAC address validation is enabled for the logical interface.	detail extensive none
Addresses, Flags	Information about the address flags. Possible values are described in the “Addresses Flags” section under Common Output Fields Description.	detail extensive none
<i>protocol-family</i>	Protocol family configured on the logical interface. If the protocol is inet , the IP address of the interface is also displayed.	brief
Flags	Information about flags (possible values are described in the “Addresses Flags” section under Common Output Fields Description.	detail extensive none
Destination	IP address of the remote side of the connection.	detail extensive none
Local	IP address of the logical interface.	detail extensive none
Broadcast	Broadcast address of the logical interlace.	detail extensive none
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive

Sample Output

show interfaces brief
(PTX5000 Packet
Transport Switch)

```
user@host> show interfaces brief et-7/0/0
Physical interface: et-7/0/0, Enabled, Physical link is Up
  Link-level type: Ethernet, MTU: 1514, Speed: 10Gbps, Loopback: Disabled, Source
  filtering: Disabled, Flow control: Enabled
  Device flags   : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  Link flags     : None
```

show interfaces
extensive (PTX5000

```
user@host> show interfaces et-7/0/0 extensive
Physical interface: et-7/0/0, Enabled, Physical link is Up
  Interface index: 168, SNMP ifIndex: 501, Generation: 171
```

Packet Transport Switch)

```

Link-level type: Ethernet, MTU: 1514, Speed: 10Gbps, BPDU Error: None,
MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled, Flow
control: Enabled
Device flags   : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Link flags     : None
CoS queues    : 8 supported, 8 maximum usable queues
Hold-times    : Up 0 ms, Down 0 ms
Current address: 88:e0:f3:3b:de:43, Hardware address: 88:e0:f3:3b:de:43
Last flapped  : 2012-01-18 11:48:24 PST (01:51:00 ago)
Statistics last cleared: 2012-01-18 13:38:54 PST (00:00:30 ago)
Traffic statistics:
Input bytes   :                               0                0 bps
Output bytes  :                               0                0 bps
Input packets :                               0                0 pps
Output packets:                              0                0 pps
IPv6 transit statistics:
Input bytes   :                               0
Output bytes  :                               0
Input packets :                               0
Output packets:                              0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0, L3
incompletes: 0, L2 channel errors: 0, L2 mismatch timeouts: 0, FIFO errors: 0,
Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
Egress queues: 8 supported, 4 in use
Queue counters:      Queued packets    Transmitted packets    Dropped packets

    0 best-effort           0                0                0
    1 expedited-fo         0                0                0
    2 assured-forw         0                0                0
    3 network-cont         0                0                0

Queue number:      Mapped forwarding classes
    0               best-effort
    1               expedited-forwarding
    2               assured-forwarding
    3               network-control
Active alarms : None
Active defects : None
MAC statistics:
Total octets      Receive      Transmit
Total packets     0            0
Unicast packets   0            0
Broadcast packets 0            0
Multicast packets 0            0
CRC/Align errors  0            0
FIFO errors       0            0
MAC control frames 0            0
MAC pause frames  0            0
Oversized frames  0
Jabber frames     0
Fragment frames   0
VLAN tagged frames 0
Code violations    0

```



```

Filter statistics:
  Input packet count          0
  Input packet rejects        0
  Input DA rejects            0
  Input SA rejects            0
  Output packet count          0
  Output packet pad count      0
  Output packet error count    0
  CAM destination filters: 0, CAM source filters: 0
Autonegotiation information:
  Negotiation status: Incomplete
Packet Forwarding Engine configuration:
  Destination slot: 7
CoS information:
  Direction : Output
  CoS transmit queue          Bandwidth          Buffer Priority
Limit
                                %          bps          %          usec          low
    0 best-effort              95      9500000000    95          0
none
    3 network-control          5       500000000     5          0
none
  Interface transmit statistics: Disabled

```

show interfaces terse (PTX5000 Packet Transport Switch)

```

user@host> show interfaces terse
Interface      Admin Link Proto  Local      Remote
et-2/0/0       up    up
et-2/0/1       up    up
et-2/0/2       up    up
et-2/0/3       up    up
et-2/0/4       up    up
et-2/0/5       up    down
et-2/0/6       up    up
et-2/0/7       up    up
et-2/0/8       up    up
et-2/0/9       up    down
et-2/0/10      up    up
et-2/0/11      up    up
et-2/0/12      up    up
et-2/0/13      up    down
et-2/0/14      up    up
et-2/0/15      up    up
et-2/0/16      up    up
et-2/0/17      up    down
et-2/0/18      up    down
et-2/0/19      up    up
et-2/0/20      up    down
et-2/0/21      up    up
et-2/0/22      up    down
et-2/0/23      up    up
et-2/1/0       up    up
et-2/1/1       up    up
et-2/1/2       up    up
et-2/1/3       up    up
et-2/1/4       up    up
et-2/1/5       up    up
et-2/1/6       up    up
et-2/1/7       up    up
et-2/1/8       up    up
et-2/1/9       up    up
et-2/1/10      up    up

```

et-2/1/11	up	up	
et-2/1/12	up	up	
et-2/1/13	up	up	
et-2/1/14	up	up	
et-2/1/15	up	up	
et-2/1/16	up	up	
et-2/1/17	up	up	
et-2/1/18	up	up	
et-2/1/19	up	up	
et-2/1/20	up	up	
et-2/1/21	up	up	
et-2/1/22	up	up	
et-2/1/23	up	up	
et-5/0/0	up	up	
et-5/0/0.0	up	up	ccc
et-5/0/0.32767	up	up	multiservice
et-5/0/1	up	up	
et-5/0/2	up	up	
et-5/0/3	up	down	
et-5/0/4	up	down	
et-5/0/5	up	up	
et-5/0/5.0	up	up	ccc
et-5/0/5.32767	up	up	multiservice
et-5/0/6	up	up	
et-5/0/7	up	up	
et-5/0/8	up	down	
et-5/0/9	up	up	
et-5/0/10	up	up	
et-5/0/11	up	up	
et-5/0/12	up	up	
et-5/0/13	up	down	
et-5/0/14	up	down	
et-5/0/15	up	up	
et-5/0/16	up	up	
et-5/0/17	up	up	
et-5/0/18	up	up	
et-5/0/19	up	up	
et-5/0/20	up	down	
et-5/0/21	up	down	
et-5/0/22	up	up	
et-5/0/23	up	up	
et-5/1/0	up	up	
et-5/1/1	up	up	
et-7/0/0	up	up	
et-7/0/1	up	up	
et-7/0/2	up	up	
et-7/0/3	up	up	
et-7/0/4	up	up	
et-7/0/5	up	up	
et-7/0/6	up	up	
et-7/0/7	up	up	
et-7/0/8	up	up	
et-7/0/9	up	up	
et-7/0/10	up	down	
et-7/0/11	up	down	
et-7/0/12	up	down	
et-7/0/13	up	down	
et-7/0/14	up	down	
et-7/0/15	up	down	
et-7/0/16	up	down	
et-7/0/17	up	down	

```

et-7/0/18          up    down
et-7/0/19          up    down
et-7/0/20          up    down
et-7/0/21          up    down
et-7/0/22          up    down
et-7/0/23          up    down
dsc                up    up
em0                up    up
em0.0              up    up    inet    192.168.177.61/25
gre                up    up
ipip               up    up
ixgbe0             up    up
ixgbe0.0           up    up    inet    10.0.0.4/8
                                   128.0.0.1/2
                                   128.0.0.4/2
                                   inet6   fe80::200:fff:fe00:4/64
                                   fec0::a:0:0:4/64
                                   tnp      0x4
ixgbe1             up    up
ixgbe1.0           up    up    inet    10.0.0.4/8
                                   128.0.0.1/2
                                   128.0.0.4/2
                                   inet6   fe80::200:1ff:fe00:4/64
                                   fec0::a:0:0:4/64
                                   tnp      0x4
lo0                up    up
lo0.0              up    up    inet    10.255.177.61    --> 0/0
                                   127.0.0.1        --> 0/0
                                   iso
47.0005.80ff.f800.0000.0108.0001.0102.5517.7061
                                   inet6   abcd::10:255:177:61
                                   fe80::ee9e:cd0f:fc02:b01e
lo0.16384          up    up    inet    127.0.0.1        --> 0/0
lo0.16385          up    up    inet
lsi                up    up
mtun               up    up
pimd               up    up
pime               up    up
tap                up    up

```

show interfaces extensive

Syntax show interfaces extensive

Release Information Command introduced before Junos OS Release 7.4.
Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.

Description Display extensive information about all interfaces configured on the router.



NOTE:

- At some times, the cumulative byte counters displayed with the `show interfaces extensive` command on the 10-Gigabit Ethernet MPC with SFP+ is not always increasing and cumulative and does not give the correct results. There is a time lag in collecting these statistics, during which the display might decrease or go from a nonzero number to zero. Eventually, the counter will display the correct result.
 - When the `show interfaces extensive` command is executed on a router with an MPC or a T4000 Type 5 FPC, the *Input packet rejects* counter of the *Filter statistics* field also displays statistics related to the following packet errors:
 - Invalid VLAN range
 - Tagged packet received on an untagged interface
 - When the `show interfaces extensive` command is executed on an interface that is configured on a T4000 Type 5 FPC, the *IPv6 transit statistics* field displays:
 - Total statistics (sum of transit and local statistics) at the physical interface level
 - Transit statistics at the logical interface level
 - When the `show interfaces extensive` command is executed on an aggregate interface in a T1600 Core Router, the *IPv6 Input bytes* is displayed for an aggregate interface. However, the *IPv6 Input bytes* is always zero on a member link of an aggregated bundle even when there are IPv6 transit traffic on the member link. This is because the logical interface index of the aggregate logical interface is updated but not the logical interface of the member links in the channel lookup table.
-

Options This command has no options.

Required Privilege Level view

List of Sample Output [show interfaces extensive \(Circuit Emulation\) on page 700](#)

[show interfaces extensive \(Fast Ethernet\) on page 700](#)
[show interfaces extensive \(Gigabit Ethernet\) on page 702](#)
[show interfaces extensive \(10-Gigabit Ethernet\) on page 702](#)
[show interfaces extensive \(IQ2 and IQ2E\) on page 705](#)
[show interfaces extensive \(100-Gigabit Ethernet\) on page 708](#)
[show interfaces extensive \(PTX5000 Packet Transport Switch\) on page 709](#)
[show interfaces extensive \(T4000 Routers with Type 5 FPCs\) on page 711](#)
[show interfaces extensive \(T4000 Routers with 24-port 10-Gigabit Ethernet LAN/WAN PIC on Type 5 FPC\) on page 713](#)
[show interfaces extensive \(Aggregated Ethernet\) on page 715](#)

Output Fields For more information, see the output fields table for the particular interface type in which you are interested. For information about destination class and source class statistics, see the “Destination Class Field” section and the “Source Class Field” section under Common Output Fields Description. For sample output for specific interfaces, see the other topics in this collection.

Sample Output

show interfaces extensive (Circuit Emulation)

If a Circuit Emulation (CE) PIC is configured for SAToP pseudowire, then pseudowire statistics are displayed in the CE information section of the show interface extensive output. If SAToP pseudowire is not configured on the CE PIC, then all the CE information counters will be displayed as 0 (zero).

```
user@host> show interface tl-0/0/0 extensive
Physical interface :tl-0/0/0, Enabled, Physical Link : Up
  Interface index:61441
  Speed : 1.54 Mbps, Loopback: Disabled
  Operational state : Enabled, Encapsulation : Trans
  Encoding : b8zs, Framing : unframe, Build-out : 0-30
  Inversion : enable, Clock source : master
  Description :
  Traffic statistics:
    T1 media:      Seconds
    ES              1643
    SES            1643

    CE Info      Packets      Bytes
    CE Rx       : 2395529     306627712
    CE Tx       : 2396259     306721152
    CE Rx Drop: 0             0
    CE Tx Drop: 0             0

    CE Overrun Events: 0
    CE Underrun Events: 0
```

Sample Output

show interfaces extensive (Fast Ethernet)

```
user@host> show interfaces fe-0/2/1 extensive
Physical interface: fe-0/2/0, Enabled, Physical link is Up
  Interface index: 129, SNMP ifIndex: 23, Generation: 130
  Link-level type: Ethernet, MTU: 1514, Speed: 100mbps, Loopback: Disabled,
  Source filtering: Disabled, Flow control: Enabled
  Device flags : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  CoS queues : 4 supported, 4 maximum usable queues
  Hold-times : Up 0 ms, Down 0 ms
  Current address: 00:90:69:91:c4:3e, Hardware address: 00:90:69:91:c4:3e
  Last flapped : 2006-04-16 23:00:41 PDT (02:08:05 ago)
  Statistics last cleared: 2006-04-16 21:42:00 PDT (03:26:46 ago)
  Traffic statistics:
    Input bytes : 17539 152 bps
    Output bytes : 92968 224 bps
    Input packets: 348 0 pps
    Output packets: 1349 0 pps
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0,
    L3 incompletes: 0, L2 channel errors: 0, L2 mismatch timeouts: 0,
    FIFO errors: 0, Resource errors: 0
  Output errors:
    Carrier transitions: 3, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,

    FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
  Egress queues: 4 supported, 4 in use
  Queue counters: Queued packets Transmitted packets Dropped packets
```

0 best-effort	66	66	0
1 expedited-fo	0	0	0
2 assured-forw	0	0	0
3 network-cont	1283	1283	0

Active alarms : None

Active defects : None

MAC statistics:	Receive	Transmit
Total octets	24721	105982
Total packets	348	1349
Unicast packets	347	430
Broadcast packets	1	37
Multicast packets	0	882
CRC/Align errors	0	0
FIFO errors	0	0
MAC control frames	0	0
MAC pause frames	0	0
Oversized frames	0	
Jabber frames	0	
Fragment frames	0	
VLAN tagged frames	0	
Code violations	0	

Filter statistics:

Input packet count	348	
Input packet rejects	0	
Input DA rejects	0	
Input SA rejects	0	
Output packet count		1349
Output packet pad count		0
Output packet error count		0
CAM destination filters: 3, CAM source filters: 0		

Autonegotiation information:

Negotiation status: Complete

Link partner:

Link mode: Full-duplex, Flow control: None, Remote fault: OK

Packet Forwarding Engine configuration:

Destination slot: 0

CoS information:

CoS transmit queue		Bandwidth		Buffer	Priority	Limit
	%	bps	%	usec		
0 best-effort	95	95000000	95	0	low	none
3 network-control	5	5000000	5	0	low	none

Logical interface fe-0/2/0.0 (Index 66) (SNMP ifIndex 46) (Generation 133)

Flags: SNMP-Traps Encapsulation: ENET2

Protocol inet, MTU: 1500, Generation: 142, Route table: 0

Flags: DCU, SCU-out

Destination class	Packets (packet-per-second)	Bytes (bits-per-second)
silv1_new	0	0
(0)	(
silv2_new	0	0
(0)	(
silv_misc	0	0
(0)	(
silver0	0	0
(0)	(

```

silver2          0          0
  (              0) (      0)
silver3          0          0
  (              0) (      0)
silver4          0          0
  (              0) (      0)
silver5          0          0
  (              0) (      0)
silver6          0          0
  (              0) (      0)
silver7          0          0
  (              0) (      0)
silver9          0          0
  (              0) (      0)
Source class      Packets      Bytes
                  (packet-per-second) (bits-per-second)
gold1             0          0
  (              0) (      0)
gold2            16600      1062400
  (              0) (      0)
gold3             0          0
  (              0) (      0)
Addresses, Flags: Is-Preferred Is-Primary
Destination: 12.1.1/24, Local: 12.1.1.1, Broadcast: 12.1.1.255,
Generation: 150

```

Sample Output

show interfaces
extensive (Gigabit
Ethernet)

```

user@host> show interfaces ge-5/0/0.0 extensive

Logical interface ge-5/0/0.0 (Index 71) (SNMP ifIndex 1930) (Generation 139)
Flags: SNMP-Traps 0x4000 Encapsulation: ENET2
Traffic statistics:
  Input bytes :          0
  Output bytes :         42
  Input packets:          0
  Output packets:         1
Local statistics:
  Input bytes :          0
  Output bytes :         42
  Input packets:          0
  Output packets:         1
Transit statistics:
  Input bytes :          0          0 bps
  Output bytes :          0          0 bps
  Input packets:          0          0 pps
  Output packets:          0          0 pps
Output Filters: f-any
Protocol inet, MTU: 1500, Generation: 155, Route table: 0
  Output Filters: f-inet,
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: 10.11.1/24, Local: 10.11.1.1, Broadcast: 10.11.1.255,
    Generation: 170
Protocol multiservice, MTU: Unlimited, Generation: 156, Route table: 0
  Flags: Is-Primary
  Policer: Input: __default_arp_policer__

