



Junos Fusion Provider Edge Feature Guide



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Junos Fusion Provider Edge Feature Guide

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About the Documentation

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- Using the Examples in This Manual on page xv
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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 <https://www.juniper.net/documentation/>.

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

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Using the Examples in This Manual

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

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

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

Merging a Full Example

To merge a full example, follow these steps:

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

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

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

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

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

Merging a Snippet

To merge a snippet, follow these steps:

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

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

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

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

```
[edit]
```



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

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

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

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

Documentation Conventions

Table 1 on page xvii defines notice icons used in this guide.

Table 1: Notice Icons







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

Table 2 on page xvii 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

Table 2: Text and Syntax Conventions (continued)

Convention	Description	Examples
Fixed-width text like this	Represents output that appears on the terminal screen.	<pre>user@host> show chassis alarms</pre> <p>No alarms currently active</p>
<i>Italic text like this</i>	<ul style="list-style-type: none"> Introduces or emphasizes important new terms. Identifies guide 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 CLI User 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.	<p>Configure the machine's domain name:</p> <pre>[edit] root@# set system domain-name domain-name</pre>
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)	Encloses optional keywords or variables.	stub <default-metric metric>;
(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 (string1 string2 string3)
# (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)	Encloses a variable for which you can substitute one or more values.	community name members [community-ids]
Indentation and braces ({ })	Identifies a level in the configuration hierarchy.	<pre>[edit] routing-options { static { route default { nexthop address; retain; } } }</pre>
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
GUI Conventions		
Bold text like this	Represents 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.

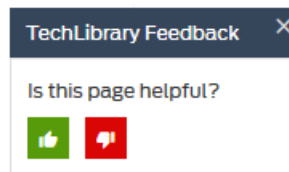
Table 2: Text and Syntax Conventions (continued)

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

Documentation Feedback

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- Online feedback system—Click TechLibrary Feedback, on the lower right of any page on the [Juniper Networks TechLibrary](#) site, and do one of the following:



- Click the thumbs-up icon if the information on the page was helpful to you.
- Click the thumbs-down icon if the information on the page was not helpful to you or if you have suggestions for improvement, and use the pop-up form to provide feedback.
- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable).

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

Self-Help Online Tools and Resources

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

- Find CSC offerings: <https://www.juniper.net/customers/support/>
- Search for known bugs: <https://prsearch.juniper.net/>
- Find product documentation: <https://www.juniper.net/documentation/>
- Find solutions and answer questions using our Knowledge Base: <https://kb.juniper.net/>
- Download the latest versions of software and review release notes: <https://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum: <https://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <https://www.juniper.net/cm/>

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

Opening a Case with JTAC

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

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

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

PART 1

Junos Fusion Provider Edge

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- [Junos Fusion Provider Edge Configuration on page 39](#)
- [Junos Fusion Provider Edge Configuration Statements on page 57](#)
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- [Junos Fusion Provider Edge Operational Commands on page 105](#)
- [Power over Ethernet, LLDP, and LLDP-MED on a Junos Fusion Provider Edge on page 787](#)
- [Configuration Statements for Power over Ethernet and Power Supply Management on a Junos Fusion Provider Edge on page 799](#)
- [Operational Commands for Power over Ethernet and Power Supply Management on Junos Fusion Provider Edge on page 811](#)
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- [Multicast Replication on Junos Fusion Provider Edge on page 869](#)
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- [Class of Service on Junos Fusion Provider Edge on page 909](#)

CHAPTER 1

Junos Fusion Provider Edge Overview

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- [Understanding the Flow of Data Packets in a Junos Fusion Topology on page 26](#)
- [Understanding Satellite Policies in a Junos Fusion on page 30](#)
- [Junos Fusion Provider Edge Supported Protocols on page 32](#)
- [Local Switching on Junos Fusion on page 35](#)

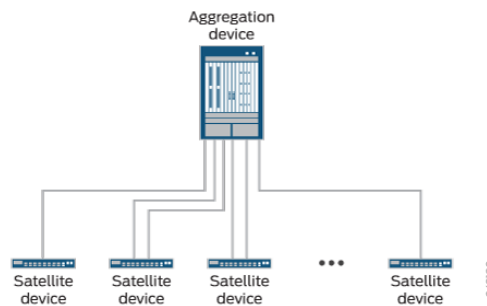
Junos Fusion Provider Edge Overview

Junos Fusion provides a method of significantly expanding the number of available network interfaces on a device—an *aggregation device*—by allowing the aggregation device to add interfaces through interconnections with *satellite devices*. The entire system—the interconnected aggregation device and satellite devices—is called a *Junos Fusion*. Junos Fusion simplifies network administration because it appears to the larger network as a single, port-dense device that is managed using one IP address.

Junos Fusion Provider Edge brings the Junos Fusion technology to the service provider edge. In a Junos Fusion Provider Edge, MX Series 5G Universal Routing Platforms act as aggregation devices while EX4300 Series and QFX5100, QFX 5110, or QFX5200 Series switches act as satellite devices.

In a Junos Fusion Provider Edge topology, each satellite device has at least one connection to the aggregation device. The aggregation device acts as the single point of management for all devices in the Junos Fusion Provider Edge. The satellite devices provide network interfaces that send and receive network traffic.

[Figure 1 on page 4](#) provides an illustration of a basic Junos Fusion Provider Edge topology.

Figure 1: Basic Junos Fusion Provider Edge Topology

The MX Series 5G Universal Routing Platform acting as the aggregation device in Junos Fusion Provider Edge is responsible for almost all management tasks, including interface configuration for every satellite device interface in the topology. The aggregation device runs Junos OS software for the entire Junos Fusion Provider Edge, and the network-facing interfaces on the satellite devices—*extended ports*—are configured from the aggregation device and support features that are supported by the version of Junos OS running on the aggregation device.

The satellite devices and the aggregation device maintain the control plane for the Junos Fusion Provider Edge using multiple internal satellite management protocols. Network traffic can be forwarded between satellite devices through the aggregation device. Junos Fusion Provider Edge supports the IEEE 802.1BR standard.

Junos Fusion Provider Edge provides the following benefits:

- **Simplified network topology**—You can combine multiple devices into a topology that appears to the larger network as a single device, and then manage the device from a single IP address.
- **Port density**—You can configure a large number of network-facing interfaces into a topology that operates as a single network device.
- **Manageability**—You can manage a Junos Fusion Provider Edge that supports a large number of network-facing interfaces from a single point. The single point of management, the aggregation device, runs Junos OS software for the entire Junos Fusion Provider Edge.
- **Flexibility**—You can easily expand the size of your Junos Fusion Provider Edge by adding satellite devices to it as your networking needs grow.
- **Investment protection**—In environments that need to expand because the capabilities of the aggregation device are maximized, a Junos Fusion Provider Edge can be a logical upgrade option because it enables the system to evolve with minimal disruption to the existing network and without having to remove the existing, previously purchased devices from the network.

**Related
Documentation**

- [Understanding Junos Fusion Provider Edge Components on page 5](#)
- [Understanding Junos Fusion Ports on page 13](#)

- [Understanding the Flow of Data Packets in a Junos Fusion Topology on page 26](#)
- [Configuring Junos Fusion Provider Edge on page 39](#)

Understanding Junos Fusion Provider Edge Components

This topic describes the components of a Junos Fusion Provider Edge.

This topic covers:

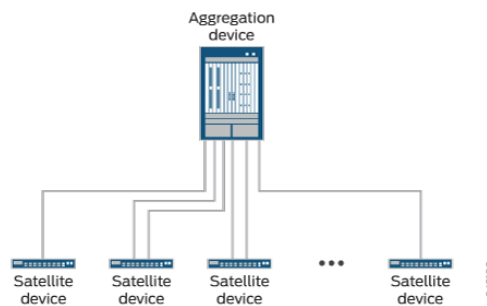
- [Junos Fusion Topology on page 5](#)
- [Aggregation Devices on page 6](#)
- [Satellite Devices on page 6](#)
- [Cascade Ports on page 6](#)
- [Uplink Ports on page 7](#)
- [Extended Ports on page 8](#)
- [Understanding FPC Identifiers and Assignment in a Junos Fusion Fabric on page 8](#)
- [Understanding Software in a Junos Fusion on page 9](#)
- [Understanding Interface Naming in a Junos Fusion on page 9](#)

Junos Fusion Topology

The Junos Fusion topology is composed of an aggregation device and multiple satellite devices. Each satellite device has at least one connection to the aggregation device. The satellite devices provide interfaces that send and receive network traffic. Network traffic can be forwarded over the aggregation device within the Junos Fusion.

See [Figure 2 on page 5](#) for an illustration of the Junos Fusion topology.

Figure 2: Junos Fusion Topology



The satellite devices and the aggregation device maintain the control plane for the Junos Fusion using multiple internal satellite management protocols. Junos Fusion supports the IEEE 802.1BR standard.

The aggregation device acts as the single point of management for all devices in the Junos Fusion. All Junos Fusion management responsibilities, including interface

configuration for every satellite device interface in the Junos Fusion, are handled by the aggregation device. The aggregation device runs Junos OS software for the entire Junos Fusion, and the interfaces on the satellite devices are configured from the aggregation device and support features that are supported by the version of Junos OS running on the aggregation device.

Aggregation Devices

An aggregation device:

- is an MX5, MX10, MX40, MX80, MX104, MX204, MX240, MX480, MX960, MX2010, MX2020, or MX10003 Universal Routing Platform in a Junos Fusion Provider Edge.
- Has at least one connection to each satellite device.
- Runs Junos OS software for the entire Junos Fusion.
- Manages the entire Junos Fusion. All Junos Fusion configuration management is handled on the aggregation device, including interface configuration of the satellite device interfaces.

The hardware specifications for aggregation devices in a Junos Fusion Provider Edge are discussed in greater detail in [Understanding Junos Fusion Provider Edge Software and Hardware Requirements](#).

Satellite Devices

A satellite device:

- Is an EX4300, QFX 5100, QFX5110, or QFX5200 switch in a Junos Fusion Provider Edge.
- Runs a version of satellite software after being converted into a satellite device.
- Has at least one direct connection to the aggregation device.
- Provides network interfaces to send and receive traffic for the Junos Fusion.
- Is managed and configured by the aggregation device.

The hardware specifications for satellite devices in a Junos Fusion Provider Edge are discussed in greater detail in [Understanding Junos Fusion Provider Edge Software and Hardware Requirements](#).

Cascade Ports

A *cascade port* is a port on an aggregation device that sends and receives control and network traffic from an attached satellite device. All traffic passed between a satellite device and the aggregation device in a Junos Fusion traverses the cascade port.

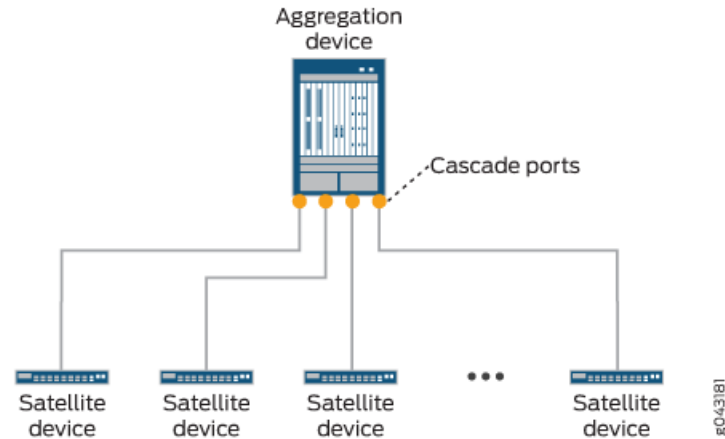
The link that connects an aggregation device to a satellite device has an interface on each end of the link. The interface on the aggregation device end of the link is a cascade port. The interface on the satellite device end of the link is an uplink port.

Satellite devices are added to a Junos Fusion by configuring the interface on the aggregation device end of a link into a satellite device.

A cascade port is typically a 10-Gbps SFP+ interface or a 40-Gbps QSFP+ interface, but any interface on the aggregation device that connects to the satellite device can be converted into a cascade port.

The location of the cascade ports in a Junos Fusion are illustrated in [Figure 3 on page 7](#).

Figure 3: Cascade Ports



The hardware specifications for cascade ports in a Junos Fusion Provider Edge are discussed in greater detail in [Understanding Junos Fusion Provider Edge Software and Hardware Requirements](#).

Uplink Ports

An *uplink port* is a physical interface on a satellite device that provides a connection to an aggregation device. All network and control traffic on a satellite device that is transported to an aggregation device is sent or received on the satellite device's uplink port.

The link that connects an aggregation device to a satellite device has an interface on each end of the link. The interface on the aggregation device end of the link is a cascade port. The interface on the satellite device end of the link is an uplink port.

Uplink ports are automatically created when a cascade port is configured on the aggregation device end of the link.

A single satellite device supports multiple uplink port connections to an aggregation device. The multiple uplink ports connections to a single aggregation device provide redundancy and additional bandwidth for satellite device to aggregation device connections.

An uplink port is typically a 10-Gbps SFP+ interface or a 40-Gbps QSFP+ interface, but any 1-Gbps interface on the aggregation device that connects to the satellite device can also be converted into a cascade port.

Extended Ports

An *extended port* is a network-facing port on a satellite device that transmits and receives network traffic for the Junos Fusion.

Network traffic received on an extended port is passed, when appropriate, to the aggregation device over the uplink port to cascade port link.

Each network-facing port on a satellite device in a Junos Fusion is also an extended port. A single cascade port is associated with multiple extended ports.

Understanding FPC Identifiers and Assignment in a Junos Fusion Fabric

In a Junos Fusion, each satellite device must have an FPC identifier (FPC ID).

The FPC ID is used for Junos Fusion configuration, monitoring, and maintenance. Interface names—which are identified using the *type-fpc / pic / port* format—use the FPC ID as the *fpc* variable when the satellite device is participating in a Junos Fusion. For instance, built-in port 2 on PIC 0 of a satellite device—a gigabit Ethernet interface on a satellite device that is using 101 as its FPC ID—uses **ge-101/0/2** as its interface name. The valid range for the FPC ID is 100–255 in Junos OS Release 14.2 and 65 to 254 in Junos OS Release 16.1 and later.

A Junos Fusion provides two methods of assigning an FPC identifier:

- Unique-ID based FPC identification
- Connectivity-based FPC identification

In unique-ID based FPC identification, the FPC ID is mapped to the serial number or MAC address of the satellite device. For instance, if a satellite device whose serial number was **ABCDEFGHIJKL** was assigned to FPC ID 110 using unique-ID based FPC identification, the satellite device with the serial number **ABCDEFGHIJKL** will always be associated with FPC ID 110 in the Junos Fusion. If the satellite device with the serial number **ABCDEFGHIJKL** connects to the aggregation device using a different cascade port, the FPC ID for the satellite device remains 110.

In connectivity-based FPC identification, the FPC ID is mapped to the cascade port. For instance, connectivity-based FPC identification can be used to assign FPC ID 120 to the satellite device that connects to the aggregation device using cascade port **xe-0/0/2**. If the existing satellite device that connects to cascade port **xe-0/0/2** is replaced by a new satellite device, the new satellite device connected to the cascade port assumes FPC ID 120.

Unique-ID based FPC identification is configured using the **serial-number** or **system-id** statement in the [edit *chassis satellite-management fpc slot-id*] hierarchy.

Connectivity-based FPC identification is configured using the **cascade-ports** statement in the [edit *chassis satellite-management fpc slot-id*] hierarchy.

If a prospective satellite device is connected to a Junos Fusion without having a configured FPC slot ID, the prospective satellite device does not participate in the Junos Fusion until

an FPC ID is associated with it. The **show chassis satellite unprovision** output includes a list of satellite devices that are not participating in a Junos Fusion due to an FPC ID association issue.

Understanding Software in a Junos Fusion

In a Junos Fusion, the aggregation device is responsible for all configuration and management within the Junos Fusion and runs Junos OS software.

The satellite devices, meanwhile, run satellite software that has the built-in intelligence to extend the feature set on the Junos OS software onto the satellite device.

The role of Junos OS and satellite software is discussed in greater detail in [“Understanding Software in a Junos Fusion Provider Edge” on page 18](#).

The software specifications for a Junos Fusion Provider Edge are discussed in greater detail in [Understanding Junos Fusion Provider Edge Software and Hardware Requirements](#).

Understanding Interface Naming in a Junos Fusion

Network interfaces in Junos OS are specified as follows:

- *type-fpc / pic / port*

In a Junos Fusion, the interface names on the satellite devices follow this naming convention, where:

- The *type* does not change for the interface when it becomes part of a Junos Fusion. The *type* for an **xe** interface, for instance, remains **xe** regardless of whether the interface is or isn't in a Junos Fusion.

You will see internally created **sd** interfaces in a Junos Fusion. The **sd** interfaces map to uplink ports, and are used internally by the Junos Fusion to process some types of traffic.

- The *fpc* identifier in a Junos Fusion, which is user-configurable, is the FPC slot identifier. See [“Understanding FPC Identifiers and Assignment in a Junos Fusion Fabric” on page 8](#).

For instance, built-in port 2 on PIC 0—a gigabit Ethernet interface that is acting as an extended port—on an EX4300 switch that is acting as FPC slot 101 would be identified as:

ge-101/0/2

Related Documentation

- [Configuring Junos Fusion Provider Edge on page 39](#)

Understanding Satellite Device Clustering in a Junos Fusion

This topic describes satellite device clustering in a Junos Fusion. It covers:

- [Satellite Device Clustering Overview on page 10](#)
- [Satellite Device Cluster Topology on page 10](#)

- [Satellite Device Cluster Names and Identifiers on page 10](#)
- [Satellite Device Cluster Uplink Interfaces on page 11](#)
- [Cluster Interfaces on page 11](#)
- [Satellite Device Cluster Software Management on page 11](#)
- [FPC Identifiers and Extended Port Interfaces in a Satellite Device Cluster on page 12](#)
- [Understanding 40-Gbps Interfaces with QSFP+ Transceiver Roles for Satellite Devices in a Satellite Device Cluster on page 12](#)

Satellite Device Clustering Overview

Satellite device clustering allows you to connect up to ten satellite devices into a single cluster, then connect the satellite device cluster to the aggregation device as a single group instead of as individual satellite devices.

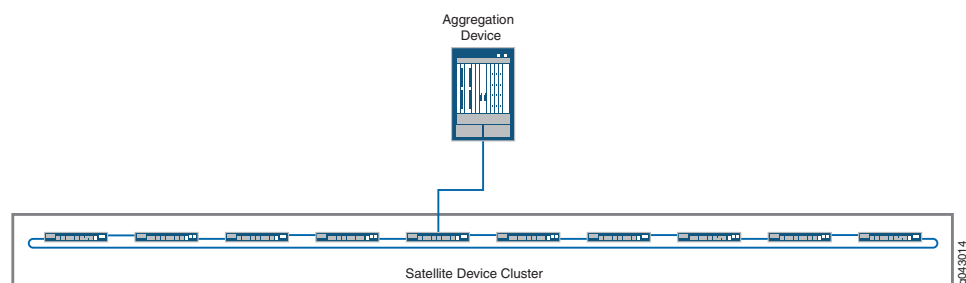
Satellite device clustering is particularly useful in scenarios where optical cabling options between buildings are limited and in scenarios where you want to preserve optical interfaces for other purposes. If you have, for instance, two buildings that have limited optical interfaces between each other and you want to put an aggregation device in one building and ten satellite devices in the other building, you can group the ten satellite devices into a cluster and connect the cluster to the aggregation device with a single cable.

Satellite Device Cluster Topology

A satellite device cluster must be cabled into a ring topology. No other cabling topologies are supported for a satellite device cluster.

[Figure 4 on page 10](#) shows a picture of a sample satellite device cluster connected to a single aggregation device.

Figure 4: Satellite Device Cluster Topology



Satellite Device Cluster Names and Identifiers

In a Junos Fusion, each satellite device cluster is named and assigned a number. The number is called the *cluster identifier*, or *cluster ID*.

The cluster name and ID are used by the aggregation device to identify a cluster for configuration, monitoring, and troubleshooting purposes.

The cluster name and ID are set using the **set chassis satellite-management cluster cluster-name cluster-id cluster-id-number** statement.

Satellite Device Cluster Uplink Interfaces

A satellite device cluster must have at least one member with an uplink interface connection to the aggregation device.

In a dual aggregation device topology using satellite device clustering, each satellite device cluster must have at least one uplink interface connection to both aggregation devices. The uplink interfaces to the aggregation devices can be on any member satellite devices in each satellite device cluster.



NOTE: Junos Fusion Provider Edge supports only one aggregation device.

A satellite device cluster supports multiple uplink interfaces. The uplink interfaces can be on any satellite devices that are members of the satellite device cluster. The advantages of configuring multiple uplink interfaces for a satellite device cluster is resiliency—all traffic can be forwarded to another uplink interface if an uplink interface fails—and efficiency—multiple uplink interfaces can reduce the number of hops that traffic takes across a cluster before it is forwarded to an aggregation device.

Cluster Interfaces

Clustering ports are interfaces that interconnect satellite devices in the same satellite device cluster.

Traffic originating from an access device connected to an extended port travels over cluster interfaces to get to an uplink port. Traffic from an aggregation device travels to a satellite device uplink port then over cluster interfaces before it is delivered to an access device connected to an extended port.

Cluster interfaces are typically 10-Gbps SFP+ interfaces. 10-Gbps SFP+ and 40-Gbps QSFP+ interfaces can be used as cluster interfaces. Other interfaces cannot be used as cluster interfaces by default. To use other interfaces as cluster interfaces, you must configure a candidate uplink port policy.

See *Configuring Uplink Port Policies on a Junos Fusion* for additional information on candidate uplink port policies.

Satellite Device Cluster Software Management

All satellite devices in a satellite device cluster are associated with a single satellite software upgrade group, which is automatically created when a satellite device cluster is configured as part of a Junos Fusion. The satellite software upgrade group is named after the satellite device cluster name, and ensures that all satellite devices in the cluster run the same version of satellite software.

See *Understanding Software in a Junos Fusion Enterprise* for additional information on software management for a satellite device cluster.

See [Understanding Junos Fusion Enterprise Software and Hardware Requirements](#) for information on software requirements for satellite devices in a satellite device cluster.

FPC Identifiers and Extended Port Interfaces in a Satellite Device Cluster

Each satellite device in a satellite device cluster has a unique FPC identifier (FPC ID), in the same way that a satellite device that is not part of a cluster has a unique FPC ID.

For this reason, all interface naming for satellite device cluster member switches is not impacted by cluster membership. If a switch is assigned FPC ID 103, for instance, the aggregation device views the satellite device as FPC 103 regardless of whether it is or is not part of a satellite device cluster.

The FPC ID is used in the FPC slot name for an extended port interface; for instance, ge-103/0/2. An extended port is any network-facing interface on a satellite device. As with FPC ID naming, extended port interface names are not impacted by satellite device cluster membership status.



NOTE: Satellite devices in a cluster are configured using the unique ID-based FPC identification method of FPC identifier assignment. For more information, see [Understanding FPC Identifiers and Assignment in a Junos Fusion](#) in [Understanding Junos Fusion Enterprise Components](#).

Understanding 40-Gbps Interfaces with QSFP+ Transceiver Roles for Satellite Devices in a Satellite Device Cluster

40-Gbps QSFP+ interfaces on satellite devices in a satellite device cluster can be used as clustering ports to cable to other satellite devices in the cluster or as uplink ports to cable the satellite device cluster to the aggregation device.

40-Gbps QSFP+ interfaces on EX2300, EX3400, EX4300 and QFX5100 satellite devices are default uplink ports. Please see [Table 3 on page 12](#) for the default uplink ports for satellite devices. When these devices are part of a satellite device cluster, the default uplink ports cannot be configured as extended ports to pass network traffic unless they have a direct connection to the aggregation device or if there is an uplink port policy configured that excludes them from acting as uplink ports.

Table 3: Default Uplink Interfaces for Junos Fusion Enterprise Satellite Devices

Device Type	Default Uplink Interfaces
EX2300 (4 ports on PIC1)	1/0 through 1/3
EX3400 (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
EX4300-24T (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3

Table 3: Default Uplink Interfaces for Junos Fusion Enterprise Satellite Devices (continued)

Device Type	Default Uplink Interfaces
EX4300-32F (4 ports on PIC 0, 2 ports on PIC 1 and 8 ports on PIC 2)	0/32 through 0/35 1/0 through 1/1 2/0 through 2/7
EX4300-48T (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
EX4300-48T-BF (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
EX4300-48T-DC (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
EX4300-48T-DC-BF (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
QFX5100-48S-6Q (6 QSFP+ ports)	0/48 through 0/53
QFX5100-48T-6Q (6 QSFP+ ports)	0/48 through 0/53

Related Documentation

- [Configuring or Expanding a Junos Fusion Enterprise](#)
- [Understanding Junos Fusion Enterprise Components](#)
- [Configuring Uplink Port Policies on a Junos Fusion](#)

Understanding Junos Fusion Ports

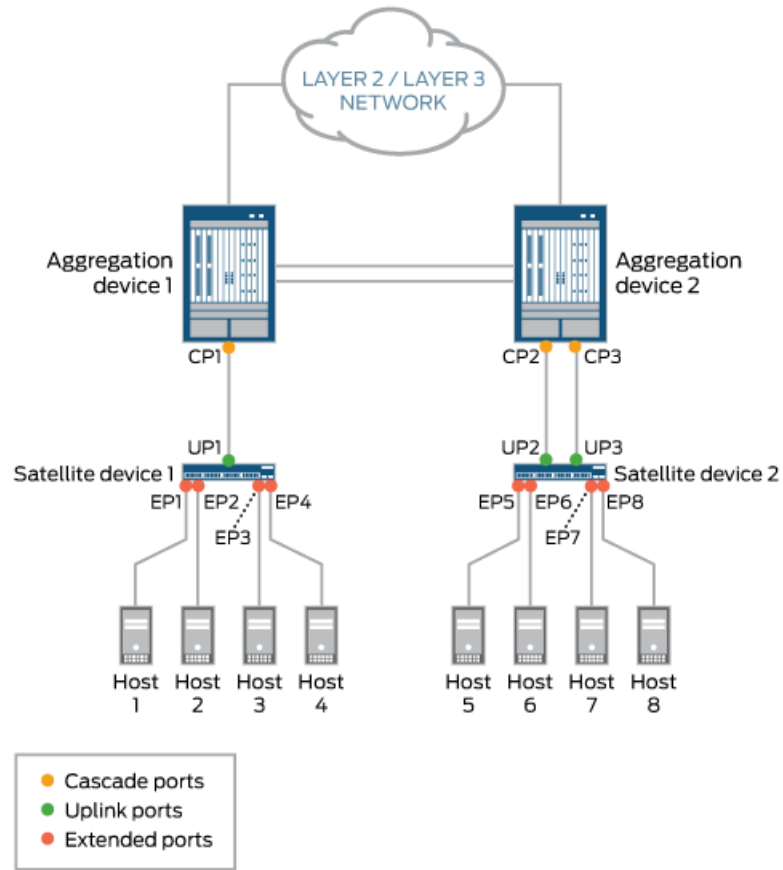
In a Junos Fusion topology, cascade, uplink, and extended ports are components that play key roles. [Figure 5 on page 14](#) and [Figure 6 on page 15](#) show sample Junos Fusion topologies, which serve as points of reference for this discussion of cascade, uplink, and extended ports.

In the Junos Fusion topology shown in [Figure 5 on page 14](#), two aggregation devices and two satellite devices are deployed. The aggregation devices are connected to each other through a multichassis link aggregation group (MC-LAG). Each satellite device is connected to its respective aggregation device through one or two links.

In the Junos Fusion Data Center topology shown in [Figure 6 on page 15](#), four aggregation devices and four satellite devices are deployed. The four aggregation devices form an EVPN core fabric wherein each satellite device is multihomed to each aggregation device. Also, in this topology, some hosts are single-homed to a satellite device, and other hosts are multihomed to two satellite devices.

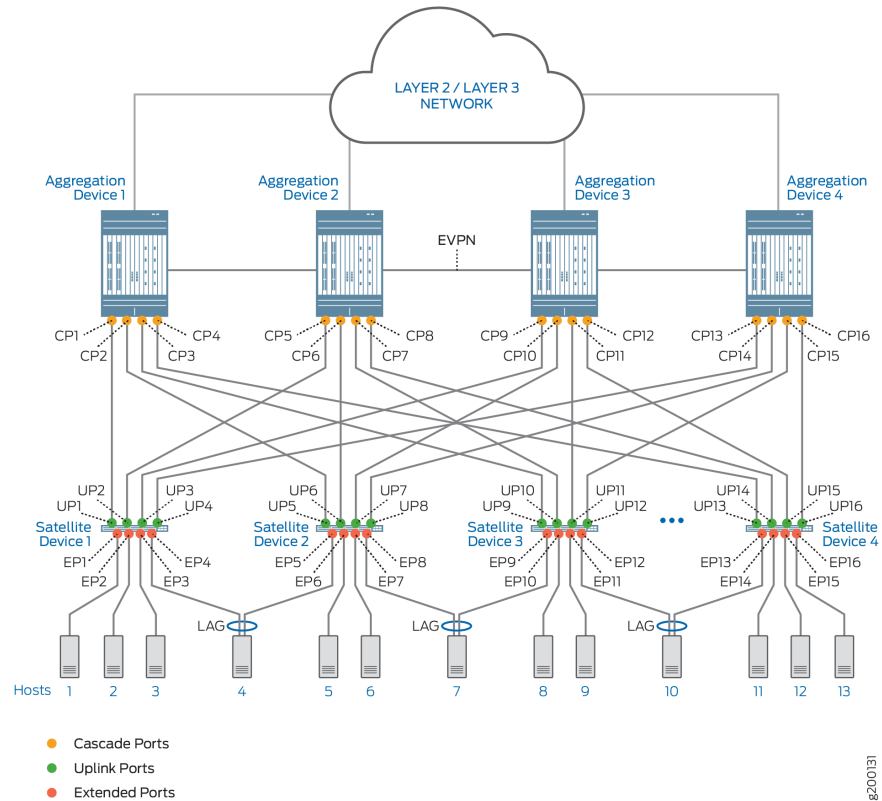
On the aggregation devices in each illustration, each link is connected to a cascade port (for example, CP1 on Aggregation device 1), while on the satellite devices, each link is connected to an uplink port (for example, UP1 on Satellite device 1). Hosts 1 through 4 are connected to Satellite device 1 through extended ports EP1 through EP4, and so on.

Figure 5: Cascade, Uplink, and Extended Ports in a Junos Fusion Topology With Two Aggregation Devices and MC-LAG



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Figure 6: Cascade, Uplink, and Extended Ports in a Junos Fusion Data Center Topology With Four Aggregation Devices and EVPN



This topic provides the following information:

- [Understanding Cascade Ports on page 15](#)
- [Understanding Uplink Ports on page 16](#)
- [Understanding Extended Ports on page 17](#)

Understanding Cascade Ports

A *cascade port* is a physical interface on an aggregation device that provides a connection to a satellite device. A cascade port on an aggregation device connects to an uplink port on a satellite device.

On an aggregation device, you can set up one or more cascade port connections with a satellite device. For example, in the Junos Fusion topology shown in [Figure 5 on page 14](#), Aggregation device 1 has one cascade port connection (CP1) to Satellite device 1, and Aggregation device 2 has two cascade port connections (CP2 and CP3) to Satellite device 2. In the Junos Fusion Data Center in [Figure 6 on page 15](#), where EVPN multihoming is implemented, each aggregation device is connected to each satellite device through one cascade port. For example, on Aggregation device 1, cascade port CP1 is connected to the leftmost satellite device, cascade port CP2 is connected to the next satellite device, and so on.

When there are multiple cascade port connections to a satellite device, as shown in [Figure 5 on page 14](#), the traffic handled by the ports is automatically load-balanced. For a packet destined for a satellite device, the cascade port over which to forward the packet is chosen based on a per-packet hash that is computed using key fields in the packet. To select the key fields to be used, you can specify the **hash-key** statement in the **[edit forwarding-options]** hierarchy or the **enhanced-hash-key** statement in the **[edit forwarding-options]**, **[edit logical-systems *logical-system-name* routing-instances *instance-name* forwarding-options]**, and **[edit routing-instances *instance-name* forwarding-options]** hierarchies.



NOTE: The 802.1BR tag is not included in the load-balancing hash computation for cascade ports.

In addition, a cascade port can handle the traffic for all extended ports on a particular satellite device. However, you cannot specify that a particular cascade port handle the traffic for a particular extended port.

After you configure an interface as a cascade port (for example, by issuing **set interfaces xe-0/0/1 cascade-port**), you cannot configure the interface as a Layer 2 interface (for example, by issuing **set interfaces xe-0/0/1 unit 0 family bridge**) or a Layer 3 interface (for example, **set interfaces xe-0/0/1 unit 0 family inet**). If you try to configure a cascade port as a Layer 2 or Layer 3 interface, you receive an error message.

On a cascade port, you can configure class-of-service (CoS) policies.

Understanding Uplink Ports

An *uplink port* is a physical interface on a satellite device that provides a connection to an aggregation device. An uplink port on a satellite device connects to a cascade port on an aggregation device.

After a cascade port is configured on the aggregation device end of a link, a corresponding uplink port is automatically created on the satellite device. From the aggregation device, you can monitor port and queue statistics for uplink ports. However, we do not recommend that you configure Layer 2 or Layer 3 forwarding features on uplink ports.

On a satellite device, you can set up one or more uplink port connections to an aggregation device. For example, in the Junos Fusion topology shown in [Figure 5 on page 14](#), Satellite device 1 has one uplink port (UP1) to Aggregation device 1, and Satellite device 2 has two uplink ports (UP2 and UP3) to Aggregation device 2. In the Junos Fusion Data Center in [Figure 6 on page 15](#), where EVPN multihoming is implemented, each satellite device is connected to each aggregation device through an uplink port. For example, on the leftmost satellite device, uplink port UP1 is connected to Aggregation device 1, uplink port UP2 is connected to Aggregation device 2, and so on.

When a satellite device has multiple uplink ports to an aggregation device, the traffic from the extended ports is automatically load-balanced among the uplink ports. For example, in the Junos Fusion topology shown in [Figure 5 on page 14](#), the traffic from extended ports EP5 through EP8 is load balanced between uplink ports UP2 and UP3 to

reach Aggregation device 2. In this situation, each packet is examined, and if an IPv4 or IPv6 header is found, a load-balancing algorithm chooses the uplink port based on the header (source and destination IP addresses, and source and destination TCP/UDP ports). If an IPv4 or IPv6 header is not found, the load-balancing algorithm chooses the uplink port based on the Layer 2 header (destination and source MAC addresses, Ethertype, and outer VLAN ID) of the packet.

Understanding Extended Ports

An *extended port* is a physical interface on a satellite device that provides a connection to servers or endpoints. To an aggregation device, a satellite device appears as an additional Flexible PIC Concentrator (FPC) and the extended ports on the satellite device appear as additional interfaces to be managed by the aggregation device.

On aggregation devices, you can configure extended ports by using the same Junos OS CLI and naming convention used for Junos OS interfaces on standalone routers and switches. The only difference is that when you specify an extended port name, the FPC slot number must be in the range of 100 through 254 in Junos OS Release 14.2 and in the range of 65 through 254 in Junos OS Release 16.1 and later.

For example, for the four extended ports shown on Satellite device 1 in [Figure 5 on page 14](#) and the leftmost satellite device in [Figure 6 on page 15](#), the FPC slot number could be 100, the PIC slot number could be 0, the first extended port could be 1, the second extended port could be 2, the third extended port could be 3, and the fourth extended port could be 4. The complete 10-Gigabit Ethernet extended port names could be as follows:

xe-100/0/1

xe-100/0/2

xe-100/0/3

xe-100/0/4

You can configure the following features on extended ports:

- Layer 2 bridging protocols
- Integrated routing and bridging (IRB)
- Firewall filters



NOTE: In a Junos Fusion Data Center with EVPN wherein VXLAN encapsulation is used, firewall filters with next-interface or next-ip actions are not supported.

- CoS policies

Related Documentation

- [Understanding the Flow of Data Packets in a Junos Fusion Topology on page 26](#)
- *hash-key*

- *enhanced-hash-key*

Understanding Port-Based Authentication in a Junos Fusion Provider Edge

Junos Fusion supports port-based authentication as defined by IEEE 802.1X standard to prevent unauthorized network access on the extended ports of the satellite devices. The satellite device blocks all packets to and from the supplicant (client) except for Extensible Authentication Protocol over LAN (EAPoL) packets at the interface. EAPoL allows the client to authenticate to an authentication server, such as a RADIUS server. Once the authentication server validates the supplicant's credentials, the switch opens the interface to the supplicant and allows access to the network. For more information on 802.1X authentication, see *Configuring 802.1X Interface Settings on MX Series Routers in Enhanced LAN Mode*.

Junos fusion also supports central Web authentication. Central Web authentication redirects Web browser requests to a central Web authentication server that manages the authentication and authorization process. Upon successful authorization, the user is allowed access to the network. For more information on central Web authentication, see *Understanding Central Web Authentication*.



NOTE: The authentication server in a Junos Fusion should be connected directly to the aggregation device and not to an extended port on a satellite device.

Related Documentation

- *IEEE 802.1x Port-Based Network Access Control Overview*
- *Understanding Central Web Authentication*
- *Configuring 802.1X Interface Settings on MX Series Routers in Enhanced LAN Mode*

Understanding Software in a Junos Fusion Provider Edge

This topic discusses the role of software in a Junos Fusion Provider Edge. It covers:

- [Understanding Junos OS for the Aggregation Device in a Junos Fusion on page 18](#)
- [Understanding Satellite Software for the Satellite Devices in a Junos Fusion on page 19](#)
- [Understanding the Preboot eXecution Environment \(PXE\) Junos OS Software Package for QFX5100 Switches in a Junos Fusion on page 20](#)
- [Understanding Minimum Software Requirements for a Junos Fusion on page 20](#)
- [Understanding Satellite Software Upgrade Groups on page 20](#)

Understanding Junos OS for the Aggregation Device in a Junos Fusion

An aggregation device in a Junos Fusion always runs Junos OS software and is responsible for almost all management tasks, including configuring all network-facing ports—the *extended ports*—on all satellite devices in the Junos Fusion. The extended ports in a Junos

Fusion, therefore, support features that are supported by the version of Junos OS running on the aggregation device.

An aggregation device in a Junos Fusion runs the same Junos OS software regardless of whether it is or is not part of a Junos Fusion. Hence, Junos OS software is acquired, installed, and managed on an aggregation device in a Junos Fusion in the same manner that it is acquired, installed, and managed on a standalone device that is not part of a Junos Fusion.

Understanding Satellite Software for the Satellite Devices in a Junos Fusion

The satellite devices in a Junos Fusion run satellite software that has the built-in intelligence to extend the feature set on the Junos OS software onto the satellite device. The satellite software is a Linux-based operating system that allows the satellite devices to communicate with the aggregation device for control plane data while also passing network traffic.

All satellite devices in a Junos Fusion must run the satellite software. The satellite software, notably, applies features from the Junos OS software on the aggregation device onto the satellite device. The satellite software allows the satellite device to participate in the Junos Fusion, but does not provide any other software features for the satellite device.

You can run the same version of satellite software on satellite devices that are different hardware platforms. For instance, if your Junos Fusion included EX4300 and QFX5100 switches as satellite devices, the EX4300 and QFX5100 switches acting as satellite devices could install the satellite software from the same satellite software package.

Different satellite devices can run different versions of satellite software within the same Junos Fusion.

You can download satellite software from the software center for any satellite device. Additionally, you have the option to order some switches with the satellite software pre-installed from the factory.

The satellite software packages are stored on the aggregation device after a satellite software package installation—which is typically managed from the aggregation device—has been executed. The satellite software packages remain in the file system even if the Junos OS software on the aggregation device is upgraded. The satellite software packages on an individual satellite device can be updated manually using CLI commands on the aggregation device but are typically installed using software upgrade groups, which are discussed in more detail in this document.

A device cannot simultaneously run Junos OS and the satellite software. If you remove a satellite device from a Junos Fusion, you have to install Junos OS onto the device before you can use it in your network as a standalone switch.

Satellite software is sometimes referred to as satellite network operating system (SNOS) software in the command-line interface and in the technical documentation.

The satellite software requirements for a Junos Fusion Provider Edge are discussed in [Understanding Junos Fusion Provider Edge Software and Hardware Requirements](#).

Understanding the Preboot eXecution Environment (PXE) Junos OS Software Package for QFX5100 Switches in a Junos Fusion

The Preboot eXecution Environment (PXE) software is a version of Junos OS that must be used to convert a QFX5100 switch that is running satellite software as a satellite device into a standalone switch that is running Junos OS software.

The first version of PXE software that can be used to convert a QFX5100 switch from a satellite device to a standalone switch is introduced at Junos OS Release 14.1X53-D16. The PXE version of Junos OS software supports the same feature set as the other Junos OS software packages for a release, but is specifically engineered to install Junos OS onto a device running satellite software.

The PXE version of Junos OS software is required for QFX5100 switches only. Standard Junos OS software can be used to convert the other devices acting as satellite devices into standalone devices.

The PXE version of Junos OS software can be downloaded from the Software Center with the other QFX5100 switch software packages. For more information on PXE software images, see the *Junos OS Release Notes* for your software release. For information on using the PXE version of Junos OS software to convert a QFX5100 device into a standalone device, see *Removing a Satellite Device from a Junos Fusion*.

Understanding Minimum Software Requirements for a Junos Fusion

An aggregation device:

- Must be running Junos OS Release 14.2R3, or a later version of Junos OS Release 14.2.



NOTE: Junos Fusion is not supported in any Junos OS Release 15.1 release.

A satellite device:

- Must be running Junos OS Release 14.1X53-D16 or later prior to being converted into a satellite device.
- Must run a version of satellite software.

For more detailed information about satellite software support, see the Junos OS release notes for the version of Junos OS running on your aggregation device.

Understanding Satellite Software Upgrade Groups

A *satellite software upgrade group* is a group of satellite devices that are designated to upgrade to the same satellite software version using the same satellite software package. One Junos Fusion can contain multiple software upgrade groups, and multiple software upgrade groups should be configured in most Junos Fusions to avoid network downtimes during satellite software installations.

When a satellite device is added to a Junos Fusion, the aggregation device checks if the satellite device is using an FPC ID that is included in a satellite software upgrade group.

If the device is connected to a satellite device that is using an FPC ID that is part of a satellite software upgrade group, the device—unless it is already running the same version of satellite software—upgrades its satellite software using the satellite software associated with the satellite software upgrade group.

When the satellite software package associated with an existing satellite software group is changed, the satellite software for all member satellite devices is upgraded using a throttled upgrade. The throttled upgrade ensures that only a few satellite devices are updated at a time to minimize the effects of a traffic disruption due to too many satellite devices upgrading software simultaneously.

The two most common methods of installing satellite software—autoconverting a device into a satellite device when it is cabled into an aggregation device and manually converting a device that is cabled into an aggregation device into a satellite device—require that a satellite software upgrade group is configured.

Software upgrade groups are configured and managed on the aggregation device.

Related Documentation

- [Configuring or Expanding a Junos Fusion Enterprise](#)

Understanding Junos Fusion Provider Edge Software and Hardware Requirements

This topic describes the software and hardware requirements for a Junos Fusion Provider Edge.

It covers:

- [Aggregation Devices on page 21](#)
- [Satellite Devices on page 24](#)

Aggregation Devices

This section details the hardware and software requirements for an aggregation device in a Junos Fusion Provider Edge.

It includes the following sections.

- [Aggregation Device Hardware Models on page 21](#)
- [Support for Junos Node Slicing on page 22](#)
- [Maximum Number of Aggregation Devices on page 23](#)
- [Cascade Ports on page 23](#)

Aggregation Device Hardware Models

[Table 4 on page 22](#) lists the hardware platforms that are supported as aggregation devices, and the Junos OS release that introduced aggregation device support to Junos Fusion Provider Edge for the hardware.

Table 4: Supported Aggregation Device Hardware and Initial Junos OS Release

Hardware	Initial Junos OS Release
MX5 Universal Routing Platform	14.2R6
MX10 Universal Routing Platform	14.2R6
MX40 Universal Routing Platform	14.2R6
MX80 Universal Routing Platform	14.2R6
MX104 Universal Routing Platform	14.2R6
MX204 Universal Routing Platform	17.4R1
MX240 Universal Routing Platform	14.2R3
MX480 Universal Routing Platform	14.2R3
MX960 Universal Routing Platform	14.2R3
MX2010 Universal Routing Platform	14.2R3
MX2020 Universal Routing Platform	14.2R3
MX10003 Universal Routing Platform	17.3R1



BEST PRACTICE: We recommend installing a 64-bit version of Junos OS on the aggregation devices in a Junos Fusion, particularly in topologies that support a large number of satellite devices.

Support for Junos Node Slicing

Starting in Junos OS Release 18.1R1, you can configure an aggregation device on a guest network fusion (GNF) on an MX 960, MX2010, and MX2020 series router. Using Junos Node Slicing, you can create multiple partitions on a single MX router. These partitions are referred to as a guest network functions (GNFs). Each MX series router supports a maximum of 10 GNFs with each GNF supporting a separate aggregation device. The aggregation device on each GNF supports a maximum of 10 satellite devices.

For more information on Junos Node Slicing, see *Junos Node Slicing Overview*.



NOTE: In a Junos Fusion Provider Edge topology that has a GNF configured as the aggregation device, you can only use EX4300 switches as satellite devices.



NOTE: In the GNF, you should use the following line cards to support the cascade port on the aggregation device:

- MPC7
- MPC8
- MPC9

Maximum Number of Aggregation Devices

A Junos Fusion supports one aggregation device.

Cascade Ports

A *cascade port* is a port on an aggregation device that sends and receives control and network traffic from an attached satellite device.

Table 5 on page 23 provides a list of line cards on an MX Series 5G Universal Routing Platform that have interfaces that can be converted into cascade ports, and the initial Junos OS release when cascade port support was introduced for interfaces on the line card.



BEST PRACTICE: A cascade port is typically a 10-Gbps SFP+ interface or a 40-Gbps QSFP+ interface, but any interface on the aggregation device that connects to the satellite device can be converted into a cascade port.

Table 5: MX Series 5G Universal Routing Platform Line Card Cascade Port Support

Hardware	Initial Junos OS Release
16x10GE MPC	14.2R3
MPC1 Q	14.2R3
MPC1E Q	14.2R3
MPC2 Q	14.2R3
MPC2E Q	14.2R3
MPC2 EQ	14.2R3
MPC2E EQ	14.2R3
MPC2E NG	14.2R6
MPC2E NG Q	14.2R6
MPC3E	14.2R3

Table 5: MX Series 5G Universal Routing Platform Line Card Cascade Port Support (continued)

Hardware	Initial Junos OS Release
MPC3E NG	14.2R6
MPC3E NG Q	14.2R6
MPC4E	14.2R3
MPC5E	14.2R3
MPC5EQ	14.2R3
MPC6E <small>NOTE: MPC6E is supported with the 10-Gigabit Ethernet MIC with SFP+ (24 Ports) only</small>	14.2R3
MPC7E	16.1R1
MPC8E	16.1R1
MPC9E	16.1R1

Satellite Devices

This section details the hardware and software requirements for a satellite device in a Junos Fusion Provider Edge.

It includes the following sections:

- [Satellite Device Hardware Models on page 24](#)
- [Power over Ethernet Requirements for a Satellite Device on page 25](#)
- [Maximum Number of Satellite Devices on page 26](#)

Satellite Device Hardware Models

[Table 6 on page 25](#) lists the hardware platforms that are supported as satellite devices, as well as the minimum Junos OS release that must be running on the satellite device before it can be converted from a standalone switch to a satellite device.

A minimum version of Junos OS software is only required before a switch is converted into a satellite device. A satellite device in Junos Fusion Provider Edge runs satellite software after it is converted into a satellite device.

When you upgrade the satellite software version to a release later than the recommended versions listed in the [Junos Fusion Hardware and Software Compatibility Matrices](#), your Junos Fusion system will only benefit from the satellite software fixes. To acquire the full benefits of a satellite software release, including satellite software fixes and new features,

we recommend you upgrade both the aggregation device software and its compatible satellite device software for a complete upgrade.

Table 6: Supported Satellite Device Hardware and Initial Junos OS Release

Hardware	Initial Junos OS Release—Satellite Device	Initial Junos OS Release—Aggregation Device	Minimum Satellite Software Version
QFX5100-24Q	14.1X53-D16	14.2R3	1.0R1
QFX5100-48S	14.1X53-D16	14.2R3	1.0R1
QFX5100-48T	14.1X53-D16	14.2R3	1.0R1
QFX5100-96S	14.1X53-D16	14.2R3	1.0R1
QFX5110-32Q	18.1R1	18.1R1	3.4R1
QFX5110-48S	18.1R1	18.1R1	3.4R1
QFX5200-32C	18.1R1	18.1R1	3.4R1
EX4300-24P	14.1X53-D16	14.2R3	1.0R1
EX4300-24T	14.1X53-D16	14.2R3	1.0R1
EX4300-32F	14.1X53-D30	14.2R5	1.0R2.2
EX4300-32F-DC	14.1X53-D30	14.2R5	1.0R2.2
EX4300-48P	14.1X53-D16	14.2R3	1.0R1
EX4300-48T	14.1X53-D16	14.2R3	1.0R1
EX4300-48T-DC	14.1X53-D26	14.2R3	1.0R1

Power over Ethernet Requirements for a Satellite Device

A satellite device that supports Power over Ethernet (PoE) must be running the minimum PoE controller software version. The EX4300 series switches must be running PoE controller software version 2.6.3.9.2.1 or higher.

To check the PoE controller software version, enter the **show chassis firmware detail** command and view the **PoE firmware** output.

For information on checking and upgrading the PoE controller software, see *Upgrading the PoE Controller Software*.

Maximum Number of Satellite Devices

Junos Fusion Provider Edge supports up to eighteen satellite devices on the MX5, MX10, MX40, MX80, and MX104 Universal Routing Platform. For all other MX Series routers, Junos Fusion Provider Edge supports up to sixty-four satellite devices.

Release History Table

Release	Description
18.1R1	Starting in Junos OS Release 18.1R1, you can configure an aggregation device on a guest network fusion (GNF) on an MX 960, MX2010, and MX2020 series router.

Related Documentation

- [Configuring Junos Fusion Provider Edge on page 39](#)
- [Managing Satellite Software Upgrade Groups in a Junos Fusion on page 83](#)
- [Converting a Satellite Device in a Junos Fusion to a Standalone Device on page 98](#)

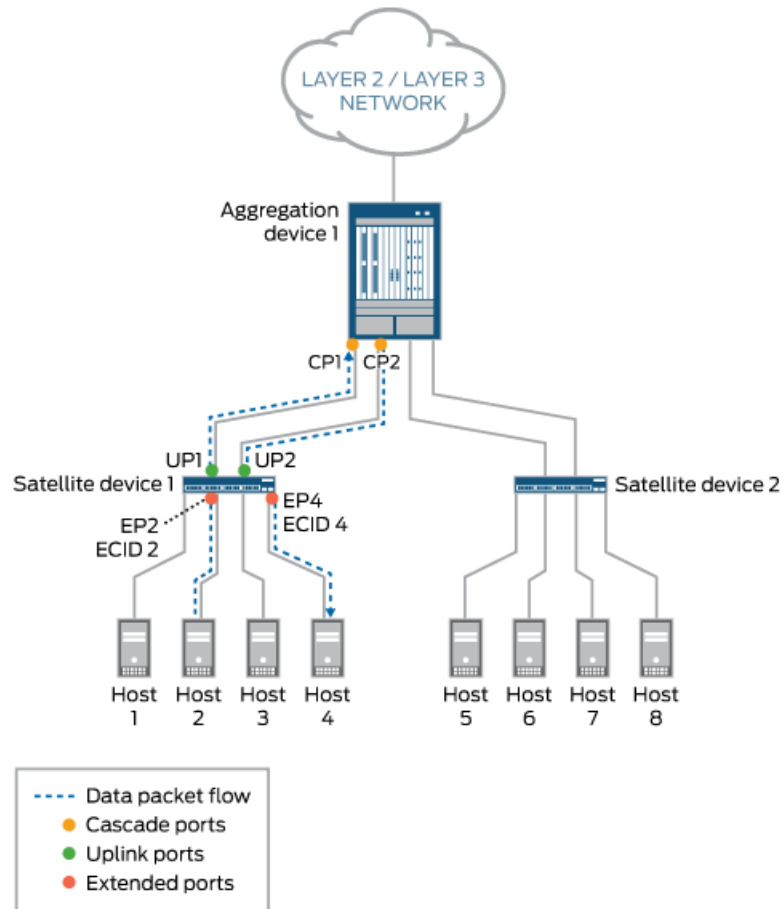
Understanding the Flow of Data Packets in a Junos Fusion Topology

All Ethernet data packets that are exchanged between aggregation devices and satellite devices in a Junos Fusion topology include an E-channel tag (ETAG) header that carries an E-channel identifier (ECID) value. The ECID value, which is assigned by the aggregation device, identifies the source or destination extended port on one of the connected satellite devices.

In a sample Junos Fusion topology, where an aggregation device is connected to two satellite devices, the following Layer 2 unicast data packet flow scenarios can occur:

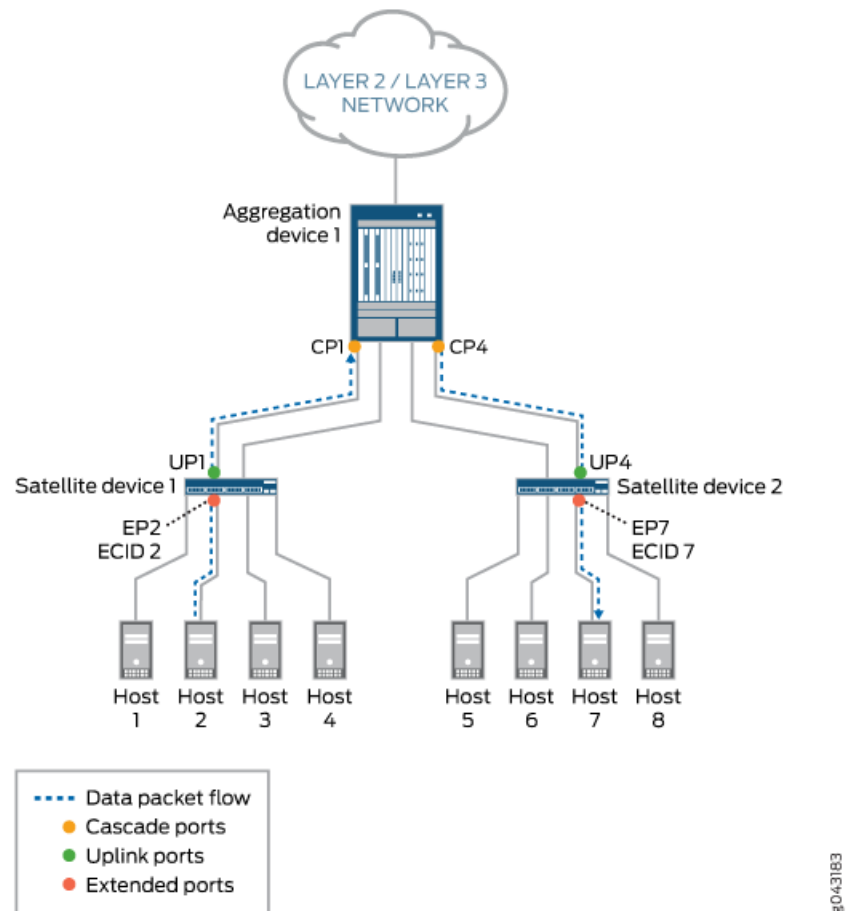
- Scenario 1—A host on one satellite device sends a packet to another host on the same satellite device. For example, Host 2 sends a unicast packet to Host 4. Both hosts are connected to Satellite device 1. (See [Figure 7 on page 27.](#))
- Scenario 2—A host on one satellite device sends a packet to another host on the other satellite device. For example, Host 2, which is connected to Satellite device 1, sends a unicast packet to Host 7, which is connected to Satellite device 2. (See [Figure 8 on page 28.](#))

Figure 7: Layer 2 Unicast Data Packet Flow Through a Junos Fusion Topology—Scenario 1



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Figure 8: Layer 2 Unicast Data Packet Flow Through a Junos Fusion Topology—Scenario 2



In scenario 1, where Host 2 sends a unicast data packet to Host 4, the following events occur:



NOTE: Only the events that are performed by Junos Fusion components are listed. Events handled by components that are not specific to the Junos Fusion topology are excluded.

1. Extended port EP2 on Satellite device 1 receives the packet from Host 2.
2. Satellite device 1 inserts an ETAG header in the packet. The ETAG header carries the ECID value (ECID 2), which is assigned by Aggregation device 1 to extended port EP2.
3. On Satellite device 1, two uplink ports (UP1 and UP2) are connected to Aggregation device 1. As a result, traffic between the devices can be load-balanced. In this case,

uplink port UP1 is chosen to forward the packet to cascade port CP1 on Aggregation device 1.

4. On receiving the packet, Aggregation device 1 extracts the ECID value (ECID 2) from the ETAG header of the packet and learns that the packet is from extended port EP2 on Satellite device 1. Aggregation device 1 then removes the ETAG header from the packet.
5. Aggregation device 1 performs a lookup for Host 4. The result of the lookup is extended port EP4 on Satellite device 1.
6. On Aggregation device 1, two cascade ports (CP1 and CP2) are connected to Satellite device 1. As a result, traffic between the devices can be load-balanced. In this case, cascade port CP2 is chosen to forward the packet to uplink port UP2 on Satellite device 1.
7. The packet is forwarded to cascade port CP2, where a new ETAG header and ECID value (ECID 4), which is assigned by Aggregation device 1 to extended port EP4, is added.
8. The packet is received by uplink port UP2 on Satellite device 1.
9. Satellite device 1 extracts the ECID value (ECID 4) from the ETAG header of the packet, then maps ECID 4 to extended port EP4.
10. Host 4 receives the packet from extended port EP4.

In scenario 2, where Host 2 sends a unicast data packet to Host 7, the events that occur are the same as for scenario 1 except for the following:

- Event 5—Aggregation device 1 performs a lookup for Host 7. The result of the lookup is extended port EP7 on Satellite device 2.
- Event 6—On Aggregation device 1, two cascade ports (CP3 and CP4) are connected to Satellite device 2. As a result, traffic between the devices can be load-balanced. In this case, cascade port CP4 is chosen to forward the packet to uplink port UP4 on Satellite device 2.
- Event 7—The packet is forwarded to cascade port CP4, where a new ETAG header and ECID value (ECID 7), which is assigned by Aggregation device 1 to extended port EP7, is added.
- Event 8—The packet is received by uplink port UP4 on Satellite device 2.
- Event 9—Satellite device 2 extracts the ECID value (ECID 7) from the ETAG header of the packet, and then maps ECID 7 to extended port EP7.
- Event 10—Host 7 receives the packet from extended port EP7.

**Related
Documentation**

- [Understanding Junos Fusion Provider Edge Components on page 5](#)
- [Understanding Junos Fusion Enterprise Components](#)

Understanding Satellite Policies in a Junos Fusion

This topic describes satellite policies in a Junos Fusion. It covers:

- [Satellite Policies Overview on page 30](#)
- [Understanding Environment Monitoring Satellite Policies on page 31](#)
- [Understanding Uplink Failure Detection Satellite Policies on page 31](#)
- [Understanding Satellite Policies for Remapping Uplink Traffic Flows on a Junos Fusion Data Center on page 31](#)

Satellite Policies Overview

Satellite policies are used in a Junos Fusion to define how certain features are configured for standalone satellite devices within a Junos Fusion. Satellite policies can be used to configure standalone satellite devices or all satellite devices in a satellite device cluster.

Environment monitoring of the satellite devices, uplink failure detection for satellite device uplink ports, and remapping uplinks—with port pinning, uplink selection, and local port mirroring—are configured using satellite policies. See [“Understanding Environment Monitoring Satellite Policies” on page 31](#), [“Understanding Uplink Failure Detection Satellite Policies” on page 31](#), and [“Understanding Satellite Policies for Remapping Uplink Traffic Flows on a Junos Fusion Data Center” on page 31](#).

Satellite policies are configured as independent policies on the aggregation device, and then associated with the Junos Fusion configuration.

Understanding Environment Monitoring Satellite Policies

You can configure an environment monitoring satellite policy in a Junos Fusion to configure how a Junos Fusion responds to link-down alarms on satellite devices.

In the environment monitoring satellite policy, you define how you want a link-down alarm from a satellite device to be handled by the Junos Fusion. The Junos Fusion can treat the link-down alarm as a yellow or red alarm, or it can be configured to ignore the alarm.

The environment monitoring policy provides the flexibility to define different alarm handling based on user preference. You can, for instance, assign environment monitoring policies to individual satellite devices based on FPC ID. You can also configure environment monitoring policies based on the product model of the satellite devices, if desired. You can, for instance, specify that all link-down alarms from EX4300 switches acting as satellite devices are treated as yellow alarms, while all link-down alarms from QFX5100 switches acting as satellite devices are treated as red alarms.

Environment monitoring satellite policies are configured using the [environment-monitoring-policy](#) statement in the **[edit policy-options satellite-policies]** hierarchy level.

An environment monitoring policy is applied for a single satellite device in a Junos Fusion using the [environment-monitoring-policy](#) statement in the **[edit chassis satellite-management]** or the **[edit chassis satellite-management fpc slot-id]** hierarchy levels.

You can configure a different environment monitoring policy for a single satellite device in the **fpc slot-id** when an environment monitoring policy for all satellite devices is configured. The environment monitoring policy for the FPC is enabled in cases when both an individual and global environment monitoring policy is configured.

Understanding Uplink Failure Detection Satellite Policies

Satellite policies are used to configure uplink failure detection on satellite device uplink ports within a Junos Fusion.

For information on uplink failure detection within a Junos Fusion, see [“Overview of Uplink Failure Detection on a Junos Fusion” on page 835](#).

Understanding Satellite Policies for Remapping Uplink Traffic Flows on a Junos Fusion Data Center

Satellite policies are used to configure the remapping of uplink traffic flows within a Junos Fusion Data Center. You can configure uplink port pinning and flow-based uplink selection to improve load-balancing of traffic flows across uplink ports. You can use local port mirroring to troubleshoot and monitor applications.

See *Understanding Remapping Uplink Traffic Flows on a Junos Fusion Data Center*.

- Related Documentation**
- [Configuring Junos Fusion Provider Edge on page 39](#)
 - [Configuring or Expanding a Junos Fusion Enterprise](#)

Junos Fusion Provider Edge Supported Protocols

Junos Fusion Provider Edge expands the number of available network interfaces on an aggregation device by connecting satellite devices that act as extensions of the aggregation device. The entire system—the interconnected aggregation device and satellite devices—is called a Junos Fusion. Junos Fusion Provider Edge simplifies network aggregation device administration because the aggregation device acts as a single, port-dense device, managed using one IP address.

- [Layer 3 Protocols Supported on Junos Fusion Provider Edge on page 32](#)
- [Multicast Protocols Supported on Junos Fusion Provider Edge on page 33](#)
- [VPN Protocols Supported on Junos Fusion Provider Edge on page 34](#)

Layer 3 Protocols Supported on Junos Fusion Provider Edge

Starting with Junos OS Release 14.2R4, many of the routing protocols supported on MX Series routers have been extended to the satellite devices in a Junos Fusion Provider Edge topology. You can configure the following Layer 3 routing protocols on satellite device extended ports:

- BFD (Centralized only)
- BGP
- BGP for IPv6
- IS-IS
- OSPF
- OSPF version 3

You can configure the following Layer 3 routing protocols on satellite device extended ports that are included in link aggregation groups (LAGs):

- BGP
- IS-IS
- OSPF

BFD Support on Junos Fusion Provider Edge

Bidirectional Forwarding Detection (BFD) is a protocol used to detect failure in the data path. Hello packets are sent at a specified, regular interval. A neighbor failure is detected when the routing device stops receiving a reply after a specified interval. BFD works with a wide variety of network environments and topologies.



NOTE: Junos Fusion Provider Edge only supports centralize BFD.

For more information, see the following:

- *Understanding BFD for BGP*
- *Understanding BFD for IS-IS*
- *Understanding BFD for OSPF*

BGP Support on Junos Fusion Provider Edge

Border Gateway Protocol (BGP) is a standardized exterior gateway protocol that exchanges routing and reachability information between autonomous systems on the Internet. The protocol can be a path vector protocol or a distance-vector routing protocol. BGP makes routing decisions based on paths, network policies, or rule-sets configured by a network administrator for core routing decisions. For more information, see the *BGP Feature Guide* and the CLI statement *bgp*.

IS-IS Support on Junos Fusion Provider Edge

Intermediate System to Intermediate System (IS-IS) moves information within either a computer network, a group of physically connected computers, or between similar devices. It accomplishes this by determining the best route for traffic through a packet-switched network. For more information, see the *IS-IS Feature Guide*.

OSPF Support on Junos Fusion Provider Edge

Open Shortest Path First (OSPF) is a routing protocol for IP networks using a link state routing algorithm. This interior routing protocol operates within a single autonomous system. For more information, see the *OSPF Feature Guide* and the CLI statements *ospf* and *ospf3*.

Multicast Protocols Supported on Junos Fusion Provider Edge

You can configure the following multicast protocols on satellite device extended ports:

- PIM
- IGMP
- MLD

PIM on Junos Fusion Provider Edge

Protocol-Independent Multicast (PIM) is a family of multicast routing protocols for Internet Protocol (IP) networks that provide one-to-many and many-to-many distribution of data over a LAN, WAN or the Internet. It is termed protocol-independent because PIM does not include its own topology discovery mechanism, but instead uses routing information supplied by other routing protocols, in this case Internet Group Management Protocol (IGMP) on extended ports. All four PIM modes work on extended ports—PIM

sparse Mode (default), PIM dense Mode, bidirectional PIM, and PIM source-specific multicast. For more information, see the *PIM Overview* and the CLI statement *pim*.

IGMP on Junos Fusion Provider Edge

Internet Group Management Protocol (IGMP) is a communications protocol used by hosts and adjacent routers on IPv4 networks to establish multicast group membership. IGMP is an integral part of IP multicast, and is used for one-to-many networking applications such as online streaming video and gaming because it allows more efficient use of resources when supporting these types of applications. For more information, see *Understanding IGMP* and the CLI statement *igmp*.

MLD on Junos Fusion Provider Edge

Multicast Listener Discovery (MLD) is a component of the Internet Protocol Version 6 (IPv6) suite. MLD is used by IPv6 routers for discovering multicast listeners on a directly attached link, much like IGMP is used in IPv4. MLD uses ICMPv6 messaging in contrast to IGMP's bare IP encapsulation. For more information, see the *mld* CLI statement.

Junos Fusion supports multicast and broadcast packet replication on the aggregation device and the satellite devices. For more information on multicast replication, see [“Understanding Multicast Replication in a Junos Fusion” on page 869](#).

VPN Protocols Supported on Junos Fusion Provider Edge

You can configure the following VPN protocols on satellite device extended ports:

- Layer 2 Circuits
- Layer 2 VPNs
- Layer 3 VPNs
- VPLS
- EVPN with VXLAN



NOTE: Extended ports on satellite devices can only be configured as customer edge (CE) router interfaces in a VPN. Provider edge (PE) router interfaces must be configured directly on the native port of the aggregation device.

Layer 2 Circuits on Junos Fusion Provider Edge

You can configure a local switching interface to ignore the MTU configuration set for an associated physical interface. This enables you to bring up a circuit between two logical interfaces that are defined on physical interfaces with different MTU values. For more information, see the *Configuring Interfaces for Layer 2 Circuits Overview*.

Layer 2 VPNs on Junos Fusion Provider Edge

Layer 2 VPNs provide communication between a provider network and a customer network. Provider edge routers or PEs at the edge of a provider network communicate with each customer edge or CE router. Customers configure their routers to carry all

Layer 3 traffic, while the service provider needs to know only how much traffic the Layer 2 VPN needs to carry. For more information, see the *Layer 2 VPNs and VPLS Feature Guide for Routing Devices*.

Layer 3 VPNs on Junos Fusion Provider Edge

Layer 3 VPNs also provide communication between a provider network and a customer network. However, in a Layer 3 VPN, routing occurs on the service provider's router. Therefore, Layer 3 VPNs require more configuration on the part of the service provider, because the service provider's PE routers must store and process the customer's routes. For more information, see the *Layer 3 VPNs Feature Guide for Routing Devices*.

VPLS on Junos Fusion Provider Edge

Virtual Private LAN Service (VPLS) provides Ethernet-based multipoint to multipoint communication over IP or MPLS networks. It allows geographically dispersed sites to share an Ethernet broadcast domain by connecting sites with pseudowires. The technologies that can be used as pseudowire can be Ethernet over MPLS, L2TPv3 or even GRE. For more information, see the *Layer 2 VPNs and VPLS Feature Guide for Routing Devices*.

EVPN with VXLAN

You can configure ports on the satellite devices managed by MX Series routers to support Ethernet VPNs (EVPNs) with Virtual Extensible LAN (VXLAN) encapsulation. EVPN provides layer 2 VPN services with advance multi-homing capabilities by using the BGP control plane to distribute routes over IP or IP/MPLS backbone. VXLAN is a tunneling scheme that overlays layer 2 ethernet frames on top of layer 3 UDP packets. EVPN with VXLAN encapsulation allows you to create a logical network for hosts that span across a physical network and supports up to 16 million VXLAN segments. For more information on EVPN and VXLAN, see *Understanding EVPN with VXLAN Data Plane Encapsulation*

Related Documentation

- [Understanding the Flow of Data Packets in a Junos Fusion Topology on page 26](#)
- [Junos Fusion Provider Edge Overview on page 3](#)

Local Switching on Junos Fusion

Junos Fusion supports packet forwarding both on the aggregation device and on satellite devices. The default behavior is to forward the packets received on the extended port to the aggregation device. The satellite device does not perform any processing on the incoming traffic. The aggregation device processes and directs the data traffic.

Local switching in Junos Fusion reduces the traffic that is exchanged between satellite devices and the aggregation device by handling some of the local switching. When you enable local switching, the satellite device handles the bridging traffic locally on the satellite device. The satellite device maintains a bridge forwarding table with the local MAC addresses for devices that are connected directly to the satellite device and forwards the data packets with local MAC addresses. Packets with unknown MAC addresses are sent to the aggregate device. Local switching applies to all the ports on the satellite device.

To configure local switching on a satellite device, include the **local-switching** statement in the forwarding options hierarchy:

```
[edit forwarding-options]
satellite {
  fpc slot {
    local-switching;
  }
}
```

Selective VLAN Local Switching

In some cases, you might want to enable local switching for only a select number of VLANs on the satellite device—for example, offloading data traffic based on the type of service. This will allow you to control traffic more precisely. To enable selective VLAN local switching on a satellite device, include selected VLANs in a virtual switch routing instance. VLANs that are not included in the routing instance will default to forwarding data packets to the aggregate device.

To configure selective VLAN local switching on a satellite device, include the **selective-vlan-switching** statement in the forwarding options hierarchy with a virtual switch routing instance:

```
[edit forwarding-options]
satellite {
  fpc slot {
    selective-vlan-switching {
      routing-instance routing-instance-name;
    }
  }
}
```

When you have digital subscriber line access multiplexer (DSLAM) ports and broadband network gateway (BNG) ports on a satellite device, you should configure the satellite device to switch traffic locally from the DSLAM ports to the BNG port while restricting the traffic between two DSLAM ports. Configure the satellite device to switch traffic locally from a DSLAM port to a BNG port by including the **core-facing** keyword in all BNG port interfaces. Restrict switched traffic between DSLAM ports by including the **no-local switching** keyword in the bridge domain.

Policer

Traffic policing enables you to control the maximum rate of traffic that will be sent or received on an interface. A policer defines a set of traffic rate limits and sets the action for traffic that does not conform to the configured limits. Packets in a traffic flow that do not conform to traffic limits are either discarded or are marked with a different forwarding class or packet loss priority (PLP) level.

You can limit the flow of Layer 2 traffic that is sent to the aggregation device by applying an ingress policer at the satellite device. You configure the Layer 2 ingress policer by using the **input-policer** statement at the **[edit interfaces interface-name layer2-policer]** hierarchy level. Because the satellite device is only aware of locally switched logical interface, the ingress policer is applied to Layer 2 input traffic at the satellite device ports.

Example: Configuring Selective VLAN Local Switching

In this configuration example, the satellite device is configured with the following options:

- VLANs 101, 102, 103, and 104 are enabled for selective VLAN local switching.
- VLAN 101 and 102 have DSLAM traffic.
- Interface xe-100/0/0 is a BNG port.
- Interfaces xe-100/0/1 and xe-100/0/2

```

interfaces {
  xe-100/0/0 {
    unit 0 {
      family bridge {
        interface-mode trunk;
        vlan-id-list [100-110];
        core-facing;
      }
    }
  }
  xe-100/0/1 {
    layer2-policer {
      input-policer SD-policer-A;
    }
    unit 0 {
      family bridge {
        interface-mode trunk;
        vlan-id-list [100-110];
      }
    }
  }
  xe-100/0/2 {
    layer2-policer {
      input-policer SD-policer-A;
    }
    unit 0 {
      family bridge {
        interface-mode trunk;
        vlan-id-list [100-110];
      }
    }
  }
}

routing-instances {
  vs-1 {
    instance-type virtual-switch;
    interface xe-100/0/0.0;
    interface xe-100/0/2.0;
    interface xe-100/0/2.0;
    bridge-domains {
      bd-1 {
        vlan-id 101;
        no-local-switching;
      }
    }
  }
}

```

```
    }  
    bd-2 {  
        vlan-id 102;  
        no-local-switching;  
    }  
    bd-3 {  
        vlan-id 103;  
    }  
    bd-4 {  
        vlan-id 104;  
    }  
    }  
}  
forwarding-options {  
    satellite {  
        fpc 100 {  
            sd-vlan-switching {  
                routing-instance vs-1;  
            }  
        }  
    }  
}
```

Related Documentation

- *Two-Color Policer Configuration Overview*

CHAPTER 2

Junos Fusion Provider Edge Configuration

- [Configuring Junos Fusion Provider Edge on page 39](#)
- [Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion on page 54](#)

Configuring Junos Fusion Provider Edge

This topic provides the instructions needed to configure a Junos Fusion Provider Edge. The instructions in this topic can also be used to add a new satellite device to a Junos Fusion Provider Edge after initial installation. It covers:

- [Preparing the Aggregation Device on page 40](#)
- [Configuring the Cascade Ports on the Aggregation Device on page 41](#)
- [Configuring the FPC Slot Identifiers on page 41](#)
- [Configuring Software Upgrade Groups on the Aggregation Device on page 43](#)
- [Preparing the Satellite Device on page 45](#)
- [Adding Satellite Devices to the Junos Fusion Provider Edge on page 46](#)

Preparing the Aggregation Device

This section provides instructions on the required steps to prepare a switch to become the aggregation device in a Junos Fusion Provider Edge.

This section does not discuss the cascade port, FPC slot identification, or the software upgrade group configuration, which are important elements of preparing your aggregation device for a Junos Fusion Provider Edge installation and are discussed in [“Configuring the Cascade Ports on the Aggregation Device” on page 41](#), [“Configuring the FPC Slot Identifiers” on page 41](#), and [“Configuring Software Upgrade Groups on the Aggregation Device” on page 43](#). The instructions for adding satellite devices to the Junos Fusion Provider Edge are also provided later in this topic.

To prepare your aggregation device for a Junos Fusion Provider Edge:

1. Enable Enhanced IP:

```
[edit]
user@aggregation-device# set chassis network-services enhanced-ip
```

2. Configure the Junos Fusion into single home mode:

```
[edit]
user@aggregation-device# set chassis satellite-management single-home satellite all
```



.....

NOTE: Configuring the Junos Fusion into single home mode using this step is optional when the aggregation device is running Junos OS Release 14.2R5 or later.

Configuring the Junos Fusion into single home mode is required when the aggregation device is running Junos OS Release 14.2R3 or 14.2R4.

.....

3. Commit the configuration to both Routing Engines:

```
[edit]
user@aggregation-device# commit synchronize
```

If you are using an aggregation device with a single Routing Engine:

```
[edit]
user@aggregation-device# commit
```

4. Ensure your aggregation device is running a version of Junos OS software that is compatible with Junos Fusion Provider Edge, such as Junos OS Release 14.2R3 or later. If the aggregation device does not have the correct version installed, upgrade your aggregation device.

```
user@aggregation-device> request system software add aggregation-device-package-name
```

5. Reboot both Routing Engines:

```
user@aggregation-device> request system reboot both-routing-engines
```

A reboot is required to enable enhanced IP.

If you only want to reboot a single Routing Engine:

```
user@aggregation-device> request system reboot
```

Reboot the other Routing Engine at a later time to ensure it is ready to manage the Junos Fusion in the event of a Routing Engine switchover.

Configuring the Cascade Ports on the Aggregation Device

A cascade port is a port on an aggregation device that connects to a satellite device. Data and control traffic is passed between the aggregation device and the satellite devices over the cascade port link.

A cascade port must be configured before a satellite device is recognized by the Junos Fusion Provider Edge. Cascade port configuration, therefore, is always a required step for configuring a Junos Fusion Provider Edge.

To configure a cascade port or ports:

1. Log in to the aggregation device.
2. Configure the interface on the aggregation device side of the link into a cascade port:

```
[edit]
user@aggregation-device# set interfaces interface-name cascade-port
```

For example, to configure interface xe-0/0/1 on the aggregation device into a cascade port:

```
[edit]
user@aggregation-device# set interfaces xe-0/0/1 cascade-port
```

3. Commit the configuration:

```
[edit]
user@aggregation-device# commit
```

If you want to commit the configuration to both Routing Engines:

```
[edit]
user@aggregation-device# commit synchronize
```

Configuring the FPC Slot Identifiers

In a Junos Fusion, each satellite device must be mapped to an FPC identifier (FPC ID). The FPC ID is used for Junos Fusion configuration, monitoring, and maintenance. Interface names—which are identified using the *type-fpc / pic / port* format—use the FPC ID as the *fpc* variable when the satellite device is participating in a Junos Fusion. For instance, built-in port 2—a gigabit Ethernet interface on a satellite device that is using 101 as it's

FPC ID— uses **ge-101/0/2** as its interface name. The range for the FPC ID is 100 -255 in Junos OS Release 14.2 and 65 to 254 in Junos OS Release 16.1 and later.

A Junos Fusion Provider Edge provides two methods of assigning an FPC identifier: Unique-ID based FPC identification and connectivity-based FPC identification. Unique-ID based FPC identification maps an FPC slot ID to a satellite device's MAC address or serial number, while Unique-ID based FPC identification maps an FPC slot ID to a cascade port. Both options are discussed in [“Understanding Junos Fusion Provider Edge Components” on page 5](#).

- To configure the FPC slot ID using connectivity-based FPC identification, enter:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc slot-id cascade-ports
interface-name
```

where *slot-id* becomes the FPC slot ID of the satellite device, and *interface-name* is the name of the interface.

For example, to configure the FPC slot ID of the satellite device that is connected to xe-0/0/1 to 101:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 cascade-ports xe-0/0/1
```

- To configure the FPC slot ID using unique-ID based FPC identification, use one of the following options:
 - To map the FPC slot ID to a satellite device's serial number:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc slot-id serial-number
serial-number
```

where *slot-id* becomes the FPC slot ID of the satellite device and *serial-number* is the satellite device's serial number. The FPC slot ID functions as the FPC slot identifier.

For instance, to map FPC slot ID 101 to the satellite device using the serial number ABCDEFGHIJKL:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 serial-number
ABCDEFGHIJKL
```

- To map the FPC slot ID to a satellite device's MAC address:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc slot-id system-id
mac-address
```

where *slot-id* becomes the FPC slot ID of the satellite device and *mac-address* is the satellite device's MAC address. The FPC slot ID functions as the FPC slot identifier.

For example, to map FPC slot ID to the satellite device using MAC address 12:34:56:AB:CD:EF:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 110 system-id
12:34:56:AB:CD:EF
```

If a prospective satellite device is connected to a Junos Fusion Provider Edge without having a configured FPC slot ID, the prospective satellite device does not participate in the Junos Fusion Provider Edge until an FPC ID is associated with it. The **show chassis satellite unprovision** output includes a list of satellite devices that are not participating in a Junos Fusion Provider Edge due to an FPC ID association issue.

Configuring Software Upgrade Groups on the Aggregation Device

A satellite software upgrade group is a group of satellite devices that are designated to upgrade to the same satellite software version using the same satellite software package. One Junos Fusion can contain multiple software upgrade groups, and multiple software upgrade groups should be configured in most Junos Fusions to avoid network downtimes during satellite software installations.

When a satellite device is added to a Junos Fusion, the aggregation device checks if the satellite device is using an FPC ID that is included in a satellite software upgrade group. If the device is connected to a satellite device that is using an FPC ID that is part of a satellite software upgrade group, the device—unless it is already running the same version of satellite software—upgrades its satellite software using the satellite software associated with the satellite software upgrade group.

When the satellite software package associated with an existing satellite software group is changed, the satellite software for all member satellite devices is upgraded using a throttled upgrade. The throttled upgrade ensures that only a few satellite devices are updated at a time to minimize the effects of a traffic disruption due to too many satellite devices upgrading software simultaneously.

The two most common methods of installing satellite software onto an aggregation device—autoconverting a device into a satellite device when it is cabled into an aggregation device and manually converting a device that is cabled into an aggregation device into a satellite device—require that a satellite software upgrade group is configured.

Software upgrade groups are configured and managed from the aggregation device.

To configure a software upgrade group:

1. Log in to the aggregation device.
2. Create the software upgrade group, and add the satellite devices to the group.

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-groups
upgrade-group-name satellite slot-id-number-or-range
```

where *upgrade-group-name* is the name of the upgrade group, and the *slot-id-number-or-range* is FPC slot ID number or range of numbers, of the satellite devices that are being added to the upgrade group. If you enter an existing upgrade

group name as the *upgrade-group-name*, you add new satellite devices to the existing software upgrade group.

For example, to create a software upgrade group named **group1** that includes all satellite devices numbered 101 through 120:

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-groups group1
satellite 101-120
```

3. Commit the configuration to both Routing Engines on the aggregation device:

```
[edit]
user@aggregation-device# commit synchronize
```

If you are using an aggregation device with a single Routing Engine or want to commit the configuration to a single Routing Engine only:

```
[edit]
user@aggregation-device# commit
```

The configuration must be committed before associating a satellite software image with the satellite software upgrade group, which is done in Step 4.

4. Associate a satellite software package with the software upgrade group:

```
user@aggregation-device> request system software add package-name upgrade-group
upgrade-group-name
```

where *package-name* is the URL to the satellite software package, and *upgrade-group-name* is the name of the upgrade group that was assigned by the user earlier in this procedure.

For example, to associate a satellite software image named **satellite-1.0R1.1-signed.tgz** that is currently stored in the **/var/tmp** directory on the aggregation device to the upgrade group named **group1**:

```
user@aggregation-device> request system software add
/var/tmp/satellite-1.0R1.1-signed.tgz upgrade-group group1
```

Associating a satellite software image to a new satellite software package can trigger a satellite software upgrade. A throttled satellite software upgrade might begin after entering the **request system software add** command to associate a satellite software package with a satellite software upgrade group. A satellite software upgrade might also be triggered when a configuration that uses the satellite software upgrade group is committed.

Preparing the Satellite Device

This section discusses the steps that must be performed on a standalone switch before converting it into a satellite device in a Junos Fusion Provider Edge.

To perform this procedure:

These instructions assume your device is already running Junos OS Release 14.1X53-D16 or later.

1. Log in to the device using the console port.
2. Zeroize the device:

```
[edit]
user@satellite-device# request system zeroize
```



NOTE: The device reboots to complete the procedure for zeroizing the device.

If you are not logged in to the device using the console port connection, your connection to the device is lost after entering the **request system zeroize** command.

If you lose your connection to the device, login using the console port.

3. (EX4300 switches only) After the reboot is complete, convert the built-in 40-Gbps QSFP+ interfaces from Virtual Chassis ports (VCPs) into network ports:

```
user@satellite-device> request virtual-chassis vc-port delete pic-slot 1 port port-number
```

For example, to convert all four built-in 40-Gbps QSFP+ interfaces on an EX4300-24P switch into network ports:

```
user@satellite-device> request virtual-chassis vc-port delete pic-slot 1 port 0
user@satellite-device> request virtual-chassis vc-port delete pic-slot 1 port 1
user@satellite-device> request virtual-chassis vc-port delete pic-slot 1 port 2
user@satellite-device> request virtual-chassis vc-port delete pic-slot 1 port 3
```

This step is required for the 40-Gbps QSFP+ interfaces that will be used as uplink interfaces in a Junos Fusion.

This step is needed because the built-in 40-Gbps QSFP+ interfaces on EX4300 switches are configured into VCPs by default, and the default settings are restored after the device is zeroized.

The number of built-in 40-Gbps QSFP+ interfaces varies by EX4300 switch model. See *EX4300 Switches Hardware Overview*.

Adding Satellite Devices to the Junos Fusion Provider Edge

This section discusses the processes for adding satellite devices to a Junos Fusion Provider Edge.

A switch must be running the satellite software to operate as a satellite device. The instructions in this procedure include the required steps to install the satellite software onto your satellite device.

You can add satellite devices to your Junos Fusion Provider Edge using one of the following procedures:

- [Autoconverting a Switch into a Satellite Device on page 47](#)
- [Manually Converting a Switch into a Satellite Device on page 50](#)
- [Configuring a Switch into a Satellite Device Before Interconnecting It into a Junos Fusion Provider Edge on page 52](#)

Autoconverting a Switch into a Satellite Device

Use this procedure to automatically configure a switch into a satellite device when it is cabled into the aggregation device.

You can use the autoconversion procedure to add one or more satellite devices to your Junos Fusion topology. The autoconversion procedure is especially useful when you are adding multiple satellite devices to your Junos Fusion, because it allows you to easily configure the entire topology before or after cabling the satellite devices to the aggregation devices.

Before you begin:

- Ensure that your aggregation device is running Junos OS Release 14.2R3 or later, and that the satellite devices are running Junos OS Release 14.1X53-D16 or later.
- Ensure that you have prepared your satellite device for the installation, following the instructions in [“Preparing the Satellite Device” on page 45](#).

To autoconvert a switch into a satellite device:

1. Cable a link between the aggregation device and the satellite device, if desired.



NOTE: You can cable the aggregation device to the satellite device at any point in this procedure.

When the aggregation device is cabled to the satellite device during this procedure, the process for converting a switch into a satellite device to finalize this process occurs immediately.

If the aggregation device is not cabled to the satellite device, the process for converting a switch into a satellite device to finalize this process starts when the satellite device is cabled to the aggregation device.

2. Log in to the aggregation device.
3. Configure the cascade ports. See [“Configuring the Cascade Ports on the Aggregation Device” on page 41](#).

For example, to configure interface xe-0/0/1 on the aggregation device into a cascade port:

```
[edit]
user@aggregation-device# set interfaces xe-0/0/1 cascade-port
```

4. Associate an FPC slot ID with each satellite device.

There are multiple methods of assigning FPC slot IDs. See [“Configuring the FPC Slot Identifiers” on page 41](#).

Examples:

- To configure the FPC slot ID of the satellite device that is connected to xe-0/0/1 to 101:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 cascade-ports
xe-0/0/1
```

- To map FPC slot ID 101 to the satellite device using the serial number ABCDEFGHIJKL:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 serial-number
ABCDEFGHIJKL
```

- To map FPC slot ID to the satellite device using MAC address 12:34:56:AB:CD:EF:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 110 system-id
12:34:56:AB:CD:EF
```

5. (Recommended) Configure an alias name for the satellite device:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc slot-id alias alias-name
```

where *slot-id* is the FPC slot ID of the satellite device defined in the previous step, and *alias-name* is the alias.

For example, to configure the satellite device numbered 101 as **qfx5100-48s-1**:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 alias qfx5100-48s-1
```

6. Configure an FPC slot ID into a software upgrade group. See [“Configuring Software Upgrade Groups on the Aggregation Device” on page 43](#).

For example, to add the satellite device using FPC slot ID 101 to an existing software group named **group1**, or create a software upgrade group named **group1** and add the satellite device using FPC slot 101 to the software upgrade group:

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-group group1 satellite
101
```

If you are creating a new software upgrade group in this step, you also need to associate the group with a satellite software image. You can skip this final step if the software upgrade group has already been created and a satellite software package association exists.

The configuration with the satellite software upgrade group must be committed before a satellite software image is associated with a satellite software upgrade group:

```
[edit]
user@aggregation-device# commit synchronize
```

After committing the configuration, associate a satellite software image named **satellite-1.0R1.1-signed.tgz** to the upgrade group named **group1**:

```
user@aggregation-device> request system software add  
/var/tmp/satellite-1.0R1.1-signed.tgz upgrade-group group1
```

7. Enable automatic satellite conversion:

```
[edit]  
user@aggregation-device# set chassis satellite-management auto-satellite-conversion  
satellite slot-id
```

For example, to automatically convert FPC 101 into a satellite device:

```
[edit]  
user@aggregation-device# set chassis satellite-management auto-satellite-conversion  
satellite 101
```

8. Commit the configuration:

```
[edit]  
user@aggregation-device# commit
```

If you want to commit the configuration to both Routing Engines:

```
[edit]  
user@aggregation-device# commit synchronize
```

The satellite software upgrade on the satellite device begins after this final step is completed, or after you cable the satellite device to a cascade port using automatic satellite conversion if you have not already cabled the satellite device to the aggregation device.

After the satellite software update, the switch operates as a satellite device in the Junos Fusion.

Manually Converting a Switch into a Satellite Device

Use this procedure to manually convert a switch into a satellite device after cabling it into the Junos Fusion Provider Edge.

This procedure should be used to convert a switch that is not currently acting as a satellite device into a satellite device. A switch might not be recognized as a satellite device for several reasons, including that the device was not previously autoconverted into a satellite device or that the switch had previously been reverted from a satellite device to a standalone switch.

Before you begin:

- Ensure that your aggregation device is running Junos OS Release 14.2R3 or later, and that the switches that will become satellite devices are running Junos OS Release 14.1X53-D16 or later.
- Ensure that you have prepared your switches that will become satellite devices for the installation, following the instructions in the [“Preparing the Satellite Device” on page 45](#) section.

To manually convert a switch into a satellite device:

1. Cable a link between the aggregation device and the satellite device.
2. Log in to the aggregation device.
3. Configure the link on the aggregation device into a cascade port, if you have not done so already. See [“Configuring the Cascade Ports on the Aggregation Device” on page 41](#).

For example, to configure interface xe-0/0/1 on the aggregation device into a cascade port:

```
[edit]
user@aggregation-device# set interfaces xe-0/0/1 cascade-port
```

4. Associate an FPC slot ID with the satellite device.

There are multiple methods of assigning FPC slot IDs. See [“Configuring the FPC Slot Identifiers” on page 41](#).

Examples:

- To configure the FPC slot ID of the satellite device that is connected to xe-0/0/1 to 101:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 cascade-ports
xe-0/0/1
```

- To map FPC slot ID 101 to the satellite device using the serial number ABCDEFGHIJKL:

```
[edit]
```

```
user@aggregation-device# set chassis satellite-management fpc 101 serial-number
ABCDEFHIJKL
```

- To map FPC slot ID to the satellite device using MAC address 12:34:56:AB:CD:EF:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 110 system-id
12:34:56:AB:CD:EF
```

5. Configure the interface on the aggregation device into a software upgrade group. See [“Configuring Software Upgrade Groups on the Aggregation Device” on page 43](#).

For example, to add the satellite device using FPC slot ID 101 to an existing software group named **group1**, or create a software upgrade group named **group1** and add the satellite device using FPC slot 101 to the software upgrade group:

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-group group1 satellite
101
```

If you are creating a new software upgrade group in this step, you also need to associate the group with a satellite software image. You can skip this final step if the software upgrade group has already been created and a satellite software package association exists.

The configuration with the satellite software upgrade group must be committed before a satellite software image is associated with the satellite software upgrade group:

```
[edit]
user@aggregation-device# commit synchronize
```

After committing the configuration, associate a satellite software image named **satellite-1.0R1.1-signed.tgz** to the upgrade group named **group1**:

```
user@aggregation-device> request system software add
/var/tmp/satellite-1.0R1.1-signed.tgz upgrade-group group1
```

6. Commit the configuration:

```
[edit]
user@aggregation-device# commit
```

If you want to commit the configuration to both Routing Engines:

```
[edit]
user@aggregation-device# commit synchronize
```

7. Manually configure the switch into a satellite device:

```
user@aggregation-device> request chassis satellite interface interface-name device-mode
satellite
```

For example, to manually configure the switch that is connecting the satellite device to interface xe-0/0/1 on the aggregation device into a satellite device:

```
user@aggregation-device> request chassis satellite interface xe-0/0/1 device-mode satellite
```

The satellite software upgrade on the satellite device begins after this final step is completed.

After the satellite software update, the switch operates as a satellite device in the Junos Fusion Provider Edge.

Configuring a Switch into a Satellite Device Before Interconnecting It into a Junos Fusion Provider Edge

Use this procedure to install the satellite software onto a switch before interconnecting it into the Junos Fusion Provider Edge as a satellite device. Installing the satellite software on a switch before interconnecting it into the Junos Fusion Provider Edge allows you to more immediately deploy the switch as a satellite device by avoiding the downtime associated with the satellite software installation procedure in the Junos Fusion Provider Edge.

Before you begin:

- Ensure that your switch that will become a satellite device is running Junos OS Release 14.1X53-D16 or later. See *Installing Software Packages on QFX Devices* for information on upgrading Junos OS on your device.
- Ensure that you have copied the satellite software onto the device that will become a satellite device.

You can manually install the satellite software onto a switch by entering the following command:

```
user@satellite-device> request chassis device-mode satellite URL-to-satellite-software
```

For instance, to install the satellite software package **satellite-1.0R1.1-signed.tgz** stored in the **/var/tmp/** folder on the switch:

```
user@satellite-device> request chassis device-mode satellite  
/var/tmp/satellite-1.0R1.1-signed.tgz
```

The device will reboot to complete the satellite software installation.

After the satellite software is installed, follow this procedure to connect the switch into the Junos Fusion Provider Edge:

1. Log in to the aggregation device.
2. Configure the link on the aggregation device into a cascade port, if you have not done so already. See [“Configuring the Cascade Ports on the Aggregation Device” on page 41](#).

For example, to configure interface xe-0/0/1 on the aggregation device into a cascade port:

```
[edit]  
user@aggregation-device# set interfaces xe-0/0/1 cascade-port
```


3. Associate an FPC slot ID with the satellite device.

There are multiple methods of assigning FPC slot IDs. See [“Configuring the FPC Slot Identifiers” on page 41](#).

Examples:

- To configure the FPC slot ID of the satellite device that is connected to xe-0/0/1 to 101:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 cascade-ports
xe-0/0/1
```

- To map FPC slot ID 101 to the satellite device using the serial number ABCDEFGHIJKL:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 101 serial-number
ABCDEFGHIJKL
```

- To map FPC slot ID to the satellite device using MAC address 12:34:56:AB:CD:EF:

```
[edit]
user@aggregation-device# set chassis satellite-management fpc 110 system-id
12:34:56:AB:CD:EF
```

4. Configure the satellite switch into a satellite software upgrade group that is using the same version of satellite software that was manually installed onto the switch. See [“Configuring Software Upgrade Groups on the Aggregation Device” on page 43](#).

This step is advisable, but not always required. Completing this step ensures that the satellite software on your device is not upgraded to the version of satellite software associated with the satellite software upgrade group upon installation.

5. Commit the configuration to both Routing Engines:

```
[edit]
user@aggregation-device# commit synchronize
```

If you want to commit the configuration to a single Routing Engine:

```
[edit]
user@aggregation-device# commit
```

6. Cable a link between the aggregation device and the satellite device.

Related Documentation

- [Verifying Connectivity, Device States, Satellite Software Versions, and Operations in a Junos Fusion on page 87](#)
- [Understanding Junos Fusion Provider Edge Components on page 5](#)
- [Understanding Software in a Junos Fusion Provider Edge on page 18](#)

Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion

This topic shows how to configure the alarm levels for link-down events on a satellite device in a Junos Fusion.

To configure system alarm handling in a Junos Fusion using an environment monitoring satellite policy:

1. Log in to the aggregation device.
2. Create and name the environment monitoring satellite policy:

```
[edit]
user@aggregation-device# set policy-options satellite-policies
environment-monitoring-policy policy-name
```

For example, to create an environment monitoring satellite policy named **linkdown-alarm-monitoring-1**:

```
[edit]
user@aggregation-device# set policy-options satellite-policies
environment-monitoring-policy linkdown-alarm-monitoring-1
```

3. Configure the link-down alarm behavior for the Junos Fusion using one or both of the following methods:
 - Set the default link-down alarm to one setting whenever it is experienced in a Junos Fusion:

```
[edit policy-options satellite-policies environment-monitoring-policy
policy-name]
user@aggregation-device# set alarm linkdown [ignore | red | yellow]
```

For example, to set the default link-down alarm to ignore for **linkdown-alarm-monitoring-1**:

```
[edit policy-options satellite-policies environment-monitoring-policy
linkdown-alarm-monitoring-1]
user@aggregation-device# set alarm linkdown ignore
```

- Set the link-down alarm behavior for a specific satellite device hardware model using terms:

```
[edit policy-options satellite-policies environment-monitoring-policy
policy-name]
user@aggregation-device# set term term-name from product-model model-name alarm
linkdown [ignore | red | yellow]
```

where *term-name* is the user-defined name of the term, and *model-name* defines the product model of the satellite device that uses the satellite policy.

You can apply environment monitoring satellite policies individually or globally. You can, therefore, create multiple policies using the instructions in this step and apply them to different satellite devices in your Junos Fusion, when needed.

You can use multiple terms in the same environment monitoring satellite policy.

For example, if you wanted to configure EX4300 switches acting as satellite devices to send yellow alarms when link-down errors occur while QFX5100 switches acting as satellite devices send red alarms for the same condition:

```
[edit policy-options satellite-policies environment-monitoring-policy
linkdown-alarm-monitoring-1]
user@aggregation-device# set term ex4300-yellow from product-model EX4300* alarm
linkdown yellow
user@aggregation-device# set term qfx5100-red from product-model QFX5100* alarm
linkdown red
```

4. Associate the environment monitoring satellite policy with a Junos Fusion configuration.

- To associate an environment monitoring satellite policy for all satellite devices in a Junos Fusion:

```
[edit chassis satellite-management]
user@aggregation-device# set environment-monitoring-policy policy-name
```

For example, to associate an environment monitoring satellite policy named **linkdown-alarm-monitoring-1** for all satellite devices in a Junos Fusion:

```
[edit chassis satellite-management]
user@aggregation-device# set environment-monitoring-policy
linkdown-alarm-monitoring-1
```

- To associate an environment monitoring satellite policy for select FPC IDs in a Junos Fusion:

```
[edit chassis satellite-management fpc slot-id]
user@aggregation-device# set environment-monitoring-policy policy-name
```

For example, to associate an environment monitoring satellite policy named **linkdown-alarm-monitoring-1** for the satellite device associated with FPC ID 101 in a Junos Fusion:

```
[edit chassis satellite-management fpc 101]
user@aggregation-device# set environment-monitoring-policy
linkdown-alarm-monitoring-1
```

You can configure a different environment monitoring policy for a single satellite device using the **fpc slot-id** when an environment monitoring policy for all satellite devices is configured. The environment monitoring policy for the FPC is enabled in cases when both an individual and global environment monitoring policy are configured.

5. Commit the configuration to both Routing Engines:

```
[edit]
user@aggregation-device# commit synchronize
```

If you want to commit the configuration to the active Routing Engine only:

```
[edit]  
user@aggregation-device# commit
```

- Related Documentation**
- [Configuring Junos Fusion Provider Edge on page 39](#)
 - *Configuring or Expanding a Junos Fusion Enterprise*

CHAPTER 3

Junos Fusion Provider Edge Configuration Statements

- [aging-timer \(Junos Fusion\) on page 58](#)
- [alarm \(Satellite Policies\) on page 59](#)
- [alias \(Junos Fusion\) on page 60](#)
- [auto-satellite-conversion \(Junos Fusion\) on page 61](#)
- [cascade-port on page 62](#)
- [cascade-ports on page 63](#)
- [description \(Junos Fusion\) on page 64](#)
- [environment-monitoring-policy \(satellite-management\) on page 65](#)
- [environment-monitoring-policy \(satellite-policies\) on page 66](#)
- [fpc \(Junos Fusion\) on page 67](#)
- [linkdown \(satellite-policies alarm\) on page 68](#)
- [network-services on page 69](#)
- [satellite \(Junos Fusion Automatic Satellite Conversion\) on page 70](#)
- [satellite \(Junos Fusion Satellite Software Upgrade Groups\) on page 71](#)
- [satellite-management \(Junos Fusion\) on page 72](#)
- [serial-number \(Junos Fusion\) on page 74](#)
- [selective-vlan-switching on page 75](#)
- [single-home \(Junos Fusion\) on page 75](#)
- [system-id \(Junos Fusion\) on page 76](#)
- [term \(satellite-policies\) on page 78](#)
- [upgrade-groups \(Junos Fusion\) on page 80](#)

aging-timer (Junos Fusion)

Syntax	aging-timer <i>aging-timer</i> ;
Hierarchy Level	[edit chassis satellite-management]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Configure the aging timer on the aggregation device in a Junos Fusion.</p> <p>The aging timer is used on the aggregation device to specify the amount of time, in minutes, to maintain the device state of an unreachable satellite device before deleting the satellite device from the Junos Fusion.</p> <p>If the unreachable satellite device is discovered before the aging timer expires, the satellite device is reactivated in the Junos Fusion without having to restore its device state.</p>
Default	The default aging time is 10 minutes.
Options	The remaining statements are explained separately. Range: 2 through 60,000 minutes
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Configuring or Expanding a Junos Fusion Enterprise</i>• Configuring Junos Fusion Provider Edge on page 39

alarm (Satellite Policies)

Syntax	alarm { linkdown [ignore red yellow] }
Hierarchy Level	[edit policy-options satellite-policies environment-monitoring-policy <i>policy-name</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Configure the link down alarm that is sent within the Junos Fusion whenever a satellite device experiences a link-down error.
Default	Link-down alarms are not sent on satellite devices in a Junos Fusion until an environment monitoring policy is configured.
Options	The remaining statements are explained separately.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion on page 54• Understanding Satellite Policies in a Junos Fusion on page 30

alias (Junos Fusion)

Syntax	<code>alias <i>alias</i>;</code>
Hierarchy Level	[edit chassis satellite-management fpc <i>slot-id</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Configure an alias to label a satellite device.</p> <p>Satellite device alias configuration is optional, but recommended. In a Junos Fusion, satellite device aliases assist with administration tasks, such as monitoring satellite devices using show command outputs, as well as with some configuration tasks that provide an option to identify a satellite device by its alias.</p>
Default	Satellite devices are not assigned an alias, by default.
Options	alias —The user-defined text name of the alias.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Configuring or Expanding a Junos Fusion Enterprise</i>• Configuring Junos Fusion Provider Edge on page 39

auto-satellite-conversion (Junos Fusion)

Syntax	<code>auto-satellite-conversion { satellite [slot-id range all]; }</code>
Hierarchy Level	[edit chassis satellite-management]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Enable automatic satellite conversion in a Junos Fusion.</p> <p>Automatic satellite conversion automatically configures a switch into a satellite device when it is cabled into the aggregation device.</p> <p>Additional configuration steps are required to add satellite devices to a Junos Fusion using automatic satellite conversion. See “Configuring Junos Fusion Provider Edge” on page 39 or <i>Configuring or Expanding a Junos Fusion Enterprise</i>.</p>
Options	The remaining statements are explained separately.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Configuring or Expanding a Junos Fusion Enterprise</i>• Configuring Junos Fusion Provider Edge on page 39

cascade-port

Syntax	<code>cascade-port;</code>
Hierarchy Level	<code>[edit interfaces <i>interface-name</i>]</code>
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Configure the specified interface on the aggregation device in a Junos Fusion into a cascade port.</p> <p>Additional configuration is required to configure cascade ports on a Junos Fusion. See “Configuring Junos Fusion Provider Edge” on page 39 or <i>Configuring or Expanding a Junos Fusion Enterprise</i>.</p>
Default	No interfaces are cascade ports, by default.
Options	<i>interface-name</i> —Specifies the name of the interface.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Configuring or Expanding a Junos Fusion Enterprise</i>• Configuring Junos Fusion Provider Edge on page 39

cascade-ports

Syntax	<code>cascade-ports <i>interface-name</i>;</code>
Hierarchy Level	[edit chassis satellite-management fpc <i>slot-id</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Associate a cascade port with an FPC slot ID number in a Junos Fusion.</p> <p>The FPC slot ID of the satellite device is determined by the value entered as the FPC <i>slot-id</i>. For instance, if the set chassis satellite-management fpc 105 cascade-ports xe-0/0/1 statement is used to configure interface xe-0/0/1 into a cascade port, the satellite device that connects to interface xe-0/0/1 has an FPC slot ID of 105 in the Junos Fusion.</p> <p>A Junos Fusion provides two methods of assigning an FPC identifier: Unique ID-based FPC identification and connectivity-based FPC identification. Unique ID-based FPC identification maps an FPC slot ID to a satellite device's MAC address or serial number, while connectivity-based FPC identification maps an FPC slot ID to a cascade port. This statement is used to assign an FPC ID using connectivity-based FPC identification by mapping an FPC slot ID to a cascade port.</p> <p>In a Junos Fusion, each satellite device must be mapped to an FPC identifier (FPC ID). The FPC ID is used for Junos Fusion configuration, monitoring, and maintenance. Interface names—which are identified using the <i>type-fpc / pic / port</i> format—use the FPC ID as the <i>fpc</i> variable when the satellite device is participating in a Junos Fusion. For instance, built-in port 2—a Gigabit Ethernet interface on a satellite device that is using 101 as its FPC ID—uses ge-101/0/2 as its interface name.</p> <p>For additional information on the role of FPC slot IDs in a Junos Fusion, see “Understanding Junos Fusion Provider Edge Components” on page 5 or <i>Understanding Junos Fusion Enterprise Components</i>.</p>
Default	No FPC slot IDs are associated with satellite devices, by default.
Options	<i>interface-name</i> —Specifies the name of the interface.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> Configuring or Expanding a Junos Fusion Enterprise Configuring Junos Fusion Provider Edge on page 39

description (Junos Fusion)

Syntax	<code>description <i>description</i>;</code>
Hierarchy Level	[edit chassis satellite-management fpc <i>slot-id</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Configure a description for the satellite device. The description is optional and used for information purposes only.
Default	Satellite devices do not have descriptions, by default.
Options	<i>description</i> —A text description of the satellite device.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• <i>Configuring or Expanding a Junos Fusion Enterprise</i>

environment-monitoring-policy (satellite-management)

Syntax	environment-monitoring-policy <i>policy-name</i> ;
Hierarchy Level	[edit chassis satellite-management] [edit chassis satellite-management fpc slot-id]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Enable an environment monitoring policy in a Junos Fusion.</p> <p>You configure environment monitoring policies for a Junos Fusion in the [edit policy-options environment-monitoring-policy <i>policy-name</i>] hierarchy.</p> <p>You can configure an environment monitoring policy in a Junos Fusion for a single satellite device using the fpc slot-id option, or for all satellite devices in the Junos Fusion by not specifying the fpc slot-id option.</p> <p>You can configure a different environment monitoring policy for a single satellite device using the fpc slot-id when an environment monitoring policy for all satellite devices is configured. The environment monitoring policy for the FPC is enabled in cases when both an individual and global environment monitoring policy are configured.</p>
Default	<p>No environment monitoring policies for the Junos Fusion are present.</p> <p>If you enable an environment monitoring policy in a Junos Fusion without specifying the fpc slot-id option, the environment monitoring policy is applied for all satellite devices in the Junos Fusion.</p>
Options	<p><i>policy-name</i>—Specifies the name of the environment monitoring policy.</p> <p>The <i>policy-name</i> name is defined as part of the environment monitoring policy configuration procedure, which is handled in the [edit policy-options environment-monitoring-policy <i>policy-name</i>] hierarchy.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion on page 54 • Understanding Satellite Policies in a Junos Fusion on page 30

environment-monitoring-policy (satellite-policies)

Syntax	<pre>environment-monitoring-policy <i>policy-name</i>{ alarm { linkdown [ignore red yellow] } term <i>term-name</i>{ from { product-model <i>model-name</i>; } } }</pre>
Hierarchy Level	[edit policy-options satellite-policies]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Configure an environment monitoring satellite policy for a device or devices in a Junos Fusion.</p> <p>An environment monitoring satellite policy is used to configure alarm behavior on satellite devices in a Junos Fusion.</p> <p>The environment monitoring policy is applied to a Junos Fusion using the environment-monitoring-policy statement in the [edit <i>chassis</i> satellite-management] or [edit <i>chassis</i> satellite-management <i>fpc slot-id</i>] hierarchy levels.</p>
Options	<p><i>policy-name</i>—Specifies the user-defined name of the environment monitoring policy.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion on page 54• Understanding Satellite Policies in a Junos Fusion on page 30

fpc (Junos Fusion)

Syntax	<pre>fpc slot-id{ alias alias; cascade-ports interface-name; description description; environment-monitoring-policy policy; serial-number serial-number; system-id mac-address; uplink-failure-detection { candidate-uplink-policy policy; } local switching; selective-vlan-switching{ routing-instance routing-instance; } }</pre>
Hierarchy Level	[edit chassis satellite-management]
Release Information	<p>Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.</p> <p>Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.</p> <p>Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.</p> <p>local-switching and selective-vlan-switching introduced in Junos OS Release 17.2R1 for Junos Fusion Provider Edge.</p>
Description	Configure an FPC identifier for a satellite device within a Junos Fusion, or modify the configuration of an existing satellite device in a Junos Fusion.
Options	<p>slot-id—Specifies the FPC identifier of the device and functions as the FPC identifier in the interface name when configuring satellite device interfaces.</p> <p>In a Junos Fusion Data Center, the <i>slot-id</i> must have a value in the range of 65 to 254.</p> <p>In a Junos Fusion Enterprise or Junos Fusion Provider Edge, the <i>slot-id</i> must have a value of 34 or greater.</p> <p>local switching—Enables local-switching for all the ports on the satellite device.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Junos Fusion Provider Edge on page 39 • Configuring or Expanding a Junos Fusion Enterprise

linkdown (satellite-policies alarm)

Syntax	linkdown [ignore red yellow]
Hierarchy Level	[edit policy-options satellite-policies environment-monitoring-policy <i>policy-name</i> alarm]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Configure the alarm behavior when an Ethernet link goes down on a satellite device in a Junos Fusion.</p> <p>The configured alarm behavior can be applied to any satellite device in the Junos Fusion. The alarm behavior is applied to satellite devices using environment monitoring policies.</p>
Options	<p>ignore—Do not signal an alarm when an Ethernet link-down event occurs.</p> <p>red—Raise a major alarm when an Ethernet link-down event occurs.</p> <p>yellow—Raise a minor alarm when an Ethernet link-down event occurs.</p>
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion on page 54• Understanding Satellite Policies in a Junos Fusion on page 30

network-services

Syntax	<code>network-services (ethernet enhanced-ethernet ip enhanced-ip lan);</code>
Hierarchy Level	[edit chassis]
Release Information	Statement introduced before Junos OS Release 8.5. enhanced-ethernet and enhanced-ip options introduced in Junos OS Release 11.4. limited-ifl-scaling option introduced in Junos OS Release 15.1R3 for MX Series routers.
Description	Set the router's network services to a specific mode of operation. On MX240, MX480, and MX960 routers, MPC5E and MPC7E power on only if the network services mode configured is enhanced-ip or enhanced-ethernet . MX2010 and MX2020 support only enhanced-ip and enhanced-ethernet network services modes.
Default	<ul style="list-style-type: none"> MX80, MX104, MX2010, MX2020—enhanced-ip MX240, MX480, MX960—ip
Options	<p>ethernet—Set the router's network services to Ethernet and use standard, compiled firewall filter format.</p> <p>enhanced-ethernet—Set the router's network services to enhanced Ethernet and use enhanced mode capabilities. Only MPCs and MS-DPCs are powered on in the chassis.</p> <p>ip—Set the router's network services to Internet Protocol and use standard, compiled firewall filter format.</p> <p>enhanced-ip—Set the router's network services to enhanced Internet Protocol and use enhanced mode capabilities. Only MPCs and MS-DPCs are powered on in the chassis. Non-service DPCs do not work with enhanced network services mode options. This feature is enabled by default on MX80, MX104, MX2010, and MX2020 Universal Routing Platforms.</p> <p>lan—Set the router's network services to LAN and use standard, compiled firewall filter format. Reboot the system after setting the router's network services to LAN.</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"> <i>Network Services Mode Overview</i> <i>Firewall Filters and Enhanced Network Services Mode Overview</i> <i>Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers</i> <i>Configuring Enhanced IP Network Services for a Virtual Chassis</i>

- *Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode*

satellite (Junos Fusion Automatic Satellite Conversion)

Syntax	<code>satellite [slot-id range all];</code>
Hierarchy Level	[edit chassis satellite-management auto-satellite-conversion]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Specify the interface to enable automatic software conversion in a Junos Fusion.</p> <p>The device that is cabled to the slot specified in this command is automatically converted into a satellite device.</p> <p>Additional configuration steps are required to add satellite devices to a Junos Fusion using automatic satellite conversion. See <i>Configuring or Expanding a Junos Fusion Enterprise</i> or “Configuring Junos Fusion Provider Edge” on page 39.</p>
Options	<p>slot-id—Specifies the FPC slot identifier of the device that will be automatically converted into a satellite device.</p> <p>The FPC identifier must be mapped to a cascade port interface before this command is operational. See <i>Configuring or Expanding a Junos Fusion Enterprise</i> or “Configuring Junos Fusion Provider Edge” on page 39.</p> <p>range—Specifies a range of FPC slot identifiers that will automatically be converted into satellite devices. For instance, to specify that FPC IDs 103, 104, and 105 should be automatically converted into satellite devices, enter a <i>range</i> of 103-105.</p> <p>all—Specifies that all FPC slot identifiers in the Junos Fusion will automatically be converted into satellite devices.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• <i>Configuring or Expanding a Junos Fusion Enterprise</i>

satellite (Junos Fusion Satellite Software Upgrade Groups)

Syntax	<code>satellite [<i>slot-id</i> <i>range</i> <i>all</i>];</code>
Hierarchy Level	[edit chassis satellite-management upgrade-groups <i>upgrade-group-name</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Specify the satellite device to add to the satellite software upgrade group. This statement is entered on an aggregation device in a Junos Fusion. Software upgrade groups are configured and managed using the aggregation device.
Options	<p><i>slot-id</i>—Specifies the FPC slot identification number of the satellite device that is being added to the satellite software upgrade group.</p> <p><i>range</i>—Specifies a range of FPC slot identifiers to add to the satellite software upgrade group. For instance, to specify that FPC IDs 103, 104, and 105 should be automatically converted into satellite devices, enter a <i>range</i> of 103-105.</p> <p><i>all</i>—Specifies that all FPC slot identifiers in the Junos Fusion are added to the satellite software upgrade group.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Junos Fusion Provider Edge on page 39 • <i>Configuring or Expanding a Junos Fusion Enterprise</i>

satellite-management (Junos Fusion)

```
Syntax  satellite-management {
        aging-timer aging-timer;
        auto-satellite-conversion {
            satellite [slot-id | range | all];
        }
        cluster cluster-name {
            cascade-ports interface-name;
            cluster-id cluster-id-number;
            fpc slot-id {
                alias alias;
                description description;
                member-id member-id-number;
                system-id mac-address;
            }
        }
        designated-event-forwarding
        environment-monitoring-policy policy;
        firewall
            family family-name {
                filter filter-name {
                    term term-name {
                        from {
                            match-conditions;
                        }
                        then {
                            action;
                            action-modifiers;
                        }
                    }
                }
            }
        }
        fpc slot-id {
            alias alias;
            cascade-ports interface-name;
            description description;
            environment-monitoring-policy policy;
            serial-number serial-number;
            system-id mac-address;
            uplink-failure-detection {
                candidate-uplink-policy policy;
            }
        }
        psu {
            redundancy {
                n-plus-n;
            }
        }
        redundancy-groups {
            chassis-id number;
            redundancy-group-name {
                redundancy-group-id redundancy-group-id-number;
                peer-chassis-id peer-chassis-id-number {
```

```

        inter-chassis-link interface-name;
        no-auto-iccp-provisioning;
        no-auto-vlan-provisioning;
        satellite satellite-device-fpc-IDs;
    }
}
single-home {
    satellite [slot-id | slot-id-range | all];
}
upgrade-groups upgrade-group-name {
    satellite [slot-id | range | all];
}
uplink-failure-detection {
    candidate-uplink-policy policy;
}
}

```

Hierarchy Level [edit chassis]

Release Information Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.
Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.
Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.

Description Configure and manage a Junos Fusion.

If you enter the **delete chassis satellite-management** command to delete a Junos Fusion configuration, we recommend also rebooting the Routing Engines on your device to maximize device performance.



NOTE: In a Junos Fusion Data Center with EVPN wherein VXLAN encapsulation is used, firewall filters with next-interface or next-ip actions are not supported.

Options The remaining statements are explained separately.

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

Related Documentation

- [Configuring or Expanding a Junos Fusion Enterprise](#)
- [Configuring Junos Fusion Provider Edge on page 39](#)

serial-number (Junos Fusion)

Syntax	<code>serial-number serial-number;</code>
Hierarchy Level	[edit chassis satellite-management fpc slot-id]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Bind the specified FPC slot ID to a satellite device based on the serial number.</p> <p>A Junos Fusion provides two methods of assigning an FPC identifier: Unique ID-based FPC identification and connectivity-based FPC identification. Unique ID-based FPC identification maps an FPC slot ID to a satellite device's MAC address or serial number, while unique ID-based FPC identification maps an FPC slot ID to a cascade port. This statement is used to assign an FPC ID using unique ID-based FPC identification by mapping the FPC slot ID to the satellite device's serial number.</p> <p>In a Junos Fusion, each satellite device must be mapped to an FPC identifier (FPC ID). The FPC ID is used for Junos Fusion configuration, monitoring, and maintenance. Interface names—which are identified using the <i>type-fpc / pic / port</i> format—use the FPC ID as the <i>fpc</i> variable when the satellite device is participating in a Junos Fusion. For instance, built-in port 2—a Gigabit Ethernet interface on a satellite device that is using 101 as its FPC ID—uses ge-101/0/2 as its interface name.</p> <p>For additional information on the role of FPC slot IDs in a Junos Fusion, see <i>Understanding Junos Fusion Enterprise Components</i> or “Understanding Junos Fusion Provider Edge Components” on page 5.</p> <p>If the serial number that is configured using this statement does not match the serial number of the satellite device, the device is not converted into a satellite device.</p>
Default	No FPC slot IDs are associated with satellite devices, by default.
Options	<i>serial-number</i> —Specifies the serial number of the satellite device.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• <i>Configuring or Expanding a Junos Fusion Enterprise</i>

selective-vlan-switching

Syntax	<code>selective-vlan-switching { routing-instance <i>routing-instance</i>; }</code>
Hierarchy Level	[edit forwarding-options satellite fpc],
Release Information	Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Provider Edge..
Description	Enables local switching for only a select number of VLANs on the satellite device.
Options	routing-instance —Configure routing instance.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39

single-home (Junos Fusion)

Syntax	<code>single-home { satellite [<i>slot-id</i> <i>slot-id-range</i> all]; }</code>
Hierarchy Level	[edit chassis satellite-management]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Specify that the links connecting the satellite device to the aggregation device are connected to the aggregation device only.
Options	The remaining statements are explained separately.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• Configuring or Expanding a Junos Fusion Enterprise

system-id (Junos Fusion)

Syntax	<code>system-id mac-address;</code>
Hierarchy Level	[edit chassis satellite-management fpc slot-id]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Assign the specified FPC identifier to the satellite device based on the satellite device's MAC address.</p> <p>For instance, if you wanted the satellite device using MAC address 01:02:03:AA:BB:CC to be assigned FPC identifier 101, enter the set chassis satellite-management fpc 101 system-id 01:02:03:AA:BB:CC statement.</p> <p>A Junos Fusion provides two methods of assigning an FPC identifier: Unique ID-based FPC identification and connectivity-based FPC identification. Unique ID-based FPC identification maps an FPC slot ID to a satellite device's MAC address or serial number, while connectivity-based FPC identification maps an FPC slot ID to a cascade port. This statement is used to assign an FPC ID using unique ID-based FPC identification by mapping the FPC slot ID to the satellite device's MAC address.</p> <p>In a Junos Fusion, each satellite device must be mapped to an FPC identifier (FPC ID). The FPC ID is used for Junos Fusion configuration, monitoring, and maintenance. Interface names—which are identified using the <i>type-fpc / pic / port</i> format—use the FPC ID as the <i>fpc</i> variable when the satellite device is participating in a Junos Fusion. For instance, built-in port 2—a gigabit Ethernet interface on a satellite device that is using 101 as its FPC ID—uses ge-101/0/2 as its interface name.</p> <p>For additional information on the role of FPC slot IDs in a Junos Fusion, see “Understanding Junos Fusion Provider Edge Components” on page 5 or <i>Understanding Junos Fusion Enterprise Components</i>.</p> <p>If the serial number that is configured using this statement does not match the serial number of the satellite device, the device is not converted into a satellite device.</p> <p>If the MAC address that is configured using this statement does not match the MAC address of the satellite device, the device is not converted into a satellite device.</p>
Default	No FPC slot IDs are associated with satellite devices, by default.
Options	mac-address —Specifies the MAC address of the satellite device.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.

- Related Documentation**
- [Configuring Junos Fusion Provider Edge on page 39](#)
 - *Configuring or Expanding a Junos Fusion Enterprise*

term (satellite-policies)

Syntax	<pre>term <i>term-name</i>{ from { product-model <i>model-name</i>; } }</pre>
Hierarchy Level	[edit policy-options satellite-policies candidate-uplink-policy <i>policy-name</i>], [edit policy-options satellite-policies environment-monitoring-policy <i>policy-name</i>], [edit policy-options satellite-policies forwarding-policy <i>policy-name</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Create and configure a term in a candidate uplink satellite policy, an environment monitoring satellite policy, or a forwarding policy satellite policy, within a satellite policy.</p> <p>A term in a candidate uplink policy, an environment monitoring policy, or a forwarding policy for satellite devices is used to apply the policy to certain satellite devices only. The more complex options that are available for other policies in Junos OS—such as the terms available for routing policies—are not available for satellite policies.</p> <p>The actions of a candidate uplink satellite policy, an environment monitoring satellite policy, or forwarding-policy satellite policy are defined at the [edit policy-options satellite-policies candidate-uplink-policy <i>policy-name</i>], [edit policy-options satellite-policies environment-monitoring-policy <i>policy-name</i>], and [edit policy-options satellite-policies forwarding-policy <i>policy-name</i>] hierarchy levels.</p>
Options	<p>term <i>term-name</i>—Specifies the user-defined name of the term.</p> <p>A <i>term</i> is a named structure in which match conditions and actions are defined. A candidate uplink policy or environment monitoring policy can contain multiple terms. The term name can contain letters, numbers, and hyphens (-) and can be up to 255 characters long. To include spaces in the name, enclose the entire name in double quotation marks.</p> <p>from—(Optional) Defines the match criteria for the satellite policy.</p> <p>The only match criteria available for a satellite policy is the product model.</p> <p>If you omit the from option, the satellite policy is applied globally.</p> <p>product-model <i>model-name</i>—Defines the product model of the satellite device that uses the satellite policy.</p> <p>If you want the satellite policy to apply to all EX4300 switches in the satellite device role, enter EX4300* as the <i>model-name</i>.</p>

If you want the satellite policy to apply to all QFX5100 switches in the satellite device role, enter **QFX5100*** as the *model-name*.

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

Related Documentation	<ul style="list-style-type: none">• Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion on page 54• Understanding Satellite Policies in a Junos Fusion on page 30• <i>Configuring Uplink Port Pinning for Satellite Devices on a Junos Fusion Data Center</i>• <i>Understanding Remapping Uplink Traffic Flows on a Junos Fusion Data Center</i>
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upgrade-groups (Junos Fusion)

Syntax	<pre>upgrade-groups <i>upgrade-group-name</i> { <i>satellite</i> [<i>slot-id</i> <i>range</i> all]; }</pre>
Hierarchy Level	[edit chassis satellite-management]
Release Information	Statement introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Create and name a satellite software upgrade group for a Junos Fusion, or specify an existing satellite software upgrade group to configure.</p> <p>A satellite software upgrade group is a group of satellite devices that are designated to upgrade to the same satellite software version using the same satellite software package. One Junos Fusion can contain multiple software upgrade groups, and multiple software upgrade groups should be configured in most Junos Fusions to avoid network downtimes during satellite software installations.</p> <p>The two most common methods of installing satellite software in a Junos Fusion—autoconverting a device into a satellite device when it is cabled into an aggregation device and manually converting a device that is cabled into an aggregation device into a satellite device—require a configured satellite software upgrade group.</p> <p>Software upgrade groups are configured and managed from the aggregation device.</p> <p>To associate a satellite software package with a satellite software upgrade group, use the request system software add <i>package-name</i> upgrade-group <i>upgrade-group-name</i> command.</p> <p>This statement is entered on an aggregation device in a Junos Fusion. Software upgrade groups are configured and managed from the aggregation device.</p> <p>The software upgrade group configurations must match exactly—including the same <i>package-name</i> and <i>upgrade-group-name</i>—in every Junos Fusion with dual aggregation devices to avoid satellite device downtime.</p> <p>All satellite devices in a satellite device cluster are associated with a single satellite software upgrade group, which is automatically created when a satellite device cluster becomes part of a Junos Fusion. The satellite software upgrade group is named after the satellite device cluster name, and ensures that all satellite devices in the cluster run the same version of satellite software. See <i>Understanding Software in a Junos Fusion Enterprise</i> for additional information on software management for a satellite device cluster.</p>
Default	No satellite software upgrade groups are present, by default.

A satellite software upgrade group with the name of the satellite device cluster is created automatically when a satellite device cluster is created.

Options *upgrade-group-name*—Specifies the user-defined name for the satellite software upgrade group.

The remaining statements are explained separately.

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

Related Documentation • *Configuring or Expanding a Junos Fusion Enterprise*
 • [Configuring Junos Fusion Provider Edge on page 39](#)

CHAPTER 4

Junos Fusion Provider Edge Administration

- [Managing Satellite Software Upgrade Groups in a Junos Fusion on page 83](#)
- [Verifying Connectivity, Device States, Satellite Software Versions, and Operations in a Junos Fusion on page 87](#)
- [Converting a Satellite Device in a Junos Fusion to a Standalone Device on page 98](#)
- [Installing Junos OS Software on a Standalone Device Running Satellite Software on page 102](#)

Managing Satellite Software Upgrade Groups in a Junos Fusion

This topic discusses maintaining satellite software upgrade groups in a Junos Fusion. For more information on the process for creating a satellite software upgrade group, see [“Configuring Junos Fusion Provider Edge” on page 39](#) or *Configuring or Expanding a Junos Fusion Enterprise*.

A satellite software upgrade group is a group of satellite devices that are designated to upgrade to the same satellite software version using the same satellite software package. One Junos Fusion can contain multiple software upgrade groups, and multiple software upgrade groups should be configured in most Junos Fusions to avoid network downtimes during satellite software installations.

When a satellite device is added to a Junos Fusion, the aggregation device checks if the satellite device is using an FPC ID that is included in a satellite software upgrade group. If the satellite device is using an FPC ID that is part of a satellite software upgrade group, the device upgrades its satellite software to the version of software associated with the satellite software upgrade group – unless it is already running the defined version.

When the satellite software package associated with an existing satellite software group is changed, the satellite software for all member satellite devices is upgraded using a throttled upgrade. The throttled upgrade ensures that the aggregation device is not overwhelmed with providing satellite software simultaneously to many satellite devices.

The two most common methods of installing satellite software—autoconverting a device into a satellite device when it is cabled into an aggregation device and manually converting a device that is cabled into an aggregation device into a satellite device—require a configured satellite software upgrade group.

Software upgrade groups are configured and managed from the aggregation device. All satellite devices in a satellite device cluster are part of the same software upgrade group, and a software upgrade group with the name of the satellite device cluster is automatically created when the satellite device cluster is created.

- [Creating a Satellite Software Upgrade Group on page 84](#)
- [Adding Satellite Devices to a Satellite Software Upgrade Group on page 84](#)
- [Removing a Satellite Device from a Satellite Software Upgrade Group on page 85](#)
- [Modifying the Satellite Software Used by a Satellite Software Upgrade Group on page 85](#)
- [Deleting Associated Satellite Software from a Satellite Software Upgrade Group on page 86](#)
- [Deleting Satellite Software on the Aggregation Device on page 87](#)

Creating a Satellite Software Upgrade Group

If your satellite device is a member of a satellite device cluster, a satellite software upgrade group with the name of the satellite device cluster is automatically created when the satellite device cluster is created. This satellite software upgrade group must be used to manage the satellite software for all member satellite devices in the satellite device cluster.

For information on creating a satellite software upgrade group for a satellite device that is not part of a satellite device cluster, see [“Configuring Junos Fusion Provider Edge” on page 39](#) or [Configuring or Expanding a Junos Fusion Enterprise](#).

Adding Satellite Devices to a Satellite Software Upgrade Group

To add a satellite device to an existing satellite software upgrade group, enter the **set chassis satellite-management upgrade-groups *upgrade-group-name* satellite *slot-id-or-range*** command:

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-groups
upgrade-group-name satellite slot-id-or-range
```

where *upgrade-group-name* is the name of the existing satellite software upgrade group, and the *slot-id-or-range* is the FPC slot ID or range of FPC slot IDs of the satellite devices that are being added to the upgrade group.