```

Sample Output

**show interfaces
extensive (10-Gigabit
Ethernet)**

```

user@host> show interfaces xe-2/1/0 extensive

Physical interface: xe-2/1/0, Enabled, Physical link is Up
  Interface index: 258, SNMP ifIndex: 762, Generation: 2046
  Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps, BPDU Error:
  None, Loopback: None, Source filtering: Disabled,
  Flow control: Enabled
  Device flags   : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  Link flags     : None
  CoS queues     : 8 supported, 8 maximum usable queues
  Hold-times     : Up 0 ms, Down 0 ms
  Current address: 00:1d:b5:f8:6d:eb, Hardware address: 00:1d:b5:f8:6d:eb
  Last flapped   : 2011-12-17 00:19:02 PST (07:36:37 ago)
  Statistics last cleared: 2011-12-17 07:55:24 PST (00:00:15 ago)
  Traffic statistics:
    Input bytes :          110000          0 bps
    Output bytes :           0          0 bps
    Input packets:           1000          0 pps
    Output packets:           0          0 pps
  IPv6 transit statistics:
    Input bytes :          110000
    Output bytes :           0
    Input packets:           1000
    Output packets:           0
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0, L3
incompletes: 0, L2 channel errors: 0,
    L2 mismatch timeouts: 0, FIFO errors: 0, Resource errors: 0
  Output errors:
    Carrier transitions: 0, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
  FIFO errors: 0, HS link CRC errors: 0,
    MTU errors: 0, Resource errors: 0
  Egress queues: 8 supported, 4 in use
  Queue counters:
    Queued packets  Transmitted packets  Dropped packets

    0 best-effort          0              0              0
    1 expedited-fo        0              0              0
    2 assured-forw        0              0              0
    3 network-cont        0              0              0

  Queue number:      Mapped forwarding classes
    0                best-effort
    1                expedited-forwarding
    2                assured-forwarding
    3                network-control

  Active alarms : None
  Active defects : None
  PCS statistics
    Bit errors          0
    Errored blocks      0
  MAC statistics:
    Receive              Transmit
    Total octets        128000          0
    Total packets       1000          0
    Unicast packets     1000          0
    Broadcast packets   0          0
    Multicast packets   0          0
    CRC/Align errors    0          0

```

```

FIFO errors                                0                0
MAC control frames                        0                0
MAC pause frames                         0                0
Oversized frames                        0
Jabber frames                          0
Fragment frames                        0
VLAN tagged frames                     0
Code violations                         0
Filter statistics:
  Input packet count                     1000
  Input packet rejects                   0
  Input DA rejects                       0
  Input SA rejects                       0
  Output packet count                   0
  Output packet pad count               0
  Output packet error count             0
  CAM destination filters: 0, CAM source filters: 0
Packet Forwarding Engine configuration:
  Destination slot: 2
CoS information:
  Direction : Output
  CoS transmit queue                    Bandwidth          Buffer Priority
Limit
      0 best-effort                      95      95000000000    95      0      low
none
      3 network-control                  5      5000000000      5      0      low
none
Interface transmit statistics: Disabled

Logical interface xe-2/1/0.0 (Index 83) (SNMP ifIndex 1677) (Generation 10082)

Flags: SNMP-Traps 0x4004000 Encapsulation: ENET2
Traffic statistics:
  Input bytes : 110000
  Output bytes : 0
  Input packets: 1000
  Output packets: 0
IPv6 transit statistics:
  Input bytes : 55000
  Output bytes : 0
  Input packets: 500
  Output packets: 0
Local statistics:
  Input bytes : 55000
  Output bytes : 0
  Input packets: 500
  Output packets: 0
Transit statistics:
  Input bytes : 55000      0 bps
  Output bytes : 0      0 bps
  Input packets: 500      0 pps
  Output packets: 0      0 pps
IPv6 transit statistics:
  Input bytes : 55000
  Output bytes : 0
  Input packets: 500
  Output packets: 0
Protocol inet6, MTU: 1500, Generation: 23739, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: 2001:1000:abcd:2312:1432:abcd:1234:0/112, Local:

```

```

2001:1000:abcd:2312:1432:abcd:1234:1234
  Generation: 506
  Addresses, Flags: Is-Preferred
    Destination: fe80::/64, Local: fe80::21d:b5ff:fe8:6deb
  Protocol multiservice, MTU: Unlimited, Generation: 508
  Generation: 23740, Route table: 0
  Policer: Input: __default_arp_policer__

```

Sample Output

show interfaces
extensive (IQ2 and
IQ2E)

```

user@host> show interfaces ge-3/2/2 extensive
Physical interface: ge-3/2/2, Enabled, Physical link is Up
  Interface index: 156, SNMP ifIndex: 548, Generation: 159
  Link-level type: Ethernet, MTU: 1518, Speed: 1000mbps, BPDU Error: None,
  MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled,
  Flow control: Enabled, Auto-negotiation: Enabled, Remote fault: Online
  Device flags   : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  CoS queues     : 8 supported, 8 maximum usable queues
  Schedulers     : 128
  Hold-times     : Up 0 ms, Down 0 ms
  Current address: 00:14:f6:12:86:fa, Hardware address: 00:14:f6:12:86:fa
  Last flapped   : 2010-03-17 04:03:11 PDT (00:45:30 ago)
  Statistics last cleared: Never
  Traffic statistics:
    Input bytes   :          1716096          0 bps
    Output bytes  :          1716448          0 bps
    Input packets :           13407          0 pps
    Output packets:           13411          0 pps
  IPv6 total statistics:
    Input bytes   :          1716096
    Output bytes  :          1716096
    Input packets :           13407
    Output packets:           13407
  Ingress traffic statistics at Packet Forwarding Engine:
    Input bytes   :          1716096          0 bps
    Input packets :           13407          0 pps
    Drop bytes    :              0          0 bps
    Drop packets  :              0          0 pps
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0,
  L3 incompletes: 0, L2 channel errors: 1, L2 mismatch timeouts: 0, FIFO errors:
  0,
    Resource errors: 0
  Output errors:
    Carrier transitions: 1, Errors: 0, Drops: 0, Collisions: 0, Aged packets:
  0, FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
  Ingress queues: 8 supported, 4 in use
  Queue counters:      Queued packets  Transmitted packets      Dropped
  packets
    0 best-effort          13407          13407
    0
    1 expedited-fo              0              0
    0
    2 assured-forw              0              0
    0
    3 network-cont              0              0
    0
  Egress queues: 8 supported, 4 in use
  Queue counters:      Queued packets  Transmitted packets      Dropped
  packets

```

```

0      0 best-effort          13407          13407
0      1 expedited-fo        0              0
0      2 assured-forw        0              0
0      3 network-cont        4              4
0
Active alarms : None
Active defects : None
MAC statistics:
                                Receive          Transmit
Total octets                   1716096        1716448
Total packets                   13407         13411
Unicast packets                 13407         13407
Broadcast packets               0              0
Multicast packets               0              4
CRC/Align errors               0              0
FIFO errors                     0              0
MAC control frames              0              0
MAC pause frames                0              0
Oversized frames                0
Jabber frames                   0
Fragment frames                 0
VLAN tagged frames              0
Code violations                  0
Filter statistics:
Input packet count              13407
Input packet rejects            0
Input DA rejects                0
Input SA rejects                0
Output packet count              0
Output packet pad count         13411
Output packet error count       0
CAM destination filters: 0, CAM source filters: 0
Autonegotiation information:
Negotiation status: Complete
Link partner:
Link mode: Full-duplex, Flow control: None, Remote fault: OK
Local resolution:
Flow control: Symmetric, Remote fault: Link OK
Packet Forwarding Engine configuration:
Destination slot: 3
CoS information:
Direction : Output
CoS transmit queue             Bandwidth          Buffer Priority
Limit
    %          bps      %          usec
0 best-effort    95    950000000    95          0      low
none
3 network-control 5     50000000    5          0      low
none
Direction : Input
CoS transmit queue             Bandwidth          Buffer Priority
Limit
    %          bps      %          usec
0 best-effort    95    950000000    95          0      low
none
3 network-control 5     50000000    5          0      low
none

Logical interface ge-3/2/2.0 (Index 83) (SNMP ifIndex 6080) (Generation

```

148)

```

Flags: SNMP-Traps 0x4000 VLAN-Tag [ 0x8100.100 ] Encapsulation: ENET2
Traffic statistics:
  Input bytes :          0
  Output bytes :         336
  Input packets:          0
  Output packets:         4
IPv6 total statistics:
  Input bytes :       1716096
  Output bytes :       1716096
  Input packets:      13407
  Output packets:     13407
Local statistics:
  Input bytes :          0
  Output bytes :         336
  Input packets:          0
  Output packets:         4
Transit statistics:
  Input bytes :          0          0 bps
  Output bytes :          0          0 bps
  Input packets:         0          0 pps
  Output packets:         0          0 pps
IPv6 total statistics:
  Input bytes :       1716096
  Output bytes :       1716096
  Input packets:      13407
  Output packets:     13407
Protocol inet6, MTU: 1500, Generation: 159, Route table: 0
  Flags: Is-Primary
  Addresses, Flags: Is-Default Is-Primary
    Destination: Unspecified, Local: 2000::2
Generation: 146
  Addresses, Flags: Is-Preferred
    Destination: fe80::/64, Local: fe80::214:f600:6412:86fa
Protocol multiservice, MTU: Unlimited, Generation: 148
Generation: 160, Route table: 0
  Policer: Input: __default_arp_policer__

```

Logical interface ge-3/2/2.32767 (Index 84) (SNMP ifIndex 6081) (Generation

149)

```

Flags: SNMP-Traps 0x4000 VLAN-Tag [ 0x0000.0 ] Encapsulation: ENET2
Traffic statistics:
  Input bytes :          0
  Output bytes :          0
  Input packets:         0
  Output packets:         0
Local statistics:
  Input bytes :          0
  Output bytes :          0
  Input packets:         0
  Output packets:         0
Transit statistics:
  Input bytes :          0          0 bps
  Output bytes :          0          0 bps
  Input packets:         0          0 pps
  Output packets:         0          0 pps
Protocol multiservice, MTU: Unlimited, Generation: 161, Route table: 0
  Flags: None
  Policer: Input: __default_arp_policer__

```

Sample Output

show interfaces extensive (100-Gigabit Ethernet)

```

user@host> show interfaces et-0/0/0:0 extensive
Physical interface: et-0/0/0:0, Enabled, Physical link is Down
  Interface index: 156, SNMP ifIndex: 516, Generation: 163
  Link-level type: Ethernet, MTU: 9192, Speed: 50000mbps, BPDU Error: None,
  MAC-REWRITE Error: None,
  Loopback: Disabled, Source filtering: Disabled, Flow control: Enabled
  Device flags   : Present Running Down
  Interface flags: Hardware-Down SNMP-Traps Internal: 0x4000
  Link flags     : None
  CoS queues     : 8 supported, 8 maximum usable queues
  Hold-times     : Up 0 ms, Down 0 ms
  Current address: 00:aa:aa:aa:aa:00, Hardware address: 00:21:59:5c:48:00
  Last flapped   : 2010-01-07 16:36:49 PST (18:02:35 ago)
  Statistics last cleared: Never
  Traffic statistics:
    Input bytes   :                0                0 bps
    Output bytes  :                0                0 bps
    Input packets :                0                0 pps
    Output packets:                0                0 pps
  IPv6 transit statistics:
    Input bytes   :                0
    Output bytes  :                0
    Input packets :                0
    Output packets:                0
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0, L3
incompletes: 0,
    L2 channel errors: 0, L2 mismatch timeouts: 0, FIFO errors: 0, Resource errors:
0
  Output errors:
    Carrier transitions: 0, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
FIFO errors: 0,
    HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
  Egress queues: 8 supported, 8 in use
  Queue counters:
    Queued packets  Transmitted packets  Dropped packets

    0 DEFAULT, NC-                0                0                0
    1 REALTIME                0                0                0
    2 PRIVATE, NC-                0                0                0
    3 CONTROL                1253                1253                0
    4 BC-H, CLASS_                0                0                0
    5 BC-M, CLASS_                0                0                0
    6 IA, CLASS_V_                0                0                0
    7 CLASS_S_OUTP                0                0                0

  Queue      Mapped Forwarding Class
  0          DEFAULT, NC-Q0
  1          REALTIME
  2          PRIVATE, NC-Q1
  3          CONTROL
  4          BC-H, CLASS-Q4
  5          BC-M, CLASS-Q5

```

```

6      IA, CLASS_V_OUTPUT
7      CLASS_S_OUTPUT
Active alarms : None
Active defects : None
MAC statistics:
Total octets          Receive          Transmit
Total packets        0              0
Unicast packets      0              0
Broadcast packets    0              0
Multicast packets    0              0
CRC/Align errors     0              0
FIFO errors          0              0
MAC control frames   0              0
MAC pause frames     0              0
Oversized frames     0
Jabber frames        0
Fragment frames      0
VLAN tagged frames   0
Code violations       0
Packet Forwarding Engine configuration:
Destination slot: 0
CoS information:
Direction : Output
CoS transmit queue    Bandwidth          Buffer Priority Limit

                                %      bps      %      usec
0 best-effort         95    47500000000    95      0      low none
3 network-control     5     25000000000     5      0      low none

Logical interface et-0/0/0:0.0 (Index 68) (SNMP ifIndex 546) (Generation 161)
Flags: Deviet-Down SNMP-Traps Encapsulation: ENET2
Traffic statistics:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0
Local statistics:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0
Transit statistics:
Input bytes : 0          0 bps
Output bytes : 0          0 bps
Input packets: 0          0 pps
Output packets: 0          0 pps
Protocol inet, MTU: 9178, Generation: 220, Route table: 0
Addresses, Flags: Dest-route-down Is-Preferred Is-Primary
Destination: 210.160.0/24, Local: 210.160.0.1, Broadcast: 210.160.0.255,
Generation: 192
Protocol mpls, MTU: 9166, Maximum labels: 3, Generation: 221, Route table: 0

Protocol multiservice, MTU: Unlimited, Generation: 222, Route table: 0
Policer: Input: __default_arp_policer

```

Sample Output

show interfaces

```

user@host> show interfaces et-7/0/0 extensive
Physical interface: et-7/0/0, Enabled, Physical link is Up

```

extensive (PTX5000 Packet Transport Switch)

```

Interface index: 168, SNMP ifIndex: 501, Generation: 171
Link-level type: Ethernet, MTU: 1514, Speed: 10Gbps, BPDU Error: None,
MAC-REWRITE Error: None,
Loopback: Disabled, Source filtering: Disabled, Flow control: Enabled
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Link flags : None
CoS queues : 8 supported, 8 maximum usable queues
Hold-times : Up 0 ms, Down 0 ms
Current address: 88:e0:f3:3b:de:43, Hardware address: 88:e0:f3:3b:de:43
Last flapped : 2012-01-18 11:48:24 PST (01:47:08 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes : 3583014 0 bps
Output bytes : 758050 0 bps
Input packets: 17740 0 pps
Output packets: 3418 0 pps
IPv6 transit statistics:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0, L3
incompletes: 0,
L2 channel errors: 0, L2 mismatch timeouts: 0, FIFO errors: 0, Resource errors:
0
Output errors:
Carrier transitions: 1, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
FIFO errors: 0,
HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
Egress queues: 8 supported, 4 in use
Queue counters: Queued packets Transmitted packets Dropped packets

0 best-effort 252 252 0
1 expedited-fo 0 0 0
2 assured-forw 0 0 0
3 network-cont 6196 6196 0

Queue number: Mapped forwarding classes
0 best-effort
1 expedited-forwarding
2 assured-forwarding
3 network-control
Active alarms : None
Active defects : None
MAC statistics:
Total octets 4108825 1159686
Total packets 21166 6448
Unicast packets 14824 3255
Broadcast packets 3 0
Multicast packets 6339 3193
CRC/Align errors 0 0
FIFO errors 0 0
MAC control frames 0 0
MAC pause frames 0 0
Oversized frames 0
Jabber frames 0