For example, to add FPC slot IDs 121, 122, and 123 to a satellite software upgrade group named **group1**:

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-groups group1 satellite
121-123
```

Additionally, you can use the **all** statement as your *slot-id-or-range* to include all satellite devices in the Junos Fusion in the satellite software upgrade group.

For example, to add all satellite devices in the Junos Fusion to a satellite software upgrade group named **group1**:

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-groups group1 satellite
all
```

Removing a Satellite Device from a Satellite Software Upgrade Group

To remove a satellite device from an existing satellite software upgrade group, enter the **delete chassis satellite-management upgrade-groups *upgrade-group-name* satellite *slot-id-or-range*** statement to delete the statements that initially added the member satellite devices to the satellite software upgrade group.

```
[edit]
user@aggregation-device# delete chassis satellite-management upgrade-groups
upgrade-group-name satellite slot-id-or-range
```

where *upgrade-group-name* is the name of the existing satellite software upgrade group, and the *slot-id-or-range* is the FPC slot ID or range of FPC slot IDs of the satellite devices that are being added to the upgrade group.

In cases where you want to remove some FPC slot IDs that were configured within a range of FPC slot IDs, you might consider re-creating the satellite software group by first deleting it, then re-creating it. To delete the satellite software upgrade group:

```
[edit]
user@aggregation-device# delete chassis satellite-management upgrade-groups
upgrade-group-name
```

You can then re-create the satellite software upgrade group and add satellite devices using the **set chassis satellite-management upgrade-groups *upgrade-group-name* satellite *slot-id-or-range*** statement:

```
[edit]
user@aggregation-device# set chassis satellite-management upgrade-groups
upgrade-group-name satellite slot-id-or-range
```

For more information on the satellite software upgrade group creation process, see [“Configuring Junos Fusion Provider Edge” on page 39](#) or *Configuring or Expanding a Junos Fusion Enterprise*.

Modifying the Satellite Software Used by a Satellite Software Upgrade Group

To associate a new satellite software image with the software upgrade group:

Before you begin:

- Ensure that a satellite software package is downloaded to the location where you will use it to install the satellite software.

```
user@aggregation-device> request system software add package-name upgrade-group
upgrade-group-name
```



NOTE: A satellite software *upgrade-group-name* can be a user-configured upgrade group or the name of a satellite device cluster.

To associate a satellite software image named **satellite-2.0R1.2-signed.tgz** that is currently stored in the **/var/tmp/** directory from the aggregation device to the upgrade group named **group1**:

```
user@aggregation-device> request system software add /var/tmp/satellite-2.0R1.2-signed.tgz
upgrade-group group1
```

To associate a satellite software package that was previously installed on the aggregation device with a software upgrade group:

```
user@aggregation-device> request system software add version version upgrade-group group1
```

For instance:

```
user@aggregation-device> request system software add version 2.0R1.2 upgrade-group group1
```

The satellite software upgrade group is associated with the software package after either of these commands are entered.



NOTE: A satellite software upgrade group can be a user-configured upgrade group or the name of a satellite device cluster.

If the group was already associated with a satellite software upgrade group, the previous satellite software package associated with the software group remains the second option for updating satellite software for the satellite software upgrade group. You can disassociate any satellite software package from a satellite software upgrade group using the instructions in the next section.

Deleting Associated Satellite Software from a Satellite Software Upgrade Group

This section describes how to delete a satellite software package association from a satellite software upgrade group.

This procedure is always optional. You can always update the satellite software associated with a satellite software upgrade group using the procedure in the previous section, without deleting the satellite software from the satellite software upgrade group.

When a new satellite software package is associated with a satellite software upgrade, the previous satellite software package remains associated with the upgrade group as a backup option. The satellite software upgrade group can be associated with up to two satellite software packages, so no other satellite software packages can be associated with the satellite software upgrade group.

This process disassociates the specified satellite software package from the list of potential packages used by a satellite software upgrade group. It is useful for maintenance

purposes only, like if you wanted to ensure a satellite software upgrade group was never associated with a specific satellite software package.

To disassociate a satellite software image from a satellite software upgrade group:

```
user@aggregation-device> request system software delete upgrade-group upgrade-group-name
```

where the *upgrade-group-name* is the name of the upgrade group that was assigned by the user.

For example, to delete the current satellite software image association to the upgrade group named **group1**:

```
user@aggregation-device> request system software delete upgrade-group group1
```

Deleting Satellite Software on the Aggregation Device

This section describes how to remove a satellite software package from a Junos Fusion system. This will remove the software from the aggregation device as well as any association with any satellite software upgrade groups. This should be done when another satellite software version is available and will free up the space occupied by the software being removed.



NOTE: We recommend deleting satellite software that is not in use to free up space on a QFX10000 acting as an aggregation device.

```
user@aggregation-device> request system software delete version version
```

For example:

```
user@aggregation-device> request system software delete version 2.0R1.2
```

Related Documentation

- [Configuring Junos Fusion Provider Edge on page 39](#)
- [Configuring or Expanding a Junos Fusion Enterprise](#)

Verifying Connectivity, Device States, Satellite Software Versions, and Operations in a Junos Fusion

This topic provides information on common procedures to verify connectivity, device states, satellite software versions, and other operations in a Junos Fusion. It covers:

- [Verifying a Junos Fusion Configuration on page 88](#)
- [Verifying Basic Junos Fusion Connectivity on page 88](#)
- [Verifying the Satellite Device Hardware Model on page 90](#)
- [Verifying Cascade Port and Uplink Port State on page 90](#)
- [Verifying That a Cascade Port Recognizes a Satellite Device on page 93](#)
- [Verifying Extended Port Operation on page 95](#)

- [Verifying the Satellite Software Version on page 96](#)
- [Verifying the Devices and Software Used in a Satellite Software Upgrade Group on page 97](#)

Verifying a Junos Fusion Configuration

Purpose Verify that a device is recognized as a satellite device by the aggregation device.

Action Enter the **show chassis satellite** command and review the output.



NOTE: On a Junos Fusion Data Center with a QFX10000 switch in the aggregation device role, the number of the FPC in the interface name of the cascade ports is always 0.

```
user@aggregation-device> show chassis satellite
```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
qfx5100-24q-01	100	Online	xe-0/0/1 xe-1/3/0	online online	9/2
qfx5100-24q-02	101	Online	xe-0/0/2 xe-1/3/1	online online	20/10
qfx5100-24q-03	102	Online	xe-0/0/3 xe-1/3/2	online online	16/4
qfx5100-24q-04	103	Online	xe-0/0/4 xe-1/3/3	absent online	13/3
ex4300-01	109	Online	xe-1/0/1	online	49/2
ex4300-02	110	Online	xe-1/0/2	online	49/2

Meaning Use the output of **show chassis satellite** to confirm the following connections in a Junos Fusion:

- Whether a satellite device is recognized at all by the aggregation device. If the satellite device does not appear in the **show chassis satellite** output, then it is not recognized by the aggregation device as a satellite device.
- The state of a particular satellite device, via the **Device State** output.
- The state of the cascade port connection, via the **Cascade State** output.

Verifying Basic Junos Fusion Connectivity

Purpose Verify that all satellite devices are recognized by the aggregation device, and that all cascade and extended ports are recognized.

Action Enter the **show chassis satellite** command on the aggregation device.



NOTE: On a Junos Fusion Data Center with a QFX10000 switch in the aggregation device role, the number of the FPC in the interface name of the cascade ports is always 0.

```
user@aggregation-device> show chassis satellite
```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
qfx5100-24q-01	100	Online	xe-0/0/1 xe-1/3/0	online online	9/2
qfx5100-24q-02	101	Online	xe-0/0/2 xe-1/3/1	online online	20/12
qfx5100-24q-03	102	Online	xe-0/0/3 xe-1/3/2	online online	16/6
qfx5100-24q-04	103	Online	xe-0/0/4 xe-1/3/3	online online	16/4
qfx5100-24q-05	104	Online	xe-0/0/5 xe-1/3/4	online online	13/3
qfx5100-24q-06	105	Online	xe-0/0/6 xe-1/3/5	online online	24/15
qfx5100-24q-07	106	Online	xe-0/0/7 xe-1/3/6	online online	24/15
qfx5100-24q-08	107	Online	xe-0/0/8 xe-1/3/7	online online	21/12
ex4300-01	109	Online	xe-1/0/1	online	49/2
ex4300-02	110	Online	xe-1/0/2	online	49/2
ex4300-03	111	Online	xe-1/0/3	online	49/2
ex4300-04	112	Online	xe-1/0/4	online	49/11
ex4300-05	113	Online	xe-1/0/5	online	49/11
ex4300-06	114	Online	xe-1/0/6	online	49/11
ex4300-07	115	Online	xe-1/0/7	online	49/11
ex4300-08	116	Online	xe-1/1/0	online	49/11
ex4300-09	117	Online	xe-1/1/1	online	49/11
ex4300-10	118	Online	xe-1/1/2	online	49/11
ex4300-11	119	Online	xe-1/1/3	online	49/11
ex4300-12	120	Online	xe-1/1/4	online	49/11
ex4300-13	121	Online	xe-1/1/5	online	49/11
ex4300-14	122	Online	xe-1/1/6	online	49/11
ex4300-15	123	Online	xe-1/1/7	online	49/11
ex4300-16	124	Online	xe-1/2/1	online	49/11
ex4300-17	125	Online	xe-1/2/2	online	49/11
ex4300-18	126	Online	xe-1/2/3	online	49/2
ex4300-19	127	Online	xe-1/2/4	online	49/1
ex4300-20	128	Online	xe-1/2/5	online	49/1
ex4300-21	129	Online	xe-1/2/6	online	49/1
ex4300-22	130	Online	xe-1/2/7	online	49/1

Meaning The output confirms:

- Each listed satellite device—the satellite devices are listed by alias-name in the **Alias** column or by FPC slot ID in the **Slot** column—is recognized by the aggregation device, because the **Device State** output is **Online** for every listed satellite device.

- Each cascade port is operational, because **Port State** is **online** for every cascade port. The cascade port is the port on the aggregation device that connects to the satellite device.
- The number of available and active extended ports for each satellite device, using the **Extended Ports total** and **Extended Ports up** outputs. The number of extended ports varies by satellite devices, and in this output the total number of extended ports includes both network-facing extended ports as well as uplink ports.

Verifying the Satellite Device Hardware Model

Purpose Verify the hardware model of each satellite device in the Junos Fusion.

Action Enter the **show chassis satellite terse** command on the aggregation device.

```
user@aggregation-device> show chassis satellite terse
```

Device		Extended Ports		
Slot	State	Model	Total/Up	Version
101	Online	QFX5100-48S-6Q	7/6	3.0R1.0
102	Online	QFX5100-48S-6Q	7/6	3.0R1.0
103	Online	QFX5100-48S-6Q	6/4	3.0R1.0
104	Online	QFX5100-48S-6Q	14/14	3.0R1.0
105	Online	QFX5100-48S-6Q	18/18	3.0R1.0
106	Online	QFX5100-48S-6Q	17/16	3.0R1.0
107	Online	EX4300-48T	52/6	3.0R1.0
108	Online	EX4300-48T	52/13	3.0R1.0
109	Online	EX4300-48T	51/13	3.0R1.0
110	Online	EX4300-48T	51/14	3.0R1.0
111	Online	EX4300-48T	51/13	3.0R1.0
112	Online	EX4300-48T	51/12	3.0R1.0
113	Online	EX4300-48T	51/13	3.0R1.0
114	Online	QFX5100-24Q-2P	17/13	3.0R1.0

Meaning The output shows the device model of each satellite device in the **Device Model** output, which are listed by FPC slot identification number using the **Slot** output.

This command is also useful for verifying the version satellite software running on each satellite device, as the version is listed in the **Version** output.

Verifying Cascade Port and Uplink Port State

Purpose Verify that the cascade port and uplink port interfaces are up.

Action Enter the **show chassis satellite interface** command:

```
user@aggregation-device> show chassis satellite interface
```

Interface	State	Type
lo0	Up	Loopback

sd-101/0/0	Up	Satellite
sd-102/0/0	Up	Satellite
sd-103/0/0	Up	Satellite
sd-104/0/0	Up	Satellite
sd-105/0/0	Up	Satellite
sd-106/0/0	Up	Satellite
sd-107/0/0	Up	Satellite
sd-108/0/0	Up	Satellite
sd-109/0/0	Up	Satellite
sd-110/0/0	Up	Satellite
sd-111/0/0	Up	Satellite
sd-112/0/0	Up	Satellite
sd-113/0/0	Up	Satellite
sd-114/0/0	Up	Satellite
xe-0/0/1	Up	Cascade
xe-0/0/2	Up	Cascade
xe-0/0/3	Up	Cascade
xe-0/0/4	Up	Cascade
xe-0/0/5	Up	Cascade
xe-0/0/6	Up	Cascade
xe-0/0/7	Up	Cascade
xe-0/0/8	Up	Cascade
xe-0/0/9	Up	Cascade
xe-0/2/0	Up	Cascade
xe-0/2/1	Up	Cascade
xe-0/2/2	Up	Cascade
xe-0/2/3	Up	Cascade
xe-0/2/4	Up	Cascade
xe-0/2/5	Up	Cascade
xe-0/2/6	Up	Cascade
xe-0/2/7	Up	Cascade

xe-1/0/1	Up	Cascade
xe-1/0/2	Up	Cascade
xe-1/0/3	Up	Cascade
xe-1/2/1	Up	Cascade
xe-1/2/2	Up	Cascade
xe-1/2/3	Up	Cascade
xe-2/0/0	Up	Cascade
xe-2/0/1	Up	Cascade
xe-2/0/2	Up	Cascade
xe-2/0/3	Up	Cascade
xe-2/0/4	Up	Cascade
xe-2/0/5	Up	Cascade
xe-2/0/6	Up	Cascade
xe-2/0/7	Up	Cascade
xe-2/1/0	Up	Cascade
xe-2/1/1	Up	Cascade
xe-2/1/2	Up	Cascade
xe-2/1/3	Up	Cascade
xe-2/1/4	Up	Cascade
xe-2/1/5	Up	Cascade
xe-2/1/6	Up	Cascade
xe-2/1/7	Up	Cascade
xe-2/2/0	Up	Cascade
xe-2/2/1	Up	Cascade
xe-2/2/2	Up	Cascade
xe-2/2/3	Up	Cascade
xe-2/2/4	Up	Cascade
xe-2/2/5	Up	Cascade
xe-2/2/6	Up	Cascade
xe-2/2/7	Up	Cascade

xe-2/3/0	Up	Cascade
xe-2/3/3	Dn	Cascade
xe-2/3/4	Up	Cascade
xe-2/3/5	Up	Cascade
xe-2/3/6	Up	Cascade
xe-2/3/7	Up	Cascade

Meaning The output shows:

- Whether the recognized port is up or down, using the **State** column output. The **State** column output is **Up** when the interface is up and **Dn** when the interface is down.

Verifying That a Cascade Port Recognizes a Satellite Device

Purpose Verify that a cascade port on an aggregation device recognizes a satellite device in the Junos Fusion. This procedure also provides a method of verifying the hardware and software information for each satellite device in the Junos Fusion.

Action Enter the **show chassis satellite neighbor** command:

```
user@aggregation-device> show chassis satellite neighbor
Interface  State      Port Info  System Name  Model          SW Version
xe-2/3/7   Init
xe-2/3/6   Init
xe-2/3/5   Init
xe-2/3/4   Init
xe-2/3/3   Dn
xe-2/3/0   Two-Way    xe-0/2/2    ex4300-29    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/7   Two-Way    xe-0/2/2    ex4300-28    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/6   Two-Way    xe-0/2/2    ex4300-27    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/5   Two-Way    xe-0/2/2    ex4300-26    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/4   Init
xe-2/2/3   Init
xe-2/2/2   Two-Way    xe-0/0/48:3 qfx5100-48s-06 QFX5100-48S-6Q 0.1I20150224_18
27_dc-builder
xe-2/2/1   Two-Way    xe-0/0/48:3 qfx5100-48s-05 QFX5100-48S-6Q 0.1I20150224_18
27_dc-builder
xe-2/2/0   Init
xe-2/1/7   Init
xe-2/1/6   Init
xe-2/1/5   Two-Way    xe-0/0/4:2   qfx5100-24q-09 QFX5100-24Q-2P 0.1I20150224_18
27_dc-builder
xe-2/1/4   Two-Way    xe-0/2/1     ex4300-31    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/1/3   Two-Way    xe-0/2/1     ex4300-30    EX4300-48T    0.1I20150224_182
7_dc-builder
```

xe-2/1/2	Two-Way	xe-0/2/1	ex4300-29	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-2/1/1	Two-Way	xe-0/2/1	ex4300-28	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-2/1/0	Init				
xe-2/0/7	Two-Way	xe-0/2/1	ex4300-26	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-2/0/6	Init				
xe-2/0/5	Init				
xe-2/0/4	Init				
xe-2/0/3	Init				
xe-2/0/2	Two-Way	xe-0/0/48:2	qfx5100-48s-04	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-2/0/1	Two-Way	xe-0/0/48:2	qfx5100-48s-03	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-2/0/0	Init				
xe-1/2/3	Two-Way	xe-0/0/0:0	qfx5100-24q-09	QFX5100-24Q-2P	0.1I20150224_18
27_dc-builder					
xe-1/2/2	Two-Way	xe-0/2/0	ex4300-31	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/2/1	Two-Way	xe-0/2/0	ex4300-30	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/0/3	Two-Way	xe-0/2/0	ex4300-29	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/0/2	Two-Way	xe-0/2/0	ex4300-28	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/0/1	Two-Way	xe-0/2/0	ex4300-27	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-0/2/7	Two-Way	xe-0/0/0:1	qfx5100-24q-09	QFX5100-24Q-2P	0.1I20150224_18
27_dc-builder					
xe-0/2/6	Init				
xe-0/2/5	Init				
xe-0/2/4	Two-Way	xe-0/0/48:1	qfx5100-48s-05	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/2/3	Two-Way	xe-0/0/48:1	qfx5100-48s-04	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/2/2	Two-Way	xe-0/0/48:1	qfx5100-48s-03	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/2/1	Init				
xe-0/2/0	Init				
xe-0/0/9	Two-Way	xe-0/2/0	ex4300-26	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-0/0/8	Two-Way	xe-0/2/0	ex4300-25	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-0/0/7	Two-Way	xe-0/0/48:0	qfx5100-48s-07	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/6	Two-Way	xe-0/0/48:0	qfx5100-48s-06	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/5	Two-Way	xe-0/0/48:0	qfx5100-48s-05	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/4	Two-Way	xe-0/0/48:0	qfx5100-48s-04	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/3	Two-Way	xe-0/0/48:0	qfx5100-48s-03	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/2	Two-Way	xe-0/0/48:0	qfx5100-48s-02	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/1	Init				

Meaning The output confirms:

- The cascade ports on the aggregation device that are recognized by the Junos Fusion. All recognized cascade port interfaces are listed in the **Interface** output.
- The uplink ports on the satellite devices that are connected to the cascade ports. The cascade port on each satellite device is identified in the **Port Info** column, and the satellite device itself is identified in the **System Name** output.
- Whether the cascade port to uplink port connection has initialized, using the **State** output. The **State** output is **Two-Way** when the satellite device is properly initialized, and traffic can be passed between the aggregation device and the satellite device over the link.
- The hardware model of each satellite device in the **Model** column, and the satellite software running on each satellite device in the **SW Version** output.

Verifying Extended Port Operation

Purpose Verify that a specific extended port is recognized by the aggregation device, and is operational.

Action Enter the **show chassis satellite extended-port** command on the aggregation device:

```
user@aggregation-device> show chassis satellite extended-port
```

Legend for interface types:

* -- Uplink interface

Name	State	Rx Request	Rx State	Tx Request	Tx State	Admin/Op State	IFD Idx	PCID
et-100/0/2	AddComplete	None		Ready		Up/Dn	838	110
et-104/0/2	AddComplete	None		Ready		Up/Dn	813	110
et-107/0/23	AddComplete	None		Ready		Up/Up	544	194
ge-109/0/0	AddComplete	None		Ready		Up/Up	402	115
ge-109/0/1	AddComplete	None		Ready		Up/Dn	403	114
ge-109/0/10	AddComplete	None		Ready		Up/Dn	412	113
ge-109/0/11	AddComplete	None		Ready		Up/Dn	413	112
ge-109/0/12	AddComplete	None		Ready		Up/Dn	414	123
ge-109/0/13	AddComplete	None		Ready		Up/Dn	415	122
ge-109/0/14	AddComplete	None		Ready		Up/Dn	416	125
ge-109/0/15	AddComplete	None		Ready		Up/Dn	417	124
ge-109/0/16	AddComplete	None		Ready		Up/Dn	418	131
ge-109/0/17	AddComplete	None		Ready		Up/Dn	419	130
ge-109/0/18	AddComplete	None		Ready		Up/Dn	420	133
ge-109/0/19	AddComplete	None		Ready		Up/Dn	421	132
ge-109/0/2	AddComplete	None		Ready		Up/Dn	404	117
ge-109/0/20	AddComplete	None		Ready		Up/Dn	422	127
ge-109/0/21	AddComplete	None		Ready		Up/Dn	423	126
ge-109/0/22	AddComplete	None		Ready		Up/Dn	424	129
ge-109/0/23	AddComplete	None		Ready		Up/Dn	425	128
ge-109/0/24	AddComplete	None		Ready		Up/Dn	426	103
ge-109/0/25	AddComplete	None		Ready		Up/Dn	427	102
ge-109/0/26	AddComplete	None		Ready		Up/Dn	428	105
ge-109/0/27	AddComplete	None		Ready		Up/Dn	429	104
ge-109/0/28	AddComplete	None		Ready		Up/Dn	430	107
ge-109/0/29	AddComplete	None		Ready		Up/Dn	431	106
ge-109/0/3	AddComplete	None		Ready		Up/Dn	405	116
ge-109/0/30	AddComplete	None		Ready		Up/Dn	432	109
ge-109/0/31	AddComplete	None		Ready		Up/Dn	433	108

ge-109/0/32	AddComplete	None	Ready	Up/Dn	434	135
ge-109/0/33	AddComplete	None	Ready	Up/Dn	435	134
ge-109/0/34	AddComplete	None	Ready	Up/Dn	436	137
ge-109/0/35	AddComplete	None	Ready	Up/Dn	437	136
ge-109/0/36	AddComplete	None	Ready	Up/Dn	438	144
ge-109/0/37	AddComplete	None	Ready	Up/Dn	439	143
ge-109/0/38	AddComplete	None	Ready	Up/Dn	440	146
ge-109/0/39	AddComplete	None	Ready	Up/Dn	441	145
ge-109/0/4	AddComplete	None	Ready	Up/Dn	406	119
ge-109/0/40	AddComplete	None	Ready	Up/Dn	442	140
ge-109/0/41	AddComplete	None	Ready	Up/Dn	443	139
ge-109/0/42	AddComplete	None	Ready	Up/Dn	444	142
ge-109/0/43	AddComplete	None	Ready	Up/Dn	445	141
ge-109/0/44	AddComplete	None	Ready	Up/Dn	446	148
ge-109/0/45	AddComplete	None	Ready	Up/Dn	447	147
ge-109/0/46	AddComplete	None	Ready	Up/Dn	448	150
ge-109/0/47	AddComplete	None	Ready	Up/Dn	449	149
ge-109/0/5	AddComplete	None	Ready	Up/Dn	407	118
ge-109/0/6	AddComplete	None	Ready	Up/Dn	408	121
ge-109/0/7	AddComplete	None	Ready	Up/Dn	409	120
ge-109/0/8	AddComplete	None	Ready	Up/Dn	410	111
ge-109/0/9	AddComplete	None	Ready	Up/Dn	411	110
ge-110/0/0	AddComplete	None	Ready	Up/Up	728	115
ge-110/0/1	AddComplete	None	Ready	Up/Dn	729	114

Meaning The output confirms:

- That an extended port is recognized by the aggregation device. All extended ports are listed in the **Name** column of the output.
- That the listed extended ports have been added to the Junos Fusion, as shown by the **AddComplete** output in the **State** column.
- The administrative and operational state of each extended port. An extended port is operating correctly when the **Admin State** and **Op State** outputs are both in the **Up** state.

Verifying the Satellite Software Version

Purpose Verify the satellite software versions available on the aggregation device in a Junos Fusion.

Action Enter the **show chassis satellite software** command on the aggregation device.

```

user@aggregation-device> show chassis satellite software
Version                Platforms                Group
3.0R1.1                i386 ppc                group1
                        group2
                        group3
                        group4
                        group5
3.0R1.0                i386 ppc

```

For more detailed output, you can also enter the **show chassis satellite software detail** on the aggregation device.

```
Software package version: 3.0R1.6
Platforms supported by package: i386 ppc arm arm563xx
Platform      Host Version  Models Supported
i386          3.0.3      QFX5100-24Q-2P
              QFX5100-48C-6Q
              QFX5100-48S-6Q
              QFX5100-48T-6Q
              QFX5100-96S-8Q
              QFX5100-48SH-6Q
              QFX5100-48TH-6Q
ppc           1.1.2      EX4300-24P
              EX4300-24T
              EX4300-48P
              EX4300-48T
              EX4300-48T-BF
              EX4300-48T-DC
              EX4300-48T-DC-BF
arm           1.0.0      EX2300-24P
              EX2300-24T-DC
              EX2300-C-12T
              EX4300-C-12P
arm563xx      1.0.0      EX3400-24P
              EX3400-24T
              EX3400-48T
              EX3400-48P

Current Groups: group1
                group2
                group3
                group4
                group5
```

Meaning The version of satellite software installed is displayed in the **Version** or **Software package version** column, and the satellite software upgrade group associated with each version of satellite software is listed in the **Group** or **Current Groups** output.

Verifying the Devices and Software Used in a Satellite Software Upgrade Group

Purpose Verify the satellite software upgrade groups in the Junos Fusion, and which satellite devices are part of which satellite software upgrade groups.

A satellite software upgrade group can be a user configured group or the name of a satellite device cluster.

Action Enter the **show chassis satellite upgrade-group** command on the aggregation device.

show chassis satellite upgrade-group

```
user@aggregation-device> show chassis satellite upgrade-group

Group      Sw-Version      Group      Slot      Device
__ungrouped__
group1      3.0R1.1         in-sync    107        version-in-sync
```

			108	version-in-sync
			109	version-in-sync
			110	version-in-sync
			111	version-in-sync
			112	version-in-sync
group2	3.0R1.1	in-sync	113	version-in-sync
			102	version-in-sync
			103	version-in-sync
			104	version-in-sync
			105	version-in-sync
			106	version-in-sync
			114	version-in-sync

Meaning The output shows that two satellite software upgrade groups—**ex4300** and **qfx**—have been created, and that both are using satellite software version 1.0R1.1. The **Group Slot** output shows which satellite devices—listed by FPC slot ID number—are in which software group, and the **Device State** output showing **version-in-sync** confirms that the satellite devices are running the satellite software that is associated with the satellite software upgrade group.

Related Documentation

- [Configuring Junos Fusion Provider Edge on page 39](#)
- [Configuring or Expanding a Junos Fusion Enterprise](#)

Converting a Satellite Device in a Junos Fusion to a Standalone Device

In the event that you need to convert a satellite device to a standalone device, you will need to download and install a new Junos OS software package on the satellite device. The satellite device stops participating in the Junos Fusion topology once the software installation starts.

The following steps explain how to convert a satellite device that is participating in a Junos Fusion to a standalone device running Junos OS. If you have a standalone switch that is not part of a Junos Fusion but is running satellite software, and you want the switch to run Junos OS software, see [“Installing Junos OS Software on a Standalone Device Running Satellite Software” on page 102](#).



NOTE: The QFX5100-48SH and QFX5100-48TH switch models are shipped from the factory with satellite device software. You cannot convert these switches to become standalone devices.

Conversion of EX2300 and EX3400 switches from satellite devices to standalone devices cannot be initiated from the aggregation device. To install Junos OS software on an EX2300 or EX3400 switch acting as a satellite device, see “Installing Junos OS Software on a Standalone Device Running Satellite Software” on page 102.

- Download Junos OS Software on page 99
- Disable the Automatic Conversion Configuration on page 100
- Install Junos OS Software on the Satellite Device on page 101

Download Junos OS Software

Before you install a new Junos OS software package on a satellite device, make sure you download the correct software package for that device:

- If the satellite device is a QFX5110, QFX5200 or EX4300 switch, you install a standard, signed **jinstall** version of Junos OS.
- If the satellite device is a QFX5100 switch that can be converted to a standalone device, you must install a Preboot eXecution Environment (PXE) version of Junos OS. The PXE version of Junos OS software supports the same feature set as the other Junos OS software packages for a release, but is specially engineered to install Junos OS onto a device running satellite software. The PXE Junos OS package name uses the format **install-media-pxe-qfx-5-version-domestic.tgz**.
- For Junos Fusion systems running Junos OS Release 17.2R1 and later, if the satellite device is a QFX5100 switch that can be converted to a standalone device, you must install a signed PXE version of Junos OS to convert the satellite device running satellite software to a standalone device running Junos OS software. The signed PXE Junos OS package name uses the format **install-media-pxe-qfx-5-version-domestic-signed.tgz**.

To download the version of Junos OS that you want to run on the satellite device after removing it from the Junos Fusion:

1. Using a Web browser, navigate to the Junos OS software download URL on the Juniper Networks webpage:
<https://www.juniper.net/support/downloads>
2. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.
3. Select **By Technology > Junos Platform > Junos Fusion** from the drop-down list and select the switch platform series and model for your satellite device.

4. Select the version of Junos OS that you want to run on the satellite device after removing it from the Junos Fusion.
5. Review and accept the End User License Agreement.
6. Download the software to a local host.
7. Copy the software to the routing platform or to your internal software distribution site.

Disable the Automatic Conversion Configuration

Before removing a satellite device from an operational Junos Fusion, you must disable the configuration for automatic satellite conversion. If automatic satellite conversion is enabled for the FPC slot ID, the Junos OS installation cannot proceed.

For example, the following installation on an EX4300 satellite device is blocked:

```
[edit]
user@aggregation-device> request chassis satellite install fpc-slot 103
/var/tmp/jinstall-ex-4300-14.1X53-D43.7-domestic-signed.tgz
Convert satellite device to Junos standalone device? [yes,no] (no) yes

Verified jinstall-ex-4300-14.1X53-D43.7-domestic.tgz signed by
PackageProductionEc_2017 method ECDSA256+SHA256
Satellite 103 is configured in the auto-satellite-conversion list
Please remove it from the list before converting to standalone
```

You can check the automatic satellite conversion configuration by entering the **show** statement at the **[edit chassis satellite-management auto-satellite-conversion]** hierarchy level.

1. If automatic satellite conversion is enabled for the satellite device's FPC slot ID, remove the FPC slot ID from the automatic satellite conversion configuration.

```
[edit]
user@aggregation-device# delete chassis satellite-management auto-satellite-conversion
satellite slot-id
```

For example, to remove FPC slot ID 103 from the Junos Fusion.

```
[edit]
user@aggregation-device# delete chassis satellite-management auto-satellite-conversion
satellite 103
```

2. Commit the configuration.
 - To commit the configuration to a single Routing Engine only:

```
[edit]
user@aggregation-device# commit
```


- To commit the configuration to all Routing Engines in multiple-aggregation device topology:

```
[edit]
user@aggregation-device# commit synchronize
```

Install Junos OS Software on the Satellite Device

1. To install the Junos OS software on the satellite device to convert the device to a standalone device, use the following CLI command:

```
[edit]
user@aggregation-device> request chassis satellite install fpc-slot slot-id
URL-to-software-package
```

For example, to install a software package stored in the **var/tmp** folder on the aggregation device onto an EX4300 switch acting as the satellite device using FPC slot 103:

```
[edit]
user@aggregation-device> request chassis satellite install fpc-slot 103
/var/tmp/jinstall-ex-4300-14.1X53-D43.7-domestic-signed.tgz
Convert satellite device to Junos standalone device? [yes,no] (no) yes
```

```
Verified jinstall-ex-4300-14.1X53-D43.7-domestic.tgz signed by
PackageProductionEc_2017 method ECDSA256+SHA256
Initiating Junos standalone conversion on device 103...
Response from device: Conversion started
```



NOTE: If you are converting a QFX5100 switch and the Junos Fusion is running a Junos OS release earlier than 17.2R1, you must install the unsigned PXE software package on the QFX5100 switch:

```
[edit]
user@aggregation-device> request chassis satellite install fpc-slot 103
/var/tmp/install-media-pxe-qfx-5-14.1X53-D43.7-domestic.tgz
```

The satellite device stops participating in the Junos Fusion topology once the software installation starts. The software upgrade starts after this command is entered.

2. To check the progress of the conversion, issue the **show chassis satellite fpc-slot** command:

```
[edit]
user@aggregation-device> show chassis satellite fpc-slot 103 extensive
```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports
ex4300-24t-16	103	Online	xe-1/0/3	online	52/29
xe-2/0/3	online				

When	Event	Action
------	-------	--------

```
Nov 30 15:48:22.914 Rx SW-Update JSON-RPC response Conversion started
Nov 30 15:47:54.375 Start-SW-Update Junos conversion
```

3. Wait for the reboot that accompanies the software installation to complete.
4. When you are prompted to log back into your device, uncable the device from the Junos Fusion topology. See *Removing a Transceiver*. Your device has been removed from Junos Fusion.



NOTE: The device uses a factory-default configuration after the Junos OS installation is complete.

Release History Table

Release	Description
17.2R1	For Junos Fusion systems running Junos OS Release 17.2R1 and later, if the satellite device is a QFX5100 switch that can be converted to a standalone device, you must install a signed PXE version of Junos OS to convert the satellite device running satellite software to a standalone device running Junos OS software.

Related Documentation

- [Understanding Software in a Junos Fusion Provider Edge on page 18](#)
- [Understanding Software in a Junos Fusion Enterprise](#)
- [Understanding Software in a Junos Fusion Data Center](#)

Installing Junos OS Software on a Standalone Device Running Satellite Software

This process should be used when you have a standalone switch running satellite software and you want the switch to run Junos OS software. A standalone device is running satellite software for one of the following reasons:

- It was removed from a Junos Fusion without following the instructions in [“Converting a Satellite Device in a Junos Fusion to a Standalone Device” on page 98](#), which include a Junos OS installation.
- Satellite software was installed on the device but the device was never provisioned into a Junos Fusion.



NOTE: If you are removing a satellite device from a Junos Fusion, you must first make sure that automatic satellite conversion is disabled for the satellite device's FPC slot ID. See [“Converting a Satellite Device in a Junos Fusion to a Standalone Device” on page 98](#).

To install Junos OS onto a QFX5100, QFX5100 or QFX5200 switch running satellite software:

- Select a Junos OS image that meets the satellite software to Junos OS conversion requirements. See [Junos Fusion Hardware and Software Compatibility Matrices](#) for satellite software to Junos OS conversion requirements.
- Copy the Junos OS image onto a USB flash drive and use the USB flash drive to install the Junos OS. See [Performing a Recovery Installation Using an Emergency Boot Device](#).

To install Junos OS onto an EX4300 switch running satellite software:

1. Log in to the console port of your switch.
2. Power off the switch, and power it back on.
3. While the switch is powering back on, enter the UBoot prompt (`=>`) by pressing Ctrl+C on your keyboard.
4. From the Uboot prompt, set the operating system environment mode on the switch to Junos. Save the configuration and reset the kernel:

```
=> setenv osmode junos
=> setenv snos_previous_boot 0
=> save
=> reset
```

After the reset operation completes, the loader prompt (**loader>**) appears.

5. Install Junos OS using a USB flash drive from the loader prompt. See *Booting an EX Series Switch Using a Software Package Stored on a USB Flash Drive*.

To install Junos OS onto an EX2300 or EX3400 switch running satellite software:

- Log in to the satellite software (SNOS) on the switch to be converted back to Junos OS and use the following sequence of commands to install the Junos package:

```
#####  
dd bs=512 count=1 if=/dev/zero of=/dev/sda  
echo -e "o\nn\np\n1\n\nnw" | fdisk /dev/sda  
mkfs.vfat /dev/sda1  
fw_setenv target_os  
reboot  
#####  
>>Get to the loader prompt  
#####  
loader> install --format tftp://<tftp server>/<Junos package name>
```

**Related
Documentation**

- *Understanding Junos Fusion Enterprise Software and Hardware Requirements*
- [Junos Fusion Hardware and Software Compatibility Matrices](#)
- [Converting a Satellite Device in a Junos Fusion to a Standalone Device on page 98](#)

CHAPTER 5

Junos Fusion Provider Edge Operational Commands

- request chassis device-mode satellite
- request chassis satellite disable
- request chassis satellite enable
- request chassis satellite file-copy
- request chassis satellite install
- request chassis satellite interface
- request chassis satellite login
- request chassis satellite reboot
- request chassis satellite restart
- request chassis satellite shell-command
- request system software add
- request system software delete
- request system software rollback
- request system storage cleanup
- show chassis alarms
- show chassis environment
- show chassis environment fpc
- show chassis environment pem
- show chassis environment routing-engine
- show chassis firmware
- show chassis fan
- show chassis hardware
- show chassis led satellite
- show chassis routing-engine
- show chassis satellite
- show chassis satellite extended-port

- [show chassis satellite interface](#)
- [show chassis satellite neighbor](#)
- [show chassis satellite software](#)
- [show chassis satellite statistics](#)
- [show chassis satellite unprovision](#)
- [show chassis satellite upgrade-group](#)
- [show chassis temperature-thresholds](#)
- [show interfaces extensive satellite-device](#)
- [show interfaces satellite-device](#)
- [show interfaces statistics](#)
- [show interfaces terse satellite-device](#)
- [show system core-dumps](#)
- [show system storage satellite](#)

request chassis device-mode satellite

Syntax	<code>request chassis device-mode satellite <i>package-name</i></code>
Release Information	Command introduced in Junos OS Release 14.1X53-D16.
Description	<p>Manually install satellite software onto a switch before interconnecting the switch as a satellite device into a Junos Fusion.</p> <p>There are other methods of installing satellite software onto a satellite device, and each Junos Fusion has individual requirements for manually installing satellite software. See “Configuring Junos Fusion Provider Edge” on page 39 or <i>Configuring or Expanding a Junos Fusion Enterprise</i> before manually installing satellite software.</p> <p>This command is entered from a standalone device before it is configured into a satellite device in a Junos Fusion.</p>
Options	<i>package-name</i> —The URL to the satellite software package.
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none"> • Configuring Junos Fusion Provider Edge on page 39 • <i>Configuring or Expanding a Junos Fusion Enterprise</i>
List of Sample Output	request chassis device-mode satellite /var/tmp/satellite-3.0R1.1-signed.tgz on page 107

Sample Output

`request chassis device-mode satellite /var/tmp/satellite-3.0R1.1-signed.tgz`

```
user@satellite-device> request chassis device-mode satellite
/var/tmp/satellite-3.0R1.1-signed.tgz
```

request chassis satellite disable

Syntax	<code>request chassis satellite disable</code> <device-alias <i>alias-name</i> > <fpc-slot <i>fpc-slot</i> >
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Disable the specified satellite device from the Junos Fusion.</p> <p>When a satellite device is disabled from a Junos Fusion, all extended ports are immediately placed in the down state. The satellite device cannot send or receive traffic for the Junos Fusion until it is reenabled.</p> <p>This command is useful whenever you need to disable a satellite device from a Junos Fusion, such as for troubleshooting scenarios. If you are removing a satellite device from a Junos Fusion to use the device elsewhere on the network, use the request chassis satellite install command to install Junos OS onto your satellite device before removing it from the Junos Fusion. See <i>Removing a Satellite Device from a Junos Fusion</i>.</p> <p>You can reenable a satellite device that was disabled using this command using the request chassis satellite enable command.</p>
Options	<p>device-alias <i>alias-name</i>—Disable the satellite device with the specified alias name from the Junos Fusion.</p> <p>fpc <i>fpc-slot</i>—Disable the satellite device with the specified FPC slot identifier from the Junos Fusion.</p>
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• Configuring or Expanding a Junos Fusion Enterprise
List of Sample Output	request chassis satellite disable device-alias satellite-01 on page 108 request chassis satellite disable fpc-slot 101 on page 109

Sample Output

request chassis satellite disable device-alias satellite-01

```
user@aggregation-device> request chassis satellite disable device-alias satellite-01
```


Sample Output

request chassis satellite disable fpc-slot 101

```
user@aggregation-device> request chassis satellite disable fpc-slot 101
```

request chassis satellite enable

Syntax	<code>request chassis satellite enable</code> <code><device-alias <i>alias-name</i>></code> <code><fpc-slot <i>fpc-slot</i>></code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Enable the specified device as a satellite device in a Junos Fusion.</p> <p>This command is typically not used in any standard Junos Fusion initial configuration procedure. This command is typically needed in cases where the satellite device or cascade port has been disabled and needs to be re-enabled.</p>
Options	<p>device-alias <i>alias-name</i>—Enable the satellite device with the specified alias name in the Junos Fusion.</p> <p>fpc <i>fpc-slot</i>—Enable the device with the specified FPC slot ID as a satellite device in the Junos Fusion.</p>
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none">• Configuring or Expanding a Junos Fusion Enterprise• Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	request chassis satellite enable device-alias satellite-01 on page 110 request chassis satellite enable fpc-slot 101 on page 110

Sample Output

`request chassis satellite enable device-alias satellite-01`

```
user@aggregation-device> request chassis satellite enable device-alias satellite-01
```

Sample Output

`request chassis satellite enable fpc-slot 101`

```
user@aggregation-device> request chassis satellite enable fpc-slot 101
```

request chassis satellite file-copy

Syntax	<code>request chassis satellite file-copy [remote local] <source-URL> <destination-URL></code>
Release Information	<p>Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.</p> <p>Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.</p> <p>Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.</p>
Description	Copy a file between a satellite device and an aggregation device in a Junos Fusion.
Options	<p>local—Indicate that the file-copy from satellite-device has been initiated by a local user.</p> <p>remote—Indicate that the file-copy from satellite-device has been initiated by a remote user.</p> <p>source-URL—Specify the URL of the file that is copied.</p> <p>If no device is specified as the <i>source-URL</i>, the file is copied from the aggregation device.</p> <p>To specify a satellite device in the <i>source-URL</i>, enter sdslot-id-number at the beginning of the <i>source-URL</i>. For example, enter sd101:/var/tmp/filename.txt to specify that filename.txt in the /var/tmp directory on the satellite device using FPC slot ID number 101 is the <i>source-URL</i>.</p> <p>destination-URL—Specify the destination URL where the file is copied into.</p> <p>If no device is specified as the <i>destination-URL</i>, the file is copied into the aggregation device.</p> <p>To specify a satellite device in the <i>destination-URL</i>, enter sdslot-id-number at the beginning of the <i>destination-URL</i>. For example, enter sd101:/var/tmp/ to specify the /var/tmp directory on the satellite device using FPC slot ID number 101 as the <i>source-URL</i>.</p>
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none"> • <i>Configuring or Expanding a Junos Fusion Enterprise</i> • Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	request chassis satellite file-copy on page 112

Sample Output

request chassis satellite file-copy

```
user@aggregation-device> request chassis satellite file-copy /var/tmp/file_name  
sd101:/var/tmp/
```

request chassis satellite install

Syntax `request chassis satellite install package-name
[fpc-slot fpc-slot | device-alias device-alias]
<no-confirm>`

Release Information Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.
Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.
Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.

Description Install a version of Junos OS software onto a satellite device in a Junos Fusion.

Any device operating as a satellite device in a Junos Fusion is running satellite software. A device running satellite software cannot operate as a standalone network device until it is running a version of Junos OS software.

You would typically enter this command to install Junos OS onto a satellite device before removing the satellite device from a Junos Fusion. Installing the Junos OS software onto the satellite device before removing it from the Junos Fusion allows you to more easily install the device elsewhere in your network.

If you are using the automatic satellite conversion feature to convert devices into satellite devices in your Junos Fusion, remove the FPC slot ID to the satellite device from the automatic satellite conversion configuration before using this command to install the Junos OS software. You can update the automatic satellite conversion feature using the **set chassis satellite-management auto-satellite-conversion satellite slot-id** configuration statement.

You must install a PXE version of compatible Junos OS to convert the satellite device running satellite software to a standalone device running Junos OS software on QFX5100 switches acting as satellite devices. The PXE version of Junos OS is the software that includes **pxe** in the Junos OS package name when it is downloaded from the Software Center—for example, the PXE image for Junos OS Release 14.1X53-D16 is named **install-media-pxe-qfx-5-14.1X53-D16.2.tgz**.

For Junos Fusion systems running Junos OS Release 17.2R1 and later, you must install a signed PXE version of Junos OS to convert the satellite device running satellite software to a standalone device running Junos OS software. The signed PXE Junos OS package name uses the format **install-media-pxe-qfx-5-version-domestic-signed.tgz**.

The device uses a factory-default configuration after the Junos OS installation is complete. No Junos OS configuration is modified and the previous Junos OS configuration is not restored after the Junos OS software installation.

Options ***package-name***—Specify the URL to the Junos OS image to install onto the satellite device.

fpc fpc-slot—Install the Junos OS software onto the satellite device with the specified FPC slot ID in the Junos Fusion.

device-alias *device-alias*—Install the Junos OS software onto the satellite device with the alias name in the Junos Fusion.

no-confirm—(Optional) Install the Junos OS software onto the satellite device immediately without further confirmation prompting.

Required Privilege Level system-control

Related Documentation

- [Configuring or Expanding a Junos Fusion Enterprise](#)
- [Configuring Junos Fusion Provider Edge on page 39](#)

List of Sample Output

[request chassis satellite install /var/tmp/jinstall-ex-4300-14.1X53-D16.1-domestic-signed.tgz fpc-slot 101 \(EX4300 switch as satellite device\) on page 114](#)

[request chassis satellite install /var/tmp/install-media-pxe-qfx-5-14.1X53-D16.2.tgz fpc-slot 102 \(QFX5100 switch as satellite device\) on page 114](#)

Sample Output

[request chassis satellite install /var/tmp/jinstall-ex-4300-14.1X53-D16.1-domestic-signed.tgz fpc-slot 101 \(EX4300 switch as satellite device\)](#)

```
user@aggregation-device> request chassis satellite install
/var/tmp/jinstall-ex-4300-14.1X53-D16.1-domestic-signed.tgz fpc-slot 101
Response from device:
  Conversion Started
```

[request chassis satellite install /var/tmp/install-media-pxe-qfx-5-14.1X53-D16.2.tgz fpc-slot 102 \(QFX5100 switch as satellite device\)](#)

```
user@aggregation-device> request chassis satellite install
/var/tmp/install-media-pxe-qfx-5-14.1X53-D16.2.tgz fpc-slot 102
Response from device:
  Conversion Started
```

request chassis satellite interface

Syntax	<code>request chassis satellite interface <i>interface-name</i></code> <code>device-mode satellite</code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Change the device mode for a device.</p> <p>This command is used to change a device into a satellite device for a Junos Fusion. After interconnecting a device to an aggregation device in a Junos Fusion, enter this command from the aggregation device to begin the manual satellite device conversion procedure.</p> <p>Other configuration steps, such as configuring the cascade port and creating a satellite software upgrade group, must be completed before this command can be used to convert a device into a satellite device. See “Configuring Junos Fusion Provider Edge” on page 39 or <i>Configuring or Expanding a Junos Fusion Enterprise</i>.</p>
Options	<i>interface-name</i> —Specify the name of the cascade port interface on the aggregation device that connects to the device that will be converted into a satellite device.
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none"> • Configuring Junos Fusion Provider Edge on page 39 • <i>Configuring or Expanding a Junos Fusion Enterprise</i>
List of Sample Output	request chassis satellite interface xe-0/0/1 device-mode satellite on page 115

Sample Output

request chassis satellite interface xe-0/0/1 device-mode satellite

```
user@aggregation-device> request chassis satellite interface xe-0/0/1 device-mode satellite
```

request chassis satellite login

Syntax	<code>request chassis satellite login</code> <code><fpc-slot <i>fpc-slot</i>></code> <code><interface-name <i>interface-name</i>></code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Log in to the satellite device from the aggregation device.</p> <p>This command is typically used to log in to the satellite device by expert users for debugging purposes. You can perform all configuration and administration tasks in a Junos Fusion from the aggregation device.</p>
Options	<p>fpc <i>fpc-slot</i>—Log in to the satellite device with the specified FPC slot ID.</p> <p>interface-name <i>interface-name</i>—Log in to the satellite device connected to the specified interface. The <i>interface-name</i> is the cascade port on the aggregation device.</p>
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none">• <i>Configuring or Expanding a Junos Fusion Enterprise</i>• Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	request chassis satellite login fpc-slot 101 on page 116

Sample Output

request chassis satellite login fpc-slot 101

```
user@aggregation-device> request chassis satellite login fpc-slot 101
```


request chassis satellite reboot

Syntax	<code>request chassis satellite reboot</code> <code><fpc-slot <i>fpc-slot</i>></code> <code><range <i>range</i>></code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Reboot the satellite device or devices from the aggregation device in a Junos Fusion.
Options	fpc <i>fpc-slot</i> —Reboot the satellite device with the specified FPC slot identifier. range <i>range</i> —Reboot all satellite devices in a range of FPC slot identifiers. <p>For instance, you can reboot the satellite devices using FPC slot identifiers 101, 102, and 103 by entering a <i>range</i> of 101-103.</p>
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none"> • Configuring or Expanding a Junos Fusion Enterprise • Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	request chassis satellite reboot fpc 101 on page 117 request chassis satellite reboot range 101-103 on page 117

Sample Output

request chassis satellite reboot fpc 101

```
user@aggregation-device> request chassis satellite reboot fpc 101
```

Sample Output

request chassis satellite reboot range 101-103

```
user@aggregation-device> request chassis satellite reboot range 101-103
```

request chassis satellite restart

Syntax	<code>request chassis satellite restart</code> <code>[fpc-slot <i>fpc-slot</i> range <i>range</i>]</code> <code><process-name></code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Restart a process on a satellite device or devices from the aggregation device in a Junos Fusion.</p> <p>You would typically restart a process in a Junos Fusion for troubleshooting or debugging purposes.</p> <p>This command is intended for use by expert users for debugging purposes.</p>
Options	<p>fpc <i>fpc-slot</i>—Restart the specified process on the satellite device in the specified FPC slot ID only.</p> <p>range—Restart the process on the satellite devices in the specified range of FPC slot IDs only.</p> <p>For instance, if you want to reboot the satellite devices using FPC slot IDs 101, 102, and 103, you can enter a <i>range</i> of 101-103.</p> <p>process-name—Restart the specified process on the specified FPC slot ID or range of FPC slot IDs.</p>
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none">• <i>Configuring or Expanding a Junos Fusion Enterprise</i>• Configuring Junos Fusion Provider Edge on page 39

request chassis satellite shell-command

Syntax	<code>request chassis satellite shell-command</code> <code>[fpc-slot <i>fpc-slot</i> [<i>range</i>]</code> <code><<i>remote-command</i>></code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Run a UNIX shell command for a satellite device from the aggregation device in a Junos Fusion.
Options	<p>fpc <i>fpc-slot</i>—Run the shell command on the satellite device using the specified FPC slot identifier only.</p> <p><i>range</i>—Run the shell command on the satellite devices in the specified range of FPC slot identifiers only.</p> <p>For instance, you can run the shell command on the satellite devices in FPC slot identifiers 101, 102, and 103 by entering a <i>range</i> of 101-103.</p> <p><i>remote-command</i>—Specify the UNIX shell command to run on the satellite device or devices.</p>
Required Privilege Level	system-control
Related Documentation	<ul style="list-style-type: none">• Configuring or Expanding a Junos Fusion Enterprise• Configuring Junos Fusion Provider Edge on page 39

request system software add

List of Syntax [Syntax on page 120](#)
 [Syntax \(EX Series Switches\) on page 120](#)
 [Syntax \(TX Matrix Router\) on page 120](#)
 [Syntax \(TX Matrix Plus Router\) on page 121](#)
 [Syntax \(MX Series Router\) on page 121](#)
 [Syntax \(QFX Series\) on page 121](#)
 [Syntax \(OCX Series\) on page 122](#)
 [Syntax \(SRX Series\) on page 122](#)

Syntax request system software add *package-name*
 <best-effort-load>
 <delay-restart>
 <device-alias *alias-name*>
 <force>
 <no-copy>
 <no-validate>
 <re0 | re1>
 <reboot>
 <satellite *slot-id*>
 <set [*package-name1 package-name2*]>
 <unlink>
 <upgrade-group [all | *upgrade-group-name*]>
 <upgrade-with-config>
 <satellite *slot-id*>
 <validate>
 <version *version-string*>

Syntax (EX Series Switches) request system software add *package-name*
 <best-effort-load>
 <delay-restart>
 <force>
 <no-copy>
 <no-validate>
 <re0 | re1>
 <reboot>
 <set [*package-name1 package-name2*]>
 <upgrade-with-config>
 <validate>
 <validate-on-host *hostname*>
 <validate-on-routing-engine *routing-engine*>

Syntax (TX Matrix Router) request system software add *package-name*
 <best-effort-load>
 <delay-restart>
 <force>
 <lcc *number* | scc>
 <no-copy>
 <no-validate>
 <re0 | re1>
 <reboot>

```

<set [package-name1 package-name2]>
<unlink>
<upgrade-with-config>
<validate>
<validate-on-host hostname>
<validate-on-routing-engine routing-engine>

```

Syntax (TX Matrix Plus Router) request system software add *package-name*

```

<best-effort-load>
<delay-restart>
<force>
<lcc number | sfc number>
<no-copy>
<no-validate>
<re0 | re1>
<reboot>
<set [package-name1 package-name2]>
<unlink>
<upgrade-with-config>
<validate>
<validate-on-host hostname>
<validate-on-routing-engine routing-engine>

```

Syntax (MX Series Router) request system software add *package-name*

```

<best-effort-load>
<delay-restart>
<device-alias alias-name>
<force>
<member member-id>
<no-copy>
<no-validate>
<re0 | re1>
<reboot>
<satellite slot-id>
<set [package-name1 package-name2]>
<upgrade-group [all | upgrade-group-name]>
<unlink>
<upgrade-with-config>
<validate>
<version version-string>
<validate-on-host hostname>
<validate-on-routing-engine routing-engine>

```

Syntax (QFX Series) request system software add *package-name*

```

<best-effort-load>
<component all>
<delay-restart>
<force>
<force-host>
<no-copy>
<partition>
<reboot>
<unlink>
<upgrade-with-config>

```

Syntax (OCX Series) request system software add *package-name*
<best-effort-load>
<delay-restart>
<force>
<force-host>
<no-copy>
<no-validate>
<reboot>
<unlink>
<upgrade-with-config>
<validate>

Syntax (SRX Series) request system software add *package-name*
<best-effort-load>
<delay-restart>
<no-copy>
<on-primary>
<partition>
<reboot>
<unlink>
<validate>
<validate-on-host *hostname*>
<validate-on-routing-engine *routing-engine*>

Release Information Command introduced before Junos OS Release 7.4.
best-effort-load and **unlink** options added in Junos OS Release 7.4.
Command introduced in Junos OS Release 9.0 for EX Series switches.
sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.
Partition option introduced in the command in Junos OS Release 10.1 for SRX Series devices.
Command introduced in Junos OS Release 11.1 for the QFX Series.
set [package-name1 package-name2] option added in Junos OS Release 11.1 for EX Series switches. Added in Junos OS Release 12.2 for M Series, MX Series, and T Series routers.



NOTE: On EX Series switches, the **set [package-name1 package-name2]** option allows you to install only two software packages on a mixed EX4200 and EX4500 Virtual Chassis, whereas, on M Series, MX Series, and T Series routers, the **set [package-name1 package-name2 package-name3]** option allows you to install multiple software packages and software add-on packages at the same time.

upgrade-with-config and **upgrade-with-config-format** *format* options added in Junos OS Release 12.3 for M Series routers, MX Series routers, and T Series routers, EX Series Ethernet switches, and QFX Series devices.
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
device-alias, **satellite**, **upgrade-group**, and **version** options introduced in Junos OS Release 14.2R3 for Junos Fusion.
validate-on-host and **validate-on-routing-engine** options added in Junos OS Release 15.1F3 for PTX5000 routers and MX240, MX480, and MX960 routers.

`upgrade-with-config-format format` option deleted in Junos OS Release 16.1 for M Series routers, MX Series routers, and T Series routers, EX Series Ethernet switches, and QFX Series devices.

Description



NOTE: We recommend that you always download the software image to `/var/tmp` only. On EX Series and QFX Series switches, you must use the `/var/tmp` directory. Other directories are not supported.

Install a software package or bundle on the router or switch.

For information on valid filename and URL formats, see *Format for Specifying Filenames and URLs in Junos OS CLI Commands*.



CAUTION: Any configuration changes performed after inputting the `request system software add` command will be lost when the system reboots with an upgraded version of Junos OS.



NOTE: Starting from Junos OS Release 17.2R1, PTX10008 routers do not support the `request system software add` command. Starting from Junos OS Release 17.4R1, PTX10016 routers do not support the `request system software add` command. Use the `request vmhost software add` command instead of the `request system software add` command on the PTX10008 and PTX10016 routers to install or upgrade the Junos OS software package or bundle on the router. See *request vmhost software add*.



NOTE: Starting from Junos OS Release 18.1R1, MX10003 routers do not support the `request system software add` command. Use the `request vmhost software add` command instead of the `request system software add` command on the MX10003 routers to install or upgrade the Junos OS software package or bundle on the router. See *request vmhost software add*.



NOTE: When graceful Routing Engine switchover (GRES) is enabled on a device, you must perform a unified ISSU operation to update the software running on the device. With GRES enabled, if you attempt to perform a software upgrade by entering the request system software add *package-name* command, an error message is displayed stating that only in-service-software-upgrades are supported when GRES is configured. In such a case, you must either remove the GRES configuration before you attempt the upgrade or perform a unified ISSU.



NOTE: Starting with Junos OS Release 15.1F3, the statement request system software add installs a software package for the guest OS only for the PTX5000 router with RE-DUO-C2600-16G, and for MX240, MX480, and MX960 routers with RE-S-1800X4-32G-S.