```



```

Fragment frames                                0
VLAN tagged frames                            16091
Code violations                                0
Filter statistics:
Input packet count                            9
Input packet rejects                          9
Input DA rejects                              9
Input SA rejects                              0
Output packet count                            0
Output packet pad count                       0
Output packet error count                     0
CAM destination filters: 0, CAM source filters: 0
Autonegotiation information:
Negotiation status: Incomplete
Packet Forwarding Engine configuration:
Destination slot: 7
CoS information:
Direction : Output
CoS transmit queue      Bandwidth      Buffer Priority
Limit
      %      bps      %      usec      low
0 best-effort      95      9500000000      95      0
none
3 network-control      5      500000000      5      0
none
Interface transmit statistics: Disabled

```

Sample Output

**show interfaces
extensive (T4000**

```

user@host> show interfaces xe-4/0/0 extensive
Physical interface: xe-4/0/0, Enabled, Physical link is Up
Interface index: 170, SNMP ifIndex: 859, Generation: 173

```

Routers with Type 5 FPCs)

```

Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps, Loopback:
None, Source filtering: Disabled, Flow control: Enabled
Device flags   : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Link flags     : None
CoS queues     : 8 supported, 8 maximum usable queues
Hold-times     : Up 0 ms, Down 0 ms
Current address: 00:12:1e:37:53:f8, Hardware address: 00:12:1e:37:53:f8
Last flapped   : 2012-06-06 02:25:56 PDT (10:11:58 ago)
Statistics last cleared: 2012-06-06 12:36:59 PDT (00:00:55 ago)
Traffic statistics:
Input bytes   : 0                      0 bps
Output bytes  : 0                      0 bps
Input packets : 0                      0 pps
Output packets: 0                      0 pps
IPv6 transit statistics:
Input bytes   : 0
Output bytes  : 0
Input packets : 0
Output packets: 0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runt: 0, Policed discards: 0, L3
incompletes: 0, L2 channel errors: 0, L2 mismatch timeouts: 0,
FIFO errors: 0, Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0,
Resource errors: 0
Egress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort        0                      0                      0
1 expedited-fo       0                      0                      0
2 assured-forw       0                      0                      0
3 network-cont       0                      0                      0

Queue number:      Mapped forwarding classes
0                  best-effort
1                  expedited-forwarding
2                  assured-forwarding
3                  network-control
Active alarms   : None
Active defects  : None
PCS statistics           Seconds
Bit errors         0
Errored blocks     0
MAC statistics:      Receive      Transmit
Total octets        0            0
Total packets       0            0
Unicast packets     0            0
Broadcast packets   0            0
Multicast packets   0            0
CRC/Align errors    0            0
FIFO errors         0            0
MAC control frames  0            0
MAC pause frames    0            0
Oversized frames    0
Jabber frames       0

```

```

Fragment frames                                0
VLAN tagged frames                            0
Code violations                                0
Filter statistics:
Input packet count                            0
Input packet rejects                          0
Input DA rejects                              0
Input SA rejects                              0
Output packet count                            0
Output packet pad count                       0
Output packet error count                     0
CAM destination filters: 0, CAM source filters: 0
Packet Forwarding Engine configuration:
Destination slot: 4
CoS information:
Direction : Output
CoS transmit queue          Bandwidth          Buffer Priority
Limit
%          bps          %          usec
0 best-effort          95          4750000000          95          0          low
none
3 network-control          5          250000000          5          0          low
none
Interface transmit statistics: Disabled

Logical interface xe-4/0/0.0 (Index 93) (SNMP ifIndex 834) (Generation 158)
Flags: SNMP-Traps 0x4004000 Encapsulation: ENET2
Traffic statistics:
Input bytes :                                0
Output bytes :                               0
Input packets:                               0
Output packets:                              0
Local statistics:
Input bytes :                                0
Output bytes :                               0
Input packets:                               0
Output packets:                              0
Transit statistics:
Input bytes :                                0          0 bps
Output bytes :                               0          0 bps
Input packets:                               0          0 pps
Output packets:                              0          0 pps
Protocol inet, MTU: 1500, Generation: 192, Route table: 0
Flags: Sendbcst-pkt-to-re
Addresses, Flags: Is-Preferred Is-Primary
Destination: 34.1.1/24, Local: 34.1.1.2, Broadcast: 34.1.1.255, Generation:
157
Protocol multiservice, MTU: Unlimited, Generation: 193, Route table: 0
Policer: Input: __default_arp_policer__

```

Sample Output

show interfaces
extensive (T4000
Routers with 24-port
10-Gigabit Ethernet

```

user@host> show interfaces xe-3/1/0 extensive
Physical interface: xe-3/1/0, Enabled, Physical link is Up
Interface index: 160, SNMP ifIndex: 1285, Generation: 163
Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps, BPDU Error:
None, Loopback: None,

```

LAN/WAN PIC on Type
5 FPC)

```

Source filtering: Disabled, Flow control: Enabled
Device flags   : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Link flags     : None
CoS queues     : 8 supported, 8 maximum usable queues
Hold-times     : Up 0 ms, Down 0 ms
Current address: 2c:6b:f5:e1:cb:39, Hardware address: 2c:6b:f5:e1:cb:39
Last flapped   : 2012-05-09 07:15:54 UTC (03:39:52 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes   : 0 0 bps
Output bytes  : 0 0 bps
Input packets : 0 0 pps
Output packets: 0 0 pps
IPv6 transit statistics:
Input bytes   : 0
Output bytes  : 0
Input packets : 0
Output packets: 0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0, L3
incompletes: 0, L2 channel errors: 0,
L2 mismatch timeouts: 0, FIFO errors: 0, Resource errors: 0
Output errors:
Carrier transitions: 1, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
FIFO errors: 0,
HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
Egress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort        0                0                0
1 ay_q1              0                0                0
2 assured-forw       0                0                0
3 network-cont       0                0                0

Queue number:      Mapped forwarding classes
0                 best-effort
1                 ay_q1
2                 assured-forwarding
3                 network-control
Active alarms   : None
Active defects  : None
PCS statistics           Seconds
Bit errors        0
Errored blocks    0
MAC statistics:      Receive      Transmit
Total octets       0            0
Total packets      0            0
Unicast packets    0            0
Broadcast packets  0            0
Multicast packets  0            0
CRC/Align errors   0            0
FIFO errors        0            0
MAC control frames 0            0
MAC pause frames   0            0
Oversized frames   0
Jabber frames      0
Fragment frames    0

```

```

VLAN tagged frames          0
Code violations              0
Filter statistics:
  Input packet count        0
  Input packet rejects      0
  Input DA rejects          0
  Input SA rejects          0
  Output packet count       0
  Output packet pad count   0
  Output packet error count 0
  CAM destination filters: 0, CAM source filters: 0
Packet Forwarding Engine configuration:
  Destination slot: 3
CoS information:
  Direction : Output
  CoS transmit queue      Bandwidth      Buffer Priority  Limit

                                %      bps      %      usec
0 best-effort              95    9500000000    95      0      low    none
3 network-control          5     500000000     5      0      low    none

Preclassifier statistics:
Traffic Class      Received Packets  Transmitted Packets  Dropped Packets

network-control      0                  0                  0
best-effort          0                  0                  0
Interface transmit statistics: Disabled

```

Sample Output

**show interfaces
extensive (Aggregated
Ethernet)**

```

user@host> show interfaces ae0 extensive
Physical interface: ae0, Enabled, Physical link is Up
Interface index: 199, SNMP ifIndex: 570, Generation: 202
Link-level type: Ethernet, MTU: 1514, Speed: 2Gbps, BPDU Error: None,
MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled,
Flow control: Disabled, Minimum links needed: 1, Minimum bandwidth needed: 0
Device flags   : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: 2c:6b:f5:d1:0f:c0, Hardware address: 2c:6b:f5:d1:0f:c0
Last flapped   : 2012-06-06 23:33:03 PDT (00:00:58 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes :          18532          1984 bps
Output bytes :           0           0 bps
Input packets:          158           2 pps
Output packets:           0           0 pps
IPv6 transit statistics:
Input bytes :           0
Output bytes :           0
Input packets:           0
Output packets:           0
Dropped traffic statistics due to STP State:
Input bytes :           0
Output bytes :           0
Input packets:           0
Output packets:           0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards:
0,
Resource errors: 0

```

Output errors:

Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0, Resource errors:

0

Ingress queues: 8 supported, 4 in use

Queue counters:	Queued packets	Transmitted packets	Dropped packets
0 best-effort	0	0	0
1 expedited-fo	0	0	0
2 assured-forw	0	0	0
3 network-cont	0	0	0

Egress queues: 8 supported, 4 in use

Queue counters:	Queued packets	Transmitted packets	Dropped packets
0 best-effort	57	57	0
1 expedited-fo	0	0	0
2 assured-forw	0	0	0
3 network-cont	63605	63605	0

Queue number:	Mapped forwarding classes
0	best-effort
1	expedited-forwarding
2	assured-forwarding
3	network-control

Logical interface ae0.0 (Index 331) (SNMP ifIndex 583) (Generation 142)

Flags: SNMP-Traps 0x4004000 Encapsulation: ENET2

Statistics	Packets	pps	Bytes	bps	
Bundle:					
Input :	149	2	17416	1984	
Output:	0	0	0	0	
Link:					
ge-3/2/5.0					
Input :	90	1	10100	992	
Output:	0	0	0	0	
ge-3/3/9.0					
Input :	59	1	7316	992	
Output:	0	0	0	0	
LACP info:					
Port	Port	Role	System	System	Port
		priority	identifier	priority	number
key					
ge-3/2/5.0	Actor	100	00:00:00:00:00:01	127	1
1 ge-3/2/5.0	Partner	127	00:24:dc:98:67:c0	127	1 1
ge-3/3/9.0	Actor	100	00:00:00:00:00:01	127	2
1 ge-3/3/9.0	Partner	127	00:24:dc:98:67:c0	127	2 1
LACP Statistics:					
	LACP Rx	LACP Tx	Unknown Rx	Illegal Rx	
ge-3/2/5.0	38	137	0	0	
ge-3/3/9.0	36	139	0	0	
Marker Statistics:					
	Marker Rx	Resp Tx	Unknown Rx	Illegal Rx	
ge-3/2/5.0	0	0	0	0	

```
ge-3/3/9.0          0          0          0          0
Protocol inet, MTU: 1500, Generation: 169, Route table: 0
Flags: Sendbcast-pkt-to-re
Addresses, Flags: Is-Preferred Is-Primary
Destination: 1.1.1/24, Local: 1.1.1.2, Broadcast: 1.1.1.255, Generation:
153
Protocol multiservice, MTU: Unlimited, Generation: 170, Route table: 0
Flags: Is-Primary
Policer: Input: __default_arp_policer__
```

show interfaces filters

Syntax	<code>show interfaces filters</code> <code><interface-name></code>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced on PTX Series Packet Transport Switches for Junos OS Release 12.1.
Description	Display all firewall filters that are installed on each interface in a system.
Options	none —Display filter information about all interfaces. interface-name —(Optional) Display filter information about a particular interface.
Additional Information	For information about how to configure firewall filters, see the Routing Policy Configuration Guide. For related operational mode commands, see the Junos OS Operational Mode Commands.
Required Privilege Level	view
List of Sample Output	show interfaces filters on page 719 show interfaces filters interface-name on page 719 show interfaces filters (PTX Series Packet Transport Switches) on page 719
Output Fields	Table 43 on page 718 lists the output fields for the show interfaces filters command. Output fields are listed in the approximate order in which they appear.

Table 43: show interfaces filters Output Fields

Field Name	Field Description
Interface	Name of the interface.
Admin	Interface state: up or down .
Link	Link state: up or down .
Proto	Protocol configured on the interface.
Input Filter	Names of any firewall filters to be evaluated when packets are received on the interface, including any filters attached through activation of dynamic service.
Output Filter	Names of any firewall filters to be evaluated when packets are transmitted on the interface, including any filters attached through activation of dynamic service.

Sample Output

show interfaces filters

```

user@host> show interfaces filters
Interface      Admin Link Proto Input Filter      Output Filter
ge-0/0/0       up    up
ge-0/0/0.0     up    up    inet
               iso
ge-5/0/0       up    up
ge-5/0/0.0     up    up    any
               inet
               multiservice    f-any
               f-inet
gr-0/3/0       up    up
ip-0/3/0       up    up
mt-0/3/0       up    up
pd-0/3/0       up    up
pe-0/3/0       up    up
vt-0/3/0       up    up
at-1/0/0       up    up
at-1/0/0.0     up    up    inet
               iso
at-1/1/0       up    down
at-1/1/0.0     up    down inet
               iso
....

```

show interfaces filters interface-name

```

user@host> show interfaces filters so-2/1/0
Interface      Admin Link Proto Input Filter      Output Filter
so-2/1/0       up    down
so-2/1/0.0     up    down inet    goop      outfilter
               iso
               inet6 v6in    v6out

user@host > show interfaces filters ge-3/0/1
Interface      Admin Link Proto Input Filter      Output Filter
ge-3/0/1       up    up
ge-3/0/1.0     up    up    inet    F1-ge-3/0/1.0-in    F2-ge-3/0/1.0-out
               inet    F3-ge-3/0/1.0-in

```

show interfaces filters (PTX Series Packet Transport Switches)

```

user@host > show interfaces filters em0
Interface      Admin Link Proto Input Filter      Output Filter
em0            up    up
em0.0          up    up    inet

```

show interfaces (M Series and T Series Routers, and PTX Series Packet Transport Switches Management and Internal Ethernet)

Syntax	<code>show interfaces <i>interface-name</i></code> <code><brief detail extensive terse></code> <code><descriptions></code> <code><media></code> <code><snmp-index <i>snmp-index</i>></code> <code><statistics></code>
Syntax (PTX Series Packet Transport Switches)	<code>show interfaces <i>interface-name</i></code> <code><brief detail extensive terse></code> <code><descriptions></code> <code><statistics></code>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced on PTX Series Packet Transport Switches for Junos OS Release 12.1.
Description	(M Series, T Series, TX Matrix Plus, and PTX Series devices only) Display status information about the management Ethernet and internal Ethernet interfaces.
Options	<p>interface-name—Specify one of the following management interface names: fxp0, fxp1, fxp2, ixgbe0, ixgbe1, bcm0, em0, or em1. For supported Ethernet interface by chassis and Routing Engine, see Supported Routing Engines by Chassis.</p> <p>brief detail extensive terse—(Optional) Display the specified level of output.</p> <p>descriptions—(Optional) Display interface description strings.</p> <p>media—(Optional) Display media-specific information.</p> <p>snmp-index <i>snmp-index</i>—(Optional) Display information for the specified SNMP index of the interface.</p> <p>statistics—(Optional) Display static interface statistics.</p>
Required Privilege Level	view
List of Sample Output	<p>show interfaces brief (Management Ethernet) on page 724</p> <p>show interfaces (Management Ethernet) on page 724</p> <p>show interfaces (Management Ethernet [TX Matrix Plus Router]) on page 724</p> <p>show interfaces (Management Ethernet [PTX Series Packet Transport Switches]) on page 725</p> <p>show interfaces detail (Management Ethernet) on page 726</p> <p>show interfaces detail (Management Ethernet [TX Matrix Plus Router]) on page 726</p> <p>show interfaces detail (Management Ethernet [PTX Packet Transport Switches]) on page 727</p> <p>show interfaces extensive (Management Ethernet) on page 728</p> <p>show interfaces extensive (Management Ethernet [TX Matrix Plus Router]) on page 729</p>

[show interfaces extensive \(Management Ethernet \[PTX Series Packet Transport Switches\]\) on page 730](#)
[show interfaces brief \(Management Ethernet\) on page 731](#)
[show interfaces brief \(Management Ethernet \[TX Matrix Plus Router\]\) on page 731](#)
[show interfaces brief \(Management Ethernet \[PTX Series Packet Transport Switches\]\) on page 732](#)
[show interfaces \(Internal Ethernet\) on page 733](#)
[show interfaces \(Internal Ethernet \[TX Matrix Plus Router\]\) on page 733](#)
[show interfaces detail \(Internal Ethernet\) on page 734](#)
[show interfaces detail \(Internal Ethernet \[TX Matrix Plus Router\]\) on page 734](#)
[show interfaces extensive \(internal Ethernet\) on page 735](#)
[show interfaces extensive \(internal Ethernet \[TX Matrix Plus Router\]\) on page 736](#)

Output Fields Table 44 on page 721 lists the output fields for the **show interfaces** (management) command on the M Series routers, T Series routers, TX Matrix Plus routers, and PTX Series Packet Transport Switches. Output fields are listed in the approximate order in which they appear.