Starting with Junos OS Release 15.1F5, the statement request system software add installs a software package for the guest OS only for the MX2010 and MX2020 routers with REMX2K-1800-32G-S.

On these routers, in order to install both Junos software and host software packages, use the request vmhost software add command.

Options *package-name*—Location from which the software package or bundle is to be installed.
For example:

- */var/tmp/package-name*—For a software package or bundle that is being installed from a local directory on the router or switch.
- *protocol://hostname/pathname/package-name*—For a software package or bundle that is to be downloaded and installed from a remote location. Replace *protocol* with one of the following:
 - **ftp**—File Transfer Protocol.
Use **ftp://hostname/pathname/package-name**. To specify authentication credentials, use **ftp://<username>:<password>@hostname/pathname/package-name**. To have the system prompt you for the password, specify **prompt** in place of the password. If a password is required, and you do not specify the password or **prompt**, an error message is displayed.
 - **http**—Hypertext Transfer Protocol.
Use **http://hostname/pathname/package-name**. To specify authentication credentials, use **http://<username>:<password>@hostname/pathname/package-name**. If a password is required and you omit it, you are prompted for it.
 - **scp**—Secure copy (not available for limited editions).

Use `scp://hostname/pathname/package-name`. To specify authentication credentials, use `scp://<username>:<password>@hostname/pathname/package-name`.



NOTE:

- The *pathname* in the protocol is the relative path to the user's home directory on the remote system and not the root directory.
- Do not use the `scp` protocol in the `request system software add` command to download and install a software package or bundle from a remote location. The previous statement does not apply to the QFabric switch. The software upgrade is handled by the management process (`mgd`), which does not support `scp`.
Use the file copy command to copy the software package or bundle from the remote location to the `/var/tmp` directory on the hard disk:
`file copy scp://source/package-name /var/tmp`
Then install the software package or bundle using the `request system software add` command:
`request system software add /var/tmp/package-name`

best-effort-load—(Optional) Activate a partial load and treat parsing errors as warnings instead of errors.

component all—(QFabric systems only) (Optional) Install software package on all of the QFabric components.

delay-restart—(Optional) Install a software package or bundle, but do not restart software processes.

device-alias *alias-name*—(Junos Fusion only) (Optional) Install the satellite software package onto the specified satellite device using the satellite device's alias name.

force—(Optional) Force the addition of the software package or bundle (ignore warnings).

force-host—(Optional) Force the addition of host software package or bundle (ignore warnings) on the QFX5100 device.

lcc *number* —(TX Matrix routers and TX Matrix Plus routers only) (Optional) In a routing matrix based on the TX Matrix router, install a software package or bundle on a T640 router that is connected to the TX Matrix router. In a routing matrix based on the TX Matrix Plus router, install a software package or bundle on a router that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

member *member-id*—(MX Series routers only) (Optional) Install a software package on the specified Virtual Chassis member. Replace *member-id* with a value of 0 or 1.

partition —(QFX3500 switches only) (Optional) Format and repartition the media before installation.

satellite *slot-id*—(Junos Fusion only) (Optional) Install the satellite software package onto the specified satellite device using the satellite devices FPC slot identifier.

scc—(TX Matrix routers only) (Optional) Install a software package or bundle on a Routing Engine on a TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Install a software package or bundle on a Routing Engine on a TX Matrix Plus router. Replace *number* with 0.

no-copy—(Optional) Install a software package or bundle, but do not save copies of the package or bundle files.

no-validate—(Optional) When loading a software package or bundle with a different release, suppress the default behavior of the **validate** option.



NOTE: Software packages from unidentified providers cannot be loaded. To authorize providers, include the **provider-id** statement at the [edit system extensions provider] hierarchy level.

on-primary—(SRX Series devices only) Install image on the primary partition.

re0 | re1—(Optional) On routers or switches that support dual or redundant Routing Engines, load a software package or bundle on the Routing Engine in slot 0 (re0) or the Routing Engine in slot 1 (re1).

reboot—(Optional) After adding the software package or bundle, reboot the system. On a QFabric switch, the software installation is not complete until you reboot the component for which you have installed the software.

set [*package-name1 package-name2*]—(Mixed EX4200 and EX4500 Virtual Chassis, M Series, MX Series, and T Series routers only) (Optional) Install multiple packages at same time:

- In the case of mixed EX4200 and EX4500 Virtual Chassis, install two software packages—a package for an EX4200 switch and the same release of the package for an EX4500 switch—to upgrade all member switches in a mixed EX4200 and EX4500 Virtual Chassis.
- In the case of M Series, MX Series, and T Series routers, install multiple (two or more) software packages and software add-on packages at the same time. The variable *package-name* can either be a list of installation packages, each separated by a blank space, or the full URL to the directory or tar file containing the list of installation packages.

In each case, *installation-package* can either be a list of installation packages, each separated by a blank space, or the full URL to the directory or tar file containing the list of installation packages.

Use the **request system software add set** command to retain any SDK configuration by installing the SDK add-on packages along with the core Junos OS installation package.

unlink—(Optional) On M Series, T Series, MX Series routers, and SRX Series devices, use the unlink option to remove the software package from this directory after a successful upgrade is completed.

upgrade-group [**all** *upgrade-group-name*]—(Junos Fusion only) (Required to configure a Junos Fusion using autoconversion or manual conversion) Associate a satellite software image with a satellite software upgrade group. The satellite software package is associated with the specified satellite software upgrade group using the *upgrade-group-name*, or for all satellite software upgrade groups in a Junos Fusion when the all keyword is specified.

A satellite software upgrade group is a group of satellite devices in a Junos Fusion that are designated to upgrade to the same satellite software version using the same satellite software package. See [“Understanding Software in a Junos Fusion Provider Edge” on page 18](#), [Understanding Software in a Junos Fusion Enterprise](#), and [“Managing Satellite Software Upgrade Groups in a Junos Fusion” on page 83](#).

upgrade-with-config—(Optional) Install one or more configuration files.



NOTE: Configuration files specified with this option must have the extension `.text` or `.xml` and have the extension specified. Using the extension `.txt` will not work.

validate—(Optional) Validate the software package or bundle against the current configuration as a prerequisite to adding the software package or bundle. This is the

default behavior when the software package or bundle being added is a different release.



NOTE: The `validate` option only works on systems that do not have graceful-switchover (GRES) enabled. To use the `validate` option on a system with GRES, either disable GRES for the duration of the installation, or install using the command `request system software in-service-upgrade`, which requires nonstop active routing (NSR) to be enabled when using GRES.

validate-on-host *hostname*—(Optional) Validate the software package by comparing it to the running configuration on a remote Junos OS host. Specify a host, replacing ***hostname*** with the remote hostname. You can optionally provide the username that will be used to log in to the remote host by specifying the hostname in the format ***user@hostname***.

validate-on-routing-engine *routing-engine*—(Optional) Validate the software bundle or package by comparing it to the running configuration on a Junos OS Routing Engine on the same chassis. Specify a Routing Engine, replacing ***routing-engine*** with the routing engine name.

Additional Information

Before upgrading the software on the router or switch, when you have a known stable system, issue the **request system snapshot** command to back up the software, including the configuration, to the **/altroot** and **/altconfig** file systems. After you have upgraded the software on the router or switch and are satisfied that the new package or bundle is successfully installed and running, issue the **request system snapshot** command again to back up the new software to the **/altroot** and **/altconfig** file systems.



NOTE: The `request system snapshot` command is currently not supported on the QFabric system. Also, you cannot add or install multiple packages on a QFabric system.

After you run the **request system snapshot** command, you cannot return to the previous version of the software because the running and backup copies of the software are identical.

If you are upgrading more than one package at the same time, delete the operating system package, `jkernl`, last. Add the operating system package, `jkernl`, first and the routing software package, `jroute`, last. If you are upgrading all packages at once, delete and add them in the following order:

```
user@host> request system software add /var/tmp/jbase
user@host> request system software add /var/tmp/jkernl
user@host> request system software add /var/tmp/jpfe
```

```

user@host> request system software add /var/tmp/jdocs
user@host> request system software add /var/tmp/jroute
user@host> request system software add /var/tmp/jcrypto

```

By default, when you issue the **request system software add *package-name*** command on a TX Matrix master Routing Engine, all the T640 master Routing Engines that are connected to it are upgraded to the same version of software. If you issue the same command on the TX Matrix backup Routing Engine, all the T640 backup Routing Engines that are connected to it are upgraded to the same version of software.

Likewise, when you issue the **request system software add *package-name*** command on a TX Matrix Plus master Routing Engine, all the T1600 or T4000 master Routing Engines that are connected to it are upgraded to the same version of software. If you issue the same command on the TX Matrix Plus backup Routing Engine, all the T1600 or T4000 backup Routing Engines that are connected to it are upgraded to the same version of software.

When you install a software package and request a system reboot or install a package that requires rebuilding the Junos OS schema, such as an OpenConfig package, devices that use the ephemeral configuration database delete all ephemeral configuration data in the process of rebooting the system or rebuilding the schema. To restore the ephemeral configuration data, you must load and commit the data to the ephemeral database again.

Required Privilege Level maintenance

- Related Documentation**
- *Format for Specifying Filenames and URLs in Junos OS CLI Commands*
 - [request system software delete on page 134](#)
 - [request system software rollback on page 138](#)
 - [request system storage cleanup on page 143](#)
 - *Installing Software Packages on QFX Devices*
 - *Upgrading Software on a QFabric System*
 - [Managing Satellite Software Upgrade Groups in a Junos Fusion on page 83](#)
 - *request system software add (Maintenance)*
 - [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

- List of Sample Output**
- [request system software add validate on page 130](#)
 - [request system software add /var/tmp/ no-validate on page 130](#)
 - [request system software add no-copy no-validate reboot on page 131](#)
 - [request system software add validate-on-host on page 131](#)
 - [request system software add \(Mixed EX4200 and EX4500 Virtual Chassis\) on page 132](#)
 - [request system software add component all \(QFabric Systems\) on page 133](#)
 - [request system software add upgrade-group \(Junos Fusion\) on page 133](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request system software add validate

```

user@host> request system software add validate /var/tmp/jinstall-7.2R1.7-domestic-signed.tgz
Checking compatibility with configuration
Initializing...
Using jbase-7.1R2.2
Using /var/tmp/jinstall-7.2R1.7-domestic-signed.tgz
Verified jinstall-7.2R1.7-domestic.tgz signed by PackageProduction_7_2_0
Using /var/validate/tmp/jinstall-signed/jinstall-7.2R1.7-domestic.tgz
Using /var/validate/tmp/jinstall/jbundle-7.2R1.7-domestic.tgz
Checking jbundle requirements on /
Using /var/validate/tmp/jbundle/jbase-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jkernel-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jcrypto-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jpfe-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jdocs-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jroute-7.2R1.7.tgz
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded
Validating against /config/rescue.conf.gz
mgd: commit complete
Validation succeeded
Installing package '/var/tmp/jinstall-7.2R1.7-domestic-signed.tgz' ...
Verified jinstall-7.2R1.7-domestic.tgz signed by PackageProduction_7_2_0
Adding jinstall...

WARNING: This package will load JUNOS 7.2R1.7 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.

Saving the config files ...
Installing the bootstrap installer ...

WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
WARNING: command as soon as this operation completes.

Saving package file in /var/sw/pkg/jinstall-7.2R1.7-domestic-signed.tgz ...
Saving state for rollback ...

```

request system software add /var/tmp/ no-validate

```

user@host> request system software add no-validate
/var/tmp/junos-install-mx-x86-32-15.1R1.9.tgz
Installing package '/var/tmp/junos-install-mx-x86-32-15.1R1.9.tgz' ...
Verified manifest signed by PackageProductionEc_2015
Verified manifest signed by PackageProductionRSA_2015
Verified contents.iso
Verified issu-indb.tgz
Verified junos-x86-32.tgz
Verified kernel

```

```

Verified metatags
Verified package.xml
Verified pkgtools.tgz
camcontrol: not found
camcontrol: not found
Verified manifest signed by PackageProductionEc_2015
Saving the config files ...
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Saving package file in
/var/sw/pkg/junos-install-x86-32-domestic-20150618.043753_builder_junos_151_r1.tgz
...
Saving state for rollback ...

```

request system software add no-copy no-validate reboot

```

user@host> request system software add no-copy no-validate junos-install-srx-x86-64-17.3R1.tgz
reboot
Verified junos-install-srx-x86-64-17.3R1 signed by PackageProductionEc_2017 method
ECDSA256+SHA256
Verified manifest signed by PackageProductionEc_2017 method ECDSA256+SHA256
Checking PIC combinations
Verified fips-mode signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding fips-mode-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jail-runtime signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jail-runtime-x86-32-20170725.352915_builder_stable_10 ...
Verified jdocs signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jdocs-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jfirmware signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jfirmware-x86-32-17.3R1 ...
Verified jpfe-X signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-X-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-X960 signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-X960-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-common signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-common-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-fips signed by PackageProductionEc_2017 method ECDSA256+SHA256
Verified jpfe-wrlinux signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-wrlinux-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jsd-jet-1 signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jsd-x86-32-17.3R1-jet-1 ...

```

request system software add validate-on-host

```

user@host> request system software add validate-on-host user@xyz
:/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz
user@host> request system software add validate-on-host user@xyz
:/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz
Extracting JUNOS version from package...
Connecting to remote host xyz...
Password:
Sending configuration to xyz...
Validating configuration on xyz...
PACKAGETYPE: not found
Checking compatibility with configuration
Initializing...
Using jbase-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jruntime-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015

```

```

Using jkernel-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jroute-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jcrypto-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jweb-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using /var/packages/jtools-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using /var/tmp/config.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: warning: schema: init: 'logical-systems-vlans' contains-node 'juniper-config
  vlans': not found
mgd: commit complete
Validation succeeded
Installing package
'/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz' ...
Verified jinstall-15.1-20150516_ib_15_2_psd.0-domestic.tgz signed by
PackageDevelopmentEc_2015
Adding jinstall...

WARNING:    The software that is being installed has limited support.
WARNING:    Run 'file show /etc/notices/unsupported.txt' for details.


WARNING:    This package will load JUNOS 15.1-20150516_ib_15_2_psd.0 software.
WARNING:    It will save JUNOS configuration files, and SSH keys
WARNING:    (if configured), but erase all other files and information
WARNING:    stored on this machine. It will attempt to preserve dumps
WARNING:    and log files, but this can not be guaranteed. This is the
WARNING:    pre-installation stage and all the software is loaded when
WARNING:    you reboot the system.

Saving the config files ...
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...

WARNING:    A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING:    'request system reboot' command when software installation is
WARNING:    complete. To abort the installation, do not reboot your system,
WARNING:    instead use the 'request system software delete jinstall'
WARNING:    command as soon as this operation completes.

Saving package file in
/var/sw/pkg/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz ...
Saving state for rollback ...

```

Sample Output

request system software add (Mixed EX4200 and EX4500 Virtual Chassis)

```

user@switch> request system software add set
[/var/tmp/jinstall-ex-4200-11.1R1.1-domestic-signed.tgz
/var/tmp/jinstall-ex-4500-11.1R1.1-domestic-signed.tgz]
...

```


request system software add component all (QFabric Systems)

```
user@switch> request system software add /pbdata/packages/jinstall-qfabric-12.2X50-D1.3.rpm  
component all  
...
```

request system software add upgrade-group (Junos Fusion)

```
user@aggregation-device> request system software add /var/tmp/satellite-3.0R1.1-signed.tgz  
upgrade-group group1
```

request system software delete

List of Syntax [Syntax on page 134](#)
 [Syntax \(TX Matrix Router\) on page 134](#)
 [Syntax \(TX Matrix Plus Router\) on page 134](#)

Syntax `request system software delete software-package`
 `<force>`
 `<reboot>`
 `<set [package-name package-name]>`
 `<upgrade-group [all |upgrade-group-name]>`
 `<version version-string>`

Syntax (TX Matrix Router) `request system software delete software-package`
 `<force>`
 `<lcc number | scc>`
 `<reboot>`
 `<set [package-name package-name]>`

Syntax (TX Matrix Plus Router) `request system software delete software-package`
 `<force>`
 `<lcc number | sfc number>`
 `<reboot>`
 `<set [package-name package-name]>`

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
 sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 set [*package-name package-name*] option added in Junos OS Release 12.2 for M Series, MX Series, and T Series routers.
 reboot option introduced in Junos OS Release 12.3.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
 upgrade-group, and **version** options introduced in Junos OS Release 14.2R3 for Junos Fusion.

Description Remove a software package or bundle from the router or switch.



CAUTION: Before removing a software package or bundle, make sure that you have already placed the new software package or bundle that you intend to load onto the router or switch.

Options ***software-package***—Software package or bundle name. You can delete any or all of the following software bundles or packages:

- **jbase**—(Optional) Junos base software suite
- **jcrypto**—(Optional, in domestic version only) Junos security software
- **jdocs**—(Optional) Junos online documentation file
- **jkernel**—(Optional) Junos kernel software suite
- **jpfe**—(Optional) Junos Packet Forwarding Engine support
- **jroute**—(Optional) Junos routing software suite
- **junos**—(Optional) Junos base software



NOTE: On EX Series switches, some of the package names are different than those listed. To see the list of packages that you can delete on an EX Series switch, enter the command **show system software**.

force—(Optional) Ignore warnings and force removal of the software.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) In a routing matrix, delete a software package or bundle on a T640 router indicated by **lcc *number*** that is connected to the TX Matrix router. In a routing matrix, delete a software package or bundle on a router indicated by **lcc *number*** that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

re0 | re1—(Optional) On routers or switches that support dual or redundant Routing Engines, delete a software package or bundle on the Routing Engine in slot 0 (re0) or the Routing Engine in slot 1 (re1).

reboot—As of Junos OS 12.3 and greater, automatically reboot upon completing the **request system software delete** command.

scc—(TX Matrix routers only) (Optional) Remove an extension or upgrade package from the TX Matrix router (or switch-card chassis).

set [package-name package-name]—(M Series, MX Series, and T Series routers only) (Optional) Install multiple software packages or software add-on packages at the same time.

sfc number—(TX Matrix Plus routers only) (Optional) Remove an extension or upgrade package from the TX Matrix Plus router. Replace *number* with 0.

upgrade-group [all |upgrade-group-name]—(Junos Fusion only) Delete the satellite software image association with the specified satellite software upgrade group.

A satellite software upgrade group is a group of satellite devices in the same Junos Fusion that are designated to upgrade to the same satellite software version using the same satellite software package.

version version-string—(Junos Fusion only) (Optional) Delete a satellite software package association with a satellite software upgrade group by selecting the satellite software package's version.

Additional Information Before upgrading the software on the router or switch, when you have a known stable system, issue the **request system snapshot** command to back up the software, including the configuration, to the /altroot and /altconfig file systems (on routers) or the /, /altroot, /config, /var, and /var/tmp file systems (on switches). After you have upgraded the software on the router or switch and are satisfied that the new packages are successfully installed and running, issue the **request system snapshot** command again to back up the new software to the /altroot and /altconfig file systems (on routers) or the /, /altroot, /config, /var, and /var/tmp file systems (on switches). After you run the **request system snapshot** command, you cannot return to the previous version of the software, because the running and backup copies of the software are identical.

When you delete a software package and request a system reboot or delete a package that requires rebuilding the Junos OS schema, such as an OpenConfig package, devices that use the ephemeral configuration database delete all ephemeral configuration data in the process of rebooting the system or rebuilding the schema. To restore the ephemeral configuration data, you must load and commit the data to the ephemeral database again.

Required Privilege Level maintenance

Related Documentation

- [request system software add on page 120](#)
- [request system software rollback on page 138](#)
- [request system software validate](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output [request system software delete jdocs on page 137](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request system software delete jdocs

The following example displays the system software packages before and after the **jdocs** package is deleted through the **request system software delete** command:

```
user@host> show system software
Information for jbase:
```

```
Comment:
JUNOS Base OS Software Suite [7.2R1.7]
```

```
Information for jcrypto:
```

```
Comment:
JUNOS Crypto Software Suite [7.2R1.7]
```

```
Information for jdocs:
```

```
Comment:
JUNOS Online Documentation [7.2R1.7]
```

```
Information for jkernel:
```

```
Comment:
JUNOS Kernel Software Suite [7.2R1.7]
```

```
...
```

```
user@host> request system software delete jdocs
Removing package 'jdocs' ...
```

```
user@host> show system software
Information for jbase:
```

```
Comment:
JUNOS Base OS Software Suite [7.2R1.7]
```

```
Information for jcrypto:
```

```
Comment:
JUNOS Crypto Software Suite [7.2R1.7]
```

```
Information for jkernel:
```

```
Comment:
JUNOS Kernel Software Suite [7.2R1.7]
```

```
...
```

request system software rollback

List of Syntax	Syntax on page 138 Syntax (EX Series Switches) on page 138 Syntax (TX Matrix Router) on page 138 Syntax (TX Matrix Plus Router) on page 138 Syntax (MX Series Router) on page 138
Syntax	request system software rollback
Syntax (EX Series Switches)	request system software rollback <all-members> <local> <member <i>member-id</i> > <reboot>
Syntax (TX Matrix Router)	request system software rollback <lcc <i>number</i> scc> <reboot>
Syntax (TX Matrix Plus Router)	request system software rollback <lcc <i>number</i> sfc <i>number</i> > <reboot>
Syntax (MX Series Router)	request system software rollback <all-members> <device-alias <i>alias-name</i> > <local> <member <i>member-id</i> > <reboot> <satellite <i>slot-id</i> > <upgrade-group [all <i>upgrade-group-name</i>]>
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 in Junos OS Release 9.6 for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command behavior changed in Junos OS Release 12.1.</p> <p>reboot option introduced in Junos OS Release 12.3.</p> <p>device-alias, satellite, and upgrade-group options introduced in Junos OS Release 14.2R3 for Junos Fusion.</p> <p>force option deprecated in Junos OS Release 15.1 for Junos OS with Upgraded FreeBSD.</p>



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

Description This command reverts to the last successfully installed package before the **request system software (add | delete)** command. It uses the copy stored in the `/var/sw/pkg` directory.

Additional Information

- On Junos Fusion, the **request system software rollback** command can be used to roll back the version of satellite software associated with a satellite software upgrade group. Rolling back the version of satellite software associated with a satellite software upgrade group triggers a satellite software upgrade.
- On M Series and T Series routers, if **request system software add <jinstall> reboot** was used for the previous installation, then **request system software rollback** has no effect. In this case, use **jinstall** to reinstall the required package.
- On M Series and T Series routers, if **request system software add <sdk1>** was used for the previous installation, then **request system software rollback** removes the last installed SDK package (**sdk1** in this example).
- On SRX Series devices with dual root systems, when **request system software rollback** is run, the system switches to the alternate root. Each root can have a different version of Junos OS. Roll back takes each root back to the previously installed image.
- On QFX3500 and QFX3600 devices in a mixed Virtual Chassis, when the **request system software rollback** command is issued, the system does not rollback to the image stored in the alternate partition.
- On QFX5100 switches, the **reboot** option has been removed. To reboot the switch after a software rollback, issue the **request system reboot** command as a separate, secondary command.

Options **all-members**—(EX4200 switches and MX Series routers only) (Optional) Attempt to roll back to the previous set of packages on all members of the Virtual Chassis configuration.

device-alias *alias-name*—(Junos Fusion only) (Optional) Rollback the satellite software package onto the specified satellite device using the satellite devices FPC slot identifier.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, attempt to roll back to the previous set of packages on a T640 router connected to the TX Matrix router. On a TX Matrix Plus router, attempt to roll back to the previous set of packages on a connected router connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(EX4200 switches and MX Series routers only) (Optional) Attempt to roll back to the previous set of packages on the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Attempt to roll back to the previous set of packages on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace ***member-id*** with a value from 0 through 9. For an MX Series Virtual Chassis, replace ***member-id*** with a value of 0 or 1.

none—For all versions of Junos OS up to and including Junos OS 11.4, revert to the set of software as of the last successful **request system software add**. As of Junos OS 12.1 and later, revert to the last known good state before the most recent **request system software (add | delete)** command.

reboot—For Junos OS 12.3 and later, the system reboots automatically to complete the rollback.

satellite *slot-id*—(Junos Fusion only) (Optional) Roll back the satellite software package onto the specified satellite device using the satellite devices FPC slot identifier.

scc—(TX Matrix routers only) (Optional) Attempt to roll back to the previous set of packages on the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Attempt to roll back to the previous set of packages on the TX Matrix Plus router. Replace ***number*** with 0.

upgrade-group [all | *upgrade-group-name*]—(Junos Fusion only) Roll back the satellite software image associated with the specified satellite software upgrade group, or for all satellite software upgrade groups in the Junos Fusion when **all** is entered.

Required Privilege Level

maintenance

Related Documentation

- *request system software abort*
- [request system software add on page 120](#)
- [request system software delete on page 134](#)
- *request system software validate*
- *request system configuration rescue delete*
- *request system configuration rescue save*
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output [request system software rollback on page 142](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request system software rollback

```
user@host> request system software rollback
Verified SHA1 checksum of ./jbase-7.2R1.7.tgz
Verified SHA1 checksum of ./jdocs-7.2R1.7.tgz
Verified SHA1 checksum of ./jroute-7.2R1.7.tgz
Installing package './jbase-7.2R1.7.tgz' ...
Available space: 35495 require: 7335
Installing package './jdocs-7.2R1.7.tgz' ...
Available space: 35339 require: 3497
Installing package './jroute-7.2R1.7.tgz' ...
Available space: 35238 require: 6976
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Reloading /config/juniper.conf.gz ...
Activating /config/juniper.conf.gz ...
mgd: commit complete
Restarting mgd ...
Restarting aprobed ...
Restarting apsd ...
Restarting cosd ...
Restarting fsad ...
Restarting fud ...
Restarting gcdrd ...
Restarting ilmid ...
Restarting irsd ...
Restarting l2tpd ...
Restarting mib2d ...
Restarting nasd ...
Restarting pppoed ...
Restarting rdd ...
Restarting rmopd ...
Restarting rtspd ...
Restarting sampled ...
Restarting serviced ...
Restarting snmpd ...
Restarting spd ...
Restarting vrrpd ...

WARNING: cli has been replaced by an updated version:
CLI release 7.2R1.7 built by builder on 2005-04-22 02:03:44 UTC
Restart cli using the new version ? [yes,no] (yes) yes

Restarting cli ...
user@host
```

request system storage cleanup

List of Syntax	Syntax on page 143 Syntax (EX Series Switches) on page 143 Syntax (MX Series Router) on page 143 Syntax (QFX Series) on page 143 Syntax (SRX Series) on page 143
Syntax	<pre>request system storage cleanup <dry-run> <no-confirm> <re0 re1 routing-engine (backup both local master other)></pre>
Syntax (EX Series Switches)	<pre>request system storage cleanup <all-members> <dry-run> <local> <member <i>member-id</i>> <no-confirm> <re0 re1 routing-engine (backup both local master other)> <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]></pre>
Syntax (MX Series Router)	<pre>request system storage cleanup <all-members> <dry-run> <local> <member <i>member-id</i>> <no-confirm> <re0 re1 routing-engine (backup both local master other)> <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]></pre>
Syntax (QFX Series)	<pre>request system storage cleanup <component (<i>serial number</i> <i>UUID</i> all)> <director-group <i>name</i>> <dry-run> <infrastructure <i>name</i>> <interconnect-device <i>name</i>> <name-tag <i>name-tag</i>> <no-confirm> <node-group <i>name</i>> <prune> <qfabric (<i>component name</i>) dry-run name-tag repository> <repository (core log)> <re0 re1 routing-engine (backup both local master other)></pre>
Syntax (SRX Series)	<pre>request system storage cleanup <dry-run> <no-confirm> <re0 re1 routing-engine (backup both local master other)></pre>

- Release Information** Command introduced in Junos OS Release 7.4.
dry-run option introduced in Junos OS Release 7.6.
Command introduced in Junos OS Release 9.0 for EX Series switches.
Command introduced in Junos OS Release 9.2 for SRX Series.
Command introduced in Junos OS Release 11.1 for the QFX Series.
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
satellite option introduced in Junos OS Release 14.2R3.
no-confirm and **(re0 | re1 | routing-engine (backup | both | local | master | other))** options introduced in Junos OS 17.3R1.
- Description** Free storage space on the router or switch by rotating log files and proposing a list of files for deletion. User input is required for file deletion. On a QFabric system, you can delete debug files located on individual devices or on the entire QFabric system.
- Options** **all-members**—(EX4200 switches and MX Series routers only) (Optional) Delete files on the Virtual Chassis master Routing Engine only.



NOTE: To delete files on the other members of the Virtual Chassis configuration, log in to each backup Routing Engine and delete the files using the **request system storage cleanup local** command.

- component (UUID | serial number | all)**—(QFabric systems only) (Optional) Delete files located on individual QFabric system devices or on the entire QFabric system.
- director-group name**—(QFabric systems only) (Optional) Delete files on the Director group.
- dry-run**—(Optional) List files proposed for deletion (without deleting them).
- infrastructure name**—(QFabric systems only) (Optional) Delete files on the fabric control Routing Engine and fabric manager Routing Engine.
- interconnect-device name**—(QFabric systems only) (Optional) Delete files on the Interconnect device.
- local**—(EX4200 switches and MX Series routers only) (Optional) Delete files on the local Virtual Chassis member.
- member member-id**—(EX4200 switches and MX Series routers only) (Optional) Delete files on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace **member-id** with a value from 0 through 9. For an MX Series Virtual Chassis, replace **member-id** with a value of 0 or 1.
- name-tag name-tag**—(QFabric systems only) (Optional) Delete debug files that match a specific regular expression.
- node-group name**—(QFabric systems only) (Optional) Delete files on the Node group.

no-confirm—(Optional) Do not ask for confirmation before doing the cleanup.

prune—(QFabric systems only) (Optional) Delete debug files located in either the core or log debug repositories of a QFabric system device.

qfabric component *name*—(QFabric systems only) (Optional) Delete debug files located in the debug repositories of a QFabric system device.

(re0 | re1 | routing-engine (backup | both | local | master | other))—(Optional) Request operation on system storage on RE0, RE1, or on specified Routing Engine by these classifications: backup, both, local, master, or other.

When Routing Engine is specified, the below message is shown before listing the files and deleting them.

```
Please check the list of files to be deleted using the dry-run option. i.e.
request system storage cleanup dry-run
Do you want to proceed ? [yes,no] (no)
```

repository (core | log)—(QFabric systems only) (Optional) Specify the repository on the QFabric system device for which you want to delete debug files.

satellite [slot-id *slot-id* | device-alias *alias-name*]—(Junos Fusion only) (Optional) Specify the satellite device in the Junos Fusion by FPC ID or device alias name for which you want to delete debug files.

Additional Information	If logging is configured and being used, the dry-run option rotates the log files. In that case, the output displays the message "Currently rotating log files, please wait." If no logging is currently under way, the output displays only a list of files to delete.
Required Privilege Level	maintenance
List of Sample Output	request system storage cleanup dry-run on page 146 request system storage cleanup on page 147 request system storage cleanup director-group (QFabric Systems) on page 147 request system storage cleanup infrastructure device-name (QFabric Systems) on page 149 request system storage cleanup interconnect-device device-name (QFabric Systems) on page 150 request system storage cleanup node-group group-name (QFabric Systems) on page 151 request system storage cleanup qfabric component device-name (QFabric Systems) on page 152 request system storage cleanup qfabric component device-name repository core (QFabric Systems) on page 152 request system storage cleanup qfabric component all (QFabric Systems) on page 152
Output Fields	Table 7 on page 146 describes the output fields for the request system storage cleanup command. Output fields are listed in the approximate order in which they appear.

Table 7: request system storage cleanup Output Fields

Field Name	Field Description
List of files to delete:	Shows list of files available for deletion.
Size	Size of the core-dump file.
Date	Last core-dump file modification date and time.
Name	Name of the core-dump file.
Directory to delete:	Shows list of directories available for deletion.
Repository scope:	Repository where core-dump files and log files are stored. The core-dump files are located in the core repository, and the log files are located in the log repository. The default Repository scope is shared since both the core and log repositories are shared by all of the QFabric system devices.
Repository head:	Name of the top-level repository location.
Repository name:	Name of the repository: core or log .
Creating list of debug artifacts to be removed under:	Shows location of files available for deletion.
List of debug artifacts to be removed under:	Shows list of files available for deletion.

Sample Output

request system storage cleanup dry-run

```
user@host> request system storage cleanup dry-run
Currently rotating log files, please wait.
This operation can take up to a minute.
```

List of files to delete:

Size	Date	Name
11.4K	Mar 8 15:00	/var/log/messages.1.gz
7245B	Feb 5 15:00	/var/log/messages.3.gz
11.8K	Feb 22 13:00	/var/log/messages.2.gz
3926B	Mar 16 13:57	/var/log/messages.0.gz
3962B	Feb 22 12:47	/var/log/sampled.1.gz
4146B	Mar 8 12:20	/var/log/sampled.0.gz
4708B	Dec 21 11:39	/var/log/sampled.2.gz
7068B	Jan 16 18:00	/var/log/messages.4.gz
13.7K	Dec 27 22:00	/var/log/messages.5.gz
890B	Feb 22 17:22	/var/tmp/sampled.pkts
65.8M	Oct 26 09:10	/var/sw/pkg/jinstall-7.4R1.7-export-signed.tgz
63.1M	Oct 26 09:13	/var/sw/pkg/jbundle-7.4R1.7.tgz

request system storage cleanup

```
user@host> request system storage cleanup
Currently rotating log files, please wait.
This operation can take up to a minute.
```

List of files to delete:

	Size	Date	Name
11.4K	Mar 8 15:00	/var/log/messages.1.gz	
7245B	Feb 5 15:00	/var/log/messages.3.gz	
11.8K	Feb 22 13:00	/var/log/messages.2.gz	
3926B	Mar 16 13:57	/var/log/messages.0.gz	
11.6K	Mar 8 15:00	/var/log/messages.5.gz	
7254B	Feb 5 15:00	/var/log/messages.6.gz	
12.9K	Feb 22 13:00	/var/log/messages.8.gz	
3726B	Mar 16 13:57	/var/log/messages.7.gz	
3962B	Feb 22 12:47	/var/log/sampled.1.gz	
4146B	Mar 8 12:20	/var/log/sampled.0.gz	
4708B	Dec 21 11:39	/var/log/sampled.2.gz	
7068B	Jan 16 18:00	/var/log/messages.4.gz	
13.7K	Dec 27 22:00	/var/log/messages.5.gz	
890B	Feb 22 17:22	/var/tmp/sampled.pkts	
65.8M	Oct 26 09:10	/var/sw/pkg/jinstall-7.4R1.7-export-signed.tgz	
63.1M	Oct 26 09:13	/var/sw/pkg/jbundle-7.4R1.7.tgz	

Delete these files ? [yes,no] (yes)

request system storage cleanup director-group (QFabric Systems)

```
user@switch> request system storage cleanup director-group
List of files to delete:
```

	Size	Date	Name
4.0K	2011-11-07 05:16:29	/tmp/2064.sfcauth	
4.0K	2011-11-07 05:07:34	/tmp/30804.sfcauth	
4.0K	2011-11-07 04:13:41	/tmp/26792.sfcauth	
4.0K	2011-11-07 04:13:39	/tmp/26432.sfcauth	
0	2011-11-07 07:45:40	/tmp/cluster_cleanup.log	
1.3M	2011-11-07 07:39:11	/tmp/cn_monitor.20111107-052401.log	
4.0K	2011-11-07 07:36:29	/tmp/clustat.28019.log	
4.0K	2011-11-07 07:36:29	/tmp/clustat_x.28019.log	
9.6M	2011-11-07 05:30:24	/tmp/sfc.2.log	
4.0K	2011-11-07 05:28:11	/tmp/mgd-init.1320672491.log	
248K	2011-11-07 05:19:24	/tmp/cn_monitor.20111107-045111.log	
4.0K	2011-11-07 05:17:18	/tmp/clustat.3401.log	
4.0K	2011-11-07 05:17:18	/tmp/clustat_x.3401.log	
8.0K	2011-11-07 04:58:25	/tmp/mgd-init.1320670633.log	
0	2011-11-07 04:54:01	/tmp/mysql_db_install_5.1.37.log	
4.0K	2011-11-07 04:52:08	/tmp/cn_send.log	
0	2011-11-07 04:52:00	/tmp/init_eth0.log	
4.0K	2011-11-07 04:49:35	/tmp/install_interfaces.sh.log	
4.0K	2011-11-07 04:48:15	/tmp/bootstrap.sh.log	
160K	2011-11-07 04:47:43	/tmp/bootstrap_cleanup.log	
38M	2011-11-07 04:42:42	/tmp/cn_monitor.20111104-110308.log	
4.0K	2011-11-07 04:38:47	/tmp/clustat.30913.log	
4.0K	2011-11-07 04:38:47	/tmp/clustat_x.30913.log	
4.0K	2011-11-07 04:38:03	/tmp/dcf_upgrade.sh.remove.log	
4.0K	2011-11-07 04:38:03	/tmp/peer_update.log	
4.0K	2011-11-07 04:38:02	/tmp/dcf_upgrade.log	

```

4.0K  2011-11-07 04:38:02 /tmp/perl_mark_upgrade.log
8.0K  2011-11-07 04:13:42 /tmp/install_dcf_rpm.log
4.0K  2011-11-07 04:13:06 /tmp/00_cleanup.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/ccif_patch_4410_4450.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/DCF-tools.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/initial.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/inventory.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/qf-db.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/sfc.sh.1320667986.log
8.0K  2011-11-07 04:13:05 /tmp/jinstall-qfabric.log
8.0K  2011-11-04 11:10:24 /tmp/mgd-init.1320430192.log
4.0K  2011-11-04 11:07:03 /tmp/mysql_dcf_db_install.log
8.0K  2011-11-04 10:55:07 /tmp/ccif_patch_4410_4450.sh.1320429307.log
8.0K  2011-11-04 10:55:07 /tmp/initial.sh.1320429307.log
4.0K  2011-11-04 10:55:07 /tmp/inventory.sh.1320429307.log
8.0K  2011-11-04 10:55:07 /tmp/sfc.sh.1320429307.log
4.0K  2011-11-04 10:54:09 /tmp/ks-script-Ax0tz5.log
4.0K  2011-11-07 04:13:06 /tmp//sfc.sh.1320667986.log
8.0K  2011-11-04 10:55:07 /tmp//sfc.sh.1320429307.log

```

Directory to delete:

```

45M   2011-11-08 10:57:43 /tmp/sfc-captures

```

List of files to delete:

	Size	Date	Name
4.0K	2011-11-08 05:47:47	/tmp/5713.sfcauth	
4.0K	2011-11-08 05:14:32	/tmp/14494.sfcauth	
4.0K	2011-11-08 05:11:47	/tmp/9978.sfcauth	
4.0K	2011-11-08 05:09:37	/tmp/6128.sfcauth	
4.0K	2011-11-08 05:04:28	/tmp/29703.sfcauth	
4.0K	2011-11-07 11:59:10	/tmp/7811.sfcauth	
4.0K	2011-11-07 11:36:08	/tmp/32415.sfcauth	
4.0K	2011-11-07 11:30:30	/tmp/22406.sfcauth	
4.0K	2011-11-07 11:24:37	/tmp/12131.sfcauth	
4.0K	2011-11-07 10:48:42	/tmp/12687.sfcauth	
4.0K	2011-11-07 09:27:20	/tmp/31082.sfcauth	
4.0K	2011-11-07 07:33:58	/tmp/14633.sfcauth	
4.0K	2011-11-07 05:08:25	/tmp/15447.sfcauth	
4.0K	2011-11-07 04:12:29	/tmp/26874.sfcauth	
4.0K	2011-11-07 04:12:27	/tmp/26713.sfcauth	
4.0K	2011-11-07 03:49:17	/tmp/17691.sfcauth	
4.0K	2011-11-05 01:32:23	/tmp/5716.sfcauth	
4.0K	2011-11-07 08:00:17	/tmp/sfcsnmpd.log	
4.0K	2011-11-07 07:57:50	/tmp/cluster_cleanup.log	
824K	2011-11-07 07:38:37	/tmp/cn_monitor.20111107-053643.log	
4.0K	2011-11-07 07:36:30	/tmp/clustat.18399.log	
4.0K	2011-11-07 07:36:30	/tmp/clustat_x.18399.log	
4.0K	2011-11-07 07:35:47	/tmp/command_lock.log	
4.0K	2011-11-07 05:39:54	/tmp/mgd-init.1320673194.log	
92K	2011-11-07 05:19:25	/tmp/cn_monitor.20111107-050412.log	
4.0K	2011-11-07 05:17:20	/tmp/clustat.30115.log	
4.0K	2011-11-07 05:17:20	/tmp/clustat_x.30115.log	
8.0K	2011-11-07 05:08:07	/tmp/mgd-init.1320671241.log	
4.0K	2011-11-07 05:04:57	/tmp/cn_send.log	
0	2011-11-07 05:04:52	/tmp/init_eth0.log	
4.0K	2011-11-07 05:02:38	/tmp/install_interfaces.sh.log	
4.0K	2011-11-07 05:01:19	/tmp/bootstrap.sh.log	
160K	2011-11-07 05:00:47	/tmp/bootstrap_cleanup.log	
28M	2011-11-07 04:42:27	/tmp/cn_monitor.20111104-112954.log	
4.0K	2011-11-07 04:38:49	/tmp/clustat.6780.log	


```

4.0K 2011-11-07 04:38:49 /tmp/clustat_x.6780.log
4.0K 2011-11-07 04:38:05 /tmp/issue_event.log
4.0K 2011-11-07 04:38:05 /tmp/peer_upgrade_reboot.log
12K 2011-11-07 04:38:05 /tmp/primary_update.log
4.0K 2011-11-07 04:38:04 /tmp/dcf_upgrade.sh.remove.log
4.0K 2011-11-07 04:38:04 /tmp/peer_rexec_upgrade.log
4.0K 2011-11-07 04:13:42 /tmp/peer_install_dcf_rpm.log
4.0K 2011-11-07 04:11:57 /tmp/dcf-tools.sh.1320667917.log
0 2011-11-07 04:11:57 /tmp/initial.sh.1320667917.log
0 2011-11-07 04:11:57 /tmp/inventory.sh.1320667917.log
4.0K 2011-11-07 04:11:57 /tmp/qf-db.sh.1320667917.log
4.0K 2011-11-07 04:11:57 /tmp/sfc.sh.1320667917.log
4.0K 2011-11-07 04:11:56 /tmp/00_cleanup.sh.1320667916.log
0 2011-11-07 04:11:56 /tmp/ccif_patch_4410_4450.sh.1320667916.log
8.0K 2011-11-07 04:11:56 /tmp/jinstall-qfabric.log
4.0K 2011-11-07 04:11:33 /tmp/dcf_upgrade.log
8.0K 2011-11-04 11:53:12 /tmp/mgd-init.1320432782.log
8.0K 2011-11-04 11:06:17 /tmp/ccif_patch_4410_4450.sh.1320429977.log
8.0K 2011-11-04 11:06:17 /tmp/initial.sh.1320429977.log
4.0K 2011-11-04 11:06:17 /tmp/inventory.sh.1320429977.log
8.0K 2011-11-04 11:06:17 /tmp/sfc.sh.1320429977.log
4.0K 2011-11-04 11:05:19 /tmp/ks-script_tnWeb.log
4.0K 2011-11-07 04:11:57 /tmp//sfc.sh.1320667917.log
8.0K 2011-11-04 11:06:17 /tmp//sfc.sh.1320429977.log

```

Directory to delete:

```
49M 2011-11-08 10:45:20 /tmp/sfc-captures
```

request system storage cleanup infrastructure device-name (QFabric Systems)

```
user@switch> request system storage cleanup infrastructure FC
re0:
```

List of files to delete:

	Size	Date	Name
	139B	Nov 8 19:03	/var/log/default-log-messages.0.gz
	5602B	Nov 8 19:03	/var/log/messages.0.gz
	28.4K	Nov 8 10:15	/var/log/messages.1.gz
	35.2K	Nov 7 13:45	/var/log/messages.2.gz
	207B	Nov 7 16:02	/var/log/wtmp.0.gz
	27B	Nov 7 12:14	/var/log/wtmp.1.gz
	184.4M	Nov 7 12:16	/var/sw/pkg/jinstall-dc-re-11.3I20111104_1216_dc-builder-domestic-signed.tgz
	124.0K	Nov 7 15:59	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:57	/var/tmp/gres-tp/lock
	155B	Nov 7 16:02	/var/tmp/krt_gencfg_filter.txt
	0B	Nov 7 12:35	/var/tmp/last_ccif_update
	1217B	Nov 7 12:15	/var/tmp/loader.conf.preinstall
	184.4M	Nov 6 07:11	/var/tmp/mchassis-install.tgz
	10.8M	Nov 7 12:16	/var/tmp/preinstall/bootstrap-install-11.3I20111104_1216_dc-builder.tar
	57.4K	Nov 7 12:16	/var/tmp/preinstall/configs-11.3I20111104_1216_dc-builder.tgz
	259B	Nov 7 12:16	/var/tmp/preinstall/install.conf
	734.3K	Nov 4 13:46	/var/tmp/preinstall/jboot-dc-re-11.3I20111104_1216_dc-builder.tgz
	177.8M	Nov 7 12:16	/var/tmp/preinstall/jbundle-dc-re-11.3I20111104_1216_dc-builder-domestic.tgz
	124B	Nov 7 12:15	/var/tmp/preinstall/metatags

```
1217B Nov 7 12:16 /var/tmp/preinstall_boot_loader.conf
0B Nov 7 16:02 /var/tmp/rtssdb/if-rtssdb
```

request system storage cleanup interconnect-device device-name (QFabric Systems)

```
user@switch> request system storage cleanup interconnect IC
re1:
```

List of files to delete:

	Size	Date	Name
	11B	Nov 7 15:55	/var/jail/tmp/alarmd.ts
	128B	Nov 8 19:06	/var/log/default-log-messages.0.gz
	9965B	Nov 8 19:06	/var/log/messages.0.gz
	15.8K	Nov 8 12:30	/var/log/messages.1.gz
	15.8K	Nov 8 11:00	/var/log/messages.2.gz
	15.7K	Nov 8 07:30	/var/log/messages.3.gz
	15.8K	Nov 8 04:00	/var/log/messages.4.gz
	15.7K	Nov 8 00:30	/var/log/messages.5.gz
	18.7K	Nov 7 21:00	/var/log/messages.6.gz
	17.6K	Nov 7 19:00	/var/log/messages.7.gz
	58.3K	Nov 7 16:00	/var/log/messages.8.gz
	20.3K	Nov 7 15:15	/var/log/messages.9.gz
	90B	Nov 7 15:41	/var/log/wtmp.0.gz
	57B	Nov 7 12:41	/var/log/wtmp.1.gz
	124.0K	Nov 7 15:42	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:40	/var/tmp/gres-tp/lock
	0B	Nov 7 12:41	/var/tmp/if-rtssdb/env.lck
	12.0K	Nov 7 15:41	/var/tmp/if-rtssdb/env.mem
	132.0K	Nov 7 15:55	/var/tmp/if-rtssdb/shm_usr1.mem
	2688.0K	Nov 7 15:41	/var/tmp/if-rtssdb/shm_usr2.mem
	2048.0K	Nov 7 15:41	/var/tmp/if-rtssdb/trace.mem
	730B	Nov 7 19:57	/var/tmp/juniper.conf+.gz
	155B	Nov 7 15:53	/var/tmp/krt_gencfg_filter.txt
	0B	Nov 7 15:41	/var/tmp/rtssdb/if-rtssdb

```
re0:
```

List of files to delete:

	Size	Date	Name
	11B	Nov 7 15:55	/var/jail/tmp/alarmd.ts
	121B	Nov 8 19:06	/var/log/default-log-messages.0.gz
	16.7K	Nov 8 19:06	/var/log/messages.0.gz
	22.2K	Nov 8 17:45	/var/log/messages.1.gz
	18.4K	Nov 8 17:00	/var/log/messages.2.gz
	21.6K	Nov 8 16:00	/var/log/messages.3.gz
	17.9K	Nov 8 14:30	/var/log/messages.4.gz
	19.4K	Nov 8 13:30	/var/log/messages.5.gz
	18.2K	Nov 8 12:30	/var/log/messages.6.gz
	20.4K	Nov 8 11:30	/var/log/messages.7.gz
	21.4K	Nov 8 10:15	/var/log/messages.8.gz
	21.0K	Nov 8 09:00	/var/log/messages.9.gz
	19.9K	Nov 8 08:13	/var/log/snmp-traps.0.gz
	203B	Nov 8 15:36	/var/log/wtmp.0.gz
	57B	Nov 7 12:41	/var/log/wtmp.1.gz
	124.0K	Nov 7 15:42	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:40	/var/tmp/gres-tp/lock
	0B	Nov 7 12:41	/var/tmp/if-rtssdb/env.lck

```

12.0K Nov 7 15:41 /var/tmp/if-rtbdb/env.mem
132.0K Nov 7 15:55 /var/tmp/if-rtbdb/shm_usr1.mem
2688.0K Nov 7 15:41 /var/tmp/if-rtbdb/shm_usr2.mem
2048.0K Nov 7 15:41 /var/tmp/if-rtbdb/trace.mem
727B Nov 7 15:54 /var/tmp/juniper.conf+.gz
155B Nov 7 15:55 /var/tmp/krt_gencfg_filter.txt
0B Nov 7 15:41 /var/tmp/rtbdb/if-rtbdb

```

request system storage cleanup node-group group-name (QFabric Systems)

```

user@switch> request system storage cleanup node-group NW-NG
BBAK0372:

```

List of files to delete:

	Size	Date	Name
126B	Nov 8 19:07	/var/log/default-log-messages.0.gz	
179B	Nov 7 13:32	/var/log/install.0.gz	
22.9K	Nov 8 19:07	/var/log/messages.0.gz	
26.5K	Nov 8 17:30	/var/log/messages.1.gz	
20.5K	Nov 8 13:15	/var/log/messages.2.gz	
33.2K	Nov 7 17:45	/var/log/messages.3.gz	
35.5K	Nov 7 15:45	/var/log/messages.4.gz	
339B	Nov 8 17:10	/var/log/wtmp.0.gz	
58B	Nov 7 12:40	/var/log/wtmp.1.gz	
124.0K	Nov 8 17:08	/var/tmp/gres-tp/env.dat	
0B	Nov 7 12:39	/var/tmp/gres-tp/lock	
0B	Nov 7 12:59	/var/tmp/if-rtbdb/env.lck	
12.0K	Nov 8 17:09	/var/tmp/if-rtbdb/env.mem	
2688.0K	Nov 8 17:09	/var/tmp/if-rtbdb/shm_usr1.mem	
132.0K	Nov 8 17:09	/var/tmp/if-rtbdb/shm_usr2.mem	
2048.0K	Nov 8 17:09	/var/tmp/if-rtbdb/trace.mem	
1082B	Nov 8 17:09	/var/tmp/juniper.conf+.gz	
155B	Nov 7 17:39	/var/tmp/krt_gencfg_filter.txt	
0B	Nov 8 17:09	/var/tmp/rtbdb/if-rtbdb	

EE3093:

List of files to delete:

	Size	Date	Name
11B	Nov 8 17:33	/var/jail/tmp/alarmd.ts	
119B	Nov 8 19:08	/var/log/default-log-messages.0.gz	
180B	Nov 7 17:41	/var/log/install.0.gz	
178B	Nov 7 13:32	/var/log/install.1.gz	
2739B	Nov 8 19:08	/var/log/messages.0.gz	
29.8K	Nov 8 18:45	/var/log/messages.1.gz	
31.8K	Nov 8 17:15	/var/log/messages.2.gz	
20.6K	Nov 8 16:00	/var/log/messages.3.gz	
15.4K	Nov 8 10:15	/var/log/messages.4.gz	
15.4K	Nov 8 02:15	/var/log/messages.5.gz	
25.5K	Nov 7 20:45	/var/log/messages.6.gz	
48.0K	Nov 7 17:45	/var/log/messages.7.gz	
32.8K	Nov 7 13:45	/var/log/messages.8.gz	
684B	Nov 8 17:02	/var/log/wtmp.0.gz	
58B	Nov 7 12:40	/var/log/wtmp.1.gz	
124.0K	Nov 7 17:34	/var/tmp/gres-tp/env.dat	
0B	Nov 7 12:40	/var/tmp/gres-tp/lock	
0B	Nov 7 12:59	/var/tmp/if-rtbdb/env.lck	

```

12.0K Nov  7 17:39 /var/tmp/if-rtbdb/env.mem
2688.0K Nov  7 17:39 /var/tmp/if-rtbdb/shm_usr1.mem
132.0K Nov  7 17:40 /var/tmp/if-rtbdb/shm_usr2.mem
2048.0K Nov  7 17:39 /var/tmp/if-rtbdb/trace.mem
155B Nov  7 17:40 /var/tmp/krt_gencfg_filter.txt
0B Nov  7 17:39 /var/tmp/rtbdb/if-rtbdb

```

request system storage cleanup qfabric component device-name (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component Test
Repository type: regular
Repository head: /pbstorage
Creating list of debug artifacts to be removed under: /pbstorage/rdumps/Test
Removing debug artifacts ... (press control C to abort)
Removing /pbstorage/rdumps/Test/cosd.core.0.0.05162011123308.gz ... done
Removing /pbstorage/rdumps/Test/cosd.core.1.0.05162011123614.gz ... done
Removing /pbstorage/rdumps/Test/cosd.core.2.0.05162011123920.gz ... done
Removing /pbstorage/rdumps/Test/livekcore.05132011163930.gz ... done
Removing /pbstorage/rdumps/Test/tnetd.core.0.1057.05162011124500.gz ... done
Removing /pbstorage/rdumps/Test/vmcore.05132011120528.gz ... done
Removing /pbstorage/rdumps/Test/vmcore.kz ... done
Creating list of debug artifacts to be removed under: /pbstorage/rlogs/Test
Removing debug artifacts ... (press control C to abort)
Removing /pbstorage/rlogs/Test/kdumpinfo.05132011120528 ... done
Removing /pbstorage/rlogs/Test/kernel.tarball.0.1039.05122011234415.tgz ... done
Removing /pbstorage/rlogs/Test/kernel.tarball.1.1039.05132011175544.tgz ... done
Removing /pbstorage/rlogs/Test/tnetd.tarball.0.1057.05162011175453.tgz ... done

```

request system storage cleanup qfabric component device-name repository core (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component Test repository core
Repository scope: shared
Repository head: /pbdata/export
Repository name: core
Creating list of debug artifacts to be removed under: /pbdata/export/rdumps/Test
NOTE: core repository under /pbdata/export/rdumps/Test empty

```

request system storage cleanup qfabric component all (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component all
Repository scope: shared
Repository head: /pbdata/export
Creating list of debug artifacts to be removed under: /pbdata/export/rdumps
NOTE: core repository under /pbdata/export/rdumps/all empty
Creating list of debug artifacts to be removed under: /pbdata/export/rlogs
List of debug artifacts to clean up ... (press control C to abort)
/pbdata/export/rlogs/73747cd8-0710-11e1-b6a4-00e081c5297e/install-11072011125819.log
/pbdata/export/rlogs/77116f18-0710-11e1-a2a0-00e081c5297e/install-11072011125819.log
/pbdata/export/rlogs/BBAK0372/install-11072011121538.log
/pbdata/export/rlogs/BBAK0394/install-11072011121532.log
/pbdata/export/rlogs/EE3093/install-11072011121536.log
/pbdata/export/rlogs/WS001/YN5999/install-11072011121644.log
/pbdata/export/rlogs/WS001/YW3803/install-11072011122429.log
/pbdata/export/rlogs/cd78871a-0710-11e1-878e-00e081c5297e/install-11072011125932.log
/pbdata/export/rlogs/d0afdale-0710-11e1-a1d0-00e081c5297e/install-11072011125930.log
/pbdata/export/rlogs/d0afdale-0710-11e1-a1d0-00e081c5297e/install-11072011133211.log
/pbdata/export/rlogs/d0afdale-0710-11e1-a1d0-00e081c5297e/install-11072011155302.log
/pbdata/export/rlogs/d31ab7a6-0710-11e1-ad1b-00e081c5297e/install-11072011125931.log
/pbdata/export/rlogs/d4d0f254-0710-11e1-90c3-00e081c5297e/install-11072011125932.log

```


show chassis alarms

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 [Syntax \(EX9251, EX9253 Switches\) on page 155](#)

Syntax `show chassis alarms`

Syntax (TX Matrix Routers) `show chassis alarms`
 `<lcc number | scc>`

Syntax (TX Matrix Plus Routers) `show chassis alarms`
 `<lcc number | sfc number>`

Syntax (MX Series Routers) `show chassis alarms`
 `<all-members>`
 `<local>`
 `<member member-id>`

Syntax (MX104, MX2010, MX2020, and MX2008 Universal Routing Platforms) `show chassis alarms`
 `<satellite [slot-id slot-id]>`

Syntax (MX10003, MX204, and MX10008) `show chassis alarms`

Syntax (QFX Series) `show chassis alarms`
 `<interconnect-device name>`
 `<node-device name>`

Syntax (OCX Series) `show chassis alarms`

Syntax (PTX Series Packet Transport Routers) `show chassis alarms`

Syntax (ACX Series Universal Metro Routers) `show chassis alarms`

Syntax (EX9251, EX9253 Switches) `show chassis alarms`

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 Command introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Routers.
 Command introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers.
 Command introduced in Junos OS Release 12.3 for MX 2010 and MX2020 Universal Routing Platforms.
 Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
satellite option introduced in Junos OS Release 14.2R3 for Junos Fusion.
 Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.
 Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.
 Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.
 Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.
 Command introduced in Junos OS Release 18.2 for EX9253 Switches.
 Command introduced in Junos OS Release 18.2R1 for MX10008 Universal Routing Platforms.

Description Display information about the conditions that have been configured to trigger alarms.

Options **none**—Display information about the conditions that have been configured to trigger alarms.

all-members—(MX Series routers only) (Optional) Display information about alarm conditions for all the member routers of the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems only) (Optional) Display information about alarm conditions for the Interconnect device.

lcc *number*—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(MX Series routers only) (Optional) Display information about alarm conditions for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display information about alarm conditions for the specified member of the Virtual Chassis configuration. Replace *member-id* variable with a value of 0 or 1.

node-device *name*—(QFabric systems only) (Optional) Display information about alarm conditions for the Node device.

satellite [*slot-id slot-id*]—(Junos Fusion only) (Optional) Display information about alarm conditions for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix router only) (Optional) Show information about the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router only) (Optional) Show information about the respective TX Matrix Plus router, which is the switch-fabric chassis. Replace *number* variable with 0.

Additional Information Chassis alarms are preset. You cannot modify them.

You cannot clear the alarms for chassis components. Instead, you must remedy the cause of the alarm. When a chassis alarm LED is lit, it indicates that you are running the router or switch in a manner that we do not recommend.

On routers, you can manually silence external devices connected to the alarm relay contacts by pressing the alarm cutoff button, located on the craft interface. Silencing the device does not remove the alarm messages from the display (if present on the router) or extinguish the alarm LEDs. In addition, new alarms that occur after you silence an external device reactivate the external device.



NOTE: MX10003 routers do not support craft interface.

In Junos OS release 11.1 and later, alarms for fans also show the slot number of the fans in the CLI output.

In Junos OS Release 11.2 and later, the command output on EX8200 switches shows the detailed location (**Plane/FPC/PFE**) for link errors in the chassis.

In Junos OS Release 10.2 and later, an alarm is shown on T Series routers for a standby SONET Clock Generator (SCG) that is offline or absent.

You may often see the following error messages, in which only the error code is shown and no other information is provided:

```
Apr 12 08:04:10 send: red alarm set, device FPC 6, reason FPC 6 Major Errors
- Error code: 257
Apr 12 08:04:19 send: red alarm set, device FPC 1, reason FPC 1 Major Errors
- Error code: 559
```

To understand what CM_ALARM error codes mean, you need to first identify the structure of the CM Alarm codes. A CM_ALARM code has the following structure:

Bits:	Error type:
1-31	Major (1)
0	Minor (0)

According to the table above, the LSB (bit 0) identifies the **Error Type** (major alarm, if the bit is set and minor alarm if the bit is unset). The rest of the bits (1 - 31) identify the actual error code.

Take an example of the following error code, which was logged on a T1600:

```
Apr 12 08:04:10 send: red alarm set, device FPC 1, reason FPC 1 Major Errors
- Error code: 559
```

First, you have to convert 559 to binary; that is **100010111**. The LSB in this case is 1, which means that this is a major alarm. After removing the LSB, you are left with **10001011**, which is equal to 279 in decimal. This is the actual error code, its meaning can be found from the following list:

Chip Type: L Chip	Code
CMALARM_LCHIP_LOUT_DESRD_PARITY_ERR	1
CMALARM_LCHIP_LOUT_DESRD_UNINIT_ERR	2
CMALARM_LCHIP_LOUT_DESRD_ILLEGALLINK_ERR	3
CMALARM_LCHIP_LOUT_DESRD_ILLEGALSIZERR	4
CMALARM_LCHIP_LOUT_HDRF_TOERR_ERR	5
CMALARM_LCHIP_LOUT_HDRF_PARITY_ERR	6
CMALARM_LCHIP_LOUT_HDRF_UCERR_ERR	7
CMALARM_LCHIP_LOUT_NLIF_CRCDROP_ERR	8
CMALARM_LCHIP_LOUT_NLIF_CRCERR_ERR	9

CMALARM_LCHIP_UCODE_TIMEOUT_ERR	10
CMALARM_LCHIP_LIN_SRCTL_ACCT_DROP_ERR	11
CMALARM_LCHIP_LIN_SRCTL_ACCT_ADDR_SIZE_ERR	12
CMALARM_LCHIP_SRAM_PARITY_ERR	13
CMALARM_LCHIP_UCODE_OVFLW_ERR	14
CMALARM_LCHIP_LOUT_HDRF_MTU_ERR	15
<hr/>	
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

Chip Type: R Chip	Code
CMALARM_RCHIP_SRAM_PARITY_ERR	512

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 = (Error Code)/2



NOTE: Starting in Junos OS Release 18.2R1, on MX Series routers, the **show chassis alarms** output does not display error codes for PFE-related errors. You can use the following commands to view more details of the errors that caused the alarms:

- **show chassis errors active**
- **show chassis errors active detail**

Required Privilege Level view

Related Documentation

- *Configuring an RMON Alarm Entry and Its Attributes*
- *Chassis Conditions That Trigger Alarms*

List of Sample Output

- [show chassis alarms \(Alarms Active\) on page 162](#)
- [show chassis alarms \(No Alarms Active\) on page 162](#)
- [show chassis alarms \(Fan Tray\) on page 162](#)
- [show chassis alarms \(MX150\) on page 162](#)
- [show chassis alarms \(MX104 Router\) on page 162](#)
- [show chassis alarms \(MX2010 Router\) on page 162](#)
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Output Fields [Table 8 on page 161](#) lists the output fields for the **show chassis alarms** command. Output fields are listed in the approximate order in which they appear.

Table 8: 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 .

Table 8: show chassis alarms Output Fields (continued)

Field Name	Field Description
Description	Information about the alarm.

Sample Output

show chassis alarms (Alarms Active)