Table 44: M Series and T Series Router Management and Internal Ethernet show interfaces Output Fields

Field Name	Field Description	Level of Output
Physical Interface		
Physical interface	Name of the physical interface.	All levels
Enabled	State of the interface. Possible values are described in the “Enabled Field” section under Common Output Fields Description.	All levels
Interface index	Physical interface index number, which reflects its initialization sequence.	detail extensive none
SNMP ifIndex	SNMP index number for the physical interface.	detail extensive none
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive
Type	Type of interface.	All levels
Link-level type	Encapsulation type used on the physical interface.	All levels
MTU	Maximum transmission unit (MTU)—Size of the largest packet to be transmitted.	All levels
Clocking	Reference clock source of the interface.	All levels
Speed	Network speed on the interface.	All levels
Device flags	Information about the physical device. Possible values are described in the “Device Flags” section under Common Output Fields Description.	All levels
Interface flags	Information about the interface. Possible values are described in the “Interface Flags” section under Common Output Fields Description.	All levels

Table 44: M Series and T Series Router Management and Internal Ethernet show interfaces Output Fields (*continued*)

Field Name	Field Description	Level of Output
Link type	Data transmission type.	detail extensive none
Link flags	Information about the link. Possible values are described in the “Link Flags” section under Common Output Fields Description.	detail extensive
Physical info	Information about the physical interface.	detail extensive
Hold-times	Current interface hold-time up and hold-time down. Value is in milliseconds.	detail extensive
Current address	Configured MAC address.	detail extensive none
Hardware address	Media access control (MAC) address of the interface.	detail extensive none
Alternate link address	Backup link address.	detail extensive
Last flapped	Date, time, and how long ago the interface went from down to up. The format is Last flapped: year-month-day hour:minute:second timezone (hour:minute:second ago) . For example, Last flapped: 2002-04-26 10:52:40 PDT (04:33:20 ago) .	detail extensive none
Input packets	Number of packets received on the physical interface.	None specified
Output packets	Number of packets transmitted on the physical interface.	None specified
Statistics last cleared	Time when the statistics for the interface were last set to zero.	detail extensive
Traffic statistics	<p>Number and rate of bytes and packets received and transmitted on the logical and physical interface.</p> <ul style="list-style-type: none"> • Input bytes, Output bytes—Number of bytes received and transmitted on the interface. • Input packets, Output packets—Number of packets received and transmitted on the interface. 	detail extensive
Input errors	<ul style="list-style-type: none"> • Errors—Input errors on the interface. • Drops—Number of packets dropped by the output queue of the I/O Manager ASIC. • Framing errors—Number of packets received with an invalid frame checksum (FCS). • Runts—Frames received smaller than the runt threshold. • Giants—Frames received larger than the giant threshold. • Policed Discards—Frames that the incoming packet match code discarded because they were not recognized or were not of interest. Usually, this field reports protocols that Junos does not support. • Resource errors—Sum of transmit drops. 	extensive

Table 44: M Series and T Series Router Management and Internal Ethernet show interfaces Output Fields (*continued*)

Field Name	Field Description	Level of Output
Output errors	<ul style="list-style-type: none"> • Carrier transitions—Number of times the interface has gone from down to up. This number does not normally increment quickly, increasing only when the cable is unplugged, the far-end system is powered down and then up, or another problem occurs. If the number of carrier transitions increments quickly, possibly once every 10 seconds, the cable, the remote system, or the interface is malfunctioning. • Errors—Sum of outgoing frame aborts and FCS errors. • Drops—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet dropped by the ASIC RED mechanism. • Resource errors—Sum of transmit drops. 	extensive
Logical Interface		
Logical interface	Name of the logical interface	All levels
Index	Logical interface index number, which reflects its initialization sequence.	detail extensive none
SNMP ifIndex	Logical interface SNMP interface index number.	detail extensive none
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive
Flags	Information about the logical interface; values are described in the “Device Flags” section under Common Output Fields Description.	All levels
Encapsulation	Encapsulation on the logical interface.	detail extensive none
inet	IP address of the logical interface.	brief
Protocol	Protocol family configured on the logical interface (such as iso or inet6).	detail extensive none
MTU	MTU size on the logical interface.	detail extensive none
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive
Route table	Route table in which this address exists. For example, Route table:0 refers to inet.0.	detail extensive
Flags	Information about the protocol family flags. Possible values are described in the “Family Flags” section under Common Output Fields Description.	detail extensive none
Addresses, Flags	Information about address flags. Possible values are described in the “Addresses Flags” section under Common Output Fields Description.	detail extensive none
Destination	IP address of the remote side of the connection.	detail extensive none
Local	IP address of the logical interface.	detail extensive none

Table 44: M Series and T Series Router Management and Internal Ethernet show interfaces Output Fields (*continued*)

Field Name	Field Description	Level of Output
Broadcast	Broadcast address.	detail extensive none
Generation	Unique number for use by Juniper Networks technical support only.	detail extensive

Sample Output

show interfaces brief (Management Ethernet)

```
user@host> show interfaces fxp0 brief
Physical interface: fxp0, Enabled, Physical link is Up
  Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
  Speed: 100mbps
  Device flags   : Present Running
  Interface flags: SNMP-Traps

Logical interface fxp0.0
  Flags: SNMP-Traps Encapsulation: ENET2
  inet 192.168.70.143/21
```

show interfaces (Management Ethernet)

```
user@host> show interfaces fxp0
Physical interface: fxp0, Enabled, Physical link is Up
  Interface index: 1, SNMP ifIndex: 1
  Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Speed: 100mbps
  Device flags   : Present Running
  Interface flags: SNMP-Traps
  Link type      : Half-Duplex
  Current address: 00:a0:a5:56:01:89, Hardware address: 00:a0:a5:56:01:89
  Last flapped   : Never
    Input packets : 80804
    Output packets: 1105

Logical interface fxp0.0 (Index 2) (SNMP ifIndex 13)
  Flags: SNMP-Traps Encapsulation: ENET2
  Protocol inet, MTU: 1500
    Flags: Is-Primary
    Addresses, Flags: Is-Preferred Is-Primary
      Destination: 192.168.64/21, Local: 192.168.70.143,
      Broadcast: 192.168.71.255
```

show interfaces (Management Ethernet)

```
user@host> show interfaces em0
Physical interface: em0, Enabled, Physical link is Up
  Interface index: 8, SNMP ifIndex: 17
```

**Ethernet [TX Matrix
Plus Router])**

```
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Speed: 100mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Current address: 00:80:f9:26:00:c0, Hardware address: 00:80:f9:26:00:c0
Last flapped : Never
  Input packets : 1424
  Output packets: 5282

Logical interface em0.0 (Index 3) (SNMP ifIndex 18)
  Flags: SNMP-Traps Encapsulation: ENET2
  Input packets : 1424
  Output packets: 5282
  Protocol inet, MTU: 1500
    Flags: Is-Primary
    Addresses, Flags: Is-Preferred Is-Primary
      Destination: 192.168.178.0/25, Local: 192.168.178.11, Broadcast:
192.168.178.127
```

**show interfaces
(Management
Ethernet [PTX Series**

```
user@host> show interfaces em0
Physical interface: em0, Enabled, Physical link is Up
  Interface index: 8, SNMP ifIndex: 0
  Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Speed: 1000mbps
```

**Packet Transport
Switches])**

```
Device flags   : Present Running
Interface flags: SNMP-Traps
Link type      : Full-Duplex
Current address: 00:80:f9:25:00:1b, Hardware address: 00:80:f9:25:00:1b
Last flapped   : Never
Input packets  : 212581
Output packets : 71
```

```
Logical interface em0.0 (Index 3) (SNMP ifIndex 0)
Flags: SNMP-Traps Encapsulation: ENET2
Input packets : 212551
Output packets : 71
Protocol inet, MTU: 1500
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 192.168.3/24, Local: 192.168.3.30,
Broadcast: 192.168.3.255
```

**show interfaces detail
(Management
Ethernet)**

```
user@host> show interfaces fxp0 detail
Physical interface: fxp0, Enabled, Physical link is Up
Interface index: 1, SNMP ifIndex: 1, Generation: 0
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags   : Present Running
Interface flags: SNMP-Traps
Link type      : Half-Duplex
Physical info   : Unspecified
Hold-times     : Up 0 ms, Down 0 ms
Current address: 00:a0:a5:56:01:89, Hardware address: 00:a0:a5:56:01:89
Alternate link address: Unspecified
Last flapped   : Never
Statistics last cleared: Never
Traffic statistics:
Input bytes   :          6484031
Output bytes  :          167503
Input packets :           81008
Output packets:           1110

Logical interface fxp0.0 (Index 2) (SNMP ifIndex 13) (Generation 1)
Flags: SNMP-Traps Encapsulation: ENET2
Protocol inet, MTU: 1500, Generation: 6, Route table: 0
Flags: Is-Primary
Addresses, Flags: Is-Preferred Is-Primary
Destination: 192.168.64/21, Local: 192.168.70.143,
Broadcast: 192.168.71.255, Generation: 1
```

**show interfaces detail
(Management**

```
user@host> show interfaces em0 detail
Physical interface: em0, Enabled, Physical link is Up
Interface index: 8, SNMP ifIndex: 17, Generation: 2
```


Ethernet [TX Matrix Plus Router])

```

Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Physical info : Unspecified
Hold-times : Up 0 ms, Down 0 ms
Current address: 00:80:f9:26:00:c0, Hardware address: 00:80:f9:26:00:c0
Alternate link address: Unspecified
Last flapped : Never
Statistics last cleared: Never
Traffic statistics:
Input bytes : 124351
Output bytes : 1353212
Input packets: 1804
Output packets: 5344
IPv6 transit statistics:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0

```

Logical interface em0.0 (Index 3) (SNMP ifIndex 18) (Generation 1)

Flags: SNMP-Traps Encapsulation: ENET2

Traffic statistics:

```

Input bytes : 117135
Output bytes : 1331647
Input packets: 1804
Output packets: 5344

```

Local statistics:

```

Input bytes : 117135
Output bytes : 1331647
Input packets: 1804
Output packets: 5344

```

Protocol inet, MTU: 1500, Generation: 1, Route table: 0

Flags: Is-Primary

Addresses, Flags: Is-Preferred Is-Primary

Destination: 192.168.178.0/25, Local: 192.168.178.11, Broadcast: 192.168.178.127, Generation: 1

show interfaces detail (Management

```
user@host> show interfaces detail em0
```

Physical interface: em0, Enabled, Physical link is Up

Interface index: 8, SNMP ifIndex: 0, Generation: 3

Ethernet [PTX Packet Transport Switches])

```
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 1000mbps
Device flags   : Present Running
Interface flags: SNMP-Traps
Link type      : Full-Duplex
Physical info  : Unspecified
Hold-times     : Up 0 ms, Down 0 ms
Current address: 00:80:f9:25:00:1b, Hardware address: 00:80:f9:25:00:1b
Alternate link address: Unspecified
Last flapped   : Never
Statistics last cleared: Never
Traffic statistics:
  Input bytes   :          15255909
  Output bytes  :           4608
  Input packets:          214753
  Output packets:           72
  IPv6 transit statistics:
    Input bytes :           0
    Output bytes:           0
    Input packets:          0
    Output packets:          0

    Logical interface em0.0 (Index 3) (SNMP ifIndex 0) (Generation 1)
    Flags: SNMP-Traps Encapsulation: ENET2
    Traffic statistics:
      Input bytes   :          14394630
      Output bytes  :           3024
      Input packets:          214723
      Output packets:           72
    Local statistics:
      Input bytes   :          14394630
      Output bytes  :           3024
      Input packets:          214723
      Output packets:           72
    Protocol inet, MTU: 1500, Generation: 1, Route table: 0
    Flags: Is-Primary
    Addresses, Flags: Is-Default Is-Preferred Is-Primary
      Destination: 192.168.3/24, Local: 192.168.3.30,
      Broadcast: 192.168.3.255, Generation: 1
```

**show interfaces
extensive**

```
user@host> show interfaces fxp0 extensive
Physical interface: fxp0, Enabled, Physical link is Up
Interface index: 1, SNMP ifIndex: 1, Generation: 0
```

(Management Ethernet)

```

Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Half-Duplex
Physical info : Unspecified
Hold-times : Up 0 ms, Down 0 ms
Current address: 00:a0:a5:56:01:89, Hardware address: 00:a0:a5:56:01:89
Alternate link address: Unspecified
Last flapped : Never
Statistics last cleared: Never
Traffic statistics:
  Input bytes : 6678904
  Output bytes : 169657
  Input packets: 83946
  Output packets: 1127
Input errors:
  Errors: 12, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0,
  Policed discards: 0, Resource errors: 0
Output errors:
  Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0,
  Resource errors: 0

Logical interface fxp0.0 (Index 2) (SNMP ifIndex 13) (Generation 1)
  Flags: SNMP-Traps Encapsulation: ENET2
  Protocol inet, MTU: 1500, Generation: 6, Route table: 0
  Flags: Is-Primary
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: 192.168.64/21, Local: 192.168.70.143,
    Broadcast: 192.168.71.255, Generation: 1

```

**show interfaces
extensive
(Management)**

```
user@host> show interfaces em0 extensive
```

```

Physical interface: em0, Enabled, Physical link is Up
Interface index: 8, SNMP ifIndex: 17, Generation: 2

```

Ethernet [TX Matrix Plus Router])

```

Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Physical info : Unspecified
Hold-times : Up 0 ms, Down 0 ms
Current address: 00:80:f9:26:00:c0, Hardware address: 00:80:f9:26:00:c0
Alternate link address: Unspecified
Last flapped : Never
Statistics last cleared: Never
Traffic statistics:
  Input bytes : 127120
  Output bytes : 1357414
  Input packets: 1843
  Output packets: 5372
IPv6 transit statistics:
  Input bytes : 0
  Output bytes : 0
  Input packets: 0
  Output packets: 0
Input errors:
  Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards:
0, Resource errors: 0
Output errors:
  Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0, Resource errors:
0

Logical interface em0.0 (Index 3) (SNMP ifIndex 18) (Generation 1)
Flags: SNMP-Traps Encapsulation: ENET2
Traffic statistics:
  Input bytes : 119748
  Output bytes : 1335719
  Input packets: 1843
  Output packets: 5372
Local statistics:
  Input bytes : 119748
  Output bytes : 1335719
  Input packets: 1843
  Output packets: 5372
Protocol inet, MTU: 1500, Generation: 1, Route table: 0
Flags: Is-Primary
Addresses, Flags: Is-Preferred Is-Primary
  Destination: 192.168.178.0/25, Local: 192.168.178.11, Broadcast:
192.168.178.127, Generation: 1

```

**show interfaces
extensive
(Management
Ethernet [PTX Series**

```

user@host> show interfaces extensive em0
Physical interface: em0, Enabled, Physical link is Up
  Interface index: 8, SNMP ifIndex: 0, Generation: 3
  Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,

```

Packet Transport Switches])

```

Speed: 1000mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Physical info : Unspecified
Hold-times : Up 0 ms, Down 0 ms
Current address: 00:80:f9:25:00:1b, Hardware address: 00:80:f9:25:00:1b
Alternate link address: Unspecified
Last flapped : Never
Statistics last cleared: Never
Traffic statistics:
  Input bytes : 15236459
  Output bytes : 4608
  Input packets: 214482
  Output packets: 72
IPv6 transit statistics:
  Input bytes : 0
  Output bytes : 0
  Input packets: 0
  Output packets: 0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0,
Policed discards: 0, Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0,
Resource errors: 0

Logical interface em0.0 (Index 3) (SNMP ifIndex 0) (Generation 1)
Flags: SNMP-Traps Encapsulation: ENET2
Traffic statistics:
  Input bytes : 14376264
  Output bytes : 3024
  Input packets: 214452
  Output packets: 72
Local statistics:
  Input bytes : 14376264
  Output bytes : 3024
  Input packets: 214452
  Output packets: 72
Protocol inet, MTU: 1500, Generation: 1, Route table: 0
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 192.168.3/24, Local: 192.168.3.30,
Broadcast: 192.168.3.255, Generation: 1