```

user@host> show chassis alarms
3 alarms are currently active
Alarm time           Class  Description
2000-02-07 10:12:22 UTC Major fxp0: ethernet link down
2000-02-07 10:11:54 UTC Minor YELLOW ALARM - PEM 1 Removed
2000-02-07 10:11:03 UTC Minor YELLOW ALARM - Lower Fan Tray Removed

```

show chassis alarms (No Alarms Active)

```

user@host> show chassis alarms
No alarms are currently active

```

show chassis alarms (Fan Tray)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time           Class  Description
2010-11-11 20:27:38 UTC Major Side Fan Tray 7 Failure
2010-11-11 20:27:13 UTC Minor Side Fan Tray 7 Overspeed
2010-11-11 20:27:13 UTC Major Side Fan Tray 5 Failure
2010-11-11 20:27:13 UTC Major Side Fan Tray 0 Failure

```

show chassis alarms (MX150)

```

user@host > show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2016-06-04 01:49:43 PDT Major Fan Tray 1 Fan 0 failed

```

show chassis alarms (MX104 Router)

```

user@host >show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2013-06-05 14:43:31 IST Minor Backup RE Active

```

show chassis alarms (MX2010 Router)

```

user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2012-08-07 00:46:06 PDT Major Fan Tray 2 Failure
2012-08-06 18:24:36 PDT Minor Redundant feed missing for PSM 6
2012-08-06 07:41:04 PDT Minor Redundant feed missing for PSM 8
2012-08-04 02:42:06 PDT Minor Redundant feed missing for PSM 5
2012-08-03 21:14:24 PDT Minor Loss of communication with Backup RE

```

```
2012-08-03 12:26:03 PDT Minor Redundant feed missing for PSM 4
2012-08-03 10:40:18 PDT Minor Redundant feed missing for PSM 7
```

show chassis alarms (MX2020 Router)

```
user@host> show chassis alarms
1 alarms currently active
Alarm time Class Description
2012-10-03 12:14:59 PDT Minor Plane 0 not online
```

show chassis alarms (MX10003 Router)

```
user@host> show chassis alarms

9 alarms currently active
Alarm time Class Description
2017-07-13 21:50:31 PDT Major FPC 1 Temperature Hot
2017-07-13 21:50:04 PDT Minor FPC 1 PIC 1 Invalid port profile configuration
2017-07-13 21:49:13 PDT Minor FPC 1 PIC 0 Invalid port profile configuration
2017-07-13 21:48:54 PDT Major FPC 0 Temperature Hot
2017-07-13 21:43:57 PDT Minor PEM 5 Not Present
2017-07-13 21:43:57 PDT Minor PEM 4 Not Present
2017-07-13 21:43:54 PDT Minor CB 1 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:54 PDT Minor CB 0 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:31 PDT Minor Loss of communication with Backup RE
```

show chassis alarms (MX204 Router)

```
user@host> show chassis alarms

1 alarms currently active
Alarm time Class Description
2017-11-05 22:13:03 PST Major PEM 0 Not Present
```

show chassis alarms (MX2008 Router)

```
user@host> show chassis alarms
No alarms currently active
```

show chassis alarms (MX960, MX480, and MX240 Routers showing Major CB Failure)

A major CB 0 failure alarm occurs in the event of a bad CB (unknown or mismatched CBs do not trigger this alarm in Junos Release OS 12.3R9 and later). Following GRES or recovery, if the hardware issue persists, the traffic moves to the good CB and continues. If the alarm was triggered by something transient like a power zone budget on GRES, bringing the CB back online can clear the alarm. Otherwise, replace the bad CB. Note that fabric link speed is not impacted by an offline SCB. The alarm might be raised on CB0, CB1, and CB2.

```
user@host> show chassis alarms
6 alarms currently active
Alarm time Class Description
2014-10-31 16:49:41 EDT Major PEM 3 Not OK
2014-10-31 16:49:41 EDT Major PEM 2 Not OK
2014-10-31 16:49:31 EDT Major CB 0 Failure
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 0 Not Online
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 1 Not Online
2014-10-31 16:49:31 EDT Minor Backup RE Active
```

show chassis alarms (PTX10008 Router)

```

user@host>show chassis alarms
12 alarms currently active
Alarm time          Class Description
2017-05-09 01:38:55 PDT Minor Loss of communication with Backup RE
2017-05-05 06:49:57 PDT Major FPC 5 LCPU Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 PE2 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE1 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE0 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-C Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-B Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-A Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Intake-B Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 Intake-A Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 5 running at lower speed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 4 running at lower speed

```

show chassis alarms (T4000 Router)

```

user@host> show chassis alarms
9 alarms currently active
Alarm time          Class Description
2007-06-02 01:41:10 UTC Minor RE 0 Not Supported
2007-06-02 01:41:10 UTC Minor CB 0 Not Supported
2007-06-02 01:41:10 UTC Minor Mixed Master and Backup RE types
2007-05-30 19:37:33 UTC Major SPMB 1 not online
2007-05-30 19:37:29 UTC Minor Front Bottom Fan Tray Absent
2007-05-30 19:37:13 UTC Major PEM 1 Input Failure
2007-05-30 19:37:13 UTC Major PEM 0 Not OK
2007-05-30 19:37:03 UTC Major PEM 0 Improper for Platform
2007-05-30 19:37:03 UTC Minor Backup RE Active

```

show chassis alarms (Unreachable Destinations Present on a T Series Router)

```

user@host> show chassis alarms
10 alarms currently active
Alarm time          Class Description
2011-08-30 18:43:53 PDT Major FPC 7 has unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 has unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online
2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online
2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

show chassis alarms (FPC Offline Due to Unreachable Destinations on a T Series Router)

```

user@host> show chassis alarms
10 alarms currently active
Alarm time          Class Description
2011-08-30 18:43:53 PDT Major FPC 7 offline due to unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online

```



```

2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online
2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

show chassis alarms (SCG Absent on a T Series Router)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time          Class Description
2011-01-23 21:42:46 PST Major SCG 0 NO EXT CLK MEAS-BKUP SCG ABS

```

show chassis alarms (Alarms Active on a TX Matrix Router)

```

user@host> show chassis alarms
scc-re0:
-----
8 alarms currently active
Alarm time          Class Description
2004-08-05 18:43:53 PDT Minor LCC 0 Minor Errors
2004-08-05 18:43:53 PDT Minor SIB 3 Not Online
2004-08-05 18:43:52 PDT Major SIB 2 Absent
2004-08-05 18:43:52 PDT Major SIB 1 Absent
2004-08-05 18:43:52 PDT Major SIB 0 Absent
2004-08-05 18:43:33 PDT Major LCC 2 Major Errors
2004-08-05 18:43:28 PDT Major LCC 0 Major Errors
2004-08-05 18:43:05 PDT Minor LCC 2 Minor Errors
lcc0-re0:
-----
5 alarms currently active
Alarm time          Class Description
2004-08-05 18:43:53 PDT Minor SIB 3 Not Online
2004-08-05 18:43:49 PDT Major SIB 2 Absent
2004-08-05 18:43:49 PDT Major SIB 1 Absent
2004-08-05 18:43:49 PDT Major SIB 0 Absent
2004-08-05 18:43:28 PDT Major PEM 0 Not OK
lcc2-re0:
-----
5 alarms currently active
Alarm time          Class Description
2004-08-05 18:43:35 PDT Minor SIB 3 Not Online
2004-08-05 18:43:33 PDT Major SIB 2 Absent
2004-08-05 18:43:33 PDT Major SIB 1 Absent
2004-08-05 18:43:33 PDT Major SIB 0 Absent
2004-08-05 18:43:05 PDT Minor PEM 1 Absent

```

show chassis alarms (TX Matrix Plus router with 3D SIBs)

```

user@host> show chassis alarms
sfc0-re0:
-----
Alarm time          Class Description
2014-04-08 14:35:13 IST Minor FPM 0 SFC Config Size Changed
2014-04-08 14:32:58 IST Major Fan Tray Failure
2014-04-08 14:31:53 IST Major SIB F13 6 Fault
2014-04-08 14:31:43 IST Major SIB F13 11 Fault
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 8 Fbr Cbl

```

```

2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 3 Fbr Cbl
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 15 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 14
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 10 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 8
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 7 fault
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 4 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 3 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 3
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0 Fbr Cbl
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 14 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 12 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12
2014-04-08 14:31:08 IST Major SIB F13 6 CXP 10 fault
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 6 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 4 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 2 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 0 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 XC HSL Link Error
2014-04-08 14:29:27 IST Minor LCC 0 Minor Errors
2014-04-08 14:28:37 IST Major LCC 0 Major Errors
2014-04-08 14:28:37 IST Major LCC 2 Major Errors
2014-04-08 14:28:37 IST Minor LCC 2 Minor Errors
2014-04-08 14:28:24 IST Major SIB F2S 4/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/0 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/0 Absent
2014-04-08 14:28:24 IST Major SIB F13 9 Absent
2014-04-08 14:28:24 IST Major SIB F13 8 Absent
2014-04-08 14:28:24 IST Major SIB F13 7 Absent
2014-04-08 14:28:24 IST Major SIB F13 4 Absent
2014-04-08 14:28:24 IST Major SIB F13 1 Absent
2014-04-08 14:28:22 IST Major PEM 0 Input Failure
2014-04-08 14:28:22 IST Major PEM 0 Not OK

```

```
lcc0-re0:
```

```
-----
12 alarms currently active
```

Alarm time	Class	Description
2014-04-08 14:36:08 IST	Minor	CB 1 M/S Switch Changed
2014-04-08 14:36:08 IST	Minor	CB 1 CHASSIS ID Changed
2014-04-08 14:35:43 IST	Minor	CB 0 M/S Switch Changed

```

2014-04-08 14:35:43 IST Minor CB 0 CHASSIS ID Changed
2014-04-08 14:29:30 IST Minor SIB 4 Not Online
2014-04-08 14:29:30 IST Minor SIB 3 Not Online
2014-04-08 14:29:30 IST Minor SIB 2 Not Online
2014-04-08 14:29:24 IST Major Rear Fan Tray Failure
2014-04-08 14:29:24 IST Major Front Bottom Fan Tray Improper for Platform
2014-04-08 14:29:24 IST Major Front Top Fan Tray Improper for Platform
2014-04-08 14:28:37 IST Major SIB 4 Absent
2014-04-08 14:28:37 IST Major SIB 3 Absent

```

```
lcc2-re0:
```

```
-----
12 alarms currently active
```

Alarm time	Class	Description
2014-04-08 14:36:02 IST	Minor	CB 1 M/S Switch Changed
2014-04-08 14:36:02 IST	Minor	CB 1 CHASSIS ID Changed
2014-04-08 14:35:42 IST	Minor	CB 0 M/S Switch Changed
2014-04-08 14:34:42 IST	Minor	CB 0 CHASSIS ID Changed
2014-04-08 14:29:29 IST	Minor	SIB 0 CXP 7 Unsupported Optics
2014-04-08 14:29:27 IST	Major	Front Bottom Fan Tray Improper for Platform
2014-04-08 14:29:27 IST	Major	Front Top Fan Tray Improper for Platform
2014-04-08 14:29:25 IST	Minor	SIB 4 Not Online
2014-04-08 14:29:25 IST	Minor	SIB 3 Not Online
2014-04-08 14:28:47 IST	Major	PEM 0 Not OK
2014-04-08 14:28:36 IST	Major	SIB 2 Absent
2014-04-08 14:28:36 IST	Minor	Host 0 Boot from alternate media

```
lcc6-re0:
```

```
-----
2 alarms currently active
```

Alarm time	Class	Description
2013-11-06 04:03:56 PST	Minor	SIB 1 CXP 0 XC HSL Link Error
2013-11-06 03:49:32 PST	Major	PEM 1 Not OK

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

To enable improved virtual private LAN service (VPLS) MAC address learning on T4000 routers, you must include the **enhanced-mode** statement at the **[edit chassis network-services]** hierarchy level and reboot the router. When router reboots, only the T4000 Type 5 FPCs are required to be present on the router. If there are any other FPCs (apart from T4000 Type 5 FPCs) on the T4000 router, such FPCs become offline, and FPC misconfiguration alarms are generated. The **show chassis alarm** command output displays FPC misconfiguration (**FPC *fpc-slot* misconfig**) as the reason for the generation of the alarms.

```
user@host> show chassis alarms
```

```
2 alarms currently active
```

Alarm time	Class	Description
2011-10-22 10:10:47 PDT	Major	FPC 1 misconfig
2011-10-22 10:10:46 PDT	Major	FPC 0 misconfig

show chassis alarms (Backup Routing Engine)

```
user@host> show chassis alarms
```

```
2 alarms are currently active
```

Alarm time	Class	Description
2005-04-07 10:12:22 PDT	Minor	Host 1 Boot from alternate media
2005-04-07 10:11:54 PDT	Major	Host 1 compact-flash missing in Boot List

show chassis alarms (EX Series Switch)

```
user@switch> show chassis alarms
4 alarms currently active
Alarm time           Class Description
2014-03-12 15:36:09 UTC Minor Require a Fan Tray upgrade
2014-03-12 15:00:02 UTC Major PEM 0 Input Failure
2014-03-12 15:00:02 UTC Major PEM 0 Not OK
2014-03-12 14:59:51 UTC Minor Host 1 Boot from alternate media
```

show chassis alarms (Alarms Active on the QFX Series and OCX Series Switches)

```
user@switch> show chassis alarms
1 alarms currently active
Alarm time           Class Description
2012-03-05 2:10:24 UTC Major FPC 0 PEM 0 Airflow not matching Chassis Airflow
```

show chassis alarms node-device (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms node-device Test
node-device ED3694
3 alarms currently active
Alarm time           Class Description
2011-08-24 16:04:15 UTC Major Test:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC Major Test:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC Major Test PEM 0 is not supported/powered
```

show chassis alarms (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms
IC-1:
-----
1 alarms currently active
Alarm time           Class Description
2011-08-24 16:04:15 UTC Minor Backup RE Active

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

SNG-0:
-----

NW-NG-0:
-----
1 alarms currently active
Alarm time           Class Description
2011-08-24 15:49:27 UTC Major Test PEM 0 is not supported/powered
```

show chassis alarms (Alarms Active on an EX8200 Switch)

```
user@switch> show chassis alarms

6 alarms currently active
```

Alarm time	Class	Description
2010-12-02 19:15:22 UTC	Major	Fan Tray Failure
2010-12-02 19:15:22 UTC	Major	Fan Tray Failure
2010-12-02 19:15:14 UTC	Minor	Check CB 0 Fabric Chip 1 on Plane/FPC/PFE: 1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ...
2010-12-02 19:15:14 UTC	Minor	Check CB 0 Fabric Chip 0 on Plane/FPC/PFE: 1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ...
2010-12-02 19:14:18 UTC	Major	PSU 1 Output Failure
2010-12-02 19:14:18 UTC	Minor	Loss of communication with Backup RE

show chassis alarms (EX9251 Switch)

```
user@switch> show chassis alarms
2 alarms currently active
Alarm time      Class  Description
2018-03-08 05:13:10 PST Major PEM 0 Not Powered
2018-03-08 05:13:10 PST Major Fan Tray 2 is not present
```

show chassis alarms (EX9253 Switch)

```
user@switch> show chassis alarms
6 alarms currently active
Alarm time      Class  Description
2018-03-07 01:09:01 PST Major Power Budget:Insufficient Power
2018-03-06 23:56:34 PST Minor Loss of communication with Backup RE
2018-02-15 00:48:10 PST Minor PEM 3 Not Present
2018-02-15 00:48:10 PST Minor PEM 2 Not Present
2018-02-15 00:48:07 PST Major PEM 4 Not Powered
2018-02-15 00:48:07 PST Major PEM 1 Not Powered
```

show chassis alarms (Alarms Active on a PTX5000 Packet Transport Router)

```
user@host> show chassis alarms
23 alarms currently active
Alarm time      Class  Description
2011-07-12 16:22:05 PDT Minor No Redundant Power for Rear Chassis
2011-07-12 16:22:05 PDT Major PDU 0 PSM 1 Not OK
2011-07-12 16:21:57 PDT Minor No Redundant Power for Fan 0-2
2011-07-12 16:21:57 PDT Major PDU 0 PSM 0 Not OK
2011-07-12 15:56:06 PDT Major PDU 1 PSM 2 Not OK
2011-07-12 15:56:06 PDT Minor No Redundant Power for FPC 0-7
2011-07-12 15:56:06 PDT Major PDU 0 PSM 3 Not OK
2011-07-12 15:28:20 PDT Major PDU 0 PSM 2 Not OK
2011-07-12 15:19:14 PDT Minor Backup RE Active
```

show chassis alarms (Mix of PDUs Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

All PDUs installed on a PTX5000 router must be of the same type. The **Mix of PDUs** or **Power Manager Non Operational** alarm is raised when different types of PDUs are installed on a PTX5000 router.

```
user@host> show chassis alarms
15 alarms currently active
Alarm time      Class  Description
2013-03-19 23:03:53 PDT Minor No Redundant Power
2013-03-19 23:03:48 PDT Minor Mix of PDUs
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 3 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 2 Absent
```

```

2013-03-19 23:03:47 PDT Minor PDU 1 PSM 1 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 0 Absent
2013-03-19 23:03:46 PDT Major No CG Online

```

show chassis alarms (PDU Converter Failed Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

The **PDU Converter Failed** alarm is raised when one or more 36 V booster converter of a DC PDU fails. If two or more 36 V booster converter fails, fan trays fail and the router might get over heated. Therefore, when this alarm is raised, check the PDU and replace it, if required.

```

user@host> show chassis alarms
11 alarms currently active
Alarm time          Class Description
2013-12-11 22:14:13 PST Minor No Redundant Power for System
2013-12-11 22:14:10 PST Major PDU 0 PSM 7 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 6 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 5 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 4 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 3 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 2 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 1 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 0 Not OK
2013-12-11 22:14:10 PST Major PDU 0 Not OK
2013-12-11 22:14:01 PST Major PDU 0 Converter Failed

```

show chassis alarms (No Power for System Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis alarms
8 alarms currently active
Alarm time          Class Description
2013-11-19 01:58:41 PST Major No Power for System
2013-11-19 01:58:37 PST Major PDU 0 PSM 1 Not OK
2013-11-19 01:56:46 PST Major PDU 0 PSM 2 Not OK
2013-11-19 01:54:26 PST Major PDU 0 PSM 3 Not OK
2013-11-19 01:53:30 PST Major PDU 1 PSM 3 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 2 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 1 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 0 Not OK

```

show chassis alarms (Alarms Active on an ACX2000 Universal Metro Router)

```

user@host> show chassis alarms
7 alarms currently active
Alarm time          Class Description
2012-05-22 11:19:09 UTC Major xe-0/3/1: Link down
2012-05-22 11:19:09 UTC Major xe-0/3/0: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/7: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/6: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/3: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/2: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/1: Link down

```

show chassis alarms (Active Alarm to Indicate Status of the Bad SCB Clock on MX Series)

```

user@host> show chassis alarms
1 alarm currently active
Alarm time          Class Description
2013-08-06 07:48:35 PDT Major CB 0 19.44 MHz clock failure

```

show chassis alarms (Alarms active on a PTX1000 Packet Transport Router)

```

user@host> show chassis alarms
2 alarms currently active
Alarm time           Class  Description
2004-08-10 00:55:49 UTC Major  PEM 1 Not Present
2004-08-10 00:55:49 UTC Major  PEM 0 Not Present

```

show chassis alarms (MX10003 Router)

If LCMD is down on the backup RE, then the following alarm is seen on the Master.

```

user@host> show chassis alarms
1 alarm currently active
Alarm time           Class  Description
2017-05-09 13:26:27 PDT Major  VMHost RE 1 host application failed

```

If LCMD is down on the master, then following alarms are displayed.

```

user@host> show chassis alarms
3 alarms currently active
Alarm time           Class  Description
2017-05-10 14:12:21 PDT Major  VMHost RE 0 host application failed
2017-05-10 14:12:16 PDT Minor  LCM Peer Absent
2017-05-09 13:26:27 PDT Major  VMHost RE 1 host application failed

```

If the LCMD process is crashing on the master, the system will switchover after one minute provided the backup RE LCMD connection is stable. The system will not switchover under the following conditions: if the backup RE LCMD connection is unstable or if the current master just gained mastership. When the master has just gained mastership, the switchover happens only after four minutes.

The LCM peer connection un-stable alarm is raised when the LCMD-CHASD IPC communication flaps three times within a small interval of two to three minutes. Once LCM peer connection un-stable alarm is raised, the connection status is monitored for two minutes.

```

user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2017-05-29 10:12:17 PDT Minor  LCM Peer Connection un-stable
2017-05-29 09:04:17 PDT Minor  PEM 8 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 9 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 7 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 3 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 0 Not Powered
2017-05-29 09:04:08 PDT Minor  Loss of communication with Backup RE

```

If there are no more connection flaps within this two minutes time interval, the LCM peer connection un-stable alarm is cleared.

```

6 alarms currently active
Alarm time           Class  Description
2017-05-29 09:04:17 PDT Minor  PEM 8 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 9 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 7 Not Powered
2017-05-29 09:04:17 PDT Minor  PEM 3 Not Powered

```

```
2017-05-29 09:04:17 PDT Minor PEM 0 Not Powered
2017-05-29 09:04:08 PDT Minor Loss of communication with Backup RE
```

A major alarm is raised even if there is on one PLL lock error, and this alarm can be cleared only through an FPC restart.

```
user@host> show chassis alarms
4 alarms currently active
Alarm time          Class Description
2017-02-16 09:06:06 PDT Major FPC 0 Major Errors
2017-02-16 09:08:40 PDT Major FPC 1 Major Errors
2017-02-16 09:11:47 PST Minor Fan Tray 3 Pair 1 Outer Fan running at over speed
2017-02-16 09:11:47 PST Minor Fan Tray 3 Pair 1 Inner Fan running at over speed
```

show chassis alarms (Alarms active on a MX10008 Router)

```
user@host> show chassis alarms
13 alarms currently active
Alarm time          Class Description
2018-07-17 05:48:08 PDT Major FPC 2 I2C Failure
2018-07-17 05:47:02 PDT Minor Mixed Master and Backup RE types
2018-07-17 05:47:01 PDT Major Fan Tray 0 Fan 5 Failed
2018-07-17 05:47:01 PDT Major Fan Tray 0 Fan 4 Failed
2018-07-17 05:47:01 PDT Minor PEM 5 Not Powered
2018-07-17 05:47:01 PDT Minor PEM 5 Feed 2 has no input source
2018-07-17 05:47:01 PDT Minor PEM 5 Feed 1 has no input source
2018-07-17 05:47:01 PDT Minor PEM 4 Not Powered
2018-07-17 05:47:01 PDT Minor PEM 4 Feed 2 has no input source
2018-07-17 05:47:01 PDT Minor PEM 4 Feed 1 has no input source
2018-07-17 05:47:01 PDT Minor PEM 3 Not Powered
2018-07-17 05:47:01 PDT Minor PEM 3 Feed 2 has no input source
2018-07-17 05:47:01 PDT Minor PEM 3 Feed 1 has no input source
```


show chassis environment

List of Syntax	Syntax on page 173 Syntax (T320, T640, T1600, and T4000 Routers) on page 173 Syntax (TX Matrix Routers) on page 173 Syntax (TX Matrix Plus Routers) on page 173 Syntax (MX Series Routers) on page 173 Syntax (MX104 Universal Routing Platforms) on page 174 Syntax (MX150 Router Appliance) on page 174 Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms) on page 174 Syntax (MX10003 and MX204 Universal Routing Platforms) on page 174 Syntax (EX8200 Switches) on page 174 Syntax (EX Series Switches except EX8200) on page 174 Syntax (QFX Series) on page 174 Syntax (OCX Series) on page 175 Syntax (PTX Series Packet Transport Routers) on page 175 Syntax (ACX Series Universal Metro Routers) on page 175 Syntax (ACX5048 and ACX5096 Routers) on page 175 Syntax (ACX500 Routers) on page 175
Syntax	show chassis environment
Syntax (T320, T640, T1600, and T4000 Routers)	show chassis environment <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</i> > <scg <i>scg-slot-number</i> > <sib <i>sib-slot-number</i> >
Syntax (TX Matrix Routers)	show chassis environment <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers)	show chassis environment <cb <i>cb-slot-number</i> > <cip <i>cip-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <lcc <i>number</i> > <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</i> > <scg <i>scg-slot-number</i> > <sfc <i>number</i> > <sib <i>sib-slot-number</i> >
Syntax (MX Series Routers)	show chassis environment <all-members> <local> <member <i>member-id</i> >

Syntax (MX104 Universal Routing Platforms)	show chassis environment <cb> <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</i> >
Syntax (MX150 Router Appliance)	show chassis environment <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</i> >
Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms)	show chassis environment <adc <i>adc-slot-number</i> > <all-members> <cb <i>cb-slot-number</i> > <fan <i>fantray-slot-number</i> > <fpc <i>fpc-slot-number</i> > <fpm> <local> <member <i>member-id</i> > <monitored> <psm <i>psm-slot-number</i> > <routing-engine <i>re-slot-number</i> > <sfb <i>sfb-slot-number</i> > <satellite [<i>fpc-slot slot-id</i> [<i>device-alias alias-name</i>]]>
Syntax (MX10003 and MX204 Universal Routing Platforms)	show chassis environment <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <pem <i>pem-slot-number</i> > <routing-engine <i>re-slot-number</i> >
Syntax (EX8200 Switches)	show chassis environment <all-members> <cb <i>cb-slot-number</i> > <fpc <i>fpc-slot-number</i> > <local> <member <i>member-id</i> > <psu <i>psu-slot-number</i> > <routing-engine <i>re-slot-number</i> >
Syntax (EX Series Switches except EX8200)	show chassis environment <all-members> <fpc <i>fpc-slot-number</i> > <local> <member <i>member-id</i> > <power-supply-unit> <routing-engine> <satellite [<i>fpc-slot slot-id</i> [<i>device-alias alias-name</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>

	<pre> <node-device name> <pem slot-number (interconnect-device name slot-number) (node-device name)> <routing-engine name <interconnect-device name slot-number>> </pre>
Syntax (OCX Series)	show chassis environment
Syntax (PTX Series Packet Transport Routers)	<pre> show chassis environment <cb cb-slot-number> <ccg ccg-slot-number > <fpc fpc-slot-number> <fpm> <monitored> <pdu pdu-slot-number> <routing-engine re-slot-number> <sib sib-slot-number> </pre>
Syntax (ACX Series Universal Metro Routers)	<pre> show chassis environment <cb cb-slot-number> <pem pem-slot-number> <routing-engine re-slot-number> </pre>
Syntax (ACX5048 and ACX5096 Routers)	<pre> show chassis environment <fpc slot-number> <pem> <routing-engine> </pre>
Syntax (ACX500 Routers)	<pre> show chassis environment <cb cb-slot-number> <routing-engine re-slot-number> </pre>
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 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>monitored option added in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.1 for T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX 2020 and MX2010 Universal Routing Platforms.</p> <p>pem option introduced in Junos OS Release 12.3 for ACX4000 Universal Metro Routers.</p> <p>satellite option introduced in Junos OS Release 14.2R3.</p> <p>all-members, local, and member member-id options introduced in Junos OS Release 15.1 for MX2010 and MX2020 routers.</p> <p>Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p>

Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.
Command introduced in Junos OS Release 17.2 for PTX10008 Routers.
Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.
Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.
Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.
Command introduced in Junos OS Release 18.2 for EX9253 Switches.
Command introduced in Junos OS Release 18.2R1 for MX10008 Routers.

- Description** Display environmental information about the router or switch chassis, including the temperature and information about the fans, power supplies, and Routing Engine.
- In addition, on ACX4000 routers, display temperature information about the different channels of a Modular Interface Card (MIC). The number of channels displayed depends on the type of MIC installed.
- Starting with Junos OS Release 14.1, the **show chassis environment cb cb-slot-number | ccg ccg-slot-number | fpc fpc-slot-number | fpm | monitored | pdu pdu-slot-number | routing-engine re-slot-number | sib sib-slot-number** operational mode command output displays environmental information for the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-PIA) and other components in a PTX5000 Packet Transport Router.
- Options**
- none**—Display environmental information about the router or switch chassis. On a TX Matrix router, display environmental information about the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about the TX Matrix Plus router and its attached routers.
 - all-members**—(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for all the members of the Virtual Chassis configuration.
 - adc adc-slot-number**—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the adapter cards. For MX2020 routers, replace **adc-slot-number** with a value from **0** through **19**. For MX2010 and MX2008 routers, replace **adc-slot-number** with a value from **0** through **9**.
 - cb cb-slot-number**—(ACX Series Universal Metro Routers, EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2020 routers, MX2010 routers, MX2008 routers, PTX Series Packet Transport Routers, QFX Series, and T Series routers, and TX Matrix Plus routers only) (Optional) Display chassis environmental information for the Control Board. On devices other than EX Series switches, replace **cb-slot** with **0** or **1**.
 - cip cip-slot-number**—(TX Matrix Plus routers only) (Optional) Display chassis environmental information for the Connection Interface Panel (CIP). Replace the **cip-slot-number** variable with a value of **0** or **1**.
 - cb interconnect-device name**—(QFabric systems only) (Optional) Display chassis environmental information for the Control Board on an Interconnect device.

ccg *ccg-slot-number*—(PTX Series only) (Optional) Display chassis environmental information for the Centralized Clock Generator. Replace ***cb-slot*** with a value of **0** or **1**.

fan *fantray-slot-number*—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the fan trays. Replace ***fantray-slot-number*** with a value from **0** through **3**.

fpc *fpc-slot*—(EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2010 routers, MX2020 routers, MX2008 routers, PTX Series Packet Transport Routers, QFX Series, QFX3500 switches, QFabric systems, T Series routers, and TX Matrix Plus routers) (Optional) Display chassis environmental information for a specified Flexible PIC Concentrator. For MX2010 and MX2008 routers, replace ***fpc-slot*** with a value from **0** through **9**. For MX2020 routers, replace ***fpc-slot*** with a value from **0** through **19**. For information about FPC numbering, see [show chassis environment fpc](#). On a QFabric system, display chassis environmental information for a specified Flexible PIC Concentrator on an Interconnect device. On an EX Series switch, display chassis environmental information for a specified Flexible PIC Concentrator; see the hardware documentation for your switch for information on FPC numbering. On a TX Matrix Plus router with 3D SIBs replace ***fpc-slot*** with a value from **0** through **63**.

fpm—(M120, M320, and M40e routers, MX2010 routers, MX2020 routers, MX2008 routers, PTX Series, Packet Transport Routers, T Series routers, and TX Matrix Plus routers only) (Optional) Display chassis environmental information for the craft interface (FPM).

interconnect-device *name*—(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for the local Virtual Chassis member.

member *member-id*—(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for the specified member of the Virtual Chassis

configuration. On MX Series routers, replace *member-id* with a value of **0** or **1**. For EX Series switches, see *member* for member ID values.

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

node-device name—(QFabric systems only) (Optional) Display chassis environmental information for the Node device.

pdu pdu-slot-number—(PTX Series only) (Optional) Display chassis environmental information for the specified power distribution unit.

pem—(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Power Entry Module on the specified Interconnect device or Node device.

pem pem-slot-number—(ACX Series Universal Metro Routers, M120, M320, and M40e routers, MX Series routers, MX104 routers, QFX Series, and T Series routers only) (Optional) Display chassis environmental information for the Power Entry Module on the specified Power Entry Module. For information about the options, see [show chassis environment pem](#).

psm psm-slot-number—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the power supply module. For MX2020 routers, replace *psm-slot-number* with a value from **0** through **17**. For MX2010 and MX2008 routers, replace *psm-slot-number* with a value from **0** through **8**.

psu psu-slot-number—(EX Series switches only) (Optional) Display chassis environmental information for a specified power supply.

routing-engine—(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Routing Engine on the specified Interconnect device.

routing-engine re-slot-number—(Optional) Display chassis environmental information for the specified Routing Engine. For information about the options, see [show chassis environment routing-engine](#).

satellite [fpc-slot slot-id | device-alias alias-name]—(Junos Fusion only) (Optional) Display chassis environmental information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scg—(T Series routers only) (Optional) Display chassis environmental information about the SONET Clock Generator.

scc—(TX Matrix routers only) (Optional) Display chassis environmental information about the TX Matrix router (switch-card chassis).

sfb sfb-slot-number—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the switch fabric board. Replace **sfb-slot-number** with a value from 0 through 7.

sfc number—(TX Matrix Plus routers only) (Optional) Display chassis environmental information about the respective TX Matrix Plus router (switch-fabric chassis). Replace **number** variable with 0.

sib sib-slot-number—(M320 routers, PTX Series Packet Transport Routers, and T Series routers only) (Optional) Display chassis environmental information about the specified switch interface board. For information about the options, see *show chassis environment sib*.

Required Privilege Level

view

Related Documentation

- *show chassis environment adc*
- *show chassis environment cb*
- *show chassis environment ccg*
- *show chassis environment cip*
- [show chassis environment fpc on page 255](#)
- *show chassis environment fpm*
- *show chassis environment lcc*
- *show chassis environment mcs*
- *show chassis environment monitored*
- *show chassis environment pcg*
- *show chassis environment pdu*
- [show chassis environment pem on page 304](#)
- *show chassis environment psm*
- *show chassis environment psu*
- [show chassis environment routing-engine on page 318](#)
- *show chassis environment scg*
- *show chassis environment sfb*
- *show chassis environment sib*
- *show chassis environment sfc*

List of Sample Output

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[show chassis environment \(M7i Router\) on page 182](#)
[show chassis environment \(M10 Router\) on page 183](#)

[show chassis environment \(M10i Router\) on page 183](#)
[show chassis environment \(M20 Router\) on page 184](#)
[show chassis environment \(M40 Router\) on page 184](#)
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[show chassis environment \(M120 Router\) on page 185](#)
[show chassis environment \(M160 Router\) on page 186](#)
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[show chassis environment \(MX240 Router with SCBE\) on page 189](#)
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Output Fields [Table 9 on page 181](#) lists the output fields for the **show chassis environment** command. Output fields are listed in the approximate order in which they appear.

Table 9: 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). <ul style="list-style-type: none"> • On PTX Series Packet Transport Routers and MX2010, MX2020, and MX2008 Routers, multiple cooling zones are supported. FRU temperatures in each zone are coordinated with the fan speed of fan trays in those zones. • EX2200 switches have a side-to-rear cooling system. The Local Intake temperature is measured by the sensor on the right side of the chassis, and the Remote Intake temperature is measured by the sensor on the left side of the chassis. • 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 Routers and MX2010, MX2020, and MX2008 Routers, multiple fan trays are supported. Fan status is reported in Fan Tray or Fan combinations. Measurement indicates actual fan RPM (PTX and MX2010, MX2020, and MX2008 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 Routers, 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	<p>(MX2010, MX2020, and MX2008 Routers) Information about the chassis component: Routing Engines, Controls Boards (CBs), Switch Fabric Boards (SFBs), PICs, Flexible PIC Concentrators (FPCs), and Adapter Cards (ADCs).</p> <p>(MX104 Routers) Information about the chassis components: Routing Engines, Control Board (CB), Power Entry Module (PEM), and Compact Forwarding Engine Board (AFEB).</p> <p>(QFabric Systems) Information about the chassis component: Control Boards, Routing Engines, Flexible PIC Concentrators (FPCs), and Power Entry Modules (PEMs), Node Devices, and Interconnect Devices.</p> <p>(QFX Series) Information about the chassis component: Flexible PIC Concentrators (FPCs), and Power Entry Modules (PEMs).</p>

Table 9: show chassis environment Output Fields (continued)

Field Name	Field Description
Status	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the specified chassis component. For example, if the Class is Fan, the fan status can be:</p> <ul style="list-style-type: none"> • 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>(MX104, MX2010, MX2020, and MX2008 Routers) Dependant on the Class. For example, if the Class is Temp, indicates the temperature in degree Celsius and degrees Fahrenheit. If the Class is Fan, indicates actual fan RPM.</p>

Sample Output

show chassis environment (M5 Router)

```

user@host> show chassis environment
Class Item                Status    Measurement
Power Power Supply A       OK
       Power Supply B     Absent
Temp  FPC 0                OK        30 degrees C / 86 degrees F
       FEB                OK        33 degrees C / 91 degrees F
       PS Intake          OK        27 degrees C / 80 degrees F
       PS Exhaust         OK        27 degrees C / 80 degrees F
       Routing Engine     OK        34 degrees C / 93 degrees F
Fans  Left Fan 1          OK        Spinning at normal speed
       Left Fan 2         OK        Spinning at normal speed
       Left Fan 3         OK        Spinning at normal speed
       Left Fan 4         OK        Spinning at normal speed
Misc  Craft Interface     OK

```

show chassis environment (M7i Router)

```

user@host> show chassis environment
Class Item                Status    Measurement
Power Power Supply 0       OK
       Power Supply 1     Absent
Temp  Intake              OK        22 degrees C / 71 degrees F
       FPC 0              OK        23 degrees C / 73 degrees F
       Power Supplies     OK        23 degrees C / 73 degrees F
       CFEB Intake        OK        24 degrees C / 75 degrees F
       CFEB Exhaust       OK        29 degrees C / 84 degrees F
       Routing Engine     OK        26 degrees C / 78 degrees F
Fans  Fan 1               OK        Spinning at normal speed

```

Fan 2	OK	Spinning at normal speed
Fan 3	OK	Spinning at normal speed
Fan 4	OK	Spinning at normal speed

show chassis environment (M10 Router)

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

Class	Item	Status	Measurement
Power	Power Supply A	OK	
	Power Supply B	Failed	
Temp	FPC 0	OK	36 degrees C / 96 degrees F
	FPC 1	OK	35 degrees C / 95 degrees F
	FEB	OK	34 degrees C / 93 degrees F
	PS Intake	OK	31 degrees C / 87 degrees F
	PS Exhaust	OK	34 degrees C / 93 degrees F
	Routing Engine	OK	35 degrees C / 95 degrees F
Fans	Left Fan 1	OK	Spinning at normal speed
	Left Fan 2	OK	Spinning at normal speed
	Left Fan 3	OK	Spinning at normal speed
	Left Fan 4	OK	Spinning at normal speed
Misc	Craft Interface	OK	

show chassis environment (M10i Router)

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

Class	Item	Status	Measurement
Power	Power Supply 0	OK	
	Power Supply 1	OK	
	Power Supply 2	Absent	
	Power Supply 3	Absent	
Temp	Intake	OK	26 degrees C / 78 degrees F
	FPC 0	OK	27 degrees C / 80 degrees F
	FPC 1	OK	28 degrees C / 82 degrees F
	Lower Power Supplies	OK	29 degrees C / 84 degrees F
	Upper Power Supplies	OK	28 degrees C / 82 degrees F
	CFEB Intake	OK	27 degrees C / 80 degrees F
	CFEB Exhaust	OK	36 degrees C / 96 degrees F
	Routing Engine 0	OK	31 degrees C / 87 degrees F
	Routing Engine 1	OK	27 degrees C / 80 degrees F
Fans	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 0 Fan 7	OK	Spinning at normal speed
	Fan Tray 0 Fan 8	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	Absent	
	Fan Tray 1 Fan 2	Absent	
	Fan Tray 1 Fan 3	Absent	
	Fan Tray 1 Fan 4	Absent	
	Fan Tray 1 Fan 5	Absent	
	Fan Tray 1 Fan 6	Absent	
	Fan Tray 1 Fan 7	Absent	
	Fan Tray 1 Fan 8	Absent	

show chassis environment (M20 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A        OK
       Power Supply B      Absent
Temp  FPC 0                 OK          28 degrees C / 82 degrees F
       FPC 1                 OK          27 degrees C / 80 degrees F
       Power Supply A        OK          22 degrees C / 71 degrees F
       Power Supply B      Absent
       SSB 0                 OK          30 degrees C / 86 degrees F
       Backplane             OK          22 degrees C / 71 degrees F
       Routing Engine 0      OK          26 degrees C / 78 degrees F
       Routing Engine 1      Testing
Fans  Rear Fan              OK          Spinning at normal speed
       Front Upper Fan       OK          Spinning at normal speed
       Front Middle Fan      OK          Spinning at normal speed
       Front Bottom Fan      OK          Spinning at normal speed
Misc  Craft Interface       OK

```

show chassis environment (M40 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A        OK
       Power Supply B      Absent
Temp  FPC 3                 OK          24 degrees C / 75 degrees F
       FPC 6                 OK          26 degrees C / 78 degrees F
       SCB                   OK          26 degrees C / 78 degrees F
       Backplane @ A1        OK          28 degrees C / 82 degrees F
       Backplane @ A2        OK          23 degrees C / 73 degrees F
       Routing Engine         OK          26 degrees C / 78 degrees F
Fans  Top Impeller          OK          Spinning at normal speed
       Bottom impeller       OK          Spinning at normal speed
       Rear Left Fan         OK          Spinning at normal speed
       Rear Center Fan       OK          Spinning at normal speed
       Rear Right Fan        OK          Spinning at normal speed
Misc  Craft Interface       OK

```

show chassis environment (M40e Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power PEM 0                OK
       PEM 1                Absent
Temp  PCG 0                 OK          44 degrees C / 111 degrees F
       PCG 1                 OK          47 degrees C / 116 degrees F
       Routing Engine 0      OK          40 degrees C / 104 degrees F
       Routing Engine 1      OK          37 degrees C / 98 degrees F
       MCS 0                 OK          45 degrees C / 113 degrees F
       MCS 1                 OK          42 degrees C / 107 degrees F
       SFM 0 SPP             OK          40 degrees C / 104 degrees F
       SFM 0 SPR             OK          44 degrees C / 111 degrees F
       SFM 1 SPP             OK          43 degrees C / 109 degrees F
       SFM 1 SPR             OK          45 degrees C / 113 degrees F
       FPC 0                 OK          38 degrees C / 100 degrees F
       FPC 1                 OK          40 degrees C / 104 degrees F
       FPC 2                 OK          38 degrees C / 100 degrees F

```

	FPC 4	OK	34 degrees C / 93 degrees F
	FPC 5	OK	43 degrees C / 109 degrees F
	FPC 6	OK	41 degrees C / 105 degrees F
	FPC 7	OK	43 degrees C / 109 degrees F
	FPM CMB	OK	28 degrees C / 82 degrees F
	FPM Display	OK	28 degrees C / 82 degrees F
Fans	Rear Bottom Blower	OK	Spinning at normal speed
	Rear Top Blower	OK	Spinning at normal speed
	Front Top Blower	OK	Spinning at normal speed
	Fan Tray Rear Left	OK	Spinning at normal speed
	Fan Tray Rear Right	OK	Spinning at normal speed
	Fan Tray Front Left	OK	Spinning at normal speed
	Fan Tray Front Right	OK	Spinning at normal speed
Misc	CIP	OK	

show chassis environment (M120 Router)

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

Class	Item	Status	Measurement
Temp	PEM 0	OK	
	PEM 1	OK	
	Routing Engine 0	OK	43 degrees C / 109 degrees F
	Routing Engine 1	OK	44 degrees C / 111 degrees F
	CB 0 Intake	OK	33 degrees C / 91 degrees F
	CB 0 Exhaust A	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust B	OK	35 degrees C / 95 degrees F
	CB 1 Intake	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust A	OK	38 degrees C / 100 degrees F
	CB 1 Exhaust B	OK	35 degrees C / 95 degrees F
	FEB 3 Intake	OK	35 degrees C / 95 degrees F
	FEB 3 Exhaust A	OK	37 degrees C / 98 degrees F
	FEB 3 Exhaust B	OK	39 degrees C / 102 degrees F
	FEB 4 Intake	OK	33 degrees C / 91 degrees F
	FEB 4 Exhaust A	OK	39 degrees C / 102 degrees F
	FEB 4 Exhaust B	OK	36 degrees C / 96 degrees F
	FPC 2 Exhaust A	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust B	OK	31 degrees C / 87 degrees F
	FPC 3 Exhaust A	OK	32 degrees C / 89 degrees F
	FPC 3 Exhaust B	OK	33 degrees C / 91 degrees F
	FPC 4 Exhaust A	OK	32 degrees C / 89 degrees F
	FPC 4 Exhaust B	OK	30 degrees C / 86 degrees F
Fans	Front Top Tray Fan 1	OK	Spinning at normal speed
	Front Top Tray Fan 2	OK	Spinning at normal speed
	Front Top Tray Fan 3	OK	Spinning at normal speed
	Front Top Tray Fan 4	OK	Spinning at normal speed
	Front Top Tray Fan 5	OK	Spinning at normal speed
	Front Top Tray Fan 6	OK	Spinning at normal speed
	Front Top Tray Fan 7	OK	Spinning at normal speed
	Front Top Tray Fan 8	OK	Spinning at normal speed
	Front Bottom Tray Fan 1	OK	Spinning at normal speed
	Front Bottom Tray Fan 2	OK	Spinning at normal speed
	Front Bottom Tray Fan 3	OK	Spinning at normal speed
	Front Bottom Tray Fan 4	OK	Spinning at normal speed
	Front Bottom Tray Fan 5	OK	Spinning at normal speed
	Front Bottom Tray Fan 6	OK	Spinning at normal speed
	Front Bottom Tray Fan 7	OK	Spinning at normal speed
	Front Bottom Tray Fan 8	OK	Spinning at normal speed
	Rear Top Tray Fan 1	OK	Spinning at normal speed
	Rear Top Tray Fan 2	OK	Spinning at normal speed
	Rear Top Tray Fan 3	OK	Spinning at normal speed

Rear Top Tray Fan 4	OK	Spinning at normal speed
Rear Top Tray Fan 5	OK	Spinning at normal speed
Rear Top Tray Fan 6	OK	Spinning at normal speed
Rear Top Tray Fan 7	OK	Spinning at normal speed
Rear Top Tray Fan 8	OK	Spinning at normal speed
Rear Bottom Tray Fan 1	OK	Spinning at normal speed
Rear Bottom Tray Fan 2	OK	Spinning at normal speed
Rear Bottom Tray Fan 3	OK	Spinning at normal speed
Rear Bottom Tray Fan 4	OK	Spinning at normal speed
Rear Bottom Tray Fan 5	OK	Spinning at normal speed
Rear Bottom Tray Fan 6	OK	Spinning at normal speed
Rear Bottom Tray Fan 7	OK	Spinning at normal speed
Rear Bottom Tray Fan 8	OK	Spinning at normal speed

show chassis environment (M160 Router)

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

Class	Item	Status	Measurement
Power	PEM 0	OK	PEM 1
Temp	PCG 0	OK	45 degrees C / 113 degrees F
	PCG 1	Absent	
	Routing Engine 0	OK	35 degrees C / 95 degrees F
	Routing Engine 1	Absent	
	MCS 0	OK	50 degrees C / 122 degrees F
	SFM 0 SPP	OK	47 degrees C / 116 degrees F
	SFM 0 SPR	OK	49 degrees C / 120 degrees F
	SFM 1 SPP	OK	50 degrees C / 122 degrees F
	SFM 1 SPR	OK	50 degrees C / 122 degrees F
	SFM 2 SPP	OK	51 degrees C / 123 degrees F
	SFM 2 SPR	OK	52 degrees C / 125 degrees F
	SFM 3 SPP	OK	52 degrees C / 125 degrees F
	SFM 3 SPR	OK	48 degrees C / 118 degrees F
	FPC 0	OK	45 degrees C / 113 degrees F
	FPC 6	OK	43 degrees C / 109 degrees F
	FPM CMB	OK	31 degrees C / 87 degrees F
	FPM Display	OK	33 degrees C / 91 degrees F
Fans	Rear Bottom Blower	OK	Spinning at normal speed
	Rear Top Blower	OK	Spinning at normal speed
	Front Top Blower	OK	Spinning at normal speed
	Fan Tray Rear Left	OK	Spinning at normal speed
	Fan Tray Rear Right	OK	Spinning at normal speed
	Fan Tray Front Left	OK	Spinning at normal speed
	Fan Tray Front Right	OK	Spinning at normal speed
Misc	CIP	OK	

show chassis environment (M320 Router)

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

Class	Item	Status	Measurement
Temp	PEM 0	Absent	
	PEM 1	Absent	
	PEM 2	OK	
	PEM 3	OK	
	Routing Engine 0	OK	33 degrees C / 91 degrees F
	Routing Engine 1	OK	32 degrees C / 89 degrees F
	CB 0	OK	36 degrees C / 96 degrees F
	CB 1	OK	36 degrees C / 96 degrees F
	SIB 0	OK	38 degrees C / 100 degrees F
	SIB 1	OK	29 degrees C / 84 degrees F

SIB 2	OK	38 degrees C / 100 degrees F
SIB 3	OK	41 degrees C / 105 degrees F
FPC 0 Intake	OK	28 degrees C / 82 degrees F
FPC 0 Exhaust	OK	40 degrees C / 104 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust	OK	39 degrees C / 102 degrees F
FPC 2 Intake	OK	28 degrees C / 82 degrees F
FPC 2 Exhaust	OK	38 degrees C / 100 degrees F
FPC 3 Intake	OK	28 degrees C / 82 degrees F
FPC 3 Exhaust	OK	39 degrees C / 102 degrees F
FPC 6 Intake	OK	27 degrees C / 80 degrees F
FPC 6 Exhaust	OK	39 degrees C / 102 degrees F
FPC 7 Intake	OK	27 degrees C / 80 degrees F
FPC 7 Exhaust	OK	42 degrees C / 107 degrees F
FPM GBUS	OK	30 degrees C / 86 degrees F
Fan Top Left Front fan	OK	Spinning at normal speed
Top Right Rear fan	OK	Spinning at normal speed
Top Right Front fan	OK	Spinning at normal speed
Top Left Rear fan	OK	Spinning at normal speed
Bottom Left Front fan	OK	Spinning at normal speed
Bottom Right Rear fan	OK	Spinning at normal speed
Bottom Right Front fan	OK	Spinning at normal speed
Bottom Left Rear fan	OK	Spinning at normal speed
Rear Fan 1 (TOP)	OK	Spinning at normal speed
Rear Fan 2	OK	Spinning at normal speed
Rear Fan 3	OK	Spinning at normal speed
Rear Fan 4	OK	Spinning at normal speed
Rear Fan 5	OK	Spinning at normal speed
Rear Fan 6	OK	Spinning at normal speed
Rear Fan 7 (Bottom)	OK	Spinning at normal speed
Misc CIP	OK	

show chassis environment (MX150)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Power FPC 0 Power Supply 0              OK
Temp  FPC 0 Sensor 1                     OK           42 degrees C / 107 degrees F
      FPC 0 Sensor 2                     OK           39 degrees C / 102 degrees F
      FPC 0 Coretemp                     OK           75 degrees C / 167 degrees F
Fans  FPC 0 Fan Tray 0                    OK           Spinning at normal speed
      FPC 0 Fan Tray 1                    OK           Spinning at normal speed

```

show chassis environment (MX104 Router)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Temp  PEM 0                              OK           34 degrees C / 93 degrees F
      PEM 1                              Absent
      ABB 0 Intake                        OK           33 degrees C / 91 degrees F
      ABB 0 Exhaust A                     OK           42 degrees C / 107 degrees F
      ABB 0 Exhaust B                     OK           43 degrees C / 109 degrees F
      ABB 1 Intake                        Absent
      ABB 1 Exhaust A                     Absent
      ABB 1 Exhaust B                     Absent
Routing Engine 0                         OK           34 degrees C / 93 degrees F
Routing Engine 0 CPU                     OK           46 degrees C / 114 degrees F
Routing Engine 1                         Absent
Routing Engine 1 CPU                     Absent

```

	AFEB 0 AFEB Processor	OK	33 degrees C / 91 degrees F
Fans	Fan 1	OK	Spinning at normal speed
	Fan 2	OK	Spinning at normal speed
	Fan 3	OK	Spinning at normal speed
	Fan 4	OK	Spinning at normal speed
	Fan 5	OK	Spinning at normal speed

show chassis environment (MX240 Router)

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

Class	Item	Status	Measurement
Temp	PEM 0	OK	40 degrees C / 104 degrees F
	PEM 1	OK	45 degrees C / 113 degrees F
	PEM 2	Absent	
	PEM 3	Absent	
	Routing Engine 0	OK	39 degrees C / 102 degrees F
	Routing Engine 1	OK	37 degrees C / 98 degrees F
	CB 0 Intake	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 0 Exhaust B	OK	38 degrees C / 100 degrees F
	CB 0 ACBC	OK	37 degrees C / 98 degrees F
	CB 0 SF A	OK	49 degrees C / 120 degrees F
	CB 0 SF B	OK	41 degrees C / 105 degrees F
	CB 1 Intake	OK	37 degrees C / 98 degrees F
	CB 1 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 1 ACBC	OK	38 degrees C / 100 degrees F
	CB 1 SF A	OK	47 degrees C / 116 degrees F
	CB 1 SF B	OK	41 degrees C / 105 degrees F
	FPC 1 Intake	OK	33 degrees C / 91 degrees F
	FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
	FPC 1 Exhaust B	OK	53 degrees C / 127 degrees F
	FPC 1 I3 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 1 I3 0 Chip	OK	53 degrees C / 127 degrees F
	FPC 1 I3 1 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	47 degrees C / 116 degrees F
	FPC 1 I3 2 Chip	OK	49 degrees C / 120 degrees F
	FPC 1 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 1 IA 0 Chip	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 Intake	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
	FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 2 I3 1 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 1 Chip	OK	55 degrees C / 131 degrees F
	FPC 2 I3 2 TSensor	OK	49 degrees C / 120 degrees F
	FPC 2 I3 2 Chip	OK	52 degrees C / 125 degrees F
	FPC 2 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 2 I3 3 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 2 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 2 IA 1 Chip	OK	53 degrees C / 127 degrees F
Fans	Front Fan	OK	Spinning at normal speed

Middle Fan	OK	Spinning at normal speed
Rear Fan	OK	Spinning at normal speed

show chassis environment (MX240 Router with SCBE)

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

Class	Item	Status	Measurement
Temp	PEM 0	OK	40 degrees C / 104 degrees F
	PEM 1	OK	45 degrees C / 113 degrees F
	PEM 2	Absent	
	PEM 3	Absent	
	Routing Engine 0	OK	39 degrees C / 102 degrees F
	Routing Engine 1	OK	37 degrees C / 98 degrees F
	CB 0 Intake	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 0 Exhaust B	OK	38 degrees C / 100 degrees F
	CB 0 ACBC	OK	37 degrees C / 98 degrees F
	CB 0 XF A	OK	49 degrees C / 120 degrees F
	CB 0 XF B	OK	41 degrees C / 105 degrees F
	CB 1 Intake	OK	37 degrees C / 98 degrees F
	CB 1 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 1 ACBC	OK	38 degrees C / 100 degrees F
	CB 1 XF A	OK	47 degrees C / 116 degrees F
	CB 1 XF B	OK	41 degrees C / 105 degrees F
	FPC 1 Intake	OK	33 degrees C / 91 degrees F
	FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
	FPC 1 Exhaust B	OK	53 degrees C / 127 degrees F
	FPC 1 I3 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 1 I3 0 Chip	OK	53 degrees C / 127 degrees F
	FPC 1 I3 1 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	47 degrees C / 116 degrees F
	FPC 1 I3 2 Chip	OK	49 degrees C / 120 degrees F
	FPC 1 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 1 IA 0 Chip	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 Intake	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
	FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 2 I3 1 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 1 Chip	OK	55 degrees C / 131 degrees F
	FPC 2 I3 2 TSensor	OK	49 degrees C / 120 degrees F
	FPC 2 I3 2 Chip	OK	52 degrees C / 125 degrees F
	FPC 2 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 2 I3 3 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 2 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 2 IA 1 Chip	OK	53 degrees C / 127 degrees F
Fans	Front Fan	OK	Spinning at normal speed
	Middle Fan	OK	Spinning at normal speed
	Rear Fan	OK	Spinning at normal speed

show chassis environment (MX480 Router)

```

user@host> 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

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show chassis environment (MX480 Router with SCBE)

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 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)

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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

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show chassis environment (MX960 Router with SCBE)

```

user@host> show chassis environment
Class Item                               Status Measurement
Temp PEM 0                             Absent
      PEM 1                             OK           50 degrees C / 122 degrees F
      PEM 2                             OK           50 degrees C / 122 degrees F
      PEM 3                             OK           50 degrees C / 122 degrees F
      Routing Engine 0                   OK           42 degrees C / 107 degrees F
      Routing Engine 0 CPU                OK           51 degrees C / 123 degrees F
      Routing Engine 1                   OK           39 degrees C / 102 degrees F
      Routing Engine 1 CPU                OK           44 degrees C / 111 degrees F
      CB 0 Intake                         OK           35 degrees C / 95 degrees F
      CB 0 Exhaust A                     OK           36 degrees C / 96 degrees F

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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 (MX960 Router with MPC5EQ)

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user@host> show chassis environment
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Class	Item	Status	Measurement
Temp	PEM 0	OK	50 degrees C / 122 degrees F
	PEM 1	OK	45 degrees C / 113 degrees F
	PEM 2	OK	45 degrees C / 113 degrees F
	PEM 3	Absent	
	Routing Engine 0	OK	31 degrees C / 87 degrees F
	Routing Engine 0 CPU	OK	30 degrees C / 86 degrees F
	Routing Engine 1	Present	
	Routing Engine 1 CPU	Present	
	CB 0 Intake	OK	29 degrees C / 84 degrees F
	CB 0 Exhaust A	OK	29 degrees C / 84 degrees F
	CB 0 Exhaust B	OK	34 degrees C / 93 degrees F
	CB 0 ACBC	OK	32 degrees C / 89 degrees F
	CB 0 XF A	OK	49 degrees C / 120 degrees F
	CB 0 XF B	OK	45 degrees C / 113 degrees F
	CB 1 Intake	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust A	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust B	OK	27 degrees C / 80 degrees F
	CB 1 ACBC	OK	26 degrees C / 78 degrees F
	CB 1 XF A	OK	32 degrees C / 89 degrees F
	CB 1 XF B	OK	32 degrees C / 89 degrees F
	CB 2 Intake	OK	28 degrees C / 82 degrees F
	CB 2 Exhaust A	OK	27 degrees C / 80 degrees F
	CB 2 Exhaust B	OK	33 degrees C / 91 degrees F
	CB 2 ACBC	OK	30 degrees C / 86 degrees F
	CB 2 XF A	OK	48 degrees C / 118 degrees F
	CB 2 XF B	OK	46 degrees C / 114 degrees F
	FPC 0 Intake	OK	38 degrees C / 100 degrees F
	FPC 0 Exhaust A	OK	48 degrees C / 118 degrees F
	FPC 0 Exhaust B	OK	49 degrees C / 120 degrees F
	FPC 0 XL TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XL Chip	OK	50 degrees C / 122 degrees F
	FPC 0 XL_XR0 TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XL_XR0 Chip	OK	53 degrees C / 127 degrees F
	FPC 0 XL_XR1 TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XL_XR1 Chip	OK	54 degrees C / 129 degrees F
	FPC 0 XQ TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XQ Chip	OK	52 degrees C / 125 degrees F
	FPC 0 XQ_XR0 TSen	OK	48 degrees C / 118 degrees F
	FPC 0 XQ_XR0 Chip	OK	62 degrees C / 143 degrees F
	FPC 0 XQ_XR1 TSen	OK	48 degrees C / 118 degrees F

FPC 0 XQ_XR1 Chip	OK	62 degrees C / 143 degrees F
FPC 0 XM 0 TSen	OK	53 degrees C / 127 degrees F
FPC 0 XM 0 Chip	OK	63 degrees C / 145 degrees F
FPC 0 XM 1 TSen	OK	53 degrees C / 127 degrees F
FPC 0 XM 1 Chip	OK	46 degrees C / 114 degrees F
FPC 0 PLX PCIe Switch TSe	OK	53 degrees C / 127 degrees F
FPC 0 PLX PCIe Switch Chi	OK	66 degrees C / 150 degrees F
FPC 1 Intake	OK	31 degrees C / 87 degrees F
FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
FPC 1 Exhaust B	OK	49 degrees C / 120 degrees F
FPC 1 LU 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 0 Chip	OK	47 degrees C / 116 degrees F
FPC 1 LU 1 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 1 Chip	OK	42 degrees C / 107 degrees F
FPC 1 LU 2 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 2 Chip	OK	46 degrees C / 114 degrees F
FPC 1 LU 3 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 1 XM 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 XM 0 Chip	OK	49 degrees C / 120 degrees F
FPC 1 XF 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 XF 0 Chip	OK	63 degrees C / 145 degrees F
FPC 1 PLX Switch TSen	OK	41 degrees C / 105 degrees F
FPC 1 PLX Switch Chip	OK	43 degrees C / 109 degrees F
FPC 3 Intake	OK	31 degrees C / 87 degrees F
FPC 3 Exhaust A	OK	37 degrees C / 98 degrees F
FPC 3 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 3 LU 0 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 0 Chip	OK	43 degrees C / 109 degrees F
FPC 3 LU 1 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 1 Chip	OK	46 degrees C / 114 degrees F
FPC 3 LU 2 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 2 Chip	OK	40 degrees C / 104 degrees F
FPC 3 LU 3 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 3 Chip	OK	41 degrees C / 105 degrees F
FPC 3 MQ 0 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 0 Chip	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 Chip	OK	40 degrees C / 104 degrees F
FPC 3 MQ 2 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 2 Chip	OK	36 degrees C / 96 degrees F
FPC 3 MQ 3 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 3 Chip	OK	38 degrees C / 100 degrees F
FPC 4 Intake	OK	34 degrees C / 93 degrees F
FPC 4 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 4 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 4 XL TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL Chip	OK	47 degrees C / 116 degrees F
FPC 4 XL_XR0 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL_XR0 Chip	OK	48 degrees C / 118 degrees F
FPC 4 XL_XR1 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL_XR1 Chip	OK	47 degrees C / 116 degrees F
FPC 4 XQ TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ Chip	OK	47 degrees C / 116 degrees F
FPC 4 XQ_XR0 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 4 XQ_XR1 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 4 XM 0 TSen	OK	51 degrees C / 123 degrees F
FPC 4 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 4 XM 1 TSen	OK	51 degrees C / 123 degrees F

FPC 4 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 4 PLX PCIE Switch TSe	OK	51 degrees C / 123 degrees F
FPC 4 PLX PCIE Switch Chi	OK	60 degrees C / 140 degrees F
FPC 5 Intake	OK	34 degrees C / 93 degrees F
FPC 5 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 5 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 5 XL TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL Chip	OK	47 degrees C / 116 degrees F
FPC 5 XL_XR0 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL_XR0 Chip	OK	49 degrees C / 120 degrees F
FPC 5 XL_XR1 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL_XR1 Chip	OK	49 degrees C / 120 degrees F
FPC 5 XQ TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ Chip	OK	48 degrees C / 118 degrees F
FPC 5 XQ_XR0 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ_XR0 Chip	OK	60 degrees C / 140 degrees F
FPC 5 XQ_XR1 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 5 XM 0 TSen	OK	50 degrees C / 122 degrees F
FPC 5 XM 0 Chip	OK	48 degrees C / 118 degrees F
FPC 5 XM 1 TSen	OK	50 degrees C / 122 degrees F
FPC 5 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 5 PLX PCIE Switch TSe	OK	50 degrees C / 122 degrees F
FPC 5 PLX PCIE Switch Chi	OK	59 degrees C / 138 degrees F
FPC 7 Intake	OK	32 degrees C / 89 degrees F
FPC 7 Exhaust A	OK	32 degrees C / 89 degrees F
FPC 7 Exhaust B	OK	33 degrees C / 91 degrees F
FPC 7 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 0 Chip	OK	44 degrees C / 111 degrees F
FPC 7 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 1 Chip	OK	47 degrees C / 116 degrees F
FPC 7 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 2 Chip	OK	39 degrees C / 102 degrees F
FPC 7 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 3 Chip	OK	43 degrees C / 109 degrees F
FPC 7 XM 0 TSen	OK	49 degrees C / 120 degrees F
FPC 7 XM 0 Chip	OK	57 degrees C / 134 degrees F
FPC 7 XM 1 TSen	OK	49 degrees C / 120 degrees F
FPC 7 XM 1 Chip	OK	48 degrees C / 118 degrees F
FPC 7 PLX Switch TSen	OK	49 degrees C / 120 degrees F
FPC 7 PLX Switch Chip	OK	45 degrees C / 113 degrees F
FPC 8 Intake	OK	36 degrees C / 96 degrees F
FPC 8 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 8 Exhaust B	OK	46 degrees C / 114 degrees F
FPC 8 XL TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL Chip	OK	47 degrees C / 116 degrees F
FPC 8 XL_XR0 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL_XR0 Chip	OK	53 degrees C / 127 degrees F
FPC 8 XL_XR1 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL_XR1 Chip	OK	52 degrees C / 125 degrees F
FPC 8 XQ TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ Chip	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR0 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR0 Chip	OK	59 degrees C / 138 degrees F
FPC 8 XQ_XR1 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR1 Chip	OK	57 degrees C / 134 degrees F
FPC 8 XM 0 TSen	OK	52 degrees C / 125 degrees F
FPC 8 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 8 XM 1 TSen	OK	52 degrees C / 125 degrees F
FPC 8 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 8 PLX PCIE Switch TSe	OK	52 degrees C / 125 degrees F

FPC 8 PLX PCIe Switch Chi	OK	63 degrees C / 145 degrees F
FPC 9 Intake	OK	31 degrees C / 87 degrees F
FPC 9 Exhaust A	OK	34 degrees C / 93 degrees F
FPC 9 Exhaust B	OK	35 degrees C / 95 degrees F
FPC 9 QX 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 QX 0 Chip	OK	45 degrees C / 113 degrees F
FPC 9 LU 0 TCAM TSen	OK	42 degrees C / 107 degrees F
FPC 9 LU 0 TCAM Chip	OK	41 degrees C / 105 degrees F
FPC 9 LU 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 LU 0 Chip	OK	43 degrees C / 109 degrees F
FPC 9 MQ 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 MQ 0 Chip	OK	43 degrees C / 109 degrees F
FPC 9 QX 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 QX 1 Chip	OK	40 degrees C / 104 degrees F
FPC 9 LU 1 TCAM TSen	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 TCAM Chip	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 Chip	OK	41 degrees C / 105 degrees F
FPC 9 MQ 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 MQ 1 Chip	OK	41 degrees C / 105 degrees F
FPC 10 Intake	OK	35 degrees C / 95 degrees F
FPC 10 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 10 Exhaust B	OK	46 degrees C / 114 degrees F
FPC 10 XL TSen	OK	42 degrees C / 107 degrees F
FPC 10 XL Chip	OK	44 degrees C / 111 degrees F
FPC 10 XL_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XL_XR0 Chip	OK	47 degrees C / 116 degrees F
FPC 10 XL_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XL_XR1 Chip	OK	48 degrees C / 118 degrees F
FPC 10 XQ TSen	OK	42 degrees C / 107 degrees F
FPC 10 XQ Chip	OK	46 degrees C / 114 degrees F
FPC 10 XQ_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 10 XQ_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 10 XQ_XR1 Chip	OK	53 degrees C / 127 degrees F
FPC 10 XM 0 TSen	OK	51 degrees C / 123 degrees F
FPC 10 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 10 XM 1 TSen	OK	51 degrees C / 123 degrees F
FPC 10 XM 1 Chip	OK	49 degrees C / 120 degrees F
FPC 10 PLX PCIe Switch TSe	OK	51 degrees C / 123 degrees F
FPC 10 PLX PCIe Switch Chi	OK	61 degrees C / 141 degrees F
FPC 11 Intake	OK	33 degrees C / 91 degrees F
FPC 11 Exhaust A	OK	33 degrees C / 91 degrees F
FPC 11 Exhaust B	OK	34 degrees C / 93 degrees F
FPC 11 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 0 Chip	OK	48 degrees C / 118 degrees F
FPC 11 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 1 Chip	OK	50 degrees C / 122 degrees F
FPC 11 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 2 Chip	OK	41 degrees C / 105 degrees F
FPC 11 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 3 Chip	OK	48 degrees C / 118 degrees F
FPC 11 XM 0 TSen	OK	50 degrees C / 122 degrees F
FPC 11 XM 0 Chip	OK	57 degrees C / 134 degrees F
FPC 11 XM 1 TSen	OK	50 degrees C / 122 degrees F
FPC 11 XM 1 Chip	OK	52 degrees C / 125 degrees F
FPC 11 PLX Switch TSen	OK	50 degrees C / 122 degrees F
FPC 11 PLX Switch Chip	OK	45 degrees C / 113 degrees F
Fans Top Fan Tray Temp	OK	42 degrees C / 107 degrees F
Top Tray Fan 1	OK	Spinning at high speed
Top Tray Fan 2	OK	Spinning at high speed

Top Tray Fan 3	OK	Spinning at high speed
Top Tray Fan 4	OK	Spinning at high speed
Top Tray Fan 5	OK	Spinning at high speed
Top Tray Fan 6	OK	Spinning at high speed
Top Tray Fan 7	OK	Spinning at high speed
Top Tray Fan 8	OK	Spinning at high speed
Top Tray Fan 9	OK	Spinning at high speed
Top Tray Fan 10	OK	Spinning at high speed
Top Tray Fan 11	OK	Spinning at high speed
Top Tray Fan 12	OK	Spinning at high speed
Bottom Fan Tray Temp	OK	33 degrees C / 91 degrees F
Bottom Tray Fan 1	OK	Spinning at high speed
Bottom Tray Fan 2	OK	Spinning at high speed
Bottom Tray Fan 3	OK	Spinning at high speed
Bottom Tray Fan 4	OK	Spinning at high speed
Bottom Tray Fan 5	OK	Spinning at high speed
Bottom Tray Fan 6	OK	Spinning at high speed
Bottom Tray Fan 7	OK	Spinning at high speed
Bottom Tray Fan 8	OK	Spinning at high speed
Bottom Tray Fan 9	OK	Spinning at high speed
Bottom Tray Fan 10	OK	Spinning at high speed
Bottom Tray Fan 11	OK	Spinning at high speed
Bottom Tray Fan 12	OK	Spinning at high speed

show chassis environment (MX2020 Router)

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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 (MX2020 Router with MPC5EQ and MPC6E)

Class	Item	Status	Measurement
Temp	PSM 0	OK	32 degrees C / 89 degrees F
	PSM 1	OK	32 degrees C / 89 degrees F
	PSM 2	OK	32 degrees C / 89 degrees F
	PSM 3	OK	32 degrees C / 89 degrees F
	PSM 4	OK	32 degrees C / 89 degrees F
	PSM 5	OK	33 degrees C / 91 degrees F
	PSM 6	OK	32 degrees C / 89 degrees F
	PSM 7	OK	32 degrees C / 89 degrees F
	PSM 8	OK	32 degrees C / 89 degrees F
	PSM 9	Absent	
	PSM 10	Absent	
	PSM 11	Absent	
	PSM 12	OK	33 degrees C / 91 degrees F
	PSM 13	OK	33 degrees C / 91 degrees F
	PSM 14	OK	34 degrees C / 93 degrees F
	PSM 15	OK	34 degrees C / 93 degrees F
	PSM 16	OK	33 degrees C / 91 degrees F
	PSM 17	OK	33 degrees C / 91 degrees F
	PDM 0	OK	
	PDM 1	OK	
	PDM 2	OK	
	PDM 3	OK	
	CB 0 IntakeA-Zone0	OK	34 degrees C / 93 degrees F
	CB 0 IntakeB-Zone1	OK	26 degrees C / 78 degrees F
	CB 0 IntakeC-Zone0	OK	38 degrees C / 100 degrees F
	CB 0 ExhaustA-Zone0	OK	34 degrees C / 93 degrees F
	CB 0 ExhaustB-Zone1	OK	27 degrees C / 80 degrees F
	CB 0 TCBC-Zone0	OK	32 degrees C / 89 degrees F
	CB 1 IntakeA-Zone0	OK	24 degrees C / 75 degrees F
	CB 1 IntakeB-Zone1	OK	22 degrees C / 71 degrees F
	CB 1 IntakeC-Zone0	OK	34 degrees C / 93 degrees F
	CB 1 ExhaustA-Zone0	OK	31 degrees C / 87 degrees F
	CB 1 ExhaustB-Zone1	OK	24 degrees C / 75 degrees F
	CB 1 TCBC-Zone0	OK	27 degrees C / 80 degrees F
	SPMB 0 Intake	OK	25 degrees C / 77 degrees F
	SPMB 1 Intake	OK	23 degrees C / 73 degrees F
	Routing Engine 0	OK	28 degrees C / 82 degrees F
	Routing Engine 0 CPU	OK	25 degrees C / 77 degrees F
	Routing Engine 1	OK	25 degrees C / 77 degrees F
	Routing Engine 1 CPU	OK	24 degrees C / 75 degrees F
	SFB 0 Intake-Zone0	OK	45 degrees C / 113 degrees F
	SFB 0 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
	SFB 0 IntakeA-Zone0	OK	32 degrees C / 89 degrees F
	SFB 0 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
	SFB 0 Exhaust-Zone0	OK	36 degrees C / 96 degrees F
	SFB 0 SFB-XF2-Zone1	OK	46 degrees C / 114 degrees F
	SFB 0 SFB-XF1-Zone0	OK	48 degrees C / 118 degrees F
	SFB 0 SFB-XF0-Zone0	OK	60 degrees C / 140 degrees F
	SFB 1 Intake-Zone0	OK	44 degrees C / 111 degrees F
	SFB 1 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
	SFB 1 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
	SFB 1 IntakeB-Zone1	OK	27 degrees C / 80 degrees F
	SFB 1 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
	SFB 1 SFB-XF2-Zone1	OK	47 degrees C / 116 degrees F
	SFB 1 SFB-XF1-Zone0	OK	49 degrees C / 120 degrees F
SFB 1	SFB-XF0-Zone0	OK	56 degrees C / 132 degrees F
	SFB 2 Intake-Zone0	OK	41 degrees C / 105 degrees F

SFB 2 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 2 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 2 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 2 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
SFB 2 SFB-XF2-Zone1	OK	47 degrees C / 116 degrees F
SFB 2 SFB-XF1-Zone0	OK	55 degrees C / 131 degrees F
SFB 2 SFB-XF0-Zone0	OK	55 degrees C / 131 degrees F
SFB 3 Intake-Zone0	OK	43 degrees C / 109 degrees F
SFB 3 Exhaust-Zone1	OK	33 degrees C / 91 degrees F
SFB 3 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 3 IntakeB-Zone1	OK	27 degrees C / 80 degrees F
SFB 3 Exhaust-Zone0	OK	36 degrees C / 96 degrees F
SFB 3 SFB-XF2-Zone1	OK	46 degrees C / 114 degrees F
SFB 3 SFB-XF1-Zone0	OK	46 degrees C / 114 degrees F
SFB 3 SFB-XF0-Zone0	OK	57 degrees C / 134 degrees F
SFB 4 Intake-Zone0	OK	36 degrees C / 96 degrees F
SFB 4 Exhaust-Zone1	OK	32 degrees C / 89 degrees F
SFB 4 IntakeA-Zone0	OK	31 degrees C / 87 degrees F
SFB 4 IntakeB-Zone1	OK	26 degrees C / 78 degrees F
SFB 4 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 4 SFB-XF2-Zone1	OK	44 degrees C / 111 degrees F
SFB 4 SFB-XF1-Zone0	OK	45 degrees C / 113 degrees F
SFB 4 SFB-XF0-Zone0	OK	52 degrees C / 125 degrees F
SFB 5 Intake-Zone0	OK	31 degrees C / 87 degrees F
SFB 5 Exhaust-Zone1	OK	30 degrees C / 86 degrees F
SFB 5 IntakeA-Zone0	OK	26 degrees C / 78 degrees F
SFB 5 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 5 Exhaust-Zone0	OK	29 degrees C / 84 degrees F
SFB 5 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 5 SFB-XF1-Zone0	OK	47 degrees C / 116 degrees F
SFB 5 SFB-XF0-Zone0	OK	49 degrees C / 120 degrees F
SFB 6 Intake-Zone0	OK	30 degrees C / 86 degrees F
SFB 6 Exhaust-Zone1	OK	29 degrees C / 84 degrees F
SFB 6 IntakeA-Zone0	OK	25 degrees C / 77 degrees F
SFB 6 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 6 Exhaust-Zone0	OK	29 degrees C / 84 degrees F
SFB 6 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 6 SFB-XF1-Zone0	OK	44 degrees C / 111 degrees F
SFB 6 SFB-XF0-Zone0	OK	45 degrees C / 113 degrees F
SFB 7 Intake-Zone0	OK	31 degrees C / 87 degrees F
SFB 7 Exhaust-Zone1	OK	30 degrees C / 86 degrees F
SFB 7 IntakeA-Zone0	OK	26 degrees C / 78 degrees F
SFB 7 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 7 Exhaust-Zone0	OK	28 degrees C / 82 degrees F
SFB 7 SFB-XF2-Zone1	OK	50 degrees C / 122 degrees F
SFB 7 SFB-XF1-Zone0	OK	43 degrees C / 109 degrees F
SFB 7 SFB-XF0-Zone0	OK	47 degrees C / 116 degrees F
FPC 0 Intake	OK	31 degrees C / 87 degrees F
FPC 0 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 0 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 0 XL TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL Chip	OK	46 degrees C / 114 degrees F
FPC 0 XL_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL_XR0 Chip	OK	48 degrees C / 118 degrees F
FPC 0 XL_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL_XR1 Chip	OK	48 degrees C / 118 degrees F
FPC 0 XQ TSen	OK	42 degrees C / 107 degrees F
FPC 0 XQ Chip	OK	44 degrees C / 111 degrees F
FPC 0 XQ_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 0 XQ_XR1 TSen	OK	42 degrees C / 107 degrees F

FPC 0 XQ_XR1 Chip	OK	55 degrees C / 131 degrees F
FPC 0 XM 0 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XM 0 Chip	OK	62 degrees C / 143 degrees F
FPC 0 XM 1 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XM 1 Chip	OK	44 degrees C / 111 degrees F
FPC 0 PLX PCIe Switch TSe	OK	48 degrees C / 118 degrees F
FPC 0 PLX PCIe Switch Chi	OK	57 degrees C / 134 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust A	OK	36 degrees C / 96 degrees F
FPC 1 Exhaust B	OK	44 degrees C / 111 degrees F
FPC 1 LU 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 0 Chip	OK	45 degrees C / 113 degrees F
FPC 1 LU 1 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 1 Chip	OK	38 degrees C / 100 degrees F
FPC 1 LU 2 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 2 Chip	OK	42 degrees C / 107 degrees F
FPC 1 LU 3 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 3 Chip	OK	47 degrees C / 116 degrees F
FPC 1 XM 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 XM 0 Chip	OK	44 degrees C / 111 degrees F
FPC 1 XF 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 XF 0 Chip	OK	54 degrees C / 129 degrees F
FPC 1 PLX Switch TSen	OK	38 degrees C / 100 degrees F
FPC 1 PLX Switch Chip	OK	41 degrees C / 105 degrees F
FPC 2 Intake	OK	28 degrees C / 82 degrees F
FPC 2 Exhaust A	OK	28 degrees C / 82 degrees F
FPC 2 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 2 LU 0 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 0 Chip	OK	40 degrees C / 104 degrees F
FPC 2 LU 1 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 1 Chip	OK	41 degrees C / 105 degrees F
FPC 2 LU 2 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 2 Chip	OK	34 degrees C / 93 degrees F
FPC 2 LU 3 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 3 Chip	OK	38 degrees C / 100 degrees F
FPC 2 XM 0 TSen	OK	40 degrees C / 104 degrees F
FPC 2 XM 0 Chip	OK	47 degrees C / 116 degrees F
FPC 2 XM 1 TSen	OK	40 degrees C / 104 degrees F
FPC 2 XM 1 Chip	OK	42 degrees C / 107 degrees F
FPC 2 PLX Switch TSen	OK	40 degrees C / 104 degrees F
FPC 2 PLX Switch Chip	OK	39 degrees C / 102 degrees F
FPC 3 Intake	OK	27 degrees C / 80 degrees F
FPC 3 Exhaust A	OK	38 degrees C / 100 degrees F
FPC 3 Exhaust B	OK	31 degrees C / 87 degrees F
FPC 3 QX 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 QX 0 Chip	OK	42 degrees C / 107 degrees F
FPC 3 LU 0 TCAM TSen	OK	38 degrees C / 100 degrees F
FPC 3 LU 0 TCAM Chip	OK	43 degrees C / 109 degrees F
FPC 3 LU 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 LU 0 Chip	OK	42 degrees C / 107 degrees F
FPC 3 MQ 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 MQ 0 Chip	OK	39 degrees C / 102 degrees F
FPC 3 QX 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 QX 1 Chip	OK	36 degrees C / 96 degrees F
FPC 3 LU 1 TCAM TSen	OK	32 degrees C / 89 degrees F
FPC 3 LU 1 TCAM Chip	OK	35 degrees C / 95 degrees F
FPC 3 LU 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 LU 1 Chip	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 MQ 1 Chip	OK	36 degrees C / 96 degrees F
FPC 4 Intake	OK	29 degrees C / 84 degrees F

FPC 4 Exhaust A	OK	36 degrees C / 96 degrees F
FPC 4 Exhaust B	OK	40 degrees C / 104 degrees F
FPC 4 XL TSen	OK	39 degrees C / 102 degrees F
FPC 4 XL Chip	OK	42 degrees C / 107 degrees F
FPC 4 XL_XR0 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XL_XR0 Chip	OK	45 degrees C / 113 degrees F
FPC 4 XL_XR1 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XL_XR1 Chip	OK	46 degrees C / 114 degrees F
FPC 4 XQ TSen	OK	39 degrees C / 102 degrees F
FPC 4 XQ Chip	OK	42 degrees C / 107 degrees F
FPC 4 XQ_XR0 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XQ_XR0 Chip	OK	54 degrees C / 129 degrees F
FPC 4 XQ_XR1 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XQ_XR1 Chip	OK	53 degrees C / 127 degrees F
FPC 4 XM 0 TSen	OK	45 degrees C / 113 degrees F
FPC 4 XM 0 Chip	OK	59 degrees C / 138 degrees F
FPC 4 XM 1 TSen	OK	45 degrees C / 113 degrees F
FPC 4 XM 1 Chip	OK	41 degrees C / 105 degrees F
FPC 4 PLX PCIe Switch TSe	OK	45 degrees C / 113 degrees F
FPC 4 PLX PCIe Switch Chi	OK	58 degrees C / 136 degrees F
FPC 5 Intake	OK	29 degrees C / 84 degrees F
FPC 5 Exhaust A	OK	33 degrees C / 91 degrees F
FPC 5 Exhaust B	OK	39 degrees C / 102 degrees F
FPC 5 LU 0 TSen	OK	40 degrees C / 104 degrees F
FPC 5 LU 0 Chip	OK	40 degrees C / 104 degrees F
FPC 5 LU 1 TSen	OK	40 degrees C / 104 degrees F
FPC 5 LU 1 Chip	OK	45 degrees C / 113 degrees F
FPC 5 LU 2 TSen	OK	40 degrees C / 104 degrees F
FPC 5 LU 2 Chip	OK	40 degrees C / 104 degrees F
FPC 5 LU 3 TSen	OK	40 degrees C / 104 degrees F
FPC 5 LU 3 Chip	OK	46 degrees C / 114 degrees F
FPC 5 MQ 0 TSen	OK	32 degrees C / 89 degrees F
FPC 5 MQ 0 Chip	OK	33 degrees C / 91 degrees F
FPC 5 MQ 1 TSen	OK	32 degrees C / 89 degrees F
FPC 5 MQ 1 Chip	OK	35 degrees C / 95 degrees F
FPC 5 MQ 2 TSen	OK	32 degrees C / 89 degrees F
FPC 5 MQ 2 Chip	OK	32 degrees C / 89 degrees F
FPC 5 MQ 3 TSen	OK	32 degrees C / 89 degrees F
FPC 5 MQ 3 Chip	OK	32 degrees C / 89 degrees F
FPC 9 Intake	OK	25 degrees C / 77 degrees F
FPC 9 Exhaust A	OK	37 degrees C / 98 degrees F
FPC 9 Exhaust B	OK	40 degrees C / 104 degrees F
FPC 9 XL 0 TSen	OK	40 degrees C / 104 degrees F
...		

show chassis environment (MX2010 Router)

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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
Fans Fan Tray 0 Fan 2	OK	3480 RPM
Fans Fan Tray 0 Fan 3	OK	3480 RPM
Fans Fan Tray 0 Fan 4	OK	3360 RPM
Fans Fan Tray 0 Fan 5	OK	3360 RPM
Fans Fan Tray 0 Fan 6	OK	3480 RPM
Fans Fan Tray 1 Fan 1	OK	3360 RPM
Fans Fan Tray 1 Fan 2	OK	3360 RPM
Fans Fan Tray 1 Fan 3	OK	3360 RPM
Fans Fan Tray 1 Fan 4	OK	3480 RPM
Fans Fan Tray 1 Fan 5	OK	3480 RPM
Fans Fan Tray 1 Fan 6	OK	3480 RPM
Fans Fan Tray 2 Fan 1	OK	3360 RPM
Fans Fan Tray 2 Fan 2	OK	3360 RPM
Fans Fan Tray 2 Fan 3	OK	3480 RPM
Fans Fan Tray 2 Fan 4	OK	3480 RPM
Fans Fan Tray 2 Fan 5	OK	3360 RPM
Fans Fan Tray 2 Fan 6	OK	3480 RPM

Fan Tray 3 Fan 1	OK	3360 RPM
Fan Tray 3 Fan 2	OK	3360 RPM
Fan Tray 3 Fan 3	OK	3480 RPM
Fan Tray 3 Fan 4	OK	3480 RPM
Fan Tray 3 Fan 5	OK	3480 RPM
Fan Tray 3 Fan 6	OK	3360 RPM

show chassis environment (MX2008 Router)

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Class	Item	Status	Measurement
Temp	PSM 0	Absent	
	PSM 1	OK	29 degrees C / 84 degrees F
	PSM 2	OK	30 degrees C / 86 degrees F
	PSM 3	OK	29 degrees C / 84 degrees F
	PSM 4	OK	29 degrees C / 84 degrees F
	PSM 5	OK	30 degrees C / 86 degrees F
	PSM 6	OK	29 degrees C / 84 degrees F
	PSM 7	OK	31 degrees C / 87 degrees F
	PSM 8	Absent	
	PDM 0	OK	
	PDM 1	OK	
	CB 0 Inlet1	OK	37 degrees C / 98 degrees F
	CB 0 Inlet2	OK	45 degrees C / 113 degrees F
	CB 0 Inlet3	OK	44 degrees C / 111 degrees F
	CB 0 Inlet4	OK	41 degrees C / 105 degrees F
	CB 0 Exhaust1	OK	30 degrees C / 86 degrees F
	CB 0 Exhaust2	OK	40 degrees C / 104 degrees F
	CB 0 Exhaust3	OK	48 degrees C / 118 degrees F
	CB 0 Exhaust4	OK	46 degrees C / 114 degrees F
	CB 1 Inlet1	OK	30 degrees C / 86 degrees F
	CB 1 Inlet2	OK	31 degrees C / 87 degrees F
	CB 1 Inlet3	OK	29 degrees C / 84 degrees F
	CB 1 Inlet4	OK	32 degrees C / 89 degrees F
	CB 1 Exhaust1	OK	30 degrees C / 86 degrees F
	CB 1 Exhaust2	OK	33 degrees C / 91 degrees F
	CB 1 Exhaust3	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust4	OK	34 degrees C / 93 degrees F
	Routing Engine 0	OK	
	Routing Engine 0 CPU	OK	75 degrees C / 167 degrees F
	Routing Engine 1	OK	
	Routing Engine 1 CPU	OK	46 degrees C / 114 degrees F
	SFB 0 Inlet2	OK	44 degrees C / 111 degrees F
	SFB 0 Exhaust1	OK	39 degrees C / 102 degrees F
	SFB 0 Inlet1	OK	41 degrees C / 105 degrees F
	SFB 0 Exhaust2	OK	45 degrees C / 113 degrees F
	SFB 0 SFB2-PF-local	OK	45 degrees C / 113 degrees F
	SFB 0 SFB2-PF-die	OK	51 degrees C / 123 degrees F
	SFB 1 Inlet2	OK	30 degrees C / 86 degrees F
	SFB 1 Exhaust1	OK	27 degrees C / 80 degrees F
	SFB 1 Inlet1	OK	28 degrees C / 82 degrees F
	SFB 1 Exhaust2	OK	31 degrees C / 87 degrees F
	SFB 1 SFB2-PF-local	OK	30 degrees C / 86 degrees F
	SFB 1 SFB2-PF-die	OK	37 degrees C / 98 degrees F
	SFB 2 Inlet2	OK	28 degrees C / 82 degrees F
	SFB 2 Exhaust1	OK	26 degrees C / 78 degrees F
	SFB 2 Inlet1	OK	27 degrees C / 80 degrees F
	SFB 2 Exhaust2	OK	28 degrees C / 82 degrees F
	SFB 2 SFB2-PF-local	OK	27 degrees C / 80 degrees F
	SFB 2 SFB2-PF-die	OK	33 degrees C / 91 degrees F
	SFB 3 Inlet2	OK	28 degrees C / 82 degrees F

SFB 3 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 3 Inlet1	OK	26 degrees C / 78 degrees F
SFB 3 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 3 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 3 SFB2-PF-die	OK	33 degrees C / 91 degrees F
SFB 4 Inlet2	OK	28 degrees C / 82 degrees F
SFB 4 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 4 Inlet1	OK	26 degrees C / 78 degrees F
SFB 4 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 4 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 4 SFB2-PF-die	OK	32 degrees C / 89 degrees F
SFB 5 Inlet2	OK	29 degrees C / 84 degrees F
SFB 5 Exhaust1	OK	27 degrees C / 80 degrees F
SFB 5 Inlet1	OK	28 degrees C / 82 degrees F
SFB 5 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 5 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 5 SFB2-PF-die	OK	34 degrees C / 93 degrees F
SFB 6 Inlet2	OK	33 degrees C / 91 degrees F
SFB 6 Exhaust1	OK	32 degrees C / 89 degrees F
SFB 6 Inlet1	OK	32 degrees C / 89 degrees F
SFB 6 Exhaust2	OK	34 degrees C / 93 degrees F
SFB 6 SFB2-PF-local	OK	33 degrees C / 91 degrees F
SFB 6 SFB2-PF-die	OK	40 degrees C / 104 degrees F
SFB 7 Inlet2	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust1	OK	28 degrees C / 82 degrees F
SFB 7 Inlet1	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 7 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 7 SFB2-PF-die	OK	33 degrees C / 91 degrees F
FPC 0 Intake	OK	29 degrees C / 84 degrees F
FPC 0 Exhaust A	OK	42 degrees C / 107 degrees F
FPC 0 Exhaust B	OK	42 degrees C / 107 degrees F
FPC 0 XL 0 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 Chip	OK	53 degrees C / 127 degrees F
FPC 0 XL 0 XR2 0 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 XR2 0 Chip	OK	59 degrees C / 138 degrees F
FPC 0 XL 0 XR2 1 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 XR2 1 Chip	OK	59 degrees C / 138 degrees F
FPC 0 XL 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XL 1 XR2 0 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 XL 1 XR2 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 1 Chip	OK	50 degrees C / 122 degrees F
FPC 0 XM 0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 XM 1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 1 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 Chip	OK	40 degrees C / 104 degrees F
FPC 0 PCIe Switch TSen	OK	42 degrees C / 107 degrees F
FPC 0 PCIe Switch Chip	OK	22 degrees C / 71 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust A	OK	52 degrees C / 125 degrees F
FPC 1 Exhaust B	OK	44 degrees C / 111 degrees F
FPC 1 EA0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0 Chip	OK	47 degrees C / 116 degrees F
FPC 1 EA0_XR0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0_XR0 Chip	OK	56 degrees C / 132 degrees F

FPC 1 EA0_XR1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0_XR1 Chip	OK	53 degrees C / 127 degrees F
FPC 1 EA1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1 Chip	OK	49 degrees C / 120 degrees F
FPC 1 EA1_XR0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 1 EA1_XR1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 1 PEX TSen	OK	54 degrees C / 129 degrees F
FPC 1 PEX Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2 Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR0 Chip	OK	45 degrees C / 113 degrees F
FPC 1 EA2_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR1 Chip	OK	42 degrees C / 107 degrees F
FPC 1 EA3 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3 Chip	OK	40 degrees C / 104 degrees F
FPC 1 EA3_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR0 Chip	OK	50 degrees C / 122 degrees F
FPC 1 EA3_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR1 Chip	OK	46 degrees C / 114 degrees F
FPC 1 EA0_HMC0 Logic die	OK	60 degrees C / 140 degrees F
FPC 1 EA0_HMC0 DRAM botm	OK	57 degrees C / 134 degrees F
FPC 1 EA0_HMC1 Logic die	OK	61 degrees C / 141 degrees F
FPC 1 EA0_HMC1 DRAM botm	OK	58 degrees C / 136 degrees F
FPC 1 EA0_HMC2 Logic die	OK	57 degrees C / 134 degrees F
FPC 1 EA0_HMC2 DRAM botm	OK	54 degrees C / 129 degrees F
FPC 1 EA1_HMC0 Logic die	OK	65 degrees C / 149 degrees F
FPC 1 EA1_HMC0 DRAM botm	OK	62 degrees C / 143 degrees F
FPC 1 EA1_HMC1 Logic die	OK	64 degrees C / 147 degrees F
FPC 1 EA1_HMC1 DRAM botm	OK	61 degrees C / 141 degrees F
FPC 1 EA1_HMC2 Logic die	OK	61 degrees C / 141 degrees F
FPC 1 EA1_HMC2 DRAM botm	OK	58 degrees C / 136 degrees F
FPC 1 EA2_HMC0 Logic die	OK	50 degrees C / 122 degrees F
FPC 1 EA2_HMC0 DRAM botm	OK	47 degrees C / 116 degrees F
FPC 1 EA2_HMC1 Logic die	OK	54 degrees C / 129 degrees F
FPC 1 EA2_HMC1 DRAM botm	OK	51 degrees C / 123 degrees F
FPC 1 EA2_HMC2 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA2_HMC2 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC0 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC0 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC1 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC1 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC2 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC2 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 7 Intake	OK	30 degrees C / 86 degrees F
FPC 7 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 7 Exhaust B	OK	38 degrees C / 100 degrees F
FPC 7 QX 0 TSen	OK	48 degrees C / 118 degrees F
FPC 7 QX 0 Chip	OK	51 degrees C / 123 degrees F
FPC 7 LU 0 TCAM TSen	OK	48 degrees C / 118 degrees F
FPC 7 LU 0 TCAM Chip	OK	51 degrees C / 123 degrees F
FPC 7 LU 0 TSen	OK	48 degrees C / 118 degrees F
FPC 7 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 7 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 7 MQ 0 Chip	OK	54 degrees C / 129 degrees F
FPC 7 QX 1 TSen	OK	41 degrees C / 105 degrees F
FPC 7 QX 1 Chip	OK	42 degrees C / 107 degrees F
FPC 7 LU 1 TCAM TSen	OK	41 degrees C / 105 degrees F
FPC 7 LU 1 TCAM Chip	OK	43 degrees C / 109 degrees F

	FPC 7 LU 1 TSen	OK	41 degrees C / 105 degrees F
	FPC 7 LU 1 Chip	OK	46 degrees C / 114 degrees F
	FPC 7 MQ 1 TSen	OK	41 degrees C / 105 degrees F
	FPC 7 MQ 1 Chip	OK	47 degrees C / 116 degrees F
	ADC 7 Intake	OK	32 degrees C / 89 degrees F
	ADC 7 Exhaust	OK	39 degrees C / 102 degrees F
	ADC 7 ADC-XF1	OK	46 degrees C / 114 degrees F
	ADC 7 ADC-XF0	OK	54 degrees C / 129 degrees F
Fans	Fan Tray 0 Fan 1	OK	6240 RPM
	Fan Tray 0 Fan 2	OK	6120 RPM
	Fan Tray 0 Fan 3	OK	6120 RPM
	Fan Tray 0 Fan 4	OK	5760 RPM
	Fan Tray 0 Fan 5	OK	5880 RPM
	Fan Tray 0 Fan 6	OK	6000 RPM
	Fan Tray 1 Fan 1	OK	5880 RPM
	Fan Tray 1 Fan 2	OK	5880 RPM
	Fan Tray 1 Fan 3	OK	6000 RPM
	Fan Tray 1 Fan 4	OK	6000 RPM
	Fan Tray 1 Fan 5	OK	6000 RPM
	Fan Tray 1 Fan 6	OK	6000 RPM

show chassis environment (T320 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power PEM 0                OK
PEM 1                Absent
Temp SCG 0                  OK          28 degrees C / 82 degrees F
SCG 1                  OK          28 degrees C / 82 degrees F
Routing Engine 0      OK          31 degrees C / 87 degrees F
Routing Engine 1      OK          30 degrees C / 86 degrees F
CB 0                   OK          32 degrees C / 89 degrees F
CB 1                   OK          32 degrees C / 89 degrees F
SIB 0                  OK          33 degrees C / 91 degrees F
SIB 1                  OK          33 degrees C / 91 degrees F
SIB 2                  OK          34 degrees C / 93 degrees F
FPC 0 Top              OK          38 degrees C / 100 degrees F
FPC 0 Bottom           OK          32 degrees C / 89 degrees F
FPC 1 Top              OK          38 degrees C / 100 degrees F
FPC 1 Bottom           OK          33 degrees C / 91 degrees F
FPC 2 Top              OK          36 degrees C / 96 degrees F
FPC 2 Bottom           OK          31 degrees C / 87 degrees F
FPM GBUS               OK          26 degrees C / 78 degrees F
FPM Display            OK          29 degrees C / 84 degrees F
Fans Top Left Front fan OK          Spinning at normal speed
Top Left Middle fan   OK          Spinning at normal speed
Top Left Rear fan     OK          Spinning at normal speed
Top Right Front fan   OK          Spinning at normal speed
Top Right Middle fan  OK          Spinning at normal speed
Top Right Rear fan    OK          Spinning at normal speed
Bottom Left Front fan OK          Spinning at normal speed
Bottom Left Middle fan OK         Spinning at normal speed
Bottom Left Rear fan  OK          Spinning at normal speed
Bottom Right Front fan OK         Spinning at normal speed
Bottom Right Middle fan OK        Spinning at normal speed
Bottom Right Rear fan OK         Spinning at normal speed
Rear Tray Top fan     OK          Spinning at normal speed
Rear Tray Second fan  OK          Spinning at normal speed
Rear Tray Middle fan  OK          Spinning at normal speed
Rear Tray Fourth fan  OK          Spinning at normal speed
Rear Tray Bottom fan  OK          Spinning at normal speed

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```

Misc  CIP                OK
      SPMB 0             OK
      SPMB 1             OK

```

show chassis environment (MX10003 Router)

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

Class	Item	Status	Measurement
Temp	CB 0 Exhaust Temp Sensor 0x49	OK	36 degrees C / 96 degrees F
	CB 0 Inlet Temp Sensor 0x49	OK	29 degrees C / 84 degrees F
	CB 1 Exhaust Temp Sensor 0x49	OK	36 degrees C / 96 degrees F
	CB 1 Inlet Temp Sensor 0x49	OK	31 degrees C / 87 degrees F
	FPC 0 Intake Temp Sensor	OK	29 degrees C / 84 degrees F
	FPC 0 Exhaust-A Temp Sensor	OK	55 degrees C / 131 degrees F
	FPC 0 Exhaust-B Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 0 EA0 Chip	OK	58 degrees C / 136 degrees F
	FPC 0 EA0-XR0 Chip	OK	61 degrees C / 141 degrees F
	FPC 0 EA0-XR1 Chip	OK	62 degrees C / 143 degrees F
	FPC 0 EA1 Chip	OK	67 degrees C / 152 degrees F
	FPC 0 EA1-XR0 Chip	OK	71 degrees C / 159 degrees F
	FPC 0 EA1-XR1 Chip	OK	72 degrees C / 161 degrees F
	FPC 0 PEX Chip	OK	75 degrees C / 167 degrees F
	FPC 0 EA2 Chip	OK	49 degrees C / 120 degrees F
	FPC 0 EA2-XR0 Chip	OK	55 degrees C / 131 degrees F
	FPC 0 EA2-XR1 Chip	OK	56 degrees C / 132 degrees F
	FPC 0 PF Chip	OK	68 degrees C / 154 degrees F
	FPC 0 EA0_HMC0 Logic die	OK	72 degrees C / 161 degrees F
	FPC 0 EA0_HMC0 DRAM botm	OK	69 degrees C / 156 degrees F
	FPC 0 EA0_HMC1 Logic die	OK	72 degrees C / 161 degrees F
	FPC 0 EA0_HMC1 DRAM botm	OK	69 degrees C / 156 degrees F
	FPC 0 EA0_HMC2 Logic die	OK	75 degrees C / 167 degrees F
	FPC 0 EA0_HMC2 DRAM botm	OK	72 degrees C / 161 degrees F
	FPC 0 EA1_HMC0 Logic die	OK	81 degrees C / 177 degrees F
	FPC 0 EA1_HMC0 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 0 EA1_HMC1 Logic die	OK	79 degrees C / 174 degrees F
	FPC 0 EA1_HMC1 DRAM botm	OK	76 degrees C / 168 degrees F
	FPC 0 EA1_HMC2 Logic die	OK	82 degrees C / 179 degrees F
	FPC 0 EA1_HMC2 DRAM botm	OK	79 degrees C / 174 degrees F
	FPC 0 EA2_HMC0 Logic die	OK	61 degrees C / 141 degrees F
	FPC 0 EA2_HMC0 DRAM botm	OK	58 degrees C / 136 degrees F
	FPC 0 EA2_HMC1 Logic die	OK	62 degrees C / 143 degrees F
	FPC 0 EA2_HMC1 DRAM botm	OK	59 degrees C / 138 degrees F
	FPC 0 EA2_HMC2 Logic die	OK	64 degrees C / 147 degrees F
	FPC 0 EA2_HMC2 DRAM botm	OK	61 degrees C / 141 degrees F
	FPC 1 Intake Temp Sensor	OK	28 degrees C / 82 degrees F
	FPC 1 Exhaust-A Temp Sensor	OK	58 degrees C / 136 degrees F
	FPC 1 Exhaust-B Temp Sensor	OK	46 degrees C / 114 degrees F
	FPC 1 EA0 Chip	OK	64 degrees C / 147 degrees F
	FPC 1 EA0-XR0 Chip	OK	67 degrees C / 152 degrees F
	FPC 1 EA0-XR1 Chip	OK	68 degrees C / 154 degrees F
	FPC 1 EA1 Chip	OK	70 degrees C / 158 degrees F
	FPC 1 EA1-XR0 Chip	OK	74 degrees C / 165 degrees F
	FPC 1 EA1-XR1 Chip	OK	74 degrees C / 165 degrees F
	FPC 1 PEX Chip	OK	88 degrees C / 190 degrees F
	FPC 1 EA2 Chip	OK	50 degrees C / 122 degrees F
	FPC 1 EA2-XR0 Chip	OK	54 degrees C / 129 degrees F
	FPC 1 EA2-XR1 Chip	OK	56 degrees C / 132 degrees F
	FPC 1 PF Chip	OK	71 degrees C / 159 degrees F
	FPC 1 EA0_HMC0 Logic die	OK	74 degrees C / 165 degrees F

	FPC 1 EA0_HMC0 DRAM botm	OK	71 degrees C / 159 degrees F
	FPC 1 EA0_HMC1 Logic die	OK	78 degrees C / 172 degrees F
	FPC 1 EA0_HMC1 DRAM botm	OK	75 degrees C / 167 degrees F
	FPC 1 EA0_HMC2 Logic die	OK	78 degrees C / 172 degrees F
	FPC 1 EA0_HMC2 DRAM botm	OK	75 degrees C / 167 degrees F
	FPC 1 EA1_HMC0 Logic die	OK	84 degrees C / 183 degrees F
	FPC 1 EA1_HMC0 DRAM botm	OK	81 degrees C / 177 degrees F
	FPC 1 EA1_HMC1 Logic die	OK	81 degrees C / 177 degrees F
	FPC 1 EA1_HMC1 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 1 EA1_HMC2 Logic die	OK	85 degrees C / 185 degrees F
	FPC 1 EA1_HMC2 DRAM botm	OK	82 degrees C / 179 degrees F
	FPC 1 EA2_HMC0 Logic die	OK	63 degrees C / 145 degrees F
	FPC 1 EA2_HMC0 DRAM botm	OK	60 degrees C / 140 degrees F
	FPC 1 EA2_HMC1 Logic die	OK	60 degrees C / 140 degrees F
	FPC 1 EA2_HMC1 DRAM botm	OK	57 degrees C / 134 degrees F
	FPC 1 EA2_HMC2 Logic die	OK	66 degrees C / 150 degrees F
	FPC 1 EA2_HMC2 DRAM botm	OK	63 degrees C / 145 degrees F
Power	PEM 0	OK	
	PEM 1	OK	
	PEM 2	OK	
	PEM 3	OK	
	PEM 4	Absent	
	PEM 5	Absent	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 2	OK	Spinning at normal speed
	Fan Tray 2 Fan 3	OK	Spinning at normal speed
	Fan Tray 3 Fan 0	OK	Spinning at normal speed
	Fan Tray 3 Fan 1	OK	Spinning at normal speed
	Fan Tray 3 Fan 2	OK	Spinning at normal speed
	Fan Tray 3 Fan 3	OK	Spinning at normal speed

show chassis environment (MX10008 Router)

```

user@host> show chassis environment

```

Class	Item	Status	Measurement
	Routing Engine 0 CPU	OK	41 degrees C / 105 degrees F
	Routing Engine 1 CPU	OK	40 degrees C / 104 degrees F
Temp	CB 0 Intake A Temp Sensor	OK	24 degrees C / 75 degrees F
	CB 0 Intake B Temp Sensor	OK	24 degrees C / 75 degrees F
	CB 0 Exhaust A Temp Sensor	OK	28 degrees C / 82 degrees F
	CB 0 Exhaust B Temp Sensor	OK	30 degrees C / 86 degrees F
	CB 0 Middle Temp Sensor	OK	28 degrees C / 82 degrees F
	CB 1 Intake A Temp Sensor	OK	24 degrees C / 75 degrees F
	CB 1 Intake B Temp Sensor	OK	23 degrees C / 73 degrees F
	CB 1 Exhaust A Temp Sensor	OK	27 degrees C / 80 degrees F
	CB 1 Exhaust B Temp Sensor	OK	29 degrees C / 84 degrees F
	CB 1 Middle Temp Sensor	OK	28 degrees C / 82 degrees F
	FPC 0 Intake-A Temp Sensor	OK	32 degrees C / 89 degrees F
	FPC 0 Exhaust-A Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 0 Exhaust-B Temp Sensor	OK	49 degrees C / 120 degrees F
	FPC 0 EA0 Temp Sensor	OK	66 degrees C / 150 degrees F
	FPC 0 EA0_XR0 Temp Sensor	OK	69 degrees C / 156 degrees F

FPC 0 EA0_XR1 Temp Sensor	OK	73 degrees C / 163 degrees F
FPC 0 EA1 Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 0 EA1_XR0 Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 0 EA1_XR1 Temp Sensor	OK	63 degrees C / 145 degrees F
FPC 0 EA2 Temp Sensor	OK	68 degrees C / 154 degrees F
FPC 0 EA2_XR0 Temp Sensor	OK	73 degrees C / 163 degrees F
FPC 0 EA2_XR1 Temp Sensor	OK	72 degrees C / 161 degrees F
FPC 0 EA3 Temp Sensor	OK	63 degrees C / 145 degrees F
FPC 0 EA3_XR0 Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 0 EA3_XR1 Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 0 EA4 Temp Sensor	OK	68 degrees C / 154 degrees F
FPC 0 EA4_XR0 Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 0 EA4_XR1 Temp Sensor	OK	70 degrees C / 158 degrees F
FPC 0 EA5 Temp Sensor	OK	56 degrees C / 132 degrees F
FPC 0 EA5_XR0 Temp Sensor	OK	61 degrees C / 141 degrees F
FPC 0 EA5_XR1 Temp Sensor	OK	63 degrees C / 145 degrees F
FPC 0 EA0_HMC0 Logic die	OK	75 degrees C / 167 degrees F
FPC 0 EA0_HMC0 DRAM botm	OK	72 degrees C / 161 degrees F
FPC 0 EA0_HMC1 Logic die	OK	75 degrees C / 167 degrees F
FPC 0 EA0_HMC1 DRAM botm	OK	72 degrees C / 161 degrees F
FPC 0 EA0_HMC2 Logic die	OK	77 degrees C / 170 degrees F
FPC 0 EA0_HMC2 DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0 EA1_HMC0 Logic die	OK	72 degrees C / 161 degrees F
FPC 0 EA1_HMC0 DRAM botm	OK	69 degrees C / 156 degrees F
FPC 0 EA1_HMC1 Logic die	OK	73 degrees C / 163 degrees F
FPC 0 EA1_HMC1 DRAM botm	OK	70 degrees C / 158 degrees F
FPC 0 EA1_HMC2 Logic die	OK	72 degrees C / 161 degrees F
FPC 0 EA1_HMC2 DRAM botm	OK	69 degrees C / 156 degrees F
FPC 0 EA2_HMC0 Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA2_HMC0 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA2_HMC1 Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA2_HMC1 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA2_HMC2 Logic die	OK	79 degrees C / 174 degrees F
FPC 0 EA2_HMC2 DRAM botm	OK	76 degrees C / 168 degrees F
FPC 0 EA3_HMC0 Logic die	OK	77 degrees C / 170 degrees F
FPC 0 EA3_HMC0 DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0 EA3_HMC1 Logic die	OK	78 degrees C / 172 degrees F
FPC 0 EA3_HMC1 DRAM botm	OK	75 degrees C / 167 degrees F
FPC 0 EA3_HMC2 Logic die	OK	77 degrees C / 170 degrees F
FPC 0 EA3_HMC2 DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0 EA4_HMC0 Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA4_HMC0 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA4_HMC1 Logic die	OK	81 degrees C / 177 degrees F
FPC 0 EA4_HMC1 DRAM botm	OK	78 degrees C / 172 degrees F
FPC 0 EA4_HMC2 Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA4_HMC2 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA5_HMC0 Logic die	OK	68 degrees C / 154 degrees F
FPC 0 EA5_HMC0 DRAM botm	OK	65 degrees C / 149 degrees F
FPC 0 EA5_HMC1 Logic die	OK	68 degrees C / 154 degrees F
FPC 0 EA5_HMC1 DRAM botm	OK	65 degrees C / 149 degrees F
FPC 0 EA5_HMC2 Logic die	OK	67 degrees C / 152 degrees F
FPC 0 EA5_HMC2 DRAM botm	OK	64 degrees C / 147 degrees F
FPC 2 Intake-A Temp Sensor	OK	32 degrees C / 89 degrees F
FPC 2 Exhaust-A Temp Sensor	OK	52 degrees C / 125 degrees F
FPC 2 Exhaust-B Temp Sensor	OK	50 degrees C / 122 degrees F
FPC 2 EA0 Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 2 EA0_XR0 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA0_XR1 Temp Sensor	OK	78 degrees C / 172 degrees F
FPC 2 EA1 Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2 EA1_XR0 Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 2 EA1_XR1 Temp Sensor	OK	65 degrees C / 149 degrees F

FPC 2 EA2 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA2_XR0 Temp Sensor	OK	80 degrees C / 176 degrees F
FPC 2 EA2_XR1 Temp Sensor	OK	80 degrees C / 176 degrees F
FPC 2 EA3 Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 2 EA3_XR0 Temp Sensor	OK	69 degrees C / 156 degrees F
FPC 2 EA3_XR1 Temp Sensor	OK	69 degrees C / 156 degrees F
FPC 2 EA4 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA4_XR0 Temp Sensor	OK	76 degrees C / 168 degrees F
FPC 2 EA4_XR1 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA5 Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 2 EA5_XR0 Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2 EA5_XR1 Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2 EA0_HMC0 Logic die	OK	84 degrees C / 183 degrees F
FPC 2 EA0_HMC0 DRAM botm	OK	81 degrees C / 177 degrees F
FPC 2 EA0_HMC1 Logic die	OK	85 degrees C / 185 degrees F
FPC 2 EA0_HMC1 DRAM botm	OK	82 degrees C / 179 degrees F
FPC 2 EA0_HMC2 Logic die	OK	83 degrees C / 181 degrees F
FPC 2 EA0_HMC2 DRAM botm	OK	80 degrees C / 176 degrees F
FPC 2 EA1_HMC0 Logic die	OK	76 degrees C / 168 degrees F
FPC 2 EA1_HMC0 DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2 EA1_HMC1 Logic die	OK	76 degrees C / 168 degrees F
FPC 2 EA1_HMC1 DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2 EA1_HMC2 Logic die	OK	76 degrees C / 168 degrees F
FPC 2 EA1_HMC2 DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2 EA2_HMC0 Logic die	OK	86 degrees C / 186 degrees F
FPC 2 EA2_HMC0 DRAM botm	OK	83 degrees C / 181 degrees F
FPC 2 EA2_HMC1 Logic die	OK	87 degrees C / 188 degrees F
FPC 2 EA2_HMC1 DRAM botm	OK	84 degrees C / 183 degrees F
FPC 2 EA2_HMC2 Logic die	OK	87 degrees C / 188 degrees F
FPC 2 EA2_HMC2 DRAM botm	OK	84 degrees C / 183 degrees F
FPC 2 EA3_HMC0 Logic die	OK	80 degrees C / 176 degrees F
FPC 2 EA3_HMC0 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 2 EA3_HMC1 Logic die	OK	80 degrees C / 176 degrees F
FPC 2 EA3_HMC1 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 2 EA3_HMC2 Logic die	OK	80 degrees C / 176 degrees F
FPC 2 EA3_HMC2 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 2 EA4_HMC0 Logic die	OK	88 degrees C / 190 degrees F
FPC 2 EA4_HMC0 DRAM botm	OK	85 degrees C / 185 degrees F
FPC 2 EA4_HMC1 Logic die	OK	89 degrees C / 192 degrees F
FPC 2 EA4_HMC1 DRAM botm	OK	86 degrees C / 186 degrees F
FPC 2 EA4_HMC2 Logic die	OK	80 degrees C / 176 degrees F
FPC 2 EA4_HMC2 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 2 EA5_HMC0 Logic die	OK	72 degrees C / 161 degrees F
FPC 2 EA5_HMC0 DRAM botm	OK	69 degrees C / 156 degrees F
FPC 2 EA5_HMC1 Logic die	OK	69 degrees C / 156 degrees F
FPC 2 EA5_HMC1 DRAM botm	OK	66 degrees C / 150 degrees F
FPC 2 EA5_HMC2 Logic die	OK	72 degrees C / 161 degrees F
FPC 2 EA5_HMC2 DRAM botm	OK	69 degrees C / 156 degrees F
FPC 3 Intake-A Temp Sensor	OK	30 degrees C / 86 degrees F
FPC 3 Exhaust-A Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3 Exhaust-B Temp Sensor	OK	44 degrees C / 111 degrees F
FPC 3 EA0 Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 3 EA0_XR0 Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 3 EA0_XR1 Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 3 EA1 Temp Sensor	OK	54 degrees C / 129 degrees F
FPC 3 EA1_XR0 Temp Sensor	OK	59 degrees C / 138 degrees F
FPC 3 EA1_XR1 Temp Sensor	OK	58 degrees C / 136 degrees F
FPC 3 EA2 Temp Sensor	OK	62 degrees C / 143 degrees F
FPC 3 EA2_XR0 Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 3 EA2_XR1 Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 3 EA3 Temp Sensor	OK	54 degrees C / 129 degrees F

	FPC 3	EA3_XR0	Temp Sensor	OK	57 degrees C / 134 degrees F
	FPC 3	EA3_XR1	Temp Sensor	OK	56 degrees C / 132 degrees F
	FPC 3	EA4	Temp Sensor	OK	68 degrees C / 154 degrees F
	FPC 3	EA4_XR0	Temp Sensor	OK	71 degrees C / 159 degrees F
	FPC 3	EA4_XR1	Temp Sensor	OK	70 degrees C / 158 degrees F
	FPC 3	EA5	Temp Sensor	OK	55 degrees C / 131 degrees F
	FPC 3	EA5_XR0	Temp Sensor	OK	58 degrees C / 136 degrees F
	FPC 3	EA5_XR1	Temp Sensor	OK	58 degrees C / 136 degrees F
	FPC 3	EA0_HMC0	Logic die	OK	69 degrees C / 156 degrees F
	FPC 3	EA0_HMC0	DRAM botm	OK	66 degrees C / 150 degrees F
	FPC 3	EA0_HMC1	Logic die	OK	70 degrees C / 158 degrees F
	FPC 3	EA0_HMC1	DRAM botm	OK	67 degrees C / 152 degrees F
	FPC 3	EA0_HMC2	Logic die	OK	69 degrees C / 156 degrees F
	FPC 3	EA0_HMC2	DRAM botm	OK	66 degrees C / 150 degrees F
	FPC 3	EA1_HMC0	Logic die	OK	67 degrees C / 152 degrees F
	FPC 3	EA1_HMC0	DRAM botm	OK	64 degrees C / 147 degrees F
	FPC 3	EA1_HMC1	Logic die	OK	64 degrees C / 147 degrees F
	FPC 3	EA1_HMC1	DRAM botm	OK	61 degrees C / 141 degrees F
	FPC 3	EA1_HMC2	Logic die	OK	64 degrees C / 147 degrees F
	FPC 3	EA1_HMC2	DRAM botm	OK	61 degrees C / 141 degrees F
	FPC 3	EA2_HMC0	Logic die	OK	74 degrees C / 165 degrees F
	FPC 3	EA2_HMC0	DRAM botm	OK	71 degrees C / 159 degrees F
	FPC 3	EA2_HMC1	Logic die	OK	76 degrees C / 168 degrees F
	FPC 3	EA2_HMC1	DRAM botm	OK	73 degrees C / 163 degrees F
	FPC 3	EA2_HMC2	Logic die	OK	74 degrees C / 165 degrees F
	FPC 3	EA2_HMC2	DRAM botm	OK	71 degrees C / 159 degrees F
	FPC 3	EA3_HMC0	Logic die	OK	69 degrees C / 156 degrees F
	FPC 3	EA3_HMC0	DRAM botm	OK	66 degrees C / 150 degrees F
	FPC 3	EA3_HMC1	Logic die	OK	68 degrees C / 154 degrees F
	FPC 3	EA3_HMC1	DRAM botm	OK	65 degrees C / 149 degrees F
	FPC 3	EA3_HMC2	Logic die	OK	68 degrees C / 154 degrees F
	FPC 3	EA3_HMC2	DRAM botm	OK	65 degrees C / 149 degrees F
	FPC 3	EA4_HMC0	Logic die	OK	81 degrees C / 177 degrees F
	FPC 3	EA4_HMC0	DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 3	EA4_HMC1	Logic die	OK	80 degrees C / 176 degrees F
	FPC 3	EA4_HMC1	DRAM botm	OK	77 degrees C / 170 degrees F
	FPC 3	EA4_HMC2	Logic die	OK	81 degrees C / 177 degrees F
	FPC 3	EA4_HMC2	DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 3	EA5_HMC0	Logic die	OK	68 degrees C / 154 degrees F
	FPC 3	EA5_HMC0	DRAM botm	OK	65 degrees C / 149 degrees F
	FPC 3	EA5_HMC1	Logic die	OK	70 degrees C / 158 degrees F
	FPC 3	EA5_HMC1	DRAM botm	OK	67 degrees C / 152 degrees F
	FPC 3	EA5_HMC2	Logic die	OK	69 degrees C / 156 degrees F
	FPC 3	EA5_HMC2	DRAM botm	OK	66 degrees C / 150 degrees F
Power	PEM 0			OK	29 degrees C / 84 degrees F
	PEM 1			OK	27 degrees C / 80 degrees F
	PEM 2			OK	30 degrees C / 86 degrees F
	PEM 3			Check	
	PEM 4			Check	
	PEM 5			Check	
Fans	Fan Tray 0	Fan 0		OK	Spinning at normal speed
	Fan Tray 0	Fan 1		OK	Spinning at normal speed
	Fan Tray 0	Fan 2		OK	Spinning at normal speed
	Fan Tray 0	Fan 3		OK	Spinning at normal speed
	Fan Tray 0	Fan 4		Failed	
	Fan Tray 0	Fan 5		Failed	
	Fan Tray 0	Fan 6		OK	Spinning at normal speed
	Fan Tray 0	Fan 7		OK	Spinning at normal speed
	Fan Tray 0	Fan 8		OK	Spinning at normal speed
	Fan Tray 0	Fan 9		OK	Spinning at normal speed
	Fan Tray 0	Fan 10		OK	Spinning at normal speed

Fan Tray 1 Fan 0	OK	Spinning at normal speed
Fan Tray 1 Fan 1	OK	Spinning at normal speed
Fan Tray 1 Fan 2	OK	Spinning at normal speed
Fan Tray 1 Fan 3	OK	Spinning at normal speed
Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 1 Fan 7	OK	Spinning at normal speed
Fan Tray 1 Fan 8	OK	Spinning at normal speed
Fan Tray 1 Fan 9	OK	Spinning at normal speed
Fan Tray 1 Fan 10	OK	Spinning at normal speed
SFB 0 Intake-A	OK	32 degrees C / 89 degrees F
SFB 0 Intake-B	OK	21 degrees C / 69 degrees F
SFB 0 Exhaust-A	OK	27 degrees C / 80 degrees F
SFB 0 Exhaust-B	OK	32 degrees C / 89 degrees F
SFB 0 PF0	OK	39 degrees C / 102 degrees F
SFB 0 PF1	OK	29 degrees C / 84 degrees F
SFB 1 Intake-A	OK	43 degrees C / 109 degrees F
SFB 1 Intake-B	OK	20 degrees C / 68 degrees F
SFB 1 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 1 Exhaust-B	OK	44 degrees C / 111 degrees F
SFB 1 PF0	OK	50 degrees C / 122 degrees F
SFB 1 PF1	OK	29 degrees C / 84 degrees F
SFB 2 Intake-A	OK	39 degrees C / 102 degrees F
SFB 2 Intake-B	OK	20 degrees C / 68 degrees F
SFB 2 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 2 Exhaust-B	OK	38 degrees C / 100 degrees F
SFB 2 PF0	OK	45 degrees C / 113 degrees F
SFB 2 PF1	OK	30 degrees C / 86 degrees F
SFB 3 Intake-A	OK	36 degrees C / 96 degrees F
SFB 3 Intake-B	OK	20 degrees C / 68 degrees F
SFB 3 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 3 Exhaust-B	OK	35 degrees C / 95 degrees F
SFB 3 PF0	OK	42 degrees C / 107 degrees F
SFB 3 PF1	OK	29 degrees C / 84 degrees F
SFB 4 Intake-A	OK	30 degrees C / 86 degrees F
SFB 4 Intake-B	OK	20 degrees C / 68 degrees F
SFB 4 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 4 Exhaust-B	OK	31 degrees C / 87 degrees F
SFB 4 PF0	OK	41 degrees C / 105 degrees F
SFB 4 PF1	OK	29 degrees C / 84 degrees F
SFB 5 Intake-A	OK	30 degrees C / 86 degrees F
SFB 5 Intake-B	OK	21 degrees C / 69 degrees F
SFB 5 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 5 Exhaust-B	OK	30 degrees C / 86 degrees F
SFB 5 PF0	OK	35 degrees C / 95 degrees F
SFB 5 PF1	OK	34 degrees C / 93 degrees F

show chassis environment (MX204 Router)

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

Class	Item	Status	Measurement
Temp	CB 0 Top Right Inlet Sensor	OK	35 degrees C / 95 degrees F
	CB 0 Top Left Inlet Sensor	OK	37 degrees C / 98 degrees F
	CB 0 Top Right Exhaust Sensor	OK	43 degrees C / 109 degrees F
	CB 0 Top Left Exhaust Sensor	OK	50 degrees C / 122 degrees F
	CB 0 CPU Core-0 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-1 Temp	OK	48 degrees C / 118 degrees F
	CB 0 CPU Core-2 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-3 Temp	OK	47 degrees C / 116 degrees F

	CB 0 CPU Core-4 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-5 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-6 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-7 Temp	OK	47 degrees C / 116 degrees F
	FPC 0 EAO_HMC0 Logic die	OK	77 degrees C / 170 degrees F
	FPC 0 EAO_HMC0 DRAM botm	OK	74 degrees C / 165 degrees F
	FPC 0 EAO_HMC1 Logic die	OK	81 degrees C / 177 degrees F
	FPC 0 EAO_HMC1 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 0 EAO Chip	OK	94 degrees C / 201 degrees F
	FPC 0 EAO-XR0 Chip	OK	64 degrees C / 147 degrees F
	FPC 0 EAO-XR1 Chip	OK	65 degrees C / 149 degrees F
Power	PEM 0	Absent	
	PEM 1	OK	48 degrees C / 118 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed

show chassis environment (T640 Router)