```

show interfaces brief (Management Ethernet)

```

user@host> show interfaces fxp1 brief
Physical interface: fxp1, Enabled, Physical link is Up
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags : Present Running
Interface flags: SNMP-Traps

Logical interface fxp1.0
Flags: SNMP-Traps Encapsulation: ENET2
inet 10.0.0.4/8
inet6 fe80::200:ff:fe00:4/64
fec0::10:0:0:4/64
tnp 4

user@host> show interfaces em0 brief

```

show interfaces brief
(Management
Ethernet [TX Matrix
Plus Router])

Physical interface: em0, Enabled, Physical link is Up
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags : Present Running
Interface flags: SNMP-Traps

Logical interface em0.0
Flags: SNMP-Traps Encapsulation: ENET2
inet 192.168.178.11/25

show interfaces brief
(Management
Ethernet [PTX Series

user@host> **show interfaces em0 brief**
Physical interface: em0, Enabled, Physical link is Up
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,

Packet Transport Switches])

```
Speed: 1000mbps
Device flags : Present Running
Interface flags: SNMP-Traps
```

```
Logical interface em0.0
Flags: SNMP-Traps Encapsulation: ENET2
inet 192.168.3.30/24
```

```
root@aboslutely> show interfaces em0 terse
Interface      Admin Link Proto  Local      Remote
em0            up    up
em0.0          up    up   inet    192.168.3.30/24
```

show interfaces (Internal Ethernet)

```
user@host> show interfaces fxp1
Physical interface: fxp1, Enabled, Physical link is Up
Interface index: 2, SNMP ifIndex: 2
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Speed: 100mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Current address: 02:00:00:00:00:04, Hardware address: 02:00:00:00:00:04
Last flapped : Never
Input packets : 30655
Output packets: 33323

Logical interface fxp1.0 (Index 3) (SNMP ifIndex 14)
Flags: SNMP-Traps Encapsulation: ENET2
Protocol inet, MTU: 1500
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 10/8, Local: 10.0.0.4, Broadcast: 10.255.255.255
Protocol inet6, MTU: 1500
Flags: Is-Primary
Addresses, Flags: Is-Preferred
Destination: fe80::/64, Local: fe80::200:ff:fe00:4
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: fec0::/64, Local: fec0::10:0:0:4
Protocol tnp, MTU: 1500
Flags: Primary, Is-Primary
Addresses
Local: 4
```

show interfaces (Internal Ethernet [TX Matrix Plus Router])

```
user@host> show interfaces ixgbe0
Physical interface: ixgbe0, Enabled, Physical link is Up
Interface index: 2, SNMP ifIndex: 116
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Speed: 1000mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Current address: 02:00:00:22:00:04, Hardware address: 02:00:00:22:00:04
Last flapped : Never
Input packets : 2301738
Output packets: 3951155

Logical interface ixgbe0.0 (Index 4) (SNMP ifIndex 117)
Flags: SNMP-Traps Encapsulation: ENET2
Input packets : 2301595
Output packets: 3951155
Protocol inet, MTU: 1500
Flags: Is-Primary
```

```

Addresses, Flags: Is-Preferred
  Destination: 10/8, Local: 10.34.0.4, Broadcast: 10.255.255.255
Addresses, Flags: Primary Is-Default Is-Preferred Is-Primary
  Destination: 128/2, Local: 162.0.0.4, Broadcast: 191.255.255.255
Protocol inet6, MTU: 1500
Flags: Is-Primary
Addresses, Flags: Is-Preferred
  Destination: fe80::/64, Local: fe80::200:ff:fe22:4
Addresses, Flags: Is-Default Is-Preferred Is-Primary
  Destination: fec0::/64, Local: fec0::a:22:0:4
Protocol tnp, MTU: 1500
Flags: Primary, Is-Primary
Addresses
  Local: 0x22000004

```

show interfaces detail (Internal Ethernet)

```

user@host> show interfaces fxp1 detail
Physical interface: fxp1, Enabled, Physical link is Up
Interface index: 2, SNMP ifIndex: 2, Generation: 1
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags   : Present Running
Interface flags: SNMP-Traps
Link type      : Full-Duplex
Physical info   : Unspecified
Hold-times     : Up 0 ms, Down 0 ms
Current address: 02:00:00:00:00:04, Hardware address: 02:00:00:00:00:04
Alternate link address: Unspecified
Last flapped   : Never
Statistics last cleared: Never
Traffic statistics:
Input bytes   :          2339969
Output bytes  :          15880707
Input packets :          30758
Output packets:          33443

Logical interface fxp1.0 (Index 3) (SNMP ifIndex 14) (Generation 2)
Flags: SNMP-Traps Encapsulation: ENET2
Protocol inet, MTU: 1500, Generation: 7, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
  Destination: 10/8, Local: 10.0.0.4, Broadcast: 10.255.255.255,
  Generation: 3
Protocol inet6, MTU: 1500, Generation: 8, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Preferred
  Destination: fe80::/64, Local: fe80::200:ff:fe00:4,
  Broadcast: Unspecified, Generation: 5
Addresses, Flags: Is-Default Is-Preferred Is-Primary
  Destination: fec0::/64, Local: fec0::10:0:0:4, Broadcast: Unspecified,
  Generation: 7
Protocol tnp, MTU: 1500, Generation: 9, Route table: 1
Flags: Primary, Is-Primary
Addresses, Flags: None
  Destination: Unspecified, Local: 4, Broadcast: Unspecified,
  Generation: 8

```

show interfaces detail (Internal Ethernet [TX Matrix Plus Router])

```

user@host> show interfaces ixgbe0 detail
Physical interface: ixgbe0, Enabled, Physical link is Up
Interface index: 2, SNMP ifIndex: 116, Generation: 3
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,

```



```

Speed: 1000mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Physical info : Unspecified
Hold-times : Up 0 ms, Down 0 ms
Current address: 02:00:00:22:00:04, Hardware address: 02:00:00:22:00:04
Alternate link address: Unspecified
Last flapped : Never
Statistics last cleared: Never
Traffic statistics:
Input bytes : 238172825
Output bytes : 1338948955
Input packets: 2360984
Output packets: 4061512
IPv6 transit statistics:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0

Logical interface ixgbe0.0 (Index 4) (SNMP ifIndex 117) (Generation 2)
Flags: SNMP-Traps Encapsulation: ENET2
Traffic statistics:
Input bytes : 228720309
Output bytes : 1261387447
Input packets: 2360841
Output packets: 4061512
IPv6 transit statistics:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0
Local statistics:
Input bytes : 228720309
Output bytes : 1261387447
Input packets: 2360841
Output packets: 4061512
Protocol inet, MTU: 1500, Generation: 2, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Preferred
Destination: 10/8, Local: 10.34.0.4, Broadcast: 10.255.255.255, Generation:
2
Addresses, Flags: Primary Is-Default Is-Preferred Is-Primary
Destination: 128/2, Local: 162.0.0.4, Broadcast: 191.255.255.255,
Generation: 3
Protocol inet6, MTU: 1500, Generation: 3, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Preferred
Destination: fe80::/64, Local: fe80::200:ff:fe22:4
Generation: 4
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: fec0::/64, Local: fec0::a:22:0:4
Protocol tnp, MTU: 1500, Generation: 5
Generation: 4, Route table: 1
Flags: Primary, Is-Primary
Addresses, Flags: None
Destination: Unspecified, Local: 0x22000004, Broadcast: Unspecified,
Generation: 6

user@host> show interfaces fxp1 extensive

```

show interfaces
extensive
(internal Ethernet)

```
Physical interface: fxp1, Enabled, Physical link is Up
Interface index: 2, SNMP ifIndex: 2, Generation: 1
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 100mbps
Device flags   : Present Running
Interface flags: SNMP-Traps
Link type      : Full-Duplex
Physical info  : Unspecified
Hold-times     : Up 0 ms, Down 0 ms
Current address: 02:00:00:00:00:04, Hardware address: 02:00:00:00:00:04
Alternate link address: Unspecified
Last flapped   : Never
Statistics last cleared: Never
Traffic statistics:
Input bytes   :          2349897
Output bytes  :          15888605
Input packets :           30896
Output packets:           33607
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0,
Policed discards: 0, Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0,
Resource errors: 0

Logical interface fxp1.0 (Index 3) (SNMP ifIndex 14) (Generation 2)
Flags: SNMP-Traps Encapsulation: ENET2
Protocol inet, MTU: 1500, Generation: 7, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 10/8, Local: 10.0.0.4, Broadcast: 10.255.255.255,
Generation: 3
Protocol inet6, MTU: 1500, Generation: 8, Route table: 1
Flags: Is-Primary
Addresses, Flags: Is-Preferred
Destination: fe80::/64, Local: fe80::200:ff:fe00:4,
Broadcast: Unspecified, Generation: 5
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: fec0::/64, Local: fec0::10:0:0:4, Broadcast: Unspecified,
Generation: 7
Protocol tnp, MTU: 1500, Generation: 9, Route table: 1
Flags: Primary, Is-Primary
Addresses, Flags: None
Destination: Unspecified, Local: 4, Broadcast: Unspecified,
Generation: 8
```

show interfaces
extensive

```
user@host> show interfaces ixgbe0 extensive
Physical interface: ixgbe0, Enabled, Physical link is Up
Interface index: 2, SNMP ifIndex: 116, Generation: 3
```

(internal Ethernet [TX
Matrix Plus Router])

```

Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Clocking: Unspecified,
Speed: 1000mbps
Device flags : Present Running
Interface flags: SNMP-Traps
Link type : Full-Duplex
Physical info : Unspecified
Hold-times : Up 0 ms, Down 0 ms
Current address: 02:00:00:22:00:04, Hardware address: 02:00:00:22:00:04
Alternate link address: Unspecified
Last flapped : Never
Statistics last cleared: Never
Traffic statistics:
  Input bytes : 242730780
  Output bytes : 1348312269
  Input packets: 2398737
  Output packets: 4133510
IPv6 transit statistics:
  Input bytes : 0
  Output bytes : 0
  Input packets: 0
  Output packets: 0
Input errors:
  Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards:
0, Resource errors: 0
Output errors:
  Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0, Resource errors:
0

Logical interface ixgbe0.0 (Index 4) (SNMP ifIndex 117) (Generation 2)
Flags: SNMP-Traps Encapsulation: ENET2
Traffic statistics:
  Input bytes : 233127252
  Output bytes : 1269350897
  Input packets: 2398594
  Output packets: 4133510
IPv6 transit statistics:
  Input bytes : 0
  Output bytes : 0
  Input packets: 0
  Output packets: 0
Local statistics:
  Input bytes : 233127252
  Output bytes : 1269350897
  Input packets: 2398594
  Output packets: 4133510
Protocol inet, MTU: 1500, Generation: 2, Route table: 1
  Flags: Is-Primary
  Addresses, Flags: Is-Preferred
    Destination: 10/8, Local: 10.34.0.4, Broadcast: 10.255.255.255, Generation:
2
    Addresses, Flags: Primary Is-Default Is-Preferred Is-Primary
    Destination: 128/2, Local: 162.0.0.4, Broadcast: 191.255.255.255,
Generation: 3
  Protocol inet6, MTU: 1500, Generation: 3, Route table: 1
    Flags: Is-Primary
    Addresses, Flags: Is-Preferred
      Destination: fe80::/64, Local: fe80::200:ff:fe22:4
    Generation: 4
      Addresses, Flags: Is-Default Is-Preferred Is-Primary
      Destination: fec0::/64, Local: fec0::a:22:0:4
    Protocol tnp, MTU: 1500, Generation: 5

```

Generation: 4, Route table: 1
Flags: Primary, Is-Primary
Addresses, Flags: None
Destination: Unspecified, Local: 0x22000004, Broadcast: Unspecified,
Generation: 6

show interfaces mac-database (Gigabit Ethernet)

Syntax	<code>show interfaces mac-database (ge-fpc/pic/port ge-fpc/pic/port.n) <mac-address mac-address></code>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced on PTX Series Packet Transport Switches for Junos OS Release 12.1.
Description	(M Series, T Series, MX Series routers, and PTX Series Packet Transport Switches only) Display media access control (MAC) address information for the specified Gigabit Ethernet interface.
Options	<p>ge-fpc/pic/port—Display MAC addresses that have been learned on all logical interfaces on a particular physical interface.</p> <p>ge-fpc/pic/port.n—Display MAC addresses that have been learned on a particular logical interface.</p> <p>mac-address mac-address—(Optional) Display detailed MAC address statistics, including policer information.</p>
Additional Information	On IQ2 PIC interfaces, the default value for maximum retention of entries in the MAC address table has changed, for cases in which the table is not full. The new holding time is 12 hours. The previous retention time of 3 minutes is still in effect when the table is full.
Required Privilege Level	view
List of Sample Output	show interfaces mac-database (All MAC Addresses on a Port) on page 741 show interfaces mac-database (All MAC Addresses on a Service) on page 742 show interfaces mac-database mac-address on page 743
Output Fields	Table 45 on page 739 lists the output fields for the show interfaces mac-database command. Output fields are listed in the approximate order in which they appear.

Table 45: show interfaces mac-database Output Fields

Field Name	Field Description
Physical Interface	
Physical interface	Name of the physical interface.
Enabled	State of the physical interface. Possible values are described in the "Enabled Field" section under Common Output Fields Description.
Interface index	Physical interface index number, which reflects its initialization sequence.
SNMP ifIndex	SNMP index number for the physical interface.
Description	Description and name of the interface.

Table 45: show interfaces mac-database Output Fields (*continued*)

Field Name	Field Description
Link-level type	Encapsulation being used on the physical interface.
MTU	MTU size on the physical interface.
Speed	Speed at which the interface is running.
Loopback	Whether loopback is enabled and the type of loopback: local or remote .
Source filtering	Whether source filtering is configured.
Flow control	Whether flow control is enabled or disabled.
Device flags	Information about the physical device. Possible values are described in the “Device Flags” section under Common Output Fields Description.
Interface flags	Information about the interface. Possible values are described in the “Links Flags” section under Common Output Fields Description.
Link flags	Information about the link. Possible values are described in the “Device Flags” section under Common Output Fields Description.
Logical Interface	
Logical interface	Name of the logical interface.
Index	Logical interface index number, which reflects its initialization sequence.
SNMP ifIndex	Logical interface SNMP interface index number.
Flags	Information about the logical interface (possible values are described in the “Logical Interface Flags” section under Common Output Fields Description.
Encapsulation	Encapsulation on the logical interface.
MAC address, Input frames, Input bytes, Output frames, Output bytes	MAC address and corresponding number of input frames, input bytes, output frames, and output bytes.
Number of MAC addresses	Number of MAC addresses configured.

Table 45: show interfaces mac-database Output Fields (*continued*)

Field Name	Field Description
Policer Statistics	<p>(Displayed for mac-address option only) Display information about policers applied to a logical interface-MAC pair.</p> <ul style="list-style-type: none"> • Policer type—Type of policer that is out of spec with respect to the configuration. It can be one or more of the following: <ul style="list-style-type: none"> • Input premium—Number of high-priority rating out-of-spec frames or bytes received. • Output premium—Number of high-priority rating out-of-spec frames or bytes sent. • Input aggregate—Total number of out-of-spec frames or bytes received. • Output aggregate—Total number of out-of-spec frames or bytes sent. • Discarded Frames—Number of discarded frames. • Discarded Bytes—Number of discarded bytes.

Sample Output

show interfaces
mac-database (All

```
user@host> show interfaces mac-database xe-0/3/3
Physical interface: xe-0/3/3, Enabled, Physical link is Up
Interface index: 372, SNMP ifIndex: 788
```

MAC Addresses on a Port)

Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps, Loopback: None, Source filtering: Disabled, Flow control: Enabled

Device flags : Present Running

Interface flags: SNMP-Traps Internal: 0x4000

Link flags : None

Logical interface xe-0/3/3.0 (Index 364) (SNMP ifIndex 829)

Flags: SNMP-Traps 0x4004000 Encapsulation: ENET2

MAC address	Input frames	Input bytes	Output frames	Output bytes
00:00:00:00:00:00	1	56	0	0
00:00:c0:01:01:02	7023810	323095260	0	0
00:00:c0:01:01:03	7023810	323095260	0	0
00:00:c0:01:01:04	7023810	323095260	0	0
00:00:c0:01:01:05	7023810	323095260	0	0
00:00:c0:01:01:06	7023810	323095260	0	0
00:00:c0:01:01:07	7023810	323095260	0	0
00:00:c0:01:01:08	7023809	323095214	0	0
00:00:c0:01:01:09	7023809	323095214	0	0
00:00:c0:01:01:0a	7023809	323095214	0	0
00:00:c0:01:01:0b	7023809	323095214	0	0
00:00:c8:01:01:02	30424784	1399540064	37448598	1722635508
00:00:c8:01:01:03	30424784	1399540064	37448598	1722635508
00:00:c8:01:01:04	30424716	1399536936	37448523	1722632058
00:00:c8:01:01:05	30424789	1399540294	37448598	1722635508
00:00:c8:01:01:06	30424788	1399540248	37448597	1722635462
00:00:c8:01:01:07	30424783	1399540018	37448597	1722635462
00:00:c8:01:01:08	30424783	1399540018	37448596	1722635416
00:00:c8:01:01:09	8836796	406492616	8836795	406492570
00:00:c8:01:01:0a	30424712	1399536752	37448521	1722631966
00:00:c8:01:01:0b	30424715	1399536890	37448523	1722632058

Number of MAC addresses : 21

**show interfaces
mac-database (All**

user@host> show interfaces mac-database xe-0/3/3

Logical interface xe-0/3/3.0 (Index 364) (SNMP ifIndex 829)

Flags: SNMP-Traps 0x4004000 Encapsulation: ENET2

MAC Addresses on a Service)

MAC address	Input frames	Input bytes	Output frames	Output bytes
00:00:00:00:00:00	1	56	0	0
00:00:c0:01:01:02	7023810	323095260	0	0
00:00:c0:01:01:03	7023810	323095260	0	0
00:00:c0:01:01:04	7023810	323095260	0	0
00:00:c0:01:01:05	7023810	323095260	0	0
00:00:c0:01:01:06	7023810	323095260	0	0
00:00:c0:01:01:07	7023810	323095260	0	0
00:00:c0:01:01:08	7023809	323095214	0	0
00:00:c0:01:01:09	7023809	323095214	0	0
00:00:c0:01:01:0a	7023809	323095214	0	0
00:00:c0:01:01:0b	7023809	323095214	0	0
00:00:c8:01:01:02	31016568	1426762128	38040381	1749857526
00:00:c8:01:01:03	31016568	1426762128	38040382	1749857572
00:00:c8:01:01:04	31016499	1426758954	38040306	1749854076
00:00:c8:01:01:05	31016573	1426762358	38040381	1749857526
00:00:c8:01:01:06	31016573	1426762358	38040381	1749857526
00:00:c8:01:01:07	31016567	1426762082	38040380	1749857480
00:00:c8:01:01:08	31016567	1426762082	38040379	1749857434
00:00:c8:01:01:09	9428580	433714680	9428580	433714680
00:00:c8:01:01:0a	31016496	1426758816	38040304	1749853984
00:00:c8:01:01:0b	31016498	1426758908	38040307	1749854122

show interfaces
mac-database
mac-address


```

user@host> show interfaces mac-database xe-0/3/3 mac-address 00:00:c8:01:01:09
Physical interface: xe-0/3/3, Enabled, Physical link is Up
  Interface index: 372, SNMP ifIndex: 788
  Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps, Loopback:
None, Source filtering: Disabled, Flow control: Enabled
  Device flags   : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  Link flags     : None

Logical interface xe-0/3/3.0 (Index 364) (SNMP ifIndex 829)
  Flags: SNMP-Traps 0x4004000 Encapsulation: ENET2
  MAC address: 00:00:c8:01:01:09, Type: Configured,
    Input bytes   : 202324652
    Output bytes  : 202324560
    Input frames  : 4398362
    Output frames : 4398360
  Policer statistics:
    Policer type   Discarded frames   Discarded bytes
    Output aggregate      3992386           183649756

```

show interfaces media

Syntax	show interfaces media
Release Information	Command introduced before Junos OS Release 7.4. Command introduced on PTX Series Packet Transport Switches for Junos OS Release 12.1.
Description	Display media-specific information about all configured network interfaces.
	<div> NOTE: <code>show interfaces media</code> lists details for all interfaces, whereas <code>show interfaces media interface-name</code> lists details only for the specified interface.</div>
Options	This command has no options.
Additional Information	Output from both the <code>show interfaces interface-name detail</code> and the <code>show interfaces interface-name extensive</code> commands includes all the information displayed in the output from the <code>show interfaces media</code> command.
Required Privilege Level	view
List of Sample Output	show interfaces media (SONET/SDH) on page 745 show interfaces media (PTX Series Packet Transport Switches) on page 745
Output Fields	<p>The output from the <code>show interfaces media</code> command includes fields that display interface media-specific information. These fields are also included in the <code>show interfaces interface-name</code> command for each particular interface type, and the information provided in the fields is unique to each interface type.</p> <p>One field unique to the <code>show interfaces media</code> command is interface-type errors (for example, SONET errors). This field appears for channelized E3, channelized T3, channelized OC, E1, E3, SONET, T1, and T3 interfaces. The information provided in this output field is also provided in the output from the <code>show interfaces interface-name</code> command. (For example, for SONET interfaces, these fields are SONET section, SONET line, and SONET path). For a description of errors, see the chapter with the particular interface type in which you are interested.</p>

Sample Output

show interfaces media (SONET/SDH)

The following example displays the output fields unique to the **show interfaces media** command for a SONET interface (with no level of output specified):

```
user@host> show interfaces media so-4/1/2
Physical interface: so-4/1/2, Enabled, Physical link is Up
  Interface index: 168, SNMP ifIndex: 495
  Link-level type: PPP, MTU: 4474, Clocking: Internal, SONET mode, Speed: OC48,
  Loopback: None, FCS: 16, Payload scrambler: Enabled
  Device flags   : Present Running
  Interface flags: Point-To-Point SNMP-Traps 16384
  Link flags     : Keepalives
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive: Input: 1783 (00:00:00 ago), Output: 1786 (00:00:08 ago)
  LCP state: Opened
  NCP state: inet: Not-configured, inet6: Not-configured, iso: Not-configured,
  mpls: Not-configured
  CHAP state: Not-configured
  CoS queues    : 8 supported
  Last flapped  : 2005-06-15 12:14:59 PDT (04:31:29 ago)
  Input rate    : 0 bps (0 pps)
  Output rate   : 0 bps (0 pps)
  SONET alarms  : None
  SONET defects : None
  SONET errors:
    BIP-B1: 121, BIP-B2: 916, REI-L: 0, BIP-B3: 137, REI-P: 16747, BIP-BIP2: 0
  Received path trace: routerb so-1/1/2
  Transmitted path trace: routera so-4/1/2
```

show interfaces media (PTX Series Packet Transport Switches)

```
user@host> show interfaces media em0
Physical interface: em0, Enabled, Physical link is Up
  Interface index: 8, SNMP ifIndex: 0
  Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Speed: 1000mbps
  Device flags   : Present Running
  Interface flags: SNMP-Traps
  Link type      : Full-Duplex
  Current address: 00:80:f9:25:00:1b, Hardware address: 00:80:f9:25:00:1b
  Last flapped   : Never
  Input packets  : 215151
  Output packets : 72
```

show interfaces policers

Syntax	show interfaces policers < <i>interface-name</i> >
Release Information	Command introduced before Junos OS Release 7.4. Command introduced on PTX Series Packet Transport Switches for Junos OS Release 12.1.
Description	Display all policers that are installed on each interface in a system.
Options	none —Display policer information about all interfaces. <i>interface-name</i> —(Optional) Display filter information about a particular interface.
Additional Information	For information about how to configure policers, see the <i>Junos Policy Framework Configuration Guide</i> . For related operational mode commands, see the <i>Junos Routing Protocols and Policies Command Reference</i> .
Required Privilege Level	view
List of Sample Output	show interfaces policers on page 747 show interfaces policers interface-name on page 747 show interfaces policers (PTX Series Packet Transport Switches) on page 747
Output Fields	Table 46 on page 746 lists the output fields for the show interfaces policers command. Output fields are listed in the approximate order in which they appear.

Table 46: show interfaces policers Output Fields

Field Name	Field Description
Interface	Name of the interface.
Admin	Interface state: up or down .
Link	Link state: up or down .
Proto	Protocol configured on the interface.
Input Policer	Policer to be evaluated when packets are received on the interface. It has the format <i>interface-name-in-policer</i> .
Output Policer	Policer to be evaluated when packets are transmitted on the interface. It has the format <i>interface-name-out-policer</i> .

Sample Output

**show interfaces
policers**

```
user@host> show interfaces policers
Interface      Admin Link Proto Input Policer      Output Policer
ge-0/0/0       up    up
ge-0/0/0.0     up    up    inet
               iso
gr-0/3/0       up    up
ip-0/3/0       up    up
mt-0/3/0       up    up
pd-0/3/0       up    up
pe-0/3/0       up    up
...
so-2/0/0       up    up
so-2/0/0.0     up    up    inet    so-2/0/0.0-in-policer  so-2/0/0.0-out-policer
               iso
so-2/1/0       up    down
...
```

**show interfaces
policers
interface-name**

```
user@host> show interfaces policers so-2/1/0
Interface      Admin Link Proto Input Policer      Output Policer
so-2/1/0       up    down
so-2/1/0.0     up    down    inet    so-2/1/0.0-in-policer  so-2/1/0.0-out-policer
               iso
               inet6
```

**show interfaces
policers (PTX Series
Packet Transport
Switches)**

```
user@host> show interfaces policers em0
Interface      Admin Link Proto Input Policer      Output Policer
em0            up    up
em0.0          up    up
               inet
```

show interfaces routing summary

Syntax	show interfaces routing summary <interface-name> <logical-system (all logical-system-name)>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches.
Description	Display a summary of the state of the router interfaces. Use this command for performing router diagnostics only, when you are determining whether the routing protocols and the Junos OS differ about the state of an interface.
Options	none —Display summary information about the state of all router interfaces on all logical systems. interface-name —(Optional) Name of a specific interface. logical-system (all logical-system-name) —(Optional) Perform this operation on all logical systems or on a particular logical system.
Additional Information	For information about how to configure routing protocols, see the Junos OS Routing Protocols Configuration Guide. For information about related operational mode commands for routing instances and protocols, see the Junos OS Operational Mode Commands.
Required Privilege Level	view
List of Sample Output	show interfaces routing summary on page 750 show interfaces routing summary (TX Matrix Plus Router) on page 750 show interfaces routing summary (PTX5000 Packet Transport Switches) on page 750
Output Fields	Table 47 on page 748 lists the output fields for the show interfaces routing summary command. Output fields are listed in the approximate order in which they appear.

Table 47: show interfaces routing summary Output Fields

Field Name	Field Description
n physical interfaces	Number of routing interfaces and number of interfaces in the up state.
n protocol protocol interfaces	Type and number of routing protocols and number of related interfaces in the up state.
Interface	Logical interface name.
Index	Logical interface index number, which reflects its initialization sequence.

Table 47: show interfaces routing summary Output Fields (*continued*)

Field Name	Field Description
Metric	Metric value for the interface.
Trans	Number of times the interface has transitioned from Down to Up .
Status	Interface status (Up or Down) and type.

Sample Output

show interfaces routing summary

```

user@host> show interfaces routing summary
14 physical interfaces (12 up)
  11 INET protocol addresses (11 up)
  6 ISO protocol addresses (4 up)
  3 MPLS protocol addresses (3 up)
  3 CCC protocol addresses (3 up)

```

Interface	Index	Metric	Trans.	Status
so-5/0/3.0	15	0	0	Broadcast PointToPoint Multicast
so-5/0/2.0	14	0	0	Up Broadcast PointToPoint Multicast
so-5/0/1.0	13	0	5	Up Broadcast PointToPoint Multicast
so-5/0/0.0	12	0	2	Up Broadcast PointToPoint Multicast
so-1/2/0.0	11	0	0	Broadcast PointToPoint Multicast
so-1/1/0.0	10	0	5	Up Broadcast PointToPoint Multicast
at-1/0/0.6	9	0	0	Up Broadcast PointToPoint Multicast
at-1/0/0.5	8	0	0	Up Broadcast PointToPoint Multicast
at-1/0/0.4	7	0	0	Up Broadcast PointToPoint Multicast
at-1/0/0.3	6	0	0	Up Broadcast PointToPoint Multicast
at-1/0/0.2	5	0	0	Up Broadcast PointToPoint Multicast
at-1/0/0.0	4	0	0	Up Broadcast PointToPoint Multicast
lo0.0	3	0	0	Up Broadcast Loopback Multicast
fxp1.0	2	0	1	Up Broadcast Multicast
fxp0.0	1	0	0	Up Broadcast Multicast

show interfaces routing summary (TX Matrix Plus Router)

```

user@host> show interfaces routing summary
9 physical interfaces (9 up)
  11 INET protocol addresses (11 up)
  6 MPLS protocol addresses (6 up)
  4 INET6 protocol addresses (4 up)

```

Interface	Index	Metric	Trans.	Status
ge-23/0/8.0	73	0	0	Up Broadcast Multicast
ge-23/0/7.0	72	0	0	Up Broadcast Multicast
ge-23/0/6.0	71	0	0	Up Broadcast Multicast
ge-7/0/9.0	69	0	0	Up Broadcast Multicast
ge-15/0/9.0	70	0	0	Up Broadcast Multicast
xe-6/1/1.0	68	0	0	Up Broadcast Multicast
lo0.16385	66	0	0	Up Broadcast Loopback Multicast
lo0.16384	65	0	0	Up Broadcast Loopback Multicast
lo0.0	64	0	0	Up Broadcast Loopback Multicast
ixgbe1.0	5	0	0	Up Broadcast Multicast
ixgbe0.0	4	0	0	Up Broadcast Multicast
em0.0	3	0	0	Up Broadcast Multicast

show interfaces routing summary

```

user@host> show interfaces routing summary
7 physical interfaces (68 up)
  7 INET protocol addresses (7 up)

```


(PTX5000 Packet
Transport Switches)

2 CCC protocol addresses (2 up)
4 INET6 protocol addresses (4 up)

Interface	Index	Metric	Trans. Status
lo0.16385	66	0	0 Up Broadcast Loopback Multicast
lo0.16384	64	0	0 Up Broadcast Loopback Multicast
lo0.0	65	0	0 Up Broadcast Loopback Multicast
ixgbe1.0	5	0	0 Up Broadcast Multicast
ixgbe0.0	4	0	0 Up Broadcast Multicast
et-5/0/5.32767	72	0	0 Up Broadcast Multicast
et-5/0/5.0	68	0	0 Up Broadcast Multicast
et-5/0/0.32767	67	0	0 Up Broadcast Multicast
et-5/0/0.0	71	0	0 Up Broadcast Multicast
em0.0	3	0	0 Up Broadcast Multicast

show interfaces statistics

Syntax	<code>show interfaces statistics <i>interface-name</i> <detail></code>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Switches. Command introduced in Junos OS Release 12.2 for ACX Series Routers.
Description	Display static interface statistics, such as errors.
Options	<i>interface-name</i> —Name of an interface. <i>detail</i> —(Optional) Display detail output.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• clear interfaces statistics
List of Sample Output	show interfaces statistics (Fast Ethernet) on page 753 show interfaces statistics (Gigabit Ethernet PIC—Egress) on page 753 show interfaces statistics detail (Aggregated Ethernet) on page 755 show interfaces statistics detail (Aggregated Ethernet—Ingress) on page 756 show interfaces statistics detail (Aggregated Ethernet—Egress) on page 758 show interfaces statistics (SONET/SDH) on page 760 show interfaces statistics (Aggregated SONET/SDH—Ingress) on page 761 show interfaces statistics (Aggregated SONET/SDH—Egress) on page 762 show interfaces statistics (PTX Series Packet Transport Switches) on page 763 show interfaces statistics (ACX Series routers) on page 764
Output Fields	Output from both the <code>show interfaces <i>interface-name</i> detail</code> and the <code>show interfaces <i>interface-name</i> extensive</code> commands include all the information displayed in the output from the <code>show interfaces statistics</code> command. For more information, see the particular interface type in which you are interested. For information about destination class and source class statistics, see the “Destination Class Field” section and the “Source Class Field” section under Common Output Fields Description. For information about the input errors and output errors, see Fast Ethernet and Gigabit Ethernet Counters.