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

Class	Item	Status	Measurement
Temp	PEM 0	Absent	
	PEM 1	OK	22 degrees C / 71 degrees F
	SCG 0	OK	30 degrees C / 86 degrees F
	SCG 1	OK	30 degrees C / 86 degrees F
	Routing Engine 0	Present	
	Routing Engine 1	OK	27 degrees C / 80 degrees F
	CB 0	Present	
	CB 1	OK	33 degrees C / 91 degrees F
	SIB 0	Absent	
	SIB 1	Absent	
	SIB 2	Absent	
	SIB 3	Absent	
	SIB 4	Absent	
	FPC 4 Top	Testing	
	FPC 4 Bottom	Testing	
	FPC 5 Top	Testing	
	FPC 5 Bottom	Testing	
	FPC 6 Top	Testing	
	FPC 6 Bottom	Testing	
	FPM GBUS	OK	23 degrees C / 73 degrees F
	FPM Display	Absent	
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Fourth Blower from top	OK	Spinning at normal speed
	Bottom Blower	OK	Spinning at normal speed
	Middle Blower	OK	Spinning at normal speed
	Top Blower	OK	Spinning at normal speed


```

                Second Blower from top OK
Misc CIP OK
      SPMB 0 OK
      SPMB 1 OK

```

```

                Spinning at normal speed

```

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
```

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
Fans	FPM GBUS	OK	30 degrees C / 86 degrees F
	FPM Display	OK	34 degrees C / 93 degrees F
	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Third fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Fifth fan	OK	Spinning at normal speed
	Rear Tray Sixth fan	OK	Spinning at normal speed
	Rear Tray Seventh fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	

```

SPMB 1                                OK

lcc2-re0:
-----
Class Item                               Status      Measurement
Temp PEM 0                             OK          29 degrees C / 84 degrees F
    PEM 1                             Absent
    SCG 0                             OK          32 degrees C / 89 degrees F
    SCG 1                             Absent
    Routing Engine 0                 OK          31 degrees C / 87 degrees F
    Routing Engine 1                 OK          32 degrees C / 89 degrees F
    CB 0                             OK          30 degrees C / 86 degrees F
    SIB 0                             OK          38 degrees C / 100 degrees F
    SIB 0 (B)                        OK          49 degrees C / 120 degrees F
    FPC 0 Top                        OK          45 degrees C / 113 degrees F
    FPC 0 Bottom                     OK          33 degrees C / 91 degrees F
    FPC 1 Top                        OK          37 degrees C / 98 degrees F
    FPC 1 Bottom                     OK          33 degrees C / 91 degrees F
    FPM GBUS                         OK          30 degrees C / 86 degrees F
    FPM Display                      OK          34 degrees C / 93 degrees F
Fans Top Left Front fan              OK          Spinning at normal speed
    Top Left Middle fan              OK          Spinning at normal speed
...

```

show chassis environment (T1600 Router)

```

user@host> show chassis environment

Class Item                               Status      Measurement
Temp PEM 0                             OK          27 degrees C / 80 degrees F
    PEM 1                             Absent
    SCG 0                             OK          31 degrees C / 87 degrees F
    SCG 1                             OK          35 degrees C / 95 degrees F
    Routing Engine 0                 OK          30 degrees C / 86 degrees F
    Routing Engine 1                 OK          30 degrees C / 86 degrees F
    CB 0                             OK          31 degrees C / 87 degrees F
    CB 1                             OK          31 degrees C / 87 degrees F
    SIB 0                             OK          41 degrees C / 105 degrees F
    SIB 0 (B)                        OK          34 degrees C / 93 degrees F
    SIB 1                             OK          0 degrees C / 32 degrees F
    SIB 1 (B)                        OK          0 degrees C / 32 degrees F
    SIB 2                             OK          0 degrees C / 32 degrees F
    SIB 2 (B)                        OK          0 degrees C / 32 degrees F
    SIB 3                             OK          0 degrees C / 32 degrees F
    SIB 3 (B)                        OK          0 degrees C / 32 degrees F
    SIB 4                             OK          0 degrees C / 32 degrees F
    SIB 4 (B)                        OK          0 degrees C / 32 degrees F
    FPC 0 Top                        OK          49 degrees C / 120 degrees F
    FPC 0 Bottom                     OK          50 degrees C / 122 degrees F
    FPC 1 Top                        OK          48 degrees C / 118 degrees F
    FPC 1 Bottom                     OK          49 degrees C / 120 degrees F
    FPM GBUS                         OK          27 degrees C / 80 degrees F
    FPM Display                      OK          30 degrees C / 86 degrees F
Fans Top Left Front fan              OK          Spinning at normal speed
    Top Left Middle fan              OK          Spinning at normal speed
    Top Left Rear fan                OK          Spinning at normal speed
    Top Right Front fan              OK          Spinning at normal speed
    Top Right Middle fan             OK          Spinning at normal speed
    Top Right Rear fan               OK          Spinning at normal speed
    Bottom Left Front fan            OK          Spinning at normal speed
    Bottom Left Middle fan           OK          Spinning at normal speed
    Bottom Left Rear fan             OK          Spinning at normal speed

```

Bottom Right Front fan	OK	Spinning at normal speed
Bottom Right Middle fan	OK	Spinning at normal speed
Bottom Right Rear fan	OK	Spinning at normal speed
Rear Tray Top fan	OK	Spinning at normal speed
Rear Tray Second fan	OK	Spinning at normal speed
Rear Tray Third fan	OK	Spinning at normal speed
Rear Tray Fourth fan	OK	Spinning at normal speed
Rear Tray Fifth fan	OK	Spinning at normal speed
Rear Tray Sixth fan	OK	Spinning at normal speed
Rear Tray Seventh fan	OK	Spinning at normal speed
Rear Tray Bottom fan	OK	Spinning at normal speed
Misc CIP	OK	
SPMB 0	OK	
SPMB 1	OK	

show chassis environment (TX Matrix Plus Router)

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

Class	Item	Status	Measurement
Temp	PEM 0	OK	28 degrees C / 82 degrees F
	PEM 1	Absent	
	Routing Engine 0	OK	27 degrees C / 80 degrees F
	Routing Engine 1	OK	29 degrees C / 84 degrees F
	CB 0 Intake	OK	26 degrees C / 78 degrees F
	CB 0 Exhaust A	OK	25 degrees C / 77 degrees F
	CB 0 Exhaust B	OK	25 degrees C / 77 degrees F
	CB 1 Intake	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust A	OK	26 degrees C / 78 degrees F
	CB 1 Exhaust B	OK	26 degrees C / 78 degrees F
	SIB F13 0	OK	47 degrees C / 116 degrees F
	SIB F13 0 (B)	OK	48 degrees C / 118 degrees F
	SIB F13 1	OK	38 degrees C / 100 degrees F
	SIB F13 1 (B)	OK	37 degrees C / 98 degrees F
	SIB F2S 0/0	OK	27 degrees C / 80 degrees F
	SIB F2S 0/2	OK	28 degrees C / 82 degrees F
	SIB F2S 0/4	OK	27 degrees C / 80 degrees F
	SIB F2S 0/6	OK	28 degrees C / 82 degrees F
	SIB F2S 1/0	OK	26 degrees C / 78 degrees F
	SIB F2S 1/2	OK	26 degrees C / 78 degrees F
	SIB F2S 1/4	OK	26 degrees C / 78 degrees F
	SIB F2S 1/6	OK	26 degrees C / 78 degrees F
	SIB F2S 2/0	OK	25 degrees C / 77 degrees F
	SIB F2S 2/2	OK	25 degrees C / 77 degrees F
	SIB F2S 2/4	OK	23 degrees C / 73 degrees F
	CIP 0 Intake	OK	23 degrees C / 73 degrees F
	CIP 0 Exhaust A	OK	24 degrees C / 75 degrees F
	CIP 0 Exhaust B	OK	24 degrees C / 75 degrees F
	CIP 1 Intake	OK	24 degrees C / 75 degrees F
	CIP 1 Exhaust A	OK	25 degrees C / 77 degrees F
	CIP 1 Exhaust B	OK	25 degrees C / 77 degrees F
Fans	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed

Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 2 Fan 1	OK	Spinning at normal speed
Fan Tray 2 Fan 2	OK	Spinning at normal speed
Fan Tray 2 Fan 3	OK	Spinning at normal speed
Fan Tray 2 Fan 4	OK	Spinning at normal speed
Fan Tray 2 Fan 5	OK	Spinning at normal speed
Fan Tray 2 Fan 6	OK	Spinning at normal speed
Fan Tray 2 Fan 7	OK	Spinning at normal speed
Fan Tray 2 Fan 8	OK	Spinning at normal speed
Fan Tray 2 Fan 9	OK	Spinning at normal speed
Fan Tray 3 Fan 1	OK	Spinning at normal speed
Fan Tray 3 Fan 2	OK	Spinning at normal speed
Fan Tray 3 Fan 3	OK	Spinning at normal speed
Fan Tray 3 Fan 4	OK	Spinning at normal speed
Fan Tray 3 Fan 5	OK	Spinning at normal speed
Fan Tray 3 Fan 6	OK	Spinning at normal speed
Fan Tray 3 Fan 7	OK	Spinning at normal speed
Fan Tray 3 Fan 8	OK	Spinning at normal speed
Fan Tray 3 Fan 9	OK	Spinning at normal speed
Fan Tray 4 Fan 1	OK	Spinning at normal speed
Fan Tray 4 Fan 2	OK	Spinning at normal speed
Fan Tray 4 Fan 3	OK	Spinning at normal speed
Fan Tray 4 Fan 4	OK	Spinning at normal speed
Fan Tray 4 Fan 5	OK	Spinning at normal speed
Fan Tray 4 Fan 6	OK	Spinning at normal speed
Fan Tray 4 Fan 7	OK	Spinning at normal speed
Fan Tray 4 Fan 8	OK	Spinning at normal speed
Fan Tray 4 Fan 9	OK	Spinning at normal speed
Fan Tray 5 Fan 1	OK	Spinning at normal speed
Fan Tray 5 Fan 2	OK	Spinning at normal speed
Fan Tray 5 Fan 3	OK	Spinning at normal speed
Fan Tray 5 Fan 4	OK	Spinning at normal speed
Fan Tray 5 Fan 5	OK	Spinning at normal speed
Fan Tray 5 Fan 6	OK	Spinning at normal speed
Fan Tray 5 Fan 7	OK	Spinning at normal speed
Fan Tray 5 Fan 8	OK	Spinning at normal speed
Fan Tray 5 Fan 9	OK	Spinning at normal speed
Misc SPMB 0	OK	
SPMB 1	OK	

```
1cc0-re0:
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	27 degrees C / 80 degrees F
	PEM 1	Absent	
	SCG 0	OK	31 degrees C / 87 degrees F
	SCG 1	OK	35 degrees C / 95 degrees F
	Routing Engine 0	OK	30 degrees C / 86 degrees F
	Routing Engine 1	OK	30 degrees C / 86 degrees F
	CB 0	OK	31 degrees C / 87 degrees F
	CB 1	OK	31 degrees C / 87 degrees F
	SIB 0	OK	41 degrees C / 105 degrees F
	SIB 0 (B)	OK	34 degrees C / 93 degrees F
	SIB 1	OK	0 degrees C / 32 degrees F
	SIB 1 (B)	OK	0 degrees C / 32 degrees F
	SIB 2	OK	0 degrees C / 32 degrees F
	SIB 2 (B)	OK	0 degrees C / 32 degrees F
	SIB 3	OK	0 degrees C / 32 degrees F
	SIB 3 (B)	OK	0 degrees C / 32 degrees F

	SIB 4	OK	0 degrees C / 32 degrees F
	SIB 4 (B)	OK	0 degrees C / 32 degrees F
	FPC 0 Top	OK	49 degrees C / 120 degrees F
	FPC 0 Bottom	OK	50 degrees C / 122 degrees F
	FPC 1 Top	OK	48 degrees C / 118 degrees F
	FPC 1 Bottom	OK	49 degrees C / 120 degrees F
	FPM GBUS	OK	27 degrees C / 80 degrees F
	FPM Display	OK	30 degrees C / 86 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Third fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Fifth fan	OK	Spinning at normal speed
	Rear Tray Sixth fan	OK	Spinning at normal speed
	Rear Tray Seventh fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

show chassis environment (TX Matrix Plus router with 3D SIBs)

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

Class	Item	Status	Measurement
Temp	PEM 0	Check	30 degrees C / 86 degrees F
	PEM 1	OK	33 degrees C / 91 degrees F
	Routing Engine 0	OK	28 degrees C / 82 degrees F
	Routing Engine 0 CPU	OK	42 degrees C / 107 degrees F
	Routing Engine 1	OK	29 degrees C / 84 degrees F
	Routing Engine 1 CPU	OK	44 degrees C / 111 degrees F
	CB 0 Intake	OK	30 degrees C / 86 degrees F
	CB 0 Exhaust A	OK	28 degrees C / 82 degrees F
	CB 0 Exhaust B	OK	30 degrees C / 86 degrees F
	CB 1 Intake	OK	31 degrees C / 87 degrees F
	CB 1 Exhaust A	OK	27 degrees C / 80 degrees F
	CB 1 Exhaust B	OK	31 degrees C / 87 degrees F
	SIB F13 0 Board	OK	44 degrees C / 111 degrees F
	SIB F13 0 XF Junction	OK	62 degrees C / 143 degrees F
	SIB F13 3 Board	OK	45 degrees C / 113 degrees F
	SIB F13 3 XF Junction	OK	60 degrees C / 140 degrees F
	SIB F13 6 Board	OK	47 degrees C / 116 degrees F
	SIB F13 6 XF Junction	OK	62 degrees C / 143 degrees F
	SIB F2S 0/0 Board	OK	32 degrees C / 89 degrees F
	SIB F2S 0/0 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 0/2 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/2 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 0/4 Board	OK	31 degrees C / 87 degrees F

	SIB F2S 0/4 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 0/6 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/6 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 1/0 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 1/0 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 1/2 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 1/2 XF Junction	OK	39 degrees C / 102 degrees F
	SIB F2S 1/4 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 1/4 XF Junction	OK	35 degrees C / 95 degrees F
	SIB F2S 1/6 Board	OK	30 degrees C / 86 degrees F
	SIB F2S 1/6 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 2/0 Board	OK	30 degrees C / 86 degrees F
	SIB F2S 2/0 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 2/2 Board	OK	28 degrees C / 82 degrees F
	SIB F2S 2/2 XF Junction	OK	39 degrees C / 102 degrees F
	SIB F2S 2/4 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 2/4 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 2/6 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 2/6 XF Junction	OK	41 degrees C / 105 degrees F
	CIP 0 Intake	OK	25 degrees C / 77 degrees F
	CIP 0 Exhaust A	OK	26 degrees C / 78 degrees F
	CIP 0 Exhaust B	OK	26 degrees C / 78 degrees F
	CIP 1 Intake	OK	26 degrees C / 78 degrees F
	CIP 1 Exhaust A	OK	27 degrees C / 80 degrees F
	CIP 1 Exhaust B	OK	27 degrees C / 80 degrees F
Fans	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 2	OK	Spinning at normal speed
	Fan Tray 2 Fan 3	OK	Spinning at normal speed
	Fan Tray 2 Fan 4	OK	Spinning at normal speed
	Fan Tray 2 Fan 5	OK	Spinning at normal speed
	Fan Tray 2 Fan 6	OK	Spinning at normal speed
	Fan Tray 2 Fan 7	OK	Spinning at normal speed
	Fan Tray 2 Fan 8	OK	Spinning at normal speed
	Fan Tray 2 Fan 9	OK	Spinning at normal speed
	Fan Tray 3 Fan 1	OK	Spinning at normal speed
	Fan Tray 3 Fan 2	OK	Spinning at normal speed
	Fan Tray 3 Fan 3	OK	Spinning at normal speed
	Fan Tray 3 Fan 4	OK	Spinning at normal speed
	Fan Tray 3 Fan 5	OK	Spinning at normal speed
	Fan Tray 3 Fan 6	OK	Spinning at normal speed
	Fan Tray 3 Fan 7	OK	Spinning at normal speed
	Fan Tray 3 Fan 8	OK	Spinning at normal speed
	Fan Tray 3 Fan 9	OK	Spinning at normal speed
	Fan Tray 4 Fan 1	OK	Spinning at normal speed
	Fan Tray 4 Fan 2	OK	Spinning at normal speed
	Fan Tray 4 Fan 3	OK	Spinning at normal speed
	Fan Tray 4 Fan 4	OK	Spinning at normal speed
	Fan Tray 4 Fan 5	OK	Spinning at normal speed
	Fan Tray 4 Fan 6	OK	Spinning at normal speed

Fan Tray 4 Fan 7	OK	Spinning at normal speed
Fan Tray 4 Fan 8	OK	Spinning at normal speed
Fan Tray 4 Fan 9	OK	Spinning at normal speed
Fan Tray 5 Fan 1	OK	Spinning at normal speed
Fan Tray 5 Fan 2	OK	Spinning at normal speed
Fan Tray 5 Fan 3	OK	Spinning at normal speed
Fan Tray 5 Fan 4	OK	Spinning at normal speed
Fan Tray 5 Fan 5	OK	Spinning at normal speed
Fan Tray 5 Fan 6	OK	Spinning at normal speed
Fan Tray 5 Fan 7	OK	Spinning at normal speed
Fan Tray 5 Fan 8	OK	Spinning at normal speed
Fan Tray 5 Fan 9	Check	
Misc SPMB 0	OK	
SPMB 1	OK	

```
1cc0-re0:
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	29 degrees C / 84 degrees F
	PEM 1	Check	29 degrees C / 84 degrees F
	SCG 0	OK	32 degrees C / 89 degrees F
	SCG 1	OK	33 degrees C / 91 degrees F
	Routing Engine 0	OK	32 degrees C / 89 degrees F
	Routing Engine 0 CPU	OK	51 degrees C / 123 degrees F
	Routing Engine 1	OK	32 degrees C / 89 degrees F
	Routing Engine 1 CPU	OK	49 degrees C / 120 degrees F
	CB 0	OK	34 degrees C / 93 degrees F
	CB 1	OK	34 degrees C / 93 degrees F
	SIB 0	OK	39 degrees C / 102 degrees F
	SIB 0 (B)	Absent	
	SIB 1	OK	39 degrees C / 102 degrees F
	SIB 1 (B)	Absent	
	SIB 2	OK	39 degrees C / 102 degrees F
	SIB 2 (B)	Absent	
	FPC 4 Top	OK	43 degrees C / 109 degrees F
	FPC 4 Bottom	OK	43 degrees C / 109 degrees F
	FPC 7 Fan Intake	OK	35 degrees C / 95 degrees F
	FPC 7 Fan Exhaust	OK	50 degrees C / 122 degrees F
	FPC 7 PMB	OK	50 degrees C / 122 degrees F
	FPC 7 LMB0	OK	55 degrees C / 131 degrees F
	FPC 7 LMB1	OK	49 degrees C / 120 degrees F
	FPC 7 LMB2	OK	39 degrees C / 102 degrees F
	FPC 7 PFE1 LU2	OK	55 degrees C / 131 degrees F
	FPC 7 PFE1 LU0	OK	45 degrees C / 113 degrees F
	FPC 7 PFE0 LU0	OK	62 degrees C / 143 degrees F
	FPC 7 XF1	OK	52 degrees C / 125 degrees F
	FPC 7 XF0	OK	61 degrees C / 141 degrees F
	FPC 7 XM1	OK	39 degrees C / 102 degrees F
	FPC 7 XM0	OK	56 degrees C / 132 degrees F
	FPC 7 PFE0 LU1	OK	60 degrees C / 140 degrees F
	FPC 7 PFE0 LU2	OK	55 degrees C / 131 degrees F
	FPC 7 PFE1 LU1	OK	41 degrees C / 105 degrees F
	FPM GBUS	OK	24 degrees C / 75 degrees F
	FPM Display	OK	28 degrees C / 82 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed

	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray fan 1 (Top)	OK	Spinning at normal speed
	Rear Tray fan 2	OK	Spinning at normal speed
	Rear Tray fan 3	OK	Spinning at normal speed
	Rear Tray fan 4	OK	Spinning at normal speed
	Rear Tray fan 5	OK	Spinning at normal speed
	Rear Tray fan 6	OK	Spinning at normal speed
	Rear Tray fan 7	OK	Spinning at normal speed
	Rear Tray fan 8	OK	Spinning at normal speed
	Rear Tray fan 9	OK	Spinning at normal speed
	Rear Tray fan 10	OK	Spinning at normal speed
	Rear Tray fan 11	OK	Spinning at normal speed
	Rear Tray fan 12	OK	Spinning at normal speed
	Rear Tray fan 13	OK	Spinning at normal speed
	Rear Tray fan 14	OK	Spinning at normal speed
	Rear Tray fan 15	OK	Spinning at normal speed
	Rear Tray fan 16 (Bottom)	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

show chassis environment (EX4200 Standalone Switch)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	OK	
	FPC 0 Power Supply 1	Absent	
Temp	FPC 0 CPU	OK	41 degrees C / 105 degrees F
	FPC 0 EX-PFE1	OK	42 degrees C / 107 degrees F
	FPC 0 EX-PFE2	OK	46 degrees C / 114 degrees F
	FPC 0 GEPHY Front Left	OK	25 degrees C / 77 degrees F
	FPC 0 GEPHY Front Right	OK	27 degrees C / 80 degrees F
	FPC 0 Uplink Conn	OK	29 degrees C / 84 degrees F
Fans	FPC 0 Fan 1	OK	Spinning at normal speed
	FPC 0 Fan 2	OK	Spinning at normal speed
	FPC 0 Fan 3	OK	Spinning at normal speed

show chassis environment (EX8216 Switch)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Power	PSU 0	OK	
	PSU 1	OK	
	PSU 2	OK	
	PSU 3	Check	
	PSU 4	Absent	
	PSU 5	Absent	
Temp	CB 0 Intake	OK	23 degrees C / 73 degrees F
	CB 0 Exhaust	OK	26 degrees C / 78 degrees F
	CB 1 Intake	OK	22 degrees C / 71 degrees F
	CB 1 Exhaust	OK	25 degrees C / 77 degrees F
	FPC 4 Intake	OK	49 degrees C / 120 degrees F
	FPC 4 Exhaust	OK	59 degrees C / 138 degrees F
	SIB 5 Intake	OK	25 degrees C / 77 degrees F
	SIB 5 Exhaust	OK	35 degrees C / 95 degrees F
	SIB 6 Intake	OK	25 degrees C / 77 degrees F

	SIB 6 Exhaust	OK	38 degrees C / 100 degrees F
Fans	Top Fan 1	OK	Spinning at normal speed
	Top Fan 2	OK	Spinning at normal speed
	Top Fan 3	OK	Spinning at normal speed
	Top Fan 4	OK	Spinning at normal speed
	Top Fan 5	OK	Spinning at normal speed
	Top Fan 6	OK	Spinning at normal speed
	Top Fan 7	OK	Spinning at normal speed
	Top Fan 8	OK	Spinning at normal speed
	Top Fan 9	OK	Spinning at normal speed
	Bottom Fan 1	OK	Spinning at normal speed
	Bottom Fan 2	OK	Spinning at normal speed
	Bottom Fan 3	OK	Spinning at normal speed
	Bottom Fan 4	OK	Spinning at normal speed
	Bottom Fan 5	OK	Spinning at normal speed
	Bottom Fan 6	OK	Spinning at normal speed
	Bottom Fan 7	OK	Spinning at normal speed
	Bottom Fan 8	OK	Spinning at normal speed
	Bottom Fan 9	OK	Spinning at normal speed

show chassis environment (EX9200 Switch)

```

user@switch> show chassis environment
Class Item                               Status Measurement
Temp PEM 0                               Check
      PEM 1                               OK           40 degrees C / 104 degrees F
      PEM 2                               OK           40 degrees C / 104 degrees F
      PEM 3                               Absent
Routing Engine 0                         OK           35 degrees C / 95 degrees F
Routing Engine 0 CPU                     OK           33 degrees C / 91 degrees F
Routing Engine 1                         OK           38 degrees C / 100 degrees F
Routing Engine 1 CPU                     OK           33 degrees C / 91 degrees F
CB 0 Intake                             OK           35 degrees C / 95 degrees F
CB 0 Exhaust A                           OK           33 degrees C / 91 degrees F
CB 0 Exhaust B                           OK           40 degrees C / 104 degrees F
CB 0 ACBC                                OK           39 degrees C / 102 degrees F
CB 0 XF A                                OK           49 degrees C / 120 degrees F
CB 0 XF B                                OK           46 degrees C / 114 degrees F
CB 1 Intake                             OK           37 degrees C / 98 degrees F
CB 1 Exhaust A                           OK           32 degrees C / 89 degrees F
CB 1 Exhaust B                           OK           39 degrees C / 102 degrees F
CB 1 ACBC                                OK           41 degrees C / 105 degrees F
CB 1 XF A                                OK           49 degrees C / 120 degrees F
CB 1 XF B                                OK           49 degrees C / 120 degrees F
FPC 2 Intake                             OK           37 degrees C / 98 degrees F
FPC 2 Exhaust A                           OK           40 degrees C / 104 degrees F
FPC 2 Exhaust B                           OK           34 degrees C / 93 degrees F
FPC 2 LU 0 TCAM TSen                      OK           44 degrees C / 111 degrees F
FPC 2 LU 0 TCAM Chip                      OK           48 degrees C / 118 degrees F
FPC 2 LU 0 TSen                          OK           44 degrees C / 111 degrees F
FPC 2 LU 0 Chip                          OK           60 degrees C / 140 degrees F
FPC 2 MQ 0 TSen                          OK           44 degrees C / 111 degrees F
FPC 2 MQ 0 Chip                          OK           51 degrees C / 123 degrees F
FPC 3 Intake                             OK           39 degrees C / 102 degrees F
FPC 3 Exhaust A                           OK           51 degrees C / 123 degrees F

[...Output truncated...]

Fans  Top Rear Fan                       OK           Spinning at intermediate-speed
      Bottom Rear Fan                     OK           Spinning at intermediate-speed
      Top Middle Fan                       OK           Spinning at intermediate-speed

```

Bottom Middle Fan	OK	Spinning at intermediate-speed
Top Front Fan	OK	Spinning at intermediate-speed
Bottom Front Fan	OK	Spinning at intermediate-speed

show chassis environment (EX9251 Switch)

```

user@switch> show chassis environment
Class Item                               Status      Measurement
Temp  CB 0 Top Right Inlet Sensor           OK          29 degrees C / 84 degrees F
      CB 0 Top Left Inlet Sensor         OK          29 degrees C / 84 degrees F
      CB 0 Top Right Exhaust Sensor      OK          40 degrees C / 104 degrees F
      CB 0 Top Left Exhaust Sensor       OK          59 degrees C / 138 degrees F
      CB 0 CPU Core-0 Temp               OK          45 degrees C / 113 degrees F
      CB 0 CPU Core-1 Temp               OK          44 degrees C / 111 degrees F
      CB 0 CPU Core-2 Temp               OK          44 degrees C / 111 degrees F
      CB 0 CPU Core-3 Temp               OK          44 degrees C / 111 degrees F
      CB 0 CPU Core-4 Temp               OK          45 degrees C / 113 degrees F
      CB 0 CPU Core-5 Temp               OK          44 degrees C / 111 degrees F
      CB 0 CPU Core-6 Temp               OK          44 degrees C / 111 degrees F
      CB 0 CPU Core-7 Temp               OK          43 degrees C / 109 degrees F
Power PEM 0                             Check
      PEM 1                             OK          36 degrees C / 96 degrees F
Fans  Fan Tray 0 Fan 0                   OK          Spinning at normal speed
      Fan Tray 0 Fan 1                   OK          Spinning at normal speed
      Fan Tray 1 Fan 0                   OK          Spinning at normal speed
      Fan Tray 1 Fan 1                   OK          Spinning at normal speed
      Fan Tray 2 Fan 0                   Absent
      Fan Tray 2 Fan 1                   Absent

```

show chassis environment (EX9253 Switch)

```

user@switch> show chassis environment
Class Item                               Status      Measurement
Temp  CB 0 Exhaust Temp Sensor            OK          37 degrees C / 98 degrees F
      CB 0 Inlet Temp Sensor             OK          31 degrees C / 87 degrees F
      CB 0 CPU DIE Temp Sensor           OK          42 degrees C / 107 degrees F
      CB 1 Exhaust Temp Sensor           OK          31 degrees C / 87 degrees F
      CB 1 Inlet Temp Sensor             OK          28 degrees C / 82 degrees F
      CB 1 CPU DIE Temp Sensor           OK          42 degrees C / 107 degrees F
      FPC 0 Intake Temp Sensor           OK          31 degrees C / 87 degrees F
      FPC 0 Exhaust-A Temp Sensor        OK          58 degrees C / 136 degrees F
      FPC 0 Exhaust-B Temp Sensor        OK          47 degrees C / 116 degrees F
      FPC 1 Intake Temp Sensor           OK          29 degrees C / 84 degrees F
      FPC 1 Exhaust-A Temp Sensor        OK          59 degrees C / 138 degrees F
      FPC 1 Exhaust-B Temp Sensor        OK          48 degrees C / 118 degrees F
Power PEM 0                             OK          54 degrees C / 129 degrees F
      PEM 1                             Check
      PEM 2                             Absent
      PEM 3                             Absent
      PEM 4                             Check
      PEM 5                             OK          61 degrees C / 141 degrees F
Fans  Fan Tray 0 Fan 0                   OK          Spinning at normal speed
      Fan Tray 0 Fan 1                   OK          Spinning at normal speed
      Fan Tray 0 Fan 2                   OK          Spinning at normal speed
      Fan Tray 0 Fan 3                   OK          Spinning at normal speed
      Fan Tray 1 Fan 0                   OK          Spinning at normal speed
      Fan Tray 1 Fan 1                   OK          Spinning at normal speed
      Fan Tray 1 Fan 2                   OK          Spinning at normal speed
      Fan Tray 1 Fan 3                   OK          Spinning at normal speed
      Fan Tray 2 Fan 0                   OK          Spinning at normal speed

```

Fan Tray 2 Fan 1	OK	Spinning at normal speed
Fan Tray 2 Fan 2	OK	Spinning at normal speed
Fan Tray 2 Fan 3	OK	Spinning at normal speed
Fan Tray 3 Fan 0	OK	Spinning at normal speed
Fan Tray 3 Fan 1	OK	Spinning at normal speed
Fan Tray 3 Fan 2	OK	Spinning at normal speed
Fan Tray 3 Fan 3	OK	Spinning at normal speed

show chassis environment (QFX Series and OCX Series)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Top Right Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Left Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Right Exhaust Sensor	OK	40 degrees C / 104 degrees F
	CB 0 Top Left Exhaust Sensor	OK	59 degrees C / 138 degrees F
	CB 0 CPU Core-0 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-1 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-2 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-3 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-4 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-5 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-6 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-7 Temp	OK	43 degrees C / 109 degrees F
Power	PEM 0	Check	
	PEM 1	OK	36 degrees C / 96 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	Absent	
	Fan Tray 2 Fan 1	Absent	

show chassis environment interconnect-device (QFabric System)

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

Class	Item	Status	Measurement
CB 0	CB 0 L Intake	OK	30 degrees C / 86 degrees F
	CB 0 R Intake	OK	31 degrees C / 87 degrees F
	CB 0 L Exhaust	OK	32 degrees C / 89 degrees F
	CB 0 R Exhaust	OK	33 degrees C / 91 degrees F
	Routing Engine 0 CPU temp	OK	51 degrees C / 123 degrees F
CB 1	CB 1 L Intake	OK	27 degrees C / 80 degrees F
	CB 1 R Intake	OK	29 degrees C / 84 degrees F
	CB 1 L Exhaust	OK	31 degrees C / 87 degrees F
	CB 1 R Exhaust	OK	32 degrees C / 89 degrees F
	Routing Engine 1 CPU temp	OK	40 degrees C / 104 degrees F
FC 0 FPC 0	FPC 0 L Intake	OK	25 degrees C / 77 degrees F
	FPC 0 R Intake	OK	28 degrees C / 82 degrees F
	FPC 0 L Exhaust	OK	28 degrees C / 82 degrees F
	FPC 0 R Exhaust	OK	29 degrees C / 84 degrees F
	FC 7 FPC 7		
FC 7 FPC 7	FPC 7 L Intake	OK	25 degrees C / 77 degrees F
	FPC 7 R Intake	OK	26 degrees C / 78 degrees F
	FPC 7 L Exhaust	OK	28 degrees C / 82 degrees F
	FPC 7 R Exhaust	OK	29 degrees C / 84 degrees F
	RC 0 FPC 8		

FPC 8 L Intake	OK	25 degrees C / 77 degrees F
FPC 8 R Intake	OK	26 degrees C / 78 degrees F
FPC 8 L Exhaust	OK	32 degrees C / 89 degrees F
FPC 8 R Exhaust	OK	30 degrees C / 86 degrees F
RC 7 FPC 15		
FPC 15 L Intake	OK	24 degrees C / 75 degrees F
FPC 15 R Intake	OK	25 degrees C / 77 degrees F
FPC 15 L Exhaust	OK	33 degrees C / 91 degrees F
FPC 15 R Exhaust	OK	31 degrees C / 87 degrees F
Fans TFT 0 Fan 0	OK	Spinning at normal speed
Fans TFT 0 Fan 1	OK	Spinning at normal speed
Fans TFT 0 Fan 2	OK	Spinning at normal speed
Fans TFT 0 Fan 3	OK	Spinning at normal speed
Fans TFT 0 Fan 4	OK	Spinning at normal speed
Fans TFT 0 Fan 5	OK	Spinning at normal speed
Fans BFT 1 Fan 0	OK	Spinning at normal speed
Fans BFT 1 Fan 1	OK	Spinning at normal speed
Fans BFT 1 Fan 2	OK	Spinning at normal speed
Fans BFT 1 Fan 3	Check	
Fans BFT 1 Fan 4	OK	Spinning at normal speed
Fans BFT 1 Fan 5	OK	Spinning at normal speed
Fans SFT 0 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 2 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 2 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 2 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 2 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 2 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 2 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 2 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 2 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 3 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 3 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 3 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 3 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 3 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 3 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 3 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 3 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 4 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 4 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 4 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 4 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 4 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 4 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 4 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 4 Fan 3 Rotor 1	OK	Spinning at normal speed

```

Fans SFT 5 Fan 0 Rotor 0      OK      Spinning at normal speed
Fans SFT 5 Fan 0 Rotor 1      OK      Spinning at normal speed
Fans SFT 5 Fan 1 Rotor 0      OK      Spinning at normal speed
Fans SFT 5 Fan 1 Rotor 1      OK      Spinning at normal speed
Fans SFT 5 Fan 2 Rotor 0      OK      Spinning at normal speed
Fans SFT 5 Fan 2 Rotor 1      OK      Spinning at normal speed
Fans SFT 5 Fan 3 Rotor 0      OK      Spinning at normal speed
Fans SFT 5 Fan 3 Rotor 1      OK      Spinning at normal speed
Fans SFT 6 Fan 0 Rotor 0      OK      Spinning at normal speed
Fans SFT 6 Fan 0 Rotor 1      OK      Spinning at normal speed
Fans SFT 6 Fan 1 Rotor 0      OK      Spinning at normal speed
Fans SFT 6 Fan 1 Rotor 1      OK      Spinning at normal speed
Fans SFT 6 Fan 2 Rotor 0      OK      Spinning at normal speed
Fans SFT 6 Fan 2 Rotor 1      OK      Spinning at normal speed
Fans SFT 6 Fan 3 Rotor 0      OK      Spinning at normal speed
Fans SFT 6 Fan 3 Rotor 1      OK      Spinning at normal speed
Fans SFT 7 Fan 0 Rotor 0      OK      Spinning at normal speed
Fans SFT 7 Fan 0 Rotor 1      OK      Spinning at normal speed
Fans SFT 7 Fan 1 Rotor 0      OK      Spinning at normal speed
Fans SFT 7 Fan 1 Rotor 1      OK      Spinning at normal speed
Fans SFT 7 Fan 2 Rotor 0      OK      Spinning at normal speed
Fans SFT 7 Fan 2 Rotor 1      OK      Spinning at normal speed
Fans SFT 7 Fan 3 Rotor 0      OK      Spinning at normal speed
Fans SFT 7 Fan 3 Rotor 1      OK      Spinning at normal speed
Power PEM 0                   OK      30 degrees C / 86 degrees F
Power PEM 1                   OK      30 degrees C / 86 degrees F
Power PEM 2                   OK      30 degrees C / 86 degrees F
Power PEM 3                   Absent
Power PEM 4                   Absent
Power PEM 5                   Absent

```

show chassis environment node-device (QFabric System)

```

user@switch> show chassis environment node-device node1
Class Item                      Status      Measurement
Power node1 Power Supply 0      Absent
      node1 Power Supply 1      Absent
Fans  node1 Fan Tray 0          Testing
      node1 Fan Tray 1          Testing
      node1 Fan Tray 2          Testing

```

show chassis environment pem node-device (QFabric System)

```

user@switch> show chassis environment pem node-device node1
FPC 0 PEM 0 status:
State          Check
Airflow        Front to Back
Temperature     OK
AC Input:      OK
DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  12         10        120      18

FPC 0 PEM 1 status:
State          Online
Airflow        Back to Front
Temperature     OK
AC Input:      OK
DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  11         10        110      17

```

show chassis environment (PTX5000 Packet Transport Router)

user@host> show chassis environment

Class	Item	Status	Measurement
Temp	PDU 0	OK	
	PDU 0 PSM 0	OK	36 degrees C / 96 degrees F
	PDU 0 PSM 1	OK	38 degrees C / 100 degrees F
	PDU 0 PSM 2	OK	38 degrees C / 100 degrees F
	PDU 0 PSM 3	OK	37 degrees C / 98 degrees F
	PDU 1	Absent	
	CCG 0	OK	44 degrees C / 111 degrees F
	CCG 1	OK	44 degrees C / 111 degrees F
	Routing Engine 0	OK	62 degrees C / 143 degrees F
	Routing Engine 0 CPU	OK	75 degrees C / 167 degrees F
	Routing Engine 1	OK	51 degrees C / 123 degrees F
	Routing Engine 1 CPU	OK	64 degrees C / 147 degrees F
	CB 0 Intake	OK	38 degrees C / 100 degrees F
	CB 0 Exhaust A	OK	46 degrees C / 114 degrees F
	CB 0 Exhaust B	OK	42 degrees C / 107 degrees F
	CB 1 Intake	OK	35 degrees C / 95 degrees F
	CB 1 Exhaust A	OK	39 degrees C / 102 degrees F
	CB 1 Exhaust B	OK	36 degrees C / 96 degrees F
	SIB 0 Exhaust	OK	47 degrees C / 116 degrees F
	SIB 0 Junction	OK	45 degrees C / 113 degrees F
	SIB 1 Exhaust	OK	44 degrees C / 111 degrees F
	SIB 1 Junction	OK	43 degrees C / 109 degrees F
	SIB 2 Exhaust	OK	47 degrees C / 116 degrees F
	SIB 2 Junction	OK	42 degrees C / 107 degrees F
	SIB 3 Exhaust	OK	43 degrees C / 109 degrees F
	SIB 3 Junction	OK	43 degrees C / 109 degrees F
	SIB 4 Exhaust	OK	47 degrees C / 116 degrees F
	SIB 4 Junction	OK	42 degrees C / 107 degrees F
	SIB 5 Exhaust	OK	42 degrees C / 107 degrees F
	SIB 5 Junction	OK	40 degrees C / 104 degrees F
	SIB 6 Exhaust	OK	46 degrees C / 114 degrees F
	SIB 6 Junction	OK	42 degrees C / 107 degrees F
	SIB 7 Exhaust	OK	43 degrees C / 109 degrees F
	SIB 7 Junction	OK	39 degrees C / 102 degrees F
	SIB 8 Exhaust	OK	44 degrees C / 111 degrees F
	SIB 8 Junction	OK	41 degrees C / 105 degrees F
	FPC 0 PMB	OK	35 degrees C / 95 degrees F
	FPC 0 Intake	OK	33 degrees C / 91 degrees F
	FPC 0 Exhaust A	OK	51 degrees C / 123 degrees F
	FPC 0 Exhaust B	OK	43 degrees C / 109 degrees F
	FPC 0 TL0	OK	48 degrees C / 118 degrees F
	FPC 0 TQ0	OK	53 degrees C / 127 degrees F
	FPC 0 TL1	OK	56 degrees C / 132 degrees F
	FPC 0 TQ1	OK	58 degrees C / 136 degrees F
	FPC 0 TL2	OK	55 degrees C / 131 degrees F
	FPC 0 TQ2	OK	56 degrees C / 132 degrees F
	FPC 0 TL3	OK	59 degrees C / 138 degrees F
	FPC 0 TQ3	OK	59 degrees C / 138 degrees F
	FPC 2 PMB	OK	35 degrees C / 95 degrees F
	FPC 2 Intake	OK	34 degrees C / 93 degrees F
	FPC 2 Exhaust A	OK	51 degrees C / 123 degrees F
	FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 2 TL0	OK	53 degrees C / 127 degrees F
	FPC 2 TQ0	OK	53 degrees C / 127 degrees F
	FPC 2 TL1	OK	57 degrees C / 134 degrees F
	FPC 2 TQ1	OK	58 degrees C / 136 degrees F
	FPC 2 TL2	OK	54 degrees C / 129 degrees F

FPC 2 TQ2	OK	59 degrees C / 138 degrees F
FPC 2 TL3	OK	60 degrees C / 140 degrees F
FPC 2 TQ3	OK	64 degrees C / 147 degrees F
PIC 2/0 Ambient	OK	49 degrees C / 120 degrees F
FPC 3 PMB	OK	34 degrees C / 93 degrees F
FPC 3 Intake	OK	35 degrees C / 95 degrees F
FPC 3 Exhaust A	OK	54 degrees C / 129 degrees F
FPC 3 Exhaust B	OK	49 degrees C / 120 degrees F
FPC 3 TL0	OK	49 degrees C / 120 degrees F
FPC 3 TQ0	OK	55 degrees C / 131 degrees F
FPC 3 TL1	OK	56 degrees C / 132 degrees F
FPC 3 TQ1	OK	58 degrees C / 136 degrees F
FPC 3 TL2	OK	56 degrees C / 132 degrees F
FPC 3 TQ2	OK	59 degrees C / 138 degrees F
FPC 3 TL3	OK	62 degrees C / 143 degrees F
FPC 3 TQ3	OK	63 degrees C / 145 degrees F
PIC 3/1	Absent	
FPC 5 PMB	OK	35 degrees C / 95 degrees F
FPC 5 Intake	OK	34 degrees C / 93 degrees F
FPC 5 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 5 Exhaust B	OK	53 degrees C / 127 degrees F
FPC 5 TL0	OK	54 degrees C / 129 degrees F
FPC 5 TQ0	OK	52 degrees C / 125 degrees F
FPC 5 TL1	OK	61 degrees C / 141 degrees F
FPC 5 TQ1	OK	60 degrees C / 140 degrees F
FPC 5 TL2	OK	55 degrees C / 131 degrees F
FPC 5 TQ2	OK	55 degrees C / 131 degrees F
FPC 5 TL3	OK	59 degrees C / 138 degrees F
FPC 5 TQ3	OK	58 degrees C / 136 degrees F
PIC 5/0 Ambient	OK	51 degrees C / 123 degrees F
PIC 5/1 Ambient	OK	34 degrees C / 93 degrees F
PIC 5/1 cfp-5/1/0	OK	34 degrees C / 93 degrees F
PIC 5/1 cfp-5/1/1	OK	36 degrees C / 96 degrees F
FPC 6 PMB	OK	36 degrees C / 96 degrees F
FPC 6 Intake	OK	33 degrees C / 91 degrees F
FPC 6 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 6 Exhaust B	OK	39 degrees C / 102 degrees F
FPC 6 TL0	OK	44 degrees C / 111 degrees F
FPC 6 TQ0	OK	54 degrees C / 129 degrees F
FPC 6 TL1	OK	59 degrees C / 138 degrees F
FPC 6 TQ1	OK	58 degrees C / 136 degrees F
FPC 6 TL2	OK	60 degrees C / 140 degrees F
FPC 6 TQ2	OK	57 degrees C / 134 degrees F
FPC 6 TL3	OK	65 degrees C / 149 degrees F
FPC 6 TQ3	OK	60 degrees C / 140 degrees F
FPC 7 PMB	OK	35 degrees C / 95 degrees F
FPC 7 Intake	OK	33 degrees C / 91 degrees F
FPC 7 Exhaust A	OK	53 degrees C / 127 degrees F
FPC 7 Exhaust B	OK	40 degrees C / 104 degrees F
FPC 7 TL0	OK	46 degrees C / 114 degrees F
FPC 7 TQ0	OK	58 degrees C / 136 degrees F
FPC 7 TL1	OK	53 degrees C / 127 degrees F
FPC 7 TQ1	OK	59 degrees C / 138 degrees F
FPC 7 TL2	OK	56 degrees C / 132 degrees F
FPC 7 TQ2	OK	61 degrees C / 141 degrees F
FPC 7 TL3	OK	63 degrees C / 145 degrees F
FPC 7 TQ3	OK	63 degrees C / 145 degrees F
FPM I2CS	OK	37 degrees C / 98 degrees F
Fans Fan Tray 0 Fan 1	OK	3042 RPM
Fans Fan Tray 0 Fan 2	OK	3042 RPM
Fans Fan Tray 0 Fan 3	OK	3000 RPM

Fan Tray 0 Fan 4	OK	3042 RPM
Fan Tray 0 Fan 5	OK	3000 RPM
Fan Tray 0 Fan 6	OK	3042 RPM
Fan Tray 0 Fan 7	OK	3085 RPM
Fan Tray 0 Fan 8	OK	3042 RPM
Fan Tray 0 Fan 9	OK	3042 RPM
Fan Tray 0 Fan 10	OK	3085 RPM
Fan Tray 0 Fan 11	OK	3085 RPM
Fan Tray 0 Fan 12	OK	3128 RPM
Fan Tray 0 Fan 13	OK	3128 RPM
Fan Tray 0 Fan 14	OK	3042 RPM
Fan Tray 1 Fan 1	OK	2299 RPM
Fan Tray 1 Fan 2	OK	2399 RPM
Fan Tray 1 Fan 3	OK	2299 RPM
Fan Tray 1 Fan 4	OK	2266 RPM
Fan Tray 1 Fan 5	OK	2266 RPM
Fan Tray 1 Fan 6	OK	2366 RPM
Fan Tray 2 Fan 1	OK	2199 RPM
Fan Tray 2 Fan 2	OK	2133 RPM
Fan Tray 2 Fan 3	OK	2366 RPM
Fan Tray 2 Fan 4	OK	2233 RPM
Fan Tray 2 Fan 5	OK	2399 RPM
Fan Tray 2 Fan 6	OK	2233 RPM
Misc SPMB 0 Intake	OK	50 degrees C / 122 degrees F
SPMB 1 Intake	OK	40 degrees C / 104 degrees F

show chassis environment (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis environment
Class Item                               Status Measurement
Temp PDU 0                               OK
      PDU 0 PSM 0                         OK          41 degrees C / 105 degrees F
      PDU 0 PSM 1                         Absent
      PDU 0 PSM 2                         OK          43 degrees C / 109 degrees F
      PDU 0 PSM 3                         Absent
      PDU 0 PSM 4                         OK          44 degrees C / 111 degrees F
      PDU 0 PSM 5                         Absent
      PDU 0 PSM 6                         OK          45 degrees C / 113 degrees F
      PDU 0 PSM 7                         Absent
      PDU 1                               OK
      PDU 1 PSM 0                         Absent
      PDU 1 PSM 1                         OK          45 degrees C / 113 degrees F
      PDU 1 PSM 2                         Absent
      PDU 1 PSM 3                         OK          43 degrees C / 109 degrees F
      PDU 1 PSM 4                         Absent
      PDU 1 PSM 5                         OK          46 degrees C / 114 degrees F
      PDU 1 PSM 6                         Absent
      PDU 1 PSM 7                         OK          46 degrees C / 114 degrees F
      CCG 0                               OK          27 degrees C / 80 degrees F
      CCG 1                               OK          29 degrees C / 84 degrees F
...

```

show chassis environment (PTX1000 Packet Transport Router)

```

user@host> show chassis environment
Class Item                               Status Measurement
Power FPC 0 Power Supply 0               Absent
      FPC 0 Power Supply 1               Absent
      FPC 0 Power Supply 2               OK
      FPC 0 Power Supply 3               OK

```

Temp	FPC 0 Intake Temp Sensor	OK	25 degrees C / 77 degrees F
	FPC 0 Exhaust Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 0 Mezz Temp Sensor 0	OK	25 degrees C / 77 degrees F
	FPC 0 Mezz Temp Sensor 1	OK	34 degrees C / 93 degrees F
	FPC 0 PE2 Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 0 PE1 Temp Sensor	OK	32 degrees C / 89 degrees F
	FPC 0 PF0 Temp Sensor	OK	40 degrees C / 104 degrees F
	FPC 0 PE0 Temp Sensor	OK	33 degrees C / 91 degrees F
	FPC 0 PE5 Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 0 PE4 Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 0 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
	FPC 0 PE3 Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 0 CPU Die Temp Sensor	OK	40 degrees C / 104 degrees F
	FPC 0 OCX0 Temp Sensor	OK	37 degrees C / 98 degrees F
Fans	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed
	FPC 0 Fan Tray 2	OK	Spinning at normal speed

show chassis environment (PTX10008 Router)

```

user@host> show chassis environment
Class Item                               Status Measurement
Temp CB 0 Intake Temp Sensor              OK      29 degrees C / 84 degrees F
      CB 0 Exhaust Temp Sensor            OK      33 degrees C / 91 degrees F
      CB 1 Intake Temp Sensor              OK      28 degrees C / 82 degrees F
      CB 1 Exhaust Temp Sensor             OK      32 degrees C / 89 degrees F
      FPC 0 Intake-A Temp Sensor            OK      38 degrees C / 100 degrees F
      FPC 0 Intake-B Temp Sensor            OK      34 degrees C / 93 degrees F
      FPC 0 Exhaust-A Temp Sensor           OK      36 degrees C / 96 degrees F
      FPC 0 Exhaust-B Temp Sensor           OK      37 degrees C / 98 degrees F
      FPC 0 Exhaust-C Temp Sensor           OK      40 degrees C / 104 degrees F
      FPC 0 PE0 Temp Sensor                 OK      40 degrees C / 104 degrees F
      FPC 0 PE1 Temp Sensor                 OK      42 degrees C / 107 degrees F
      FPC 0 PE2 Temp Sensor                 OK      44 degrees C / 111 degrees F
      FPC 0 LCPU Temp Sensor                OK      41 degrees C / 105 degrees F
      FPC 1 Intake-A Temp Sensor            OK      37 degrees C / 98 degrees F
      FPC 1 Intake-B Temp Sensor            OK      33 degrees C / 91 degrees F
      FPC 1 Exhaust-A Temp Sensor           OK      37 degrees C / 98 degrees F
      FPC 1 Exhaust-B Temp Sensor           OK      38 degrees C / 100 degrees F
      FPC 1 Exhaust-C Temp Sensor           OK      40 degrees C / 104 degrees F
      FPC 1 PE0 Temp Sensor                 OK      41 degrees C / 105 degrees F
      FPC 1 PE1 Temp Sensor                 OK      41 degrees C / 105 degrees F
      FPC 1 PE2 Temp Sensor                 OK      45 degrees C / 113 degrees F
      FPC 1 LCPU Temp Sensor                OK      40 degrees C / 104 degrees F
      FPC 2 Intake-A Temp Sensor            OK      44 degrees C / 111 degrees F
      FPC 2 Intake-B Temp Sensor            OK      30 degrees C / 86 degrees F
      FPC 2 Exhaust-A Temp Sensor           OK      52 degrees C / 125 degrees F
      FPC 2 Exhaust-B Temp Sensor           OK      54 degrees C / 129 degrees F
      FPC 2 Exhaust-C Temp Sensor           OK      52 degrees C / 125 degrees F
      FPC 2 PE0 Temp Sensor                 OK      49 degrees C / 120 degrees F
      FPC 2 PE1 Temp Sensor                 OK      59 degrees C / 138 degrees F
      FPC 2 PE2 Temp Sensor                 OK      49 degrees C / 120 degrees F
      FPC 2 PE3 Temp Sensor                 OK      60 degrees C / 140 degrees F
      FPC 2 PE4 Temp Sensor                 OK      49 degrees C / 120 degrees F
      FPC 2 PE5 Temp Sensor                 OK      63 degrees C / 145 degrees F
      FPC 2 LCPU Temp Sensor                OK      47 degrees C / 116 degrees F
      FPC 3 Intake-A Temp Sensor            OK      42 degrees C / 107 degrees F
      FPC 3 Intake-B Temp Sensor            OK      30 degrees C / 86 degrees F
      FPC 3 Exhaust-A Temp Sensor           OK      46 degrees C / 114 degrees F

```

FPC 3 Exhaust-B Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3 Exhaust-C Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 3 PE0 Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 3 PE1 Temp Sensor	OK	53 degrees C / 127 degrees F
FPC 3 PE2 Temp Sensor	OK	46 degrees C / 114 degrees F
FPC 3 PE3 Temp Sensor	OK	53 degrees C / 127 degrees F
FPC 3 PE4 Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3 PE5 Temp Sensor	OK	57 degrees C / 134 degrees F
FPC 3 LCPU Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 5 Intake-A Temp Sensor	Failed	
FPC 5 Intake-B Temp Sensor	Failed	
FPC 5 Exhaust-A Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 5 Exhaust-B Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 5 Exhaust-C Temp Sensor	OK	41 degrees C / 105 degrees F
FPC 5 PE0 Temp Sensor	OK	46 degrees C / 114 degrees F
FPC 5 PE1 Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 5 PE2 Temp Sensor	OK	51 degrees C / 123 degrees F
FPC 5 LCPU Temp Sensor	Failed	
FPC 6 Intake-A Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 6 Intake-B Temp Sensor	OK	36 degrees C / 96 degrees F
FPC 6 Exhaust-A Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 Exhaust-B Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 Exhaust-C Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 PE0 Temp Sensor	OK	44 degrees C / 111 degrees F
FPC 6 PE1 Temp Sensor	OK	45 degrees C / 113 degrees F
FPC 6 PE2 Temp Sensor	OK	50 degrees C / 122 degrees F
FPC 6 LCPU Temp Sensor	OK	40 degrees C / 104 degrees F
SIB 0 Intake-A Temp Sensor	OK	37 degrees C / 98 degrees F
SIB 0 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 Exhaust-A Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 0 Exhaust-B Temp Sensor	OK	38 degrees C / 100 degrees F
SIB 0 PF0 Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 0 PF1 Temp Sensor	OK	39 degrees C / 102 degrees F
SIB 1 Intake-A Temp Sensor	OK	43 degrees C / 109 degrees F
SIB 1 Intake-B Temp Sensor	OK	34 degrees C / 93 degrees F
SIB 1 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
SIB 1 Exhaust-B Temp Sensor	OK	44 degrees C / 111 degrees F
SIB 1 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
SIB 1 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
SIB 2 Intake-A Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 2 Intake-B Temp Sensor	OK	35 degrees C / 95 degrees F
SIB 2 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
SIB 2 Exhaust-B Temp Sensor	OK	47 degrees C / 116 degrees F
SIB 2 PF0 Temp Sensor	OK	55 degrees C / 131 degrees F
SIB 2 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
SIB 3 Intake-A Temp Sensor	OK	45 degrees C / 113 degrees F
SIB 3 Intake-B Temp Sensor	OK	35 degrees C / 95 degrees F
SIB 3 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
SIB 3 Exhaust-B Temp Sensor	OK	45 degrees C / 113 degrees F
SIB 3 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
SIB 3 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
SIB 4 Intake-A Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 4 Intake-B Temp Sensor	OK	34 degrees C / 93 degrees F
SIB 4 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
SIB 4 Exhaust-B Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 4 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
SIB 4 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
SIB 5 Intake-A Temp Sensor	OK	38 degrees C / 100 degrees F
SIB 5 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 5 Exhaust-A Temp Sensor	OK	34 degrees C / 93 degrees F
SIB 5 Exhaust-B Temp Sensor	OK	39 degrees C / 102 degrees F

	SIB 5 PF0 Temp Sensor	OK	44 degrees C / 111 degrees F
	SIB 5 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
Power	Power Supply 0	OK	
	Power Supply 1	OK	
	Power Supply 2	OK	
	Power Supply 3	OK	
	Power Supply 4	Check	
	Power Supply 5	OK	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	Failed	
	Fan Tray 0 Fan 5	Failed	
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 0 Fan 7	OK	Spinning at normal speed
	Fan Tray 0 Fan 8	OK	Spinning at normal speed
	Fan Tray 0 Fan 9	OK	Spinning at normal speed
	Fan Tray 0 Fan 10	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 7	OK	Spinning at normal speed
	Fan Tray 1 Fan 8	OK	Spinning at normal speed
	Fan Tray 1 Fan 9	OK	Spinning at normal speed
	Fan Tray 1 Fan 10	OK	Spinning at normal speed

show chassis environment (PTX10016 Router)

user@host> show chassis environment			
Class	Item	Status	Measurement
	Routing Engine 0 CPU	OK	34 degrees C / 93 degrees F
	Routing Engine 1 CPU	OK	34 degrees C / 93 degrees F
Temp	CB 0 Intake Temp Sensor	OK	20 degrees C / 68 degrees F
	CB 0 Exhaust Temp Sensor	OK	24 degrees C / 75 degrees F
	CB 1 Intake Temp Sensor	OK	20 degrees C / 68 degrees F
	CB 1 Exhaust Temp Sensor	OK	23 degrees C / 73 degrees F
	FPC 1 Intake-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 1 Intake-B Temp Sensor	OK	32 degrees C / 89 degrees F
	FPC 1 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 1 Exhaust-B Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 1 Exhaust-C Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 1 PE0 Temp Sensor	OK	45 degrees C / 113 degrees F
	FPC 1 PE1 Temp Sensor	OK	46 degrees C / 114 degrees F
	FPC 1 PE2 Temp Sensor	OK	54 degrees C / 129 degrees F
	FPC 1 LCPU Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 3 Intake-A Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 3 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	FPC 3 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 3 Exhaust-B Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 3 Exhaust-C Temp Sensor	OK	33 degrees C / 91 degrees F
	FPC 3 PE0 Temp Sensor	OK	43 degrees C / 109 degrees F
	FPC 3 PE1 Temp Sensor	OK	45 degrees C / 113 degrees F
	FPC 3 PE2 Temp Sensor	OK	49 degrees C / 120 degrees F
	FPC 3 LCPU Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 Intake-A Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 6 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F

	FPC 6 Exhaust-A Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 Exhaust-B Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 Exhaust-C Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 6 PE0 Temp Sensor	OK	43 degrees C / 109 degrees F
	FPC 6 PE1 Temp Sensor	OK	43 degrees C / 109 degrees F
	FPC 6 PE2 Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 6 LCPU Temp Sensor	OK	35 degrees C / 95 degrees F
	FPC 8 Intake-A Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 8 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	FPC 8 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 8 Exhaust-B Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 8 Exhaust-C Temp Sensor	OK	38 degrees C / 100 degrees F
	FPC 8 PE0 Temp Sensor	OK	42 degrees C / 107 degrees F
	FPC 8 PE1 Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 8 PE2 Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 8 LCPU Temp Sensor	OK	33 degrees C / 91 degrees F
	FPC 9 Intake-A Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 9 Intake-B Temp Sensor	OK	28 degrees C / 82 degrees F
	FPC 9 Exhaust-A Temp Sensor	OK	51 degrees C / 123 degrees F
	FPC 9 Exhaust-B Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 9 Exhaust-C Temp Sensor	OK	48 degrees C / 118 degrees F
	FPC 9 PE0 Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 9 PE1 Temp Sensor	OK	66 degrees C / 150 degrees F
	FPC 9 PE2 Temp Sensor	OK	50 degrees C / 122 degrees F
	FPC 9 PE3 Temp Sensor	OK	65 degrees C / 149 degrees F
	FPC 9 PE4 Temp Sensor	OK	51 degrees C / 123 degrees F
	FPC 9 PE5 Temp Sensor	OK	68 degrees C / 154 degrees F
	FPC 9 LCPU Temp Sensor	OK	46 degrees C / 114 degrees F
Power	Power Supply 0	OK	22 degrees C / 71 degrees F
	Power Supply 1	OK	23 degrees C / 73 degrees F
	Power Supply 2	OK	23 degrees C / 73 degrees F
	Power Supply 3	OK	21 degrees C / 69 degrees F
	Power Supply 4	OK	22 degrees C / 71 degrees F
	Power Supply 5	OK	25 degrees C / 77 degrees F
	Power Supply 6	OK	21 degrees C / 69 degrees F
	Power Supply 7	Absent	
	Power Supply 8	Absent	
	Power Supply 9	Absent	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 0 Fan 7	OK	Spinning at normal speed
	Fan Tray 0 Fan 8	OK	Spinning at normal speed
	Fan Tray 0 Fan 9	OK	Spinning at normal speed
	Fan Tray 0 Fan 10	OK	Spinning at normal speed
	Fan Tray 0 Fan 11	OK	Spinning at normal speed
	Fan Tray 0 Fan 12	OK	Spinning at normal speed
	Fan Tray 0 Fan 13	OK	Spinning at normal speed
	Fan Tray 0 Fan 14	OK	Spinning at normal speed
	Fan Tray 0 Fan 15	OK	Spinning at normal speed
	Fan Tray 0 Fan 16	OK	Spinning at normal speed
	Fan Tray 0 Fan 17	OK	Spinning at normal speed
	Fan Tray 0 Fan 18	OK	Spinning at normal speed
	Fan Tray 0 Fan 19	OK	Spinning at normal speed
	Fan Tray 0 Fan 20	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed

Fan Tray 1 Fan 2	OK	Spinning at normal speed
Fan Tray 1 Fan 3	OK	Spinning at normal speed
Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 1 Fan 7	OK	Spinning at normal speed
Fan Tray 1 Fan 8	OK	Spinning at normal speed
Fan Tray 1 Fan 9	OK	Spinning at normal speed
Fan Tray 1 Fan 10	OK	Spinning at normal speed
Fan Tray 1 Fan 11	OK	Spinning at normal speed
Fan Tray 1 Fan 12	OK	Spinning at normal speed
Fan Tray 1 Fan 13	OK	Spinning at normal speed
Fan Tray 1 Fan 14	OK	Spinning at normal speed
Fan Tray 1 Fan 15	OK	Spinning at normal speed
Fan Tray 1 Fan 16	OK	Spinning at normal speed
Fan Tray 1 Fan 17	OK	Spinning at normal speed
Fan Tray 1 Fan 18	OK	Spinning at normal speed
Fan Tray 1 Fan 19	OK	Spinning at normal speed
Fan Tray 1 Fan 20	OK	Spinning at normal speed
SIB 0 Intake-A Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 0 Intake-B Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 0 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 0 Exhaust-A Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 0 Exhaust-B Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 0 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 0 PF0 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 PF2 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 0 PF3 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 0 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 0 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 1 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 1 Intake-B Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 1 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 1 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 1 Exhaust-B Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 1 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 1 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 1 PF1 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 1 PF2 Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 1 PF3 Temp Sensor	OK	38 degrees C / 100 degrees F
SIB 1 PF4 Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 1 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 2 Intake-A Temp Sensor	OK	24 degrees C / 75 degrees F
SIB 2 Intake-B Temp Sensor	OK	21 degrees C / 69 degrees F
SIB 2 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 2 Exhaust-A Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 2 Exhaust-B Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 2 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 2 PF0 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 2 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 2 PF2 Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 2 PF3 Temp Sensor	OK	41 degrees C / 105 degrees F
SIB 2 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 2 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 3 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 3 Intake-B Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 3 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 3 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 3 Exhaust-B Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 3 Exhaust-C Temp Sensor	OK	24 degrees C / 75 degrees F

SIB 3 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 3 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 3 PF2 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 3 PF3 Temp Sensor	OK	39 degrees C / 102 degrees F
SIB 3 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 3 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 4 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 4 Intake-B Temp Sensor	OK	25 degrees C / 77 degrees F
SIB 4 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 4 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 4 Exhaust-B Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 4 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 PF1 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 4 PF2 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 PF3 Temp Sensor	OK	40 degrees C / 104 degrees F
SIB 4 PF4 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 4 PF5 Temp Sensor	OK	25 degrees C / 77 degrees F
SIB 5 Intake-A Temp Sensor	OK	21 degrees C / 69 degrees F
SIB 5 Intake-B Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 5 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 5 Exhaust-A Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 5 Exhaust-B Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 5 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 5 PF0 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 5 PF1 Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 5 PF2 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 5 PF3 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 5 PF4 Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 5 PF5 Temp Sensor	OK	27 degrees C / 80 degrees F

show chassis environment (ACX2000 Universal Metro Router)

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

Class	Item	Status	Measurement
	PCB Left	OK	44 degrees C / 111 degrees F
	SFP+ Xcvr	OK	50 degrees C / 122 degrees F
	FEB	OK	70 degrees C / 158 degrees F
	PCB Up	OK	63 degrees C / 145 degrees F
	PCB Mid	OK	66 degrees C / 150 degrees F
	Telecom Mod	OK	65 degrees C / 149 degrees F
	Routing Engine	OK	54 degrees C / 129 degrees F
	Heater off		

show chassis environment (ACX4000 Universal Metro Router)

On the ACX4000 router, the MIC output of the **show chassis environment** command varies depending on the number of temperature channels present in the installed MIC.