Sample Output

show interfaces statistics (Fast Ethernet)

```

user@host> show interfaces fe-1/3/1 statistics
Physical interface: fe-1/3/1, Enabled, Physical link is Up
Interface index: 144, SNMP ifIndex: 1042
Description: ford fe-1/3/1
Link-level type: Ethernet, MTU: 1514, Speed: 100mbps, Loopback: Disabled,
Source filtering: Disabled, Flow control: Enabled
Device flags   : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
CoS queues     : 4 supported, 4 maximum usable queues
Current address: 00:90:69:93:04:dc, Hardware address: 00:90:69:93:04:dc
Last flapped   : 2006-04-18 03:08:59 PDT (00:01:24 ago)
Statistics last cleared: Never
Input rate      : 0 bps (0 pps)
Output rate     : 0 bps (0 pps)
Input errors: 0, Output errors: 0
Active alarms   : None
Active defects  : None
Logical interface fe-1/3/1.0 (Index 69) (SNMP ifIndex 50)
Flags: SNMP-Traps Encapsulation: ENET2
Protocol inet, MTU: 1500
  Flags: Is-Primary, DCU, SCU-in
    Destination class      Packets      Bytes
                          (packet-per-second) (bits-per-second)
    silver1                  0              0
    (                        0) (
    silver2                  0              0
    (                        0) (
    silver3                  0              0
    (                        0) (
Addresses, Flags: Is-Default Is-Preferred Is-Primary
  Destination: 10.27.245/24, Local: 10.27.245.2,
  Broadcast: 10.27.245.255
Protocol iso, MTU: 1497
  Flags: Is-Primary

```

show interfaces statistics

```

user@host> show interfaces ge-5/2/0 statistics detail
Physical interface: ge-5/2/0, Enabled, Physical link is Up
Interface index: 146, SNMP ifIndex: 519, Generation: 149

```

**(Gigabit Ethernet
PIC—Egress)**

```

Link-level type: Ethernet, MTU: 1514, Speed: 1000mbps, BPDU Error: None,
MAC-REWRITE Error: None, Loopback: Disabled,
Source filtering: Disabled, Flow control: Enabled, Auto-negotiation: Enabled,
Remote fault: Online
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Link flags : None
CoS queues : 8 supported, 8 maximum usable queues
Hold-times : Up 0 ms, Down 0 ms
Current address: 00:1d:b5:61:d9:74, Hardware address: 00:1d:b5:61:d9:74
Last flapped : 2009-11-11 11:24:00 PST (09:23:08 ago)
Statistics last cleared: 2009-11-11 17:50:58 PST (02:56:10 ago)
Traffic statistics:
Input bytes :                271524                0 bps
Output bytes :              37769598              352 bps
Input packets:                3664                0 pps
Output packets:             885790                0 pps
IPv6 transit statistics:
Input bytes :                  0
Output bytes :             16681118
Input packets:                0
Output packets:             362633
Multicast statistics:
IPv4 multicast statistics:
Input bytes :             112048                0 bps
Output bytes :          20779920                0 bps
Input packets:             1801                0 pps
Output packets:          519498                0 pps
IPv6 multicast statistics:
Input bytes :             156500                0 bps
Output bytes :          16681118                0 bps
Input packets:             1818                0 pps
Output packets:          362633                0 pps
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0, L3
incompletes: 0, L2 channel errors: 0,
L2 mismatch timeouts: 0, FIFO errors: 0, Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0,
Resource errors: 0
Egress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort                882558                882558                0

1 expedited-fo                 0                      0                      0

2 assured-forw                 0                      0                      0

3 network-cont                3232                 3232                0

Active alarms : None
Active defects : None

Logical interface ge-5/2/0.0 (Index 71) (SNMP ifIndex 573) (Generation 135)
Flags: SNMP-Traps 0x4000 Encapsulation: ENET2
Traffic statistics:
Input bytes :                271524
Output bytes :              37769598
Input packets:                3664

```

```

Output packets:                885790
IPv6 transit statistics:
  Input bytes :                  0
  Output bytes :                16681118
  Input packets:                 0
  Output packets:              362633
Local statistics:
  Input bytes :                  271524
  Output bytes :                308560
  Input packets:                 3664
  Output packets:              3659
Transit statistics:
  Input bytes :                  0
  Output bytes :              37461038
  Input packets:                 0
  Output packets:              882131
IPv6 transit statistics:
  Input bytes :                  0
  Output bytes :              16681118
  Input packets:                 0
  Output packets:              362633
Multicast statistics:
IPv4 multicast statistics:
  Input bytes :                  112048
  Output bytes :              20779920
  Input packets:                 1801
  Output packets:              519498
IPv6 multicast statistics:
  Input bytes :                  156500
  Output bytes :              16681118
  Input packets:                 1818
  Output packets:              362633
Protocol inet, MTU: 1500, Generation: 151, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: 40.40.40.0/30, Local: 40.40.40.2, Broadcast: 40.40.40.3,
Generation: 167
Protocol inet6, MTU: 1500, Generation: 152, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: ::40.40.40.0/126, Local: ::40.40.40.2
Generation: 169
  Addresses, Flags: Is-Preferred
    Destination: fe80::/64, Local: fe80::21d:b5ff:fe61:d974
Protocol multiservice, MTU: Unlimited, Generation: 171
Generation: 153, Route table: 0
  Policer: Input: __default_arp_policer__

```

show interfaces statistics detail (Aggregated Ethernet)

```

user@host> show interfaces ae0 detail
Physical interface: ae0, Enabled, Physical link is Up
Interface index: 186, SNMP ifIndex: 111, Generation: 187
Link-level type: Ethernet, MTU: 1514, Speed: 2000mbps, Loopback: Disabled,
Source filtering: Disabled, Flow control: Disabled, Minimum links needed: 1,
Minimum bandwidth needed: 0
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: 00:90:69:0b:2f:f0, Hardware address: 00:90:69:0b:2f:f0
Last flapped : Never
Statistics last cleared: 2006-12-23 03:04:16 PST (01:16:24 ago)
Traffic statistics:
  Input bytes :                28544
  Output bytes :               39770

```

```

Input packets:          508          0 pps
Output packets:         509          0 pps
Input bytes :           IPv6 28544
Output bytes :           IPv6 0
Input packets:          IPv6 508
Output packets:          IPv6 0
Input errors:
  Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0,
  Policed discards: 0, Resource errors: 0
Output errors:
  Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0,
  Resource errors: 0

Logical interface ae0.0 (Index 67) (SNMP ifIndex 139) (Generation 145)
Flags: SNMP-Traps Encapsulation: ENET2
Statistics      Packets      pps      Bytes      bps
Bundle:
  Input :         508         0      28544        0
  Output:         509         0      35698        0
Link:
  ge-3/3/8.0
    Input :         508         0      28544        0
    Output:          0         0         0         0
  ge-3/3/9.0
    Input :          0         0         0         0
    Output:          0         0         0         0
Marker Statistics:  Marker Rx      Resp Tx      Unknown Rx      Illegal Rx
  ge-3/3/8.0          0          0          0          0
  ge-3/3/9.0          0          0          0          0
Egress queues: 8 supported, 8 in use
Queue counters:      Queued packets      Transmitted packets      Dropped packets

  0 best-effort          0          0          0
  1 expedited-fo         0          0          0
  2 assured-forw         0          0          0
  3 network-cont         0          0          0

Protocol inet, MTU: 1500, Generation: 166, Route table: 0
Flags: None
Addresses, Flags: Is-Preferred Is-Primary
  Destination: 10.1.1/24, Local: 10.1.1.1, Broadcast: 10.1.1.255,
  Generation: 159
Protocol inet6, MTU: 1500, Generation: 163, Route table: 0
Flags: Is-Primary
Addresses, Flags: Is-Preferred
  Destination: fe80::/64, Local: fe80::206:5bff:fe05:c321,
  Broadcast: Unspecified, Generation: 161

```

show interfaces statistics detail

```

user@host> show interfaces statistics detail ae0 | no-more
Physical interface: ae0, Enabled, Physical link is Up
Interface index: 128, SNMP ifIndex: 504, Generation: 278

```

(Aggregated
Ethernet—Ingress)

```

Link-level type: Ethernet, MTU: 1514, Speed: 1Gbps, BPDU Error: None, MAC-REWRITE
Error: None, Loopback: Disabled,
Source filtering: Disabled, Flow control: Disabled, Minimum links needed: 1,
Minimum bandwidth needed: 0
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: 00:1d:b5:61:db:f0, Hardware address: 00:1d:b5:61:db:f0
Last flapped : 2009-11-09 03:30:23 PST (00:01:28 ago)
Statistics last cleared: 2009-11-09 03:26:18 PST (00:05:33 ago)
Traffic statistics:
Input bytes :          544009602          54761856 bps
Output bytes :           3396           0 bps
Input packets:        11826292        148809 pps
Output packets:           42           0 pps
IPv6 transit statistics:
Input bytes :          350818604
Output bytes :           0
Input packets:        7626488
Output packets:           0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards:
0, Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0, Resource errors:
0
Ingress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort          0              0              0
1 expedited-fo         0              0              0
2 assured-forw         0              0              0
3 network-cont         0              0              0

Egress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort         21              21              0
1 expedited-fo         0              0              0
2 assured-forw         0              0              0
3 network-cont        451             451             0

Logical interface ae0.0 (Index 70) (SNMP ifIndex 574) (Generation 177)
Flags: SNMP-Traps 0x4000 Encapsulation: ENET2
Statistics      Packets      pps      Bytes      bps
Bundle:
  Input :      11826292      148809      544009602      54761856
  Output:         42         0          3396         0
Link:
  ge-5/2/0.0
    Input :      11826292      148809      544009602      54761856
    Output:         42         0          3396         0
Marker Statistics:  Marker Rx      Resp Tx      Unknown Rx      Illegal Rx
ge-5/2/0.0          0          0          0          0
Protocol inet, MTU: 1500, Generation: 236, Route table: 0

```

```
Addresses, Flags: Is-Preferred Is-Primary
  Destination: 30.30.30.0/30, Local: 30.30.30.2, Broadcast: 30.30.30.3,
Generation: 310
Protocol inet6, MTU: 1500, Generation: 237, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: ::30.30.30.0/126, Local: ::30.30.30.2
Generation: 312
  Addresses, Flags: Is-Preferred
    Destination: fe80::/64, Local: fe80::21d:b5ff:fe61:dbf0
Protocol multiservice, MTU: Unlimited, Generation: 314
Generation: 238, Route table: 0
  Policer: Input: __default_arp_policer__
```

show interfaces
statistics detail

```
user@host> show interfaces statistics detail ae0 | no-more
Physical interface: ae0, Enabled, Physical link is Up
Interface index: 128, SNMP ifIndex: 501, Generation: 319
```


(Aggregated
Ethernet—Egress)

```

Link-level type: Ethernet, MTU: 1514, Speed: 1Gbps, BPDU Error: None, MAC-REWRITE
Error: None, Loopback: Disabled,
Source filtering: Disabled, Flow control: Disabled, Minimum links needed: 1,
Minimum bandwidth needed: 0
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: 00:1f:12:c2:37:f0, Hardware address: 00:1f:12:c2:37:f0
Last flapped : 2009-11-09 03:30:24 PST (00:02:42 ago)
Statistics last cleared: 2009-11-09 03:26:42 PST (00:06:24 ago)
Traffic statistics:
Input bytes :                440                0 bps
Output bytes :            1047338120            54635848 bps
Input packets:                 7                0 pps
Output packets:          22768200          148466 pps
IPv6 transit statistics:
Input bytes :                288
Output bytes :            723202616
Input packets:                 4
Output packets:          15721796
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards:
0, Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0, Resource errors:
0
Ingress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort                0                0                0
1 expedited-fo                0                0                0
2 assured-forw                0                0                0
3 network-cont                0                0                0

Egress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort          201985796          201985796                0
1 expedited-fo                0                0                0
2 assured-forw                0                0                0
3 network-cont           65                65                0

Logical interface ae0.0 (Index 72) (SNMP ifIndex 505) (Generation 204)
Flags: SNMP-Traps 0x4000 Encapsulation: ENET2
Statistics      Packets      pps      Bytes      bps
Bundle:
Input :          7          0          440          0
Output:        22768200        148466        1047338120        54635848
Link:
ge-2/1/6.0
Input :          7          0          440          0
Output:        22768200        148466        1047338120        54635848
Marker Statistics:  Marker Rx      Resp Tx      Unknown Rx      Illegal Rx
ge-2/1/6.0          0          0          0          0
Protocol inet, MTU: 1500, Generation: 291, Route table: 0

```

```

Addresses, Flags: Is-Preferred Is-Primary
Destination: 30.30.30.0/30, Local: 30.30.30.1, Broadcast: 30.30.30.3,
Generation: 420
Protocol inet6, MTU: 1500, Generation: 292, Route table: 0
Addresses, Flags: Is-Preferred Is-Primary
Destination: ::/26, Local: ::30.30.30.1
Generation: 422
Addresses, Flags: Is-Preferred
Destination: fe80::/64, Local: fe80::21f:12ff:fec2:37f0
Protocol multiservice, MTU: Unlimited, Generation: 424
Generation: 293, Route table: 0
Policer: Input: __default_arp_policer__

```

show interfaces statistics (SONET/SDH)

```

user@host> show interfaces statistics detail so-3/0/0 | no-more
Physical interface: so-3/0/0, Enabled, Physical link is Up
Interface index: 133, SNMP ifIndex: 538, Generation: 283
Link-level type: PPP, MTU: 4474, Clocking: Internal, SONET mode, Speed: OC192,
Loopback: None, FCS: 16, Payload scrambler: Enabled
Device flags   : Present Running
Interface flags: Point-To-Point SNMP-Traps Internal: 0x4000
Link flags     : Keepalives
Hold-times     : Up 0 ms, Down 0 ms
Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
Keepalive statistics:
  Input : 13 (last seen 00:00:04 ago)
  Output: 14 (last sent 00:00:02 ago)
LCP state: Opened
NCP state: inet: Opened, inet6: Opened, iso: Not-configured, mp1s: Not-configured

CHAP state: Closed
PAP state: Closed
CoS queues   : 8 supported, 8 maximum usable queues
Last flapped : 2009-11-09 02:52:34 PST (01:12:39 ago)
Statistics last cleared: 2009-11-09 03:58:54 PST (00:06:19 ago)
Traffic statistics:
Input bytes   :          2559160294          54761720 bps
Output bytes  :           10640          48 bps
Input packets:          55633975          148809 pps
Output packets:           216           0 pps
IPv6 transit statistics:
Input bytes   :          647922328
Output bytes  :           0
Input packets:          14085269
Output packets:           0
Input errors:
  Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Bucket drops:
0, Policed discards: 0, L3 incompletes: 0,
  L2 channel errors: 0, L2 mismatch timeouts: 0, HS link CRC errors: 0, HS link
FIFO overflows: 0
Output errors:
  Carrier transitions: 0, Errors: 0, Drops: 0, Aged packets: 0, HS link FIFO
underflows: 0, MTU errors: 0
Egress queues: 8 supported, 4 in use
Queue counters:

```

	Queued packets	Transmitted packets	Dropped packets
0 best-effort	4	4	0
1 expedited-fo	0	0	0
2 assured-forw	0	0	0

```

3 network-cont                213                213                0

```

```

SONET alarms   : None
SONET defects  : None

```

```

Logical interface so-3/0/0.0 (Index 72) (SNMP ifIndex 578) (Generation 182)
  Flags: Point-To-Point SNMP-Traps 0x4000 Encapsulation: PPP
  Protocol inet, MTU: 4470, Generation: 244, Route table: 0
    Addresses, Flags: Is-Preferred Is-Primary
      Destination: 30.30.30.0/30, Local: 30.30.30.2, Broadcast: 30.30.30.3,
Generation: 322
    Protocol inet6, MTU: 4470, Generation: 245, Route table: 0
      Addresses, Flags: Is-Preferred Is-Primary
        Destination: ::30.30.30.0/126, Local: ::30.30.30.2
Generation: 324
      Addresses, Flags: Is-Preferred
        Destination: fe80::/64, Local: fe80::2a0:a5ff:fe61:9264
Generation: 326

```

show interfaces statistics (Aggregated SONET/SDH—Ingress)

```

user@host> show interfaces statistics detail as0 | no-more
Physical interface: as0, Enabled, Physical link is Up
  Interface index: 132, SNMP ifIndex: 534, Generation: 282
  Link-level type: PPP, MTU: 4474, Speed: OC192, Minimum links needed: 1, Minimum
bandwidth needed: 0
  Device flags   : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  Link flags     : Keepalives
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Last flapped   : 2009-11-09 03:45:53 PST (00:09:38 ago)
  Statistics last cleared: 2009-11-09 03:48:17 PST (00:07:14 ago)
  Traffic statistics:
    Input bytes   :          2969786332          54761688 bps
    Output bytes  :           11601          0 bps
    Input packets :          64560636          148808 pps
    Output packets:           225          0 pps
  IPv6 transit statistics:
    Input bytes   :          2086013152
    Output bytes  :           0
    Input packets :          45348114
    Output packets:           0
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards:
0, Resource errors: 0
  Output errors:
    Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0, Resource errors:
0
  Egress queues: 8 supported, 4 in use
  Queue counters:
    Queued packets  Transmitted packets  Dropped packets

    0 best-effort          3              3              0

    1 expedited-fo         0              0              0

    2 assured-forw         0              0              0

    3 network-cont        222            222            0

  Logical interface as0.0 (Index 71) (SNMP ifIndex 576) (Generation 179)
    Flags: Point-To-Point SNMP-Traps 0x4000 Encapsulation: PPP
    Statistics
      Packets      pps      Bytes      bps

```

```

Bundle:
  Input :      64560550      148808      2969785300      54761688
  Output:      139          0          10344          0
Link:
  so-3/0/0.0
  Input :      64560550      148808      2969785300      54761688
  Output:      139          0          10344          0
Protocol inet, MTU: 4470, Generation: 240, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
  Destination: 30.30.30.0/30, Local: 30.30.30.2, Broadcast: 30.30.30.3,
Generation: 316
Protocol inet6, MTU: 4470, Generation: 241, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
  Destination: ::30.30.30.0/126, Local: ::30.30.30.2
Generation: 318
  Addresses, Flags: Is-Preferred
  Destination: fe80::/64, Local: fe80::2a0:a5ff:fe61:9264
Generation: 320

```

show interfaces statistics (Aggregated SONET/SDH—Egress)

```

user@host> show interfaces statistics detail as0 | no-more
Physical interface: as0, Enabled, Physical link is Up
Interface index: 132, SNMP ifIndex: 565, Generation: 323
Link-level type: PPP, MTU: 4474, Speed: OC192, Minimum links needed: 1, Minimum
bandwidth needed: 0
Device flags   : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Link flags     : Keepalives
Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
Last flapped   : 2009-11-09 03:43:37 PST (00:12:48 ago)
Statistics last cleared: 2009-11-09 03:48:54 PST (00:07:31 ago)
Traffic statistics:
Input bytes :      11198      392 bps
Output bytes :    3101452132    54783448 bps
Input packets:      234      0 pps
Output packets:    67422937    148868 pps
IPv6 transit statistics:
Input bytes :      5780
Output bytes :    2171015678
Input packets:      72
Output packets:    47195993
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0, Policed discards:
0, Resource errors: 0
Output errors:
Carrier transitions: 0, Errors: 0, Drops: 0, MTU errors: 0, Resource errors:
0
Egress queues: 8 supported, 4 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0 best-effort      67422830      67422830      0

1 expedited-fo      0      0      0

2 assured-forw      0      0      0

3 network-cont      90      90      0

Logical interface as0.0 (Index 71) (SNMP ifIndex 548) (Generation 206)
Flags: Point-To-Point SNMP-Traps 0x4000 Encapsulation: PPP
Statistics      Packets      pps      Bytes      bps

```

```

Bundle:
  Input :          144          0          10118          392
  Output:        67422847        148868        3101450962        54783448
Link:
  so-0/1/0.0
    Input :          144          0          10118          392
    Output:        67422847        148868        3101450962        54783448
Protocol inet, MTU: 4470, Generation: 295, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: 30.30.30.0/30, Local: 30.30.30.1, Broadcast: 30.30.30.3,
Generation: 426
Protocol inet6, MTU: 4470, Generation: 296, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: ::/26, Local: ::30.30.30.1
Generation: 428
  Addresses, Flags: Is-Preferred
    Destination: fe80::/64, Local: fe80::2a0:a5ff:fe63:1d0a
Generation: 429

```

show interfaces statistics (PTX Series)

```

user@host> show interfaces statistics em0
Physical interface: em0, Enabled, Physical link is Up
Interface index: 8, SNMP ifIndex: 0

```

**Packet Transport
Switches)**

```
Type: Ethernet, Link-level type: Ethernet, MTU: 1514, Speed: 1000mbps
Device flags   : Present Running
Interface flags: SNMP-Traps
Link type      : Full-Duplex
Current address: 00:80:f9:25:00:1b, Hardware address: 00:80:f9:25:00:1b
Last flapped   : Never
Statistics last cleared: Never
Input packets  : 212620
Output packets: 71
Input errors: 0, Output errors: 0

Logical interface em0.0 (Index 3) (SNMP ifIndex 0)
Flags: SNMP-Traps Encapsulation: ENET2
Input packets  : 212590
Output packets: 71
Protocol inet, MTU: 1500
Flags: Is-Primary
Addresses, Flags: Is-Default Is-Preferred Is-Primary
Destination: 192.168.3/24, Local: 192.168.3.30,
Broadcast: 192.168.3.255
```

**show interfaces
statistics (ACX Series
routers)**

```
user@host> show interfaces statistics ge-0/1/7
Physical interface: ge-0/1/7, Enabled, Physical link is Down
Interface index: 151, SNMP ifIndex: 524
Link-level type: Ethernet, Media type: Copper, MTU: 1514, Link-mode: Full-duplex,
Speed: 1000mbps, BPDU Error: None, MAC-REWRITE Error: None, Loopback: Disabled,

Source filtering: Disabled, Flow control: Enabled, Auto-negotiation: Enabled,
Remote fault: Online
Device flags   : Present Running Down
Interface flags: Hardware-Down SNMP-Traps Internal: 0x0
Link flags     : None
CoS queues     : 8 supported, 8 maximum usable queues
Current address: 84:18:88:c1:49:a3, Hardware address: 84:18:88:c1:49:a3
Last flapped   : 2012-05-11 04:25:28 PDT (2d 20:23 ago)
Statistics last cleared: 2012-05-13 23:07:23 PDT (01:41:25 ago)
Input rate     : 0 bps (0 pps)
Output rate    : 0 bps (0 pps)
Input errors: 0, Output errors: 0
Active alarms  : LINK
Active defects : LINK
Interface transmit statistics: Disabled
```

show interfaces terse

Syntax	show interfaces terse
Release Information	Command introduced before Junos OS Release 7.4. Command introduced on PTX Series Packet Transport Switches for Junos OS Release 12.1.
Description	Display summary information about interfaces.
Options	This command has no options.
Additional Information	Interfaces are always displayed in numerical order, from the lowest to the highest FPC slot number. Within that slot, the lowest PIC slot is shown first. On an individual PIC, the lowest port number is always first.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> Examples: Configuring Logical System Interfaces
List of Sample Output	show interfaces terse on page 766 show interfaces terse (TX Matrix Plus Router) on page 766 show interfaces terse (PTX Series Packet Transport Switches) on page 767
Output Fields	Table 48 on page 765 lists the output fields for the show interfaces terse command. Output fields are listed in the approximate order in which they appear.

Table 48: show interfaces terse Output Fields

Field Name	Field Description
Interface	Interface name.
Admin	Whether the interface is turned on (up) or off (down).
Link	Link state: up or down .
Proto	Protocol family configured on the logical interface. A logical interface on a router that supports Ethernet OAM always shows the multiservice protocol.
Local	Local IP address of the logical interface.
Remote	Remote IP address of the logical interface.

Sample Output

```

show interfaces terse user@host> show interfaces terse
Interface           Admin Link Proto  Local          Remote
t1-0/1/0:0          up   up
t1-0/1/0:0.0        up   up   inet   192.168.220.18/30
t1-0/1/0:1          up   up
t1-0/1/0:2          up   up
t1-0/1/0:3          up   up
at-1/0/0            up   up
at-1/0/1            up   up
dsc                 up   up
fxp0               up   up
fxp0.0             up   up   inet   192.168.71.249/21
fxp1               up   up
fxp1.0             up   up   inet   10.0.0.4/8
                    tnp   4
gre                up   up
ipip               up   up
lo0                up   up
lo0.0              up   up   inet   10.0.1.4        --> 0/0
                    127.0.0.1      --> 0/0
lo0.16385          up   up   inet
lsi                up   up
mtun               up   up

```

```

show interfaces terse user@host> show interfaces terse
(TX Matrix Plus
Router)
Interface           Admin Link Proto  Local          Remote
xe-0/0/0            up   up
xe-0/0/1            up   up
xe-0/0/2            up   up
xe-0/0/3            up   up
xe-6/0/0            up   up
xe-6/0/1            up   up
xe-6/0/2            up   up
xe-6/0/3            up   up
xe-6/1/0            up   up
xe-6/1/1            up   up
xe-6/1/2            up   up
xe-6/1/3            up   up
so-0/0/0            up   up
so-0/0/0.0          up   up   inet   1.1.1.1/30
ge-1/3/0.0          up   up   inet   --> 0/0
ge-7/0/0            up   up
ge-7/0/0.0          up   up   inet   2.15.1.1/30
ge-7/0/0.1          up   up   inet   2.15.1.5/30
ge-7/0/0.2          up   up   inet   2.15.1.9/30
ge-7/0/0.3          up   up   inet   2.15.1.13/30
ge-7/0/0.4          up   up   inet   2.15.1.17/30
ge-7/0/0.5          up   up   inet   2.15.1.21/30
...
em0                 up   up
em0.0               up   up   inet   192.168.178.11/25
gre                 up   up
ipip                up   up
ixgbe0              up   up

```



```

ixgbe0.0          up    up    inet    10.34.0.4/8
                  up    up    inet6   162.0.0.4/2
                  up    up    inet6   fe80::200:ff:fe22:4/64
                  up    up    inet6   fec0::a:22:0:4/64
                  up    up    tnp     0x22000004
ixgbe1            up    up
ixgbe1.0          up    up    inet    10.34.0.4/8
                  up    up    inet6   162.0.0.4/2
                  up    up    inet6   fe80::200:1ff:fe22:4/64
                  up    up    inet6   fec0::a:22:0:4/64
                  up    up    tnp     0x22000004

```

show interfaces terse
(PTX Series Packet
Transport Switches)

user@host> show interfaces em0 terse

Interface	Admin	Link	Proto	Local	Remote
em0	up	up			
em0.0	up	up	inet	192.168.3.30/24	

PART 4

Troubleshooting

- [Troubleshooting Procedures on page 771](#)

CHAPTER 16

Troubleshooting Procedures

show chassis alarms

Syntax	show chassis alarms
Syntax (TX Matrix Routers)	show chassis alarms <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers and TX Matrix Plus router with 3D SIBs)	show chassis alarms <lcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Routers)	show chassis alarms <all-members> <local> <member <i>member-id</i> >
Syntax (MX2010 3D Universal Edge Routers)	show chassis alarms
Syntax (MX2020 3D Universal Edge Routers)	show chassis alarms
Syntax (QFX Series)	show chassis alarms <interconnect-device <i>name</i> > <node-device <i>name</i> >
Syntax (PTX Series Packet Transport Switches)	show chassis alarms
Syntax (ACX Series Universal Access Routers)	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 for the TX Matrix Plus router introduced in Junos OS Release 9.6. 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 Switches. Command introduced in Junos OS Release 12.2 for the ACX Series Universal Access 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 13.1 for TX Matrix Plus router with 3D SIBs.
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, TX Matrix Plus router, and TX Matrix Plus router with 3D SIBs) (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.

scc—(TX Matrix router only) (Optional) Show information about the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router and TX matrix Plus router with 3D SIBs only) (Optional) Show information about the respective TX Matrix Plus router or TX Matrix Plus router with 3D SIBs, which is the switch-fabric chassis. Replace *number* variable with 0.

Additional Information You cannot clear the alarms for chassis components. Instead, you must remedy the cause of the alarm. When a chassis alarm 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.

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 sonic 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)

As per the above table, 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 **1000101111**. The LSB in this case is 1, which means that this is a major alarm. After removing the LSB, you are left with **100010111**, 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/>	
Chip Type: M Chip	Code
CMALARM_MCHIP_ECC_UNCORRECT_ERR	128
<hr/>	
Chip Type: N Chip	Code
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/>	
Chip Type: R Chip	Code
CMALARM_RCHIP_SRAM_PARITY_ERR	512
<hr/>	
Chip Type: R Chip	Code
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 = $(\text{Error Code})/2$

Required Privilege Level

view

Related Documentation

- [Configuring an Alarm Entry and Its Attributes](#)
- [Chassis Conditions That Trigger Alarms](#)

List of Sample Output

[show chassis alarms \(Alarms Active\) on page 779](#)
[show chassis alarms \(No Alarms Active\) on page 779](#)
[show chassis alarms \(Fan Tray\) on page 779](#)
[show chassis alarms \(MX2020 Router\) on page 779](#)
[show chassis alarms \(MX2010 Router\) on page 779](#)
[show chassis alarms \(T4000 Router\) on page 779](#)
[show chassis alarms \(Unreachable Destinations Present on a T Series Router\) on page 779](#)
[show chassis alarms \(FPC Offline Due to Unreachable Destinations on a T Series Router\) on page 780](#)
[show chassis alarms \(SCG Absent on a T Series Router\) on page 781](#)
[show chassis alarms \(Alarms Active on a TX Matrix Router\) on page 781](#)
[show chassis alarms \(TX Matrix Plus router with 3D SIBs\) on page 781](#)
[show chassis alarms \(Alarms on a T4000 Router After the enhanced-mode Statement is Enabled\) on page 782](#)

[show chassis alarms \(Backup Routing Engine\) on page 782](#)

[show chassis alarms \(Alarms Active on the QFX Series\) on page 782](#)

[show chassis alarms node-device \(Alarms Active on the QFabric System\) on page 782](#)

[show chassis alarms \(Alarms Active on the QFabric System\) on page 783](#)

[show chassis alarms \(Alarms Active on an EX8200 Switch\) on page 783](#)

[show chassis alarms \(Alarms Active on a PTX5000 Packet Transport Switch\) on page 783](#)

[show chassis alarms \(Alarms Active on an ACX2000 Universal Access Router\) on page 784](#)

Output Fields [Table 14 on page 170](#) lists the output fields for the **show chassis alarms** command. Output fields are listed in the approximate order in which they appear.

Table 49: 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: Minor or Major .
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 (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 (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 (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)

```
user@host> show chassis alarms
10 alarms currently active
Alarm time      Class  Description
```

**Destinations Present
on a T Series Router)**

```
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**

```
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
```

Destinations on a T Series Router)

```

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
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 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 Temperature Warm
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 Temperature Warm
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

```

show chassis alarms (Alarms on a T4000 Router After the enhanced-mode Statement is Enabled)

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 are 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 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 (Alarms Active on the QFX Series)

```

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)

```

user@switch> show chassis alarms node-device ED3691
node-device ED3694
3 alarms currently active

```


Active on the QFabric System)

Alarm time	Class	Description
2011-08-24 16:04:15 UTC	Major	ED3694:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC	Major	ED3694:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC	Major	ED3694 PEM 0 is not supported/powered

show chassis alarms (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms
IC-A0001:
```

```
-----
1 alarms currently active
Alarm time          Class  Description
2011-08-24 16:04:15 UTC  Minor Backup RE Active
```

```
ED3694:
```

```
-----
3 alarms currently active
Alarm time          Class  Description
2011-08-24 16:04:15 UTC  Major ED3694:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC  Major ED3694:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC  Major ED3694 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 ED3691 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 (Alarms Active on a

```
user@switch> show chassis alarms
```

```
23 alarms currently active
```

**PTX5000 Packet
Transport Switch)**

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
(Alarms Active on an
ACX2000 Universal
Access 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
```

PART 5

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