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

Class	Item	Status	Measurement
Temp	PEM 0	OK	33 degrees C / 91 degrees F
	PEM 1	Absent	
	PCB Bottom	OK	30 degrees C / 86 degrees F
	PCB Middle	OK	34 degrees C / 93 degrees F
	BCM56445	OK	33 degrees C / 91 degrees F
	SFP+ Xcvr	OK	32 degrees C / 89 degrees F
	Fan tray inlet	OK	39 degrees C / 102 degrees F
	Exhaust	OK	30 degrees C / 86 degrees F

	Routing Engine	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 (ACX5048 Router)

user@host> show chassis environment

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	Absent	
	FPC 0 Power Supply 1	OK	
Temp	FPC 0 Sensor TopMiddle E	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor TopRight C	OK	18 degrees C / 64 degrees F
	FPC 0 Sensor TopLeft C	OK	21 degrees C / 69 degrees F
	FPC 0 Sensor TopRight E	OK	20 degrees C / 68 degrees F
	FPC 0 Sensor CPURight C	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor CPULeft E	OK	22 degrees C / 71 degrees F
	FPC 0 Sensor CPU Die Temp	OK	39 degrees C / 102 degrees F
Fans	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed
	FPC 0 Fan Tray 2	OK	Spinning at normal speed
	FPC 0 Fan Tray 3	OK	Spinning at normal speed
	FPC 0 Fan Tray 4	OK	Spinning at normal speed

show chassis environment (ACX5096 Router)

user@host> show chassis environment

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	OK	
	FPC 0 Power Supply 1	OK	

Temp	FPC 0 Sensor TopMiddle E	OK	32 degrees C / 89 degrees F
	FPC 0 Sensor TopRight I	OK	29 degrees C / 84 degrees F
	FPC 0 Sensor TopLeft I	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor TopRight E	OK	28 degrees C / 82 degrees F
	FPC 0 Sensor CPURight I	OK	30 degrees C / 86 degrees F
	FPC 0 Sensor CPULeft I	OK	29 degrees C / 84 degrees F
	FPC 0 Sensor Die Temp	OK	46 degrees C / 114 degrees F
	FPC 0 Mezz Temp	OK	23 degrees C / 73 degrees F
Fans	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed
	FPC 0 Fan Tray 2	OK	Spinning at normal speed

show chassis environment (ACX500 Router)

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

Class	Item	Status	Measurement
Power	Mod	OK	47 degrees C / 116 degrees F
	BCM54610	OK	46 degrees C / 114 degrees F
	DPLL31404	OK	45 degrees C / 113 degrees F
	CPLD	OK	42 degrees C / 107 degrees F
	1588-FPGA	OK	43 degrees C / 109 degrees F
	NPU	OK	62 degrees C / 143 degrees F
	MAC sensor 1	OK	40 degrees C / 104 degrees F
	MAC sensor 2	OK	38 degrees C / 100 degrees F
	SFP PHY	OK	38 degrees C / 100 degrees F
	Combo/RJ45 PHY	OK	37 degrees C / 98 degrees F
	SFP sensor 1	OK	35 degrees C / 95 degrees F
	SFP sensor 2	OK	33 degrees C / 91 degrees F
	SFP sensor 3	OK	32 degrees C / 89 degrees F
	Routing Engine	OK	54 degrees C / 129 degrees F
	Heater	off	

show chassis environment fpc

List of Syntax	Syntax on page 255 Syntax (TX Matrix and TX Matrix Plus Routers) on page 255 Syntax (MX Series Routers) on page 255 Syntax (MX2010, MX10003, MX204, MX2008, and MX10008 Universal Routing Platforms) on page 255 Syntax (MX2020 Universal Routing Platforms) on page 255 Syntax (QFX Series) on page 255 Syntax (OCX Series) on page 255 Syntax (PTX3000 Series) on page 255 Syntax (PTX10008 Series) on page 256 Syntax (EX9251, EX9253 Switches) on page 256
Syntax	show chassis environment fpc <slot>
Syntax (TX Matrix and TX Matrix Plus Routers)	show chassis environment fpc <lcc number> <slot>
Syntax (MX Series Routers)	show chassis environment fpc <slot> <all-members> <local> <member member-id>
Syntax (MX2010, MX10003, MX204, MX2008, and MX10008 Universal Routing Platforms)	show chassis environment fpc <slot>
Syntax (MX2020 Universal Routing Platforms)	show chassis environment fpc <slot> <satellite [fpc-slot slot-id device-alias alias-name]
Syntax (QFX Series)	show chassis environment fpc <fpc-slot> interconnect-device name
Syntax (OCX Series)	show chassis environment fpc <fpc-slot>
Syntax (PTX3000 Series)	show chassis environment fpc <fpc-slot>

Syntax (PTX10008 Series)	show chassis environment fpc <fpc-slot>
Syntax (EX9251, EX9253 Switches)	show chassis environment fpc <fpc-slot>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.1 for T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX 2010 and MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>satellite option introduced in Junos OS Release 14.2R3.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> <p>Command introduced in Junos OS Release 18.2R1 for MX10008 Universal Routing Platforms.</p>
Description	(M40e, M120, M160, M320, MX Series, T Series routers, EX Series, QFX Series, and PTX Series routers only) Display environmental information about Flexible PIC Concentrators (FPCs).
Options	<p>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 routers.</p> <p>all-members—(MX Series routers only) (Optional) Display environmental information for the FPCs in all the members of the Virtual Chassis configuration.</p> <p>interconnect-device <i>name</i>—(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.</p> <p>lcc <i>number</i>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> 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.

satellite [*fpc-slot slot-id* | *device-alias alias-name*]—(Junos Fusion only)(Optional) Display environmental information for the FPCs in the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

slot* or *fpc-slot—(Optional) Display environmental information about an individual FPC:

- (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, if you specify the number of the T640 router by using only the **lcc *number*** option (the recommended method), replace ***slot*** with a value from 0 through 7. Similarly, on a TX Matrix Plus router, if you specify the number of the router by using only the **lcc *number*** option (the recommended method), replace ***slot*** with a value from 0 through 7. Otherwise, replace ***slot*** with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis environment fpc 1 lcc 1
user@host> show chassis environment fpc 9
```

- M120 router—Replace ***slot*** with a value from 0 through 5.
- MX240 router—Replace ***slot*** with a value from 0 through 2.
- MX480 router—Replace ***slot*** with a value from 0 through 5.
- MX960 router—Replace ***slot*** with a value from 0 through 11.
- MX2010 router—Replace ***slot*** with a value from 0 through 9.
- MX2020 router—Replace ***slot*** with a value from 0 through 19.
- MX2008 router—Replace ***slot*** with a value from 0 through 9.
- Other routers—Replace ***slot*** with a value from 0 through 7.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—Replace ***slot*** with 0.
 - EX4200 switches in a Virtual Chassis configuration—Replace ***slot*** with a value from 0 through 9 (switch's member ID).

- EX6210 switches—Replace **slot** with a value from 0 through 3 (line card only), 4 or 5 (line card or Switch Fabric and Routing Engine (SRE) module), or 6 through 9 (line card only).
- EX8208 switches—Replace **slot** with a value from 0 through 7 (line card).
- EX8216 switches—Replace **slot** with a value from 0 through 15 (line card).
- QFX3500 switches —Replace **fpc-slot** with 0 through 15.
- PTX5000 Packet Transport Router—Replace **fpc-slot** with 0 through 7.
- PTX3000 Packet Transport Router—Replace **fpc-slot** with 0 through 15.

Required Privilege Level view

- Related Documentation**
- [*request chassis fpc*](#)
 - [*show chassis fpc*](#)
 - [*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 260](#)
 - [show chassis environment fpc \(M160 Router\) on page 261](#)
 - [show chassis environment fpc \(M320 Router\) on page 261](#)
 - [show chassis environment fpc \(MX2020 Router\) on page 262](#)
 - [show chassis environment fpc \(MX2010 Router\) on page 265](#)
 - [show chassis environment fpc \(MX2008 Router\) on page 268](#)
 - [show chassis environment fpc \(MX240 Router\) on page 271](#)
 - [show chassis environment fpc \(MX480 Router\) on page 272](#)
 - [show chassis environment fpc \(MX960 Router\) on page 273](#)
 - [show chassis environment fpc \(MX480 Router with 100-Gigabit Ethernet CFP\) on page 274](#)
 - [show chassis environment fpc \(MX240, MX480, MX960 with Application Services Modular Line Card on page 275](#)
 - [show chassis environment fpc \(MX10003 Router\) on page 275](#)
 - [show chassis environment fpc \(MX204 Router\) on page 279](#)
 - [show chassis environment fpc \(MX10008 Router\) on page 279](#)
 - [show chassis environment fpc \(T320, T640, and T1600 Routers\) on page 286](#)
 - [show chassis environment fpc \(T4000 Router\) on page 287](#)
 - [show chassis environment fpc lcc \(TX Matrix Router\) on page 292](#)
 - [show chassis environment fpc lcc \(TX Matrix Plus Router\) on page 292](#)
 - [show chassis environment fpc \(QFX Series and OCX Series\) on page 293](#)
 - [show chassis environment fpc interconnect-device \(QFabric Systems\) on page 293](#)
 - [show chassis environment fpc 5\(PTX3000 Packet Transport Router\) on page 294](#)

[show chassis environment fpc 0 \(PTX5000 Packet Transport Router\) on page 294](#)
[show chassis environment fpc 07 \(PTX5000 Packet Transport Router with FPC2-PTX-P1A\) on page 295](#)
[show chassis environment fpc \(PTX10008 router\) on page 296](#)
[show chassis environment fpc \(PTX10016 router\) on page 299](#)
[show chassis environment FPC 1 \(MX Routers with Media Services Blade \[MSB\]\) on page 302](#)
[show chassis environment fpc \(EX9251 Switches\) on page 303](#)
[show chassis environment fpc \(EX9253 Switches\) on page 303](#)

Output Fields Table 10 on page 259 lists the output fields for the **show chassis environment fpc** command. Output fields are listed in the approximate order in which they appear.

Table 10: 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	<p>(PTX Series only) Temperature of the air flowing past the PMB (bottom of the FPC).</p> <p>The PTX5000 Packet Transport Router with FPC2-PTX-P1A include multiple temperatures for PMB (TEMPO and TEMP1).</p>
PMB CPU Temperature	(PTX5000 Packet Transport Router with FPC2-PTX-P1A only) Temperature of the air flowing past the PMB CPU.
Temperature Intake	(M320 routers, MX2010 routers, MX2020 routers, MX2008 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, MX2008 routers, and PTX Series only) Temperature of the air flowing out of the chassis.</p> <p>The PTX Series Packet Transport Routers, and the MX2010, MX2020, and MX2008 routers include exhaust temperatures for multiple zones (Exhaust A and Exhaust B).</p>
Temperature Bottom	(T Series routers only) Temperature of the air flowing past the bottom of the FPC.

Table 10: show chassis environment fpc Output Fields (continued)

Field Name	Field Description
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

```

show chassis environment fpc (M160 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State          Online
Temperature     42 degrees C / 107 degrees F
Power:
1.5 V          1500 mV
2.5 V          2509 mV
3.3 V          3308 mV
5.0 V          4991 mV
5.0 V bias     4952 mV
8.0 V bias     8307 mV
CMB Revision    12
FPC 1 status:
State          Online
Temperature     45 degrees C / 113 degrees F
Power:
1.5 V          1498 mV
2.5 V          2501 mV
3.3 V          3319 mV
5.0 V          5020 mV
5.0 V bias     5025 mV
8.0 V bias     8307 mV
CMB Revision    12

```

show chassis environment fpc (M320 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State          Online
Temperature Intake 27 degrees C / 80 degrees F
Temperature Exhaust 38 degrees C / 100 degrees F
Temperature MMB1   31 degrees C / 87 degrees F
Power:
1.5 V          1487 mV

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```

1.5 V *          1494 mV
1.8 V           1821 mV
2.5 V           2533 mV
3.3 V           3323 mV
5.0 V           5028 mV
3.3 V bias      3296 mV
5.0 V bias      4984 mV
CMB Revision    16
FPC 1 status:
State           Online
Temperature Intake 27 degrees C / 80 degrees F
Temperature Exhaust 37 degrees C / 98 degrees F
Temperature MMB1   32 degrees C / 89 degrees F
Power:
1.5 V           1504 mV
1.5 V *          1499 mV
1.8 V           1820 mV
2.5 V           2529 mV
3.3 V           3328 mV
5.0 V           5013 mV
3.3 V bias      3294 mV
5.0 V bias      4984 mV
CMB Revision    16
FPC 2 status:
State           Online
Temperature Intake 28 degrees C / 82 degrees F
Temperature Exhaust 38 degrees C / 100 degrees F
Temperature MMB1   32 degrees C / 89 degrees F
Power:
1.5 V           1498 mV
1.5 V *          1487 mV
1.8 V           1816 mV
2.5 V           2531 mV
3.3 V           3324 mV
5.0 V           5025 mV
3.3 V bias      3277 mV
5.0 V bias      5013 mV
CMB Revision    17
FPC 3 status:
...

```

show chassis environment fpc (MX2020 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State           Online
Temperature Intake 41 degrees C / 105 degrees F
Temperature Exhaust A 48 degrees C / 118 degrees F
Temperature Exhaust B 60 degrees C / 140 degrees F
Temperature LU 0 TSen 56 degrees C / 132 degrees F
Temperature LU 0 Chip 59 degrees C / 138 degrees F
Temperature LU 1 TSen 56 degrees C / 132 degrees F
Temperature LU 1 Chip 61 degrees C / 141 degrees F
Temperature LU 2 TSen 56 degrees C / 132 degrees F
Temperature LU 2 Chip 52 degrees C / 125 degrees F
Temperature LU 3 TSen 56 degrees C / 132 degrees F
Temperature LU 3 Chip 52 degrees C / 125 degrees F
Temperature MQ 0 TSen 49 degrees C / 120 degrees F
Temperature MQ 0 Chip 49 degrees C / 120 degrees F
Temperature MQ 1 TSen 49 degrees C / 120 degrees F
Temperature MQ 1 Chip 52 degrees C / 125 degrees F

```

```

Temperature MQ 2 TSen      49 degrees C / 120 degrees F
Temperature MQ 2 Chip      45 degrees C / 113 degrees F
Temperature MQ 3 TSen      49 degrees C / 120 degrees F
Temperature MQ 3 Chip      46 degrees C / 114 degrees F
Power
  AS-BIAS3V3-z12105        3299 mV
  AS-VDD1V8-z12006         1807 mV
  AS-VDD2V5-z12006         2512 mV
  AS-AVDD1V0-z12004         997 mV
  AS-PCIE_1V0-z12004         996 mV
  AS-VDD3V3-z12004         3294 mV
  AS-VDD_1V5A-z12004        1501 mV
  AS-VDD_1V5B-z12004        1498 mV
  AS-LU0_1V0-z12004         998 mV
  AS-LU1_1V0-z12004        1002 mV
  AS-MQ0_1V0-z12004         999 mV
  AS-MQ1_1V0-z12004         994 mV
  AS-LU2_1V0-z12004        1000 mV
  AS-LU3_1V0-z12004         998 mV
  AS-MQ2_1V0-z12004        1002 mV
  AS-MQ3_1V0-z12004         999 mV
  AS-PMB_1V1-z12006         1096 mV
I2C Slave Revision        68
FPC 1 status:
State                      Online
Temperature Intake          39 degrees C / 102 degrees F
Temperature Exhaust A       48 degrees C / 118 degrees F
Temperature Exhaust B       55 degrees C / 131 degrees F
Temperature LU 0 TSen        52 degrees C / 125 degrees F
Temperature LU 0 Chip        54 degrees C / 129 degrees F
Temperature LU 1 TSen        52 degrees C / 125 degrees F
Temperature LU 1 Chip        56 degrees C / 132 degrees F
Temperature LU 2 TSen        52 degrees C / 125 degrees F
Temperature LU 2 Chip        49 degrees C / 120 degrees F
Temperature LU 3 TSen        52 degrees C / 125 degrees F
Temperature LU 3 Chip        50 degrees C / 122 degrees F
Temperature MQ 0 TSen        48 degrees C / 118 degrees F
Temperature MQ 0 Chip        48 degrees C / 118 degrees F
Temperature MQ 1 TSen        48 degrees C / 118 degrees F
Temperature MQ 1 Chip        51 degrees C / 123 degrees F
Temperature MQ 2 TSen        48 degrees C / 118 degrees F
Temperature MQ 2 Chip        45 degrees C / 113 degrees F
Temperature MQ 3 TSen        48 degrees C / 118 degrees F
Temperature MQ 3 Chip        45 degrees C / 113 degrees F
Power
  AS-BIAS3V3-z12105        3291 mV
  AS-VDD1V8-z12006         1786 mV
  AS-VDD2V5-z12006         2496 mV
  AS-AVDD1V0-z12004        1000 mV
  AS-PCIE_1V0-z12004        1000 mV
  AS-VDD3V3-z12004         3294 mV
  AS-VDD_1V5A-z12004        1500 mV
  AS-VDD_1V5B-z12004        1498 mV
  AS-LU0_1V0-z12004        1003 mV
  AS-LU1_1V0-z12004        1000 mV
  AS-MQ0_1V0-z12004        1000 mV
  AS-MQ1_1V0-z12004         995 mV
  AS-LU2_1V0-z12004        1002 mV
  AS-LU3_1V0-z12004         997 mV
  AS-MQ2_1V0-z12004        1000 mV
  AS-MQ3_1V0-z12004         998 mV

```

```

AS-PMB_1V1-z12006      1096 mV
I2C Slave Revision      68
FPC 2 status:
State                   Online
Temperature Intake      39 degrees C / 102 degrees F
Temperature Exhaust A   48 degrees C / 118 degrees F
Temperature Exhaust B   58 degrees C / 136 degrees F
Temperature LU 0 TSen    55 degrees C / 131 degrees F
Temperature LU 0 Chip    57 degrees C / 134 degrees F
Temperature LU 1 TSen    55 degrees C / 131 degrees F
Temperature LU 1 Chip    63 degrees C / 145 degrees F
Temperature LU 2 TSen    55 degrees C / 131 degrees F
Temperature LU 2 Chip    51 degrees C / 123 degrees F
Temperature LU 3 TSen    55 degrees C / 131 degrees F
Temperature LU 3 Chip    52 degrees C / 125 degrees F
Temperature MQ 0 TSen    48 degrees C / 118 degrees F
Temperature MQ 0 Chip    50 degrees C / 122 degrees F
Temperature MQ 1 TSen    48 degrees C / 118 degrees F
Temperature MQ 1 Chip    52 degrees C / 125 degrees F
Temperature MQ 2 TSen    48 degrees C / 118 degrees F
Temperature MQ 2 Chip    47 degrees C / 116 degrees F
Temperature MQ 3 TSen    48 degrees C / 118 degrees F
Temperature MQ 3 Chip    47 degrees C / 116 degrees F
Power
AS-BIAS3V3-z12105      3299 mV
AS-VDD1V8-z12006      1805 mV
AS-VDD2V5-z12006      2510 mV
AS-AVDD1V0-z12004      999 mV
AS-PCIE_1V0-z12004      998 mV
AS-VDD3V3-z12004      3296 mV
AS-VDD_1V5A-z12004     1492 mV
AS-VDD_1V5B-z12004     1497 mV
AS-LU0_1V0-z12004      997 mV
AS-LU1_1V0-z12004     1000 mV
AS-MQ0_1V0-z12004      998 mV
AS-MQ1_1V0-z12004     1001 mV
AS-LU2_1V0-z12004      996 mV
AS-LU3_1V0-z12004      995 mV
AS-MQ2_1V0-z12004      998 mV
AS-MQ3_1V0-z12004      997 mV
AS-PMB_1V1-z12006      1100 mV
I2C Slave Revision      68
FPC 3 status:
State                   Online
Temperature Intake      41 degrees C / 105 degrees F
Temperature Exhaust A   48 degrees C / 118 degrees F
Temperature Exhaust B   58 degrees C / 136 degrees F
Temperature LU 0 TSen    56 degrees C / 132 degrees F
Temperature LU 0 Chip    59 degrees C / 138 degrees F
Temperature LU 1 TSen    56 degrees C / 132 degrees F
Temperature LU 1 Chip    61 degrees C / 141 degrees F
Temperature LU 2 TSen    56 degrees C / 132 degrees F
Temperature LU 2 Chip    51 degrees C / 123 degrees F
Temperature LU 3 TSen    56 degrees C / 132 degrees F
Temperature LU 3 Chip    53 degrees C / 127 degrees F
Temperature MQ 0 TSen    50 degrees C / 122 degrees F
Temperature MQ 0 Chip    51 degrees C / 123 degrees F
Temperature MQ 1 TSen    50 degrees C / 122 degrees F
Temperature MQ 1 Chip    55 degrees C / 131 degrees F
Temperature MQ 2 TSen    50 degrees C / 122 degrees F
Temperature MQ 2 Chip    47 degrees C / 116 degrees F

```

```

Temperature MQ 3 TSen      50 degrees C / 122 degrees F
Temperature MQ 3 Chip      50 degrees C / 122 degrees F
Power
  AS-BIAS3V3-z12105        3305 mV
  AS-VDD1V8-z12006         1810 mV
  AS-VDD2V5-z12006         2508 mV
  AS-AVDD1V0-z12004         999 mV
  AS-PCIE_1V0-z12004        1001 mV
  AS-VDD3V3-z12004         3294 mV
  AS-VDD_1V5A-z12004        1500 mV
  AS-VDD_1V5B-z12004        1498 mV
  AS-LU0_1V0-z12004         998 mV
  AS-LU1_1V0-z12004         998 mV
  AS-MQ0_1V0-z12004         999 mV
  AS-MQ1_1V0-z12004         998 mV
  AS-LU2_1V0-z12004        1000 mV
  AS-LU3_1V0-z12004        1001 mV
  AS-MQ2_1V0-z12004         996 mV
  AS-MQ3_1V0-z12004         998 mV
  AS-PMB_1V1-z12006        1098 mV
I2C Slave Revision        68
FPC 4 status:
...
```

show chassis environment fpc (MX2010 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State      Online
Temperature Intake      36 degrees C / 96 degrees F
Temperature Exhaust A   42 degrees C / 107 degrees F
Temperature Exhaust B   51 degrees C / 123 degrees F
Temperature LU 0 TSen    49 degrees C / 120 degrees F
Temperature LU 0 Chip    50 degrees C / 122 degrees F
Temperature LU 1 TSen    49 degrees C / 120 degrees F
Temperature LU 1 Chip    54 degrees C / 129 degrees F
Temperature LU 2 TSen    49 degrees C / 120 degrees F
Temperature LU 2 Chip    45 degrees C / 113 degrees F
Temperature LU 3 TSen    49 degrees C / 120 degrees F
Temperature LU 3 Chip    46 degrees C / 114 degrees F
Temperature MQ 0 TSen    40 degrees C / 104 degrees F
Temperature MQ 0 Chip    41 degrees C / 105 degrees F
Temperature MQ 1 TSen    40 degrees C / 104 degrees F
Temperature MQ 1 Chip    44 degrees C / 111 degrees F
Temperature MQ 2 TSen    40 degrees C / 104 degrees F
Temperature MQ 2 Chip    38 degrees C / 100 degrees F
Temperature MQ 3 TSen    40 degrees C / 104 degrees F
Temperature MQ 3 Chip    41 degrees C / 105 degrees F
Power
  AS-BIAS3V3-z12105        3300 mV
  AS-VDD1V8-z12006         1805 mV
  AS-VDD2V5-z12006         2505 mV
  AS-AVDD1V0-z12004         998 mV
  AS-PCIE_1V0-z12004        999 mV
  AS-VDD3V3-z12004         3303 mV
  AS-VDD_1V5A-z12004        1497 mV
  AS-VDD_1V5B-z12004        1497 mV
  AS-LU0_1V0-z12004         998 mV
  AS-LU1_1V0-z12004        1003 mV
  AS-MQ0_1V0-z12004         998 mV
  AS-MQ1_1V0-z12004         998 mV
```

```

AS-LU2_1V0-z12004      997 mV
AS-LU3_1V0-z12004      1001 mV
AS-MQ2_1V0-z12004      996 mV
AS-MQ3_1V0-z12004      994 mV
AS-PMB_1V1-z12006      1097 mV
I2C Slave Revision      68
FPC 1 status:
State                    Online
Temperature Intake        34 degrees C / 93 degrees F
Temperature Exhaust A    46 degrees C / 114 degrees F
Temperature Exhaust B    54 degrees C / 129 degrees F
Temperature LU 0 TSen    45 degrees C / 113 degrees F
Temperature LU 0 Chip    55 degrees C / 131 degrees F
Temperature LU 1 TSen    45 degrees C / 113 degrees F
Temperature LU 1 Chip    44 degrees C / 111 degrees F
Temperature LU 2 TSen    45 degrees C / 113 degrees F
Temperature LU 2 Chip    50 degrees C / 122 degrees F
Temperature LU 3 TSen    45 degrees C / 113 degrees F
Temperature LU 3 Chip    58 degrees C / 136 degrees F
Temperature XM 0 TSen    45 degrees C / 113 degrees F
Temperature XM 0 Chip    51 degrees C / 123 degrees F
Temperature XF 0 TSen    45 degrees C / 113 degrees F
Temperature XF 0 Chip    63 degrees C / 145 degrees F
Temperature PLX Switch TSen45 degrees C / 113 degrees F
Temperature PLX Switch Chip47 degrees C / 116 degrees F
Power
MPC-BIAS3V3-z12105      3300 mV
MPC-VDD3V3-z16100       3294 mV
MPC-VDD2V5-z16100       2505 mV
MPC-VDD1V8-z12004       1796 mV
MPC-AVDD1V0-z12004      991 mV
MPC-VDD1V2-z16100       1196 mV
MPC-VDD1V5A-z12004      1491 mV
MPC-VDD1V5B-z12004      1492 mV
MPC-XF_0V9-z12004       996 mV
MPC-PCIE_1V0-z16100     1003 mV
MPC-LU0_1V0-z12004      996 mV
MPC-LU1_1V0-z12004      996 mV
MPC-LU2_1V0-z12004      998 mV
MPC-LU3_1V0-z12004      994 mV
MPC-12VA-BMR453         12031 mV
MPC-12VB-BMR453         12003 mV
MPC-PMB_1V1-z12006      1104 mV
MPC-PMB_1V2-z12106      1194 mV
MPC-XM_0V9-vt273m       911 mV
I2C Slave Revision      110
FPC 8 status:
State                    Online
Temperature Intake        32 degrees C / 89 degrees F
Temperature Exhaust A    44 degrees C / 111 degrees F
Temperature Exhaust B    37 degrees C / 98 degrees F
Temperature LU 0 TCAM TSen 41 degrees C / 105 degrees F
Temperature LU 0 TCAM Chip 49 degrees C / 120 degrees F
Temperature LU 0 TSen    41 degrees C / 105 degrees F
Temperature LU 0 Chip    52 degrees C / 125 degrees F
Temperature MQ 0 TSen    41 degrees C / 105 degrees F
Temperature MQ 0 Chip    47 degrees C / 116 degrees F
Temperature LU 1 TCAM TSen 39 degrees C / 102 degrees F
Temperature LU 1 TCAM Chip 42 degrees C / 107 degrees F
Temperature LU 1 TSen    39 degrees C / 102 degrees F
Temperature LU 1 Chip    46 degrees C / 114 degrees F

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```

Temperature MQ 1 TSen      39 degrees C / 102 degrees F
Temperature MQ 1 Chip      45 degrees C / 113 degrees F
Power
  MPC-BIAS3V3-z12105      3296 mV
  MPC-VDD3V3-z12006      3298 mV
  MPC-VDD2V5-z12006      2505 mV
  MPC-TCAM_1V0-z12004     997 mV
  MPC-AVDD1V0-z12006     1007 mV
  MPC-VDD1V8-z12006     1803 mV
  MPC-PCIE_1V0-z12006     1004 mV
  MPC-LU0_1V0-z12004     1000 mV
  MPC-MQ0_1V0-z12004     999 mV
  MPC-VDD_1V5-z12004     1498 mV
  MPC-PMB_1V1-z12006     1102 mV
  MPC-9VA-BMR453         9009 mV
  MPC-9VB-BMR453         8960 mV
  MPC-PMB_1V2-z12105     1202 mV
  MPC-LU1_1V0-z12004     1005 mV
  MPC-MQ1_1V0-z12004     1000 mV
I2C Slave Revision        70
FPC 9 status:
State                     Online
Temperature Intake        34 degrees C / 93 degrees F
Temperature Exhaust A     41 degrees C / 105 degrees F
Temperature Exhaust B     54 degrees C / 129 degrees F
Temperature LU 0 TSen     51 degrees C / 123 degrees F
Temperature LU 0 Chip     52 degrees C / 125 degrees F
Temperature LU 1 TSen     51 degrees C / 123 degrees F
Temperature LU 1 Chip     55 degrees C / 131 degrees F
Temperature LU 2 TSen     51 degrees C / 123 degrees F
Temperature LU 2 Chip     47 degrees C / 116 degrees F
Temperature LU 3 TSen     51 degrees C / 123 degrees F
Temperature LU 3 Chip     47 degrees C / 116 degrees F
Temperature MQ 0 TSen     40 degrees C / 104 degrees F
Temperature MQ 0 Chip     42 degrees C / 107 degrees F
Temperature MQ 1 TSen     40 degrees C / 104 degrees F
Temperature MQ 1 Chip     44 degrees C / 111 degrees F
Temperature MQ 2 TSen     40 degrees C / 104 degrees F
Temperature MQ 2 Chip     38 degrees C / 100 degrees F
Temperature MQ 3 TSen     40 degrees C / 104 degrees F
Temperature MQ 3 Chip     40 degrees C / 104 degrees F
Power
  AS-BIAS3V3-z12105      3302 mV
  AS-VDD1V8-z12006      1808 mV
  AS-VDD2V5-z12006      2513 mV
  AS-AVDD1V0-z12004     997 mV
  AS-PCIE_1V0-z12004     999 mV
  AS-VDD3V3-z12004      3294 mV
  AS-VDD_1V5A-z12004     1503 mV
  AS-VDD_1V5B-z12004     1502 mV
  AS-LU0_1V0-z12004     996 mV
  AS-LU1_1V0-z12004     999 mV
  AS-MQ0_1V0-z12004     997 mV
  AS-MQ1_1V0-z12004     999 mV
  AS-LU2_1V0-z12004     997 mV
  AS-LU3_1V0-z12004     998 mV
  AS-MQ2_1V0-z12004     1000 mV
  AS-MQ3_1V0-z12004     1000 mV
  AS-PMB_1V1-z12006     1102 mV
I2C Slave Revision        68

```

show chassis environment fpc (MX2008 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                               Online
Temperature Intake                  29 degrees C / 84 degrees F
Temperature Exhaust A               43 degrees C / 109 degrees F
Temperature Exhaust B               42 degrees C / 107 degrees F
Temperature XL 0 TSen                38 degrees C / 100 degrees F
Temperature XL 0 Chip                53 degrees C / 127 degrees F
Temperature XL 0 XR2 0 TSen38 degrees C / 100 degrees F
Temperature XL 0 XR2 0 Chip60 degrees C / 140 degrees F
Temperature XL 0 XR2 1 TSen38 degrees C / 100 degrees F
Temperature XL 0 XR2 1 Chip60 degrees C / 140 degrees F
Temperature XL 1 TSen                30 degrees C / 86 degrees F
Temperature XL 1 Chip                43 degrees C / 109 degrees F
Temperature XL 1 XR2 0 TSen30 degrees C / 86 degrees F
Temperature XL 1 XR2 0 Chip50 degrees C / 122 degrees F
Temperature XL 1 XR2 1 TSen30 degrees C / 86 degrees F
Temperature XL 1 XR2 1 Chip50 degrees C / 122 degrees F
Temperature XM 0 TSen                42 degrees C / 107 degrees F
Temperature XM 0 Chip                49 degrees C / 120 degrees F
Temperature XM 1 TSen                42 degrees C / 107 degrees F
Temperature XM 1 Chip                42 degrees C / 107 degrees F
Temperature XM 2 TSen                42 degrees C / 107 degrees F
Temperature XM 2 Chip                42 degrees C / 107 degrees F
Temperature XM 3 TSen                42 degrees C / 107 degrees F
Temperature XM 3 Chip                40 degrees C / 104 degrees F
Temperature PCIE Switch TSen42 degrees C / 107 degrees F
Temperature PCIE Switch Chip22 degrees C / 71 degrees F
Power
MPC-VDD_3V3-vt273m                 3304 mV
MPC-VDD_2V5-vt273m                 2503 mV
MPC-VDD_1V5-vt273m                 1499 mV
MPC-PCIE_0V9-vt273m                 900 mV
MPC-VDD_1V8-vt273m                 1799 mV
MPC-VDD_1V2-vt273m                 1203 mV
MPC-XM01_AVDD_1V0-vt273            1001 mV
MPC-XM23_AVDD_1V0-vt273            1001 mV
MPC-XM0_0V9-vt273m                 900 mV
MPC-XM1_0V9-vt273m                 901 mV
MPC-XM2_0V9-vt273m                 903 mV
MPC-XM3_0V9-vt273m                 899 mV
MPC-XL0_XR0_0V9-vt273m             899 mV
MPC-XL0_XR1_0V9-vt273m             903 mV
MPC-XL0_0V9-vt273m                 899 mV
MPC-XL0_AVDD_1V0-vt273m            1000 mV
MPC-XL0_VDD_1V5-vt273m             1498 mV
MPC-XL0_XR_1V2-vt273m             1200 mV
MPC-XL1_XR0_0V9-vt273m             899 mV
MPC-XL1_XR1_0V9-vt273m             899 mV
MPC-XL1_0V9-vt273m                 900 mV
MPC-XL1_AVDD_1V0-vt273m            1000 mV
MPC-XL1_VDD_1V5-vt273m             1501 mV
MPC-XL1_XR_1V2-vt273m             1199 mV
MPC-PMB-1V05-ltc2978               1049 mV
MPC-PMB-1V5-ltc2978                1500 mV
MPC-PMB-2V5-ltc2978                2500 mV
MPC-PMB-3V3-ltc2978                3298 mV
I2C Slave Revision                  20

```


FPC 1 status:

```

State                               Online
Temperature Intake                  29 degrees C / 84 degrees F
Temperature Exhaust A               52 degrees C / 125 degrees F
Temperature Exhaust B               44 degrees C / 111 degrees F
Temperature EA0 TSen                 55 degrees C / 131 degrees F
Temperature EA0 Chip                 48 degrees C / 118 degrees F
Temperature EA0_XR0 TSen             55 degrees C / 131 degrees F
Temperature EA0_XR0 Chip             57 degrees C / 134 degrees F
Temperature EA0_XR1 TSen             55 degrees C / 131 degrees F
Temperature EA0_XR1 Chip             54 degrees C / 129 degrees F
Temperature EA1 TSen                 55 degrees C / 131 degrees F
Temperature EA1 Chip                 50 degrees C / 122 degrees F
Temperature EA1_XR0 TSen             55 degrees C / 131 degrees F
Temperature EA1_XR0 Chip             59 degrees C / 138 degrees F
Temperature EA1_XR1 TSen             55 degrees C / 131 degrees F
Temperature EA1_XR1 Chip             59 degrees C / 138 degrees F
Temperature PEX TSen                 55 degrees C / 131 degrees F
Temperature PEX Chip                 39 degrees C / 102 degrees F
Temperature EA2 TSen                 43 degrees C / 109 degrees F
Temperature EA2 Chip                 39 degrees C / 102 degrees F
Temperature EA2_XR0 TSen             43 degrees C / 109 degrees F
Temperature EA2_XR0 Chip             45 degrees C / 113 degrees F
Temperature EA2_XR1 TSen             43 degrees C / 109 degrees F
Temperature EA2_XR1 Chip             43 degrees C / 109 degrees F
Temperature EA3 TSen                 43 degrees C / 109 degrees F
Temperature EA3 Chip                 41 degrees C / 105 degrees F
Temperature EA3_XR0 TSen             43 degrees C / 109 degrees F
Temperature EA3_XR0 Chip             50 degrees C / 122 degrees F
Temperature EA3_XR1 TSen             43 degrees C / 109 degrees F
Temperature EA3_XR1 Chip             46 degrees C / 114 degrees F
Temperature EA0_HMC0 Logic die      61 degrees C / 141 degrees F
Temperature EA0_HMC0 DRAM botm      58 degrees C / 136 degrees F
Temperature EA0_HMC1 Logic die      62 degrees C / 143 degrees F
Temperature EA0_HMC1 DRAM botm      59 degrees C / 138 degrees F
Temperature EA0_HMC2 Logic die      59 degrees C / 138 degrees F
Temperature EA0_HMC2 DRAM botm      56 degrees C / 132 degrees F
Temperature EA1_HMC0 Logic die      67 degrees C / 152 degrees F
Temperature EA1_HMC0 DRAM botm      64 degrees C / 147 degrees F
Temperature EA1_HMC1 Logic die      65 degrees C / 149 degrees F
Temperature EA1_HMC1 DRAM botm      62 degrees C / 143 degrees F
Temperature EA1_HMC2 Logic die      63 degrees C / 145 degrees F
Temperature EA1_HMC2 DRAM botm      60 degrees C / 140 degrees F
Temperature EA2_HMC0 Logic die      51 degrees C / 123 degrees F
Temperature EA2_HMC0 DRAM botm      48 degrees C / 118 degrees F
Temperature EA2_HMC1 Logic die      55 degrees C / 131 degrees F
Temperature EA2_HMC1 DRAM botm      52 degrees C / 125 degrees F
Temperature EA2_HMC2 Logic die      52 degrees C / 125 degrees F
Temperature EA2_HMC2 DRAM botm      49 degrees C / 120 degrees F
Temperature EA3_HMC0 Logic die      51 degrees C / 123 degrees F
Temperature EA3_HMC0 DRAM botm      48 degrees C / 118 degrees F
Temperature EA3_HMC1 Logic die      52 degrees C / 125 degrees F
Temperature EA3_HMC1 DRAM botm      49 degrees C / 120 degrees F
Temperature EA3_HMC2 Logic die      52 degrees C / 125 degrees F
Temperature EA3_HMC2 DRAM botm      49 degrees C / 120 degrees F
Power
MPC-EA0_0V9-vt1527mb               950 mV
MPC-EA1_0V9-vt1527mb               950 mV
MPC-EA2_0V9-vt1527mb               925 mV
MPC-EA3_0V9-vt1527mb               924 mV
MAX20751-1V0                        1020 mV

```

MAX20731-0V9	891 mV
MAX20751-EA0-AVDD1V0	1000 mV
MAX20731-EA0-1V2	1189 mV
MAX20731-EA0-HMC-1V2	1182 mV
MAX20731-EA0-0V906	899 mV
MAX20731-EA0-HMC-0V9	891 mV
MAX20751-EA1-AVDD1V0	1000 mV
MAX20731-EA1-1V2	1189 mV
MAX20731-EA1-HMC-1V2	1182 mV
MAX20731-EA1-0V906	899 mV
MAX20731-EA1-HMC-0V9	889 mV
MAX20751-EA2-AVDD1V0	1000 mV
MAX20731-EA2-1V2	1186 mV
MAX20731-EA2-HMC-1V2	1193 mV
MAX20731-EA2-0V906	899 mV
MAX20731-EA2-HMC-0V9	889 mV
MAX20751-EA3-AVDD1V0	1000 mV
MAX20731-EA3-1V2	1186 mV
MAX20731-EA3-HMC-1V2	1193 mV
MAX20731-EA3-0V906	897 mV
MAX20731-EA3-HMC-0V9	894 mV
MAX20731-3V3	3268 mV
UCD9090_0-CH_1-EA0_PLL_	1010 mV
UCD9090_0-CH_2-EA0_1V04	1038 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1494 mV
UCD9090_0-CH_5-EA1_PLL_	1012 mV
UCD9090_0-CH_6-EA1_1V04	1038 mV
UCD9090_0-CH_7-EA1_2V5	2497 mV
UCD9090_0-CH_8-EA1_1V5	1498 mV
UCD9090_0-CH_9-VDD_1V8	1804 mV
UCD9090_0-CH_10-VDD_2V5	2499 mV
UCD9090_1-CH_1-EA2_PLL_	1017 mV
UCD9090_1-CH_2-EA2_1V04	1041 mV
UCD9090_1-CH_3-EA2_2V5	2499 mV
UCD9090_1-CH_4-EA2_1V5	1503 mV
UCD9090_1-CH_5-EA3_PLL_	1015 mV
UCD9090_1-CH_6-EA3_1V04	1048 mV
UCD9090_1-CH_7-EA3_2V5	2499 mV
UCD9090_1-CH_8-EA3_1V5	1500 mV
UCD9090_1-CH_9-VDD_1V5	1497 mV
UCD9090_1-CH_10-VDD_1V2	1216 mV
PMB PVCC 0.7V - 1.05V	802 mV
PMB PVNN 0V - 1.02V	976 mV
PMB 1.0V	1002 mV
PMB 1.1V	1076 mV
PMB 1.35V	1347 mV
PMB VDDQ 1.5V	1504 mV
PMB 1.8V	1804 mV
PMB VDD 3.3V	3292 mV
PMB BIAS 5.0V	5008 mV
PMB USB 5.0V	5000 mV
PMB 12V	10866 mV
I2C Slave Revision	112
FPC 7 status:	
State	Online
Temperature Intake	31 degrees C / 87 degrees F
Temperature Exhaust A	46 degrees C / 114 degrees F
Temperature Exhaust B	38 degrees C / 100 degrees F
Temperature QX 0 TSen	49 degrees C / 120 degrees F
Temperature QX 0 Chip	52 degrees C / 125 degrees F

```

Temperature LU 0 TCAM TSen 49 degrees C / 120 degrees F
Temperature LU 0 TCAM Chip 52 degrees C / 125 degrees F
Temperature LU 0 TSen 49 degrees C / 120 degrees F
Temperature LU 0 Chip 51 degrees C / 123 degrees F
Temperature MQ 0 TSen 49 degrees C / 120 degrees F
Temperature MQ 0 Chip 55 degrees C / 131 degrees F
Temperature QX 1 TSen 41 degrees C / 105 degrees F
Temperature QX 1 Chip 42 degrees C / 107 degrees F
Temperature LU 1 TCAM TSen 41 degrees C / 105 degrees F
Temperature LU 1 TCAM Chip 43 degrees C / 109 degrees F
Temperature LU 1 TSen 41 degrees C / 105 degrees F
Temperature LU 1 Chip 46 degrees C / 114 degrees F
Temperature MQ 1 TSen 41 degrees C / 105 degrees F
Temperature MQ 1 Chip 47 degrees C / 116 degrees F
Power
MPC-BIAS3V3-z12105 3302 mV
MPC-VDD3V3-z12006 3307 mV
MPC-VDD2V5-z12006 2505 mV
MPC-TCAM_1V0-z12004 1000 mV
MPC-AVDD1V0-z12006 1006 mV
MPC-VDD1V8-z12006 1800 mV
MPC-PCIE_1V0-z12006 1000 mV
MPC-LU0_1V0-z12004 997 mV
MPC-MQ0_1V0-z12004 999 mV
MPC-VDD_1V5-z12004 1495 mV
MPC-PMB_1V1-z12006 1096 mV
MPC-9VA-BMR453 9051 mV
MPC-9VB-BMR453 8990 mV
MPC-PMB_1V2-z12106 1200 mV
MPC-LU1_1V0-z12004 997 mV
MPC-MQ1_1V0-z12004 998 mV
MPC-QXM0_1V0-z12006 1000 mV
MPC-QXM1_1V0-z12006 999 mV
I2C Slave Revision 70

```

show chassis environment fpc (MX240 Router)

```

user@host> show chassis environment fpc
FPC 1 status:
State Online
Temperature Intake 34 degrees C / 93 degrees F
Temperature Exhaust A 39 degrees C / 102 degrees F
Temperature Exhaust B 53 degrees C / 127 degrees F
Temperature I3 0 TSensor 51 degrees C / 123 degrees F
Temperature I3 0 Chip 54 degrees C / 129 degrees F
Temperature I3 1 TSensor 50 degrees C / 122 degrees F
Temperature I3 1 Chip 53 degrees C / 127 degrees F
Temperature I3 2 TSensor 48 degrees C / 118 degrees F
Temperature I3 2 Chip 51 degrees C / 123 degrees F
Temperature I3 3 TSensor 45 degrees C / 113 degrees F
Temperature I3 3 Chip 48 degrees C / 118 degrees F
Temperature IA 0 TSensor 45 degrees C / 113 degrees F
Temperature IA 0 Chip 45 degrees C / 113 degrees F
Temperature IA 1 TSensor 45 degrees C / 113 degrees F
Temperature IA 1 Chip 49 degrees C / 120 degrees F
Power
1.5 V 1492 mV
2.5 V 2507 mV
3.3 V 3306 mV
1.8 V PFE 0 1801 mV
1.8 V PFE 1 1804 mV

```

```

1.8 V PFE 2          1798 mV
1.8 V PFE 3          1798 mV
1.2 V PFE 0          1169 mV
1.2 V PFE 1          1189 mV
1.2 V PFE 2          1182 mV
1.2 V PFE 3          1176 mV
I2C Slave Revision   42
FPC 2 status:
State                Online
Temperature Intake    33 degrees C / 91 degrees F
Temperature Exhaust A 41 degrees C / 105 degrees F
Temperature Exhaust B 53 degrees C / 127 degrees F
Temperature I3 0 TSensor 53 degrees C / 127 degrees F
Temperature I3 0 Chip  58 degrees C / 136 degrees F
Temperature I3 1 TSensor 52 degrees C / 125 degrees F
Temperature I3 1 Chip  56 degrees C / 132 degrees F
Temperature I3 2 TSensor 50 degrees C / 122 degrees F
Temperature I3 2 Chip  52 degrees C / 125 degrees F
Temperature I3 3 TSensor 46 degrees C / 114 degrees F
Temperature I3 3 Chip  49 degrees C / 120 degrees F
Temperature IA 0 TSensor 51 degrees C / 123 degrees F
Temperature IA 0 Chip  49 degrees C / 120 degrees F
Temperature IA 1 TSensor 48 degrees C / 118 degrees F
Temperature IA 1 Chip  53 degrees C / 127 degrees F
Power
1.5 V                1492 mV
2.5 V                2445 mV
3.3 V                3293 mV
1.8 V PFE 0          1827 mV
1.8 V PFE 1          1775 mV
1.8 V PFE 2          1788 mV
1.8 V PFE 3          1798 mV
1.2 V PFE 0          1250 mV
1.2 V PFE 1          1234 mV
1.2 V PFE 2          1231 mV
1.2 V PFE 3          1192 mV
I2C Slave Revision   42

```

show chassis environment fpc (MX480 Router)

```

user@host> show chassis environment fpc
FPC 1 status:
State                Online
Temperature Intake    36 degrees C / 96 degrees F
Temperature Exhaust A 41 degrees C / 105 degrees F
Temperature Exhaust B 55 degrees C / 131 degrees F
Temperature I3 0 TSensor 55 degrees C / 131 degrees F
Temperature I3 0 Chip  57 degrees C / 134 degrees F
Temperature I3 1 TSensor 53 degrees C / 127 degrees F
Temperature I3 1 Chip  53 degrees C / 127 degrees F
Temperature I3 2 TSensor 52 degrees C / 125 degrees F
Temperature I3 2 Chip  49 degrees C / 120 degrees F
Temperature I3 3 TSensor 47 degrees C / 116 degrees F
Temperature I3 3 Chip  47 degrees C / 116 degrees F
Temperature IA 0 TSensor 54 degrees C / 129 degrees F
Temperature IA 0 Chip  58 degrees C / 136 degrees F
Temperature IA 1 TSensor 48 degrees C / 118 degrees F
Temperature IA 1 Chip  53 degrees C / 127 degrees F
Power
1.5 V                1479 mV
2.5 V                2542 mV

```

```

3.3 V          3319 mV
1.8 V PFE 0    1811 mV
1.8 V PFE 1    1804 mV
1.8 V PFE 2    1804 mV
1.8 V PFE 3    1814 mV
1.2 V PFE 0    1192 mV
1.2 V PFE 1    1202 mV
1.2 V PFE 2    1205 mV
1.2 V PFE 3    1189 mV
I2C Slave Revision 40

```

show chassis environment fpc (MX960 Router)

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

```
FPC 5 status:
```

```

State          Online
Temperature Intake      27 degrees C / 80 degrees F
Temperature Exhaust A   34 degrees C / 93 degrees F
Temperature Exhaust B   40 degrees C / 104 degrees F
Temperature I3 0 TSensor 39 degrees C / 102 degrees F
Temperature I3 0 Chip    41 degrees C / 105 degrees F
Temperature I3 1 TSensor 38 degrees C / 100 degrees F
Temperature I3 1 Chip    37 degrees C / 98 degrees F
Temperature I3 2 TSensor 37 degrees C / 98 degrees F
Temperature I3 2 Chip    34 degrees C / 93 degrees F
Temperature I3 3 TSensor 32 degrees C / 89 degrees F
Temperature I3 3 Chip    33 degrees C / 91 degrees F
Temperature IA 0 TSensor 39 degrees C / 102 degrees F
Temperature IA 0 Chip    44 degrees C / 111 degrees F
Temperature IA 1 TSensor 36 degrees C / 96 degrees F
Temperature IA 1 Chip    44 degrees C / 111 degrees F
Power
1.5 V          1479 mV
2.5 V          2523 mV
3.3 V          3254 mV
1.8 V PFE 0    1798 mV
1.8 V PFE 1    1798 mV
1.8 V PFE 2    1807 mV
1.8 V PFE 3    1791 mV
1.2 V PFE 0    1173 mV
1.2 V PFE 1    1179 mV
1.2 V PFE 2    1179 mV
1.2 V PFE 3    1185 mV
I2C Slave Revision 6

```

```
FPC 6 status:
```

```

State          Online
Temperature Intake      25 degrees C / 77 degrees F
Temperature Exhaust A   38 degrees C / 100 degrees F
Temperature Exhaust B   38 degrees C / 100 degrees F
Temperature I3 0 TSensor 40 degrees C / 104 degrees F
Temperature I3 0 Chip    40 degrees C / 104 degrees F
Temperature I3 1 TSensor 40 degrees C / 104 degrees F
Temperature I3 1 Chip    38 degrees C / 100 degrees F
Temperature I3 2 TSensor 37 degrees C / 98 degrees F
Temperature I3 2 Chip    32 degrees C / 89 degrees F
Temperature I3 3 TSensor 34 degrees C / 93 degrees F
Temperature I3 3 Chip    33 degrees C / 91 degrees F
Temperature IA 0 TSensor 45 degrees C / 113 degrees F
Temperature IA 0 Chip    47 degrees C / 116 degrees F
Temperature IA 1 TSensor 37 degrees C / 98 degrees F
Temperature IA 1 Chip    42 degrees C / 107 degrees F

```

```

Power
 1.5 V          1485 mV
 2.5 V          2510 mV
 3.3 V          3332 mV
 1.8 V PFE 0    1801 mV
 1.8 V PFE 1    1814 mV
 1.8 V PFE 2    1804 mV
 1.8 V PFE 3    1820 mV
 1.2 V PFE 0    1192 mV
 1.2 V PFE 1    1189 mV
 1.2 V PFE 2    1202 mV
 1.2 V PFE 3    1156 mV
I2C Slave Revision 40

```

show chassis environment fpc (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis environment fpc
FPC 0 status:
State      Online
Temperature Intake      32 degrees C / 89 degrees F
Temperature Exhaust A   39 degrees C / 102 degrees F
Temperature Exhaust B   37 degrees C / 98 degrees F
Temperature QX 0 TSen    44 degrees C / 111 degrees F
Temperature QX 0 Chip    48 degrees C / 118 degrees F
Temperature LU 0 TCAM TSen 44 degrees C / 111 degrees F
Temperature LU 0 TCAM Chip 47 degrees C / 116 degrees F
Temperature LU 0 TSen    44 degrees C / 111 degrees F
Temperature LU 0 Chip    48 degrees C / 118 degrees F
Temperature MQ 0 TSen    44 degrees C / 111 degrees F
Temperature MQ 0 Chip    47 degrees C / 116 degrees F
Power
MPC-BIAS3V3-z12105      3297 mV
MPC-VDD3V3-z12105      3306 mV
MPC-VDD2V5-z12105      2498 mV
MPC-TCAM_1V0-z12004     999 mV
MPC-AVDD1V0-z12006     999 mV
MPC-VDD1V8-z12006      1796 mV
MPC-PCIE_1V0-z12006     1002 mV
MPC-LU0_1V0-z12004      997 mV
MPC-MQ0_1V0-z12004      995 mV
MPC-VDD_1V5-z12004      1496 mV
MPC-PMB_1V1-z12006      1094 mV
MPC-9VA-BMR453          9054 mV
MPC-9VB-BMR453          9037 mV
MPC-PMB_1V2-z12106      1191 mV
MPC-QXM0_1V0-z12006     1000 mV
I2C Slave Revision      66
FPC 1 status:
State      Online
Temperature Intake      35 degrees C / 95 degrees F
Temperature Exhaust A   50 degrees C / 122 degrees F
Temperature Exhaust B   56 degrees C / 132 degrees F
Temperature LU 0 TSen    46 degrees C / 114 degrees F
Temperature LU 0 Chip    59 degrees C / 138 degrees F
Temperature LU 1 TSen    46 degrees C / 114 degrees F
Temperature LU 1 Chip    45 degrees C / 113 degrees F
Temperature LU 2 TSen    46 degrees C / 114 degrees F
Temperature LU 2 Chip    60 degrees C / 140 degrees F
Temperature LU 3 TSen    46 degrees C / 114 degrees F
Temperature LU 3 Chip    71 degrees C / 159 degrees F
Temperature XM 0 TSen    46 degrees C / 114 degrees F

```

```

Temperature XM 0 Chip      -18 degrees C / 0 degrees F
Temperature XF 0 TSen      46 degrees C / 114 degrees F
Temperature XF 0 Chip      76 degrees C / 168 degrees F
Power
  MPC-BIAS3V3-z12105      3292 mV
  MPC-VDD3V3-z16100      3303 mV
  MPC-VDD2V5-z16100      2501 mV
  MPC-VDD1V8-z12004      1801 mV
  MPC-AVDD1V0-z12006      996 mV
  MPC-VDD1V2-z16100      1199 mV
  MPC-VDD1V5A-z12004      1493 mV
  MPC-VDD1V5B-z12004      1498 mV
  MPC-XF_0V9-z12006      996 mV
  MPC-PCIE_1V0-z16100     1000 mV
  MPC-LU0_1V0-z12004      994 mV
  MPC-LU1_1V0-z12004      994 mV
  MPC-LU2_1V0-z12004      992 mV
  MPC-LU3_1V0-z12004      993 mV
  MPC-12VA-BMR453         12003 mV
  MPC-12VB-BMR453         12043 mV
  MPC-PMB_1V1-z12006      1091 mV
  MPC-PMB_1V2-z12106      1196 mV
  MPC-XM_0V9-vt273m       899 mV
I2C Slave Revision        106

```

show chassis environment fpc (MX240, MX480, MX960 with Application Services Modular Line Card)

```

user@host>show chassis environment fpc 1
FPC 1 status:
State                               Online
Temperature Intake                  36 degrees C / 96 degrees F
Temperature Exhaust A               39 degrees C / 102 degrees F
Temperature LU TSen                  52 degrees C / 125 degrees F
Temperature LU Chip                  54 degrees C / 129 degrees F
Temperature XM TSen                  52 degrees C / 125 degrees F
Temperature XM Chip                  60 degrees C / 140 degrees F
Temperature PCIE TSen                52 degrees C / 125 degrees F
Temperature PCIE Chip                69 degrees C / 156 degrees F
Power
  MPC-BIAS3V3-z12106              3302 mV
  MPC-VDD3V3-z16100              3325 mV
  MPC-AVDD1V0-z16100              1007 mV
  MPC-PCIE_1V0-z16100              904 mV
  MPC-LU0_1V0-z12004              996 mV
  MPC-VDD_1V5-z12004              1498 mV
  MPC-12VA-BMR453                  11733 mV
  MPC-12VB-BMR453                  11728 mV
  MPC-XM_0V9-vt273m                900 mV
I2C Slave Revision                 81

```

show chassis environment fpc (MX10003 Router)

```

user@host> show chassis environment fpc

FPC 0 status:
State                               Online
FPC 0 Intake Temp Sensor            29 degrees C / 84 degrees F
FPC 0 Exhaust-A Temp Sensor         56 degrees C / 132 degrees F
FPC 0 Exhaust-B Temp Sensor         44 degrees C / 111 degrees F
FPC 0 EA0 Chip                       58 degrees C / 136 degrees F

```

FPC 0 EA0-XR0 Chip	61 degrees C / 141 degrees F
FPC 0 EA0-XR1 Chip	62 degrees C / 143 degrees F
FPC 0 EA1 Chip	67 degrees C / 152 degrees F
FPC 0 EA1-XR0 Chip	72 degrees C / 161 degrees F
FPC 0 EA1-XR1 Chip	72 degrees C / 161 degrees F
FPC 0 PEX Chip	77 degrees C / 170 degrees F
FPC 0 EA2 Chip	48 degrees C / 118 degrees F
FPC 0 EA2-XR0 Chip	54 degrees C / 129 degrees F
FPC 0 EA2-XR1 Chip	56 degrees C / 132 degrees F
FPC 0 PF Chip	68 degrees C / 154 degrees F
FPC 0 EA0_HMC0 Logic die	72 degrees C / 161 degrees F
FPC 0 EA0_HMC0 DRAM botm	69 degrees C / 156 degrees F
FPC 0 EA0_HMC1 Logic die	71 degrees C / 159 degrees F
FPC 0 EA0_HMC1 DRAM botm	68 degrees C / 154 degrees F
FPC 0 EA0_HMC2 Logic die	75 degrees C / 167 degrees F
FPC 0 EA0_HMC2 DRAM botm	72 degrees C / 161 degrees F
FPC 0 EA1_HMC0 Logic die	81 degrees C / 177 degrees F
FPC 0 EA1_HMC0 DRAM botm	78 degrees C / 172 degrees F
FPC 0 EA1_HMC1 Logic die	80 degrees C / 176 degrees F
FPC 0 EA1_HMC1 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA1_HMC2 Logic die	82 degrees C / 179 degrees F
FPC 0 EA1_HMC2 DRAM botm	79 degrees C / 174 degrees F
FPC 0 EA2_HMC0 Logic die	60 degrees C / 140 degrees F
FPC 0 EA2_HMC0 DRAM botm	57 degrees C / 134 degrees F
FPC 0 EA2_HMC1 Logic die	61 degrees C / 141 degrees F
FPC 0 EA2_HMC1 DRAM botm	58 degrees C / 136 degrees F
FPC 0 EA2_HMC2 Logic die	63 degrees C / 145 degrees F
FPC 0 EA2_HMC2 DRAM botm	60 degrees C / 140 degrees F
Power	
LTC3887-PF-VDD0V9-RAIL	898 mV
LTC3887-PF-VDD0V9-DEV0-	898 mV
LTC3887-PF-VDD0V9-DEV0-	900 mV
LTC3887-PF-VDD0V9-DEV1-	899 mV
LTC3887-PF-VDD0V9-DEV1-	901 mV
LTC3887-PF-AVDD1V0-RAIL	998 mV
LTC3887-PF-AVDD1V0-CH0	998 mV
LTC3887-PF-AVDD1V0-CH1	999 mV
LTC3887-ETHSW-VDD1V0	1000 mV
LTC3887-VDD2V5	2499 mV
LTC3887-PCIE-VDD0V9	899 mV
LTC3887-V1P0	999 mV
LTC3887-PHY-VDD1V0-A	999 mV
LTC3887-3V3	3300 mV
LTC3887-VDD1V8	1799 mV
UCD9090_0-CH_1-EA0_PLL_	1005 mV
UCD9090_0-CH_2-EA0_1V4	1049 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1499 mV
UCD9090_0-CH_5-EA1_PLL_	999 mV
UCD9090_0-CH_6-EA1_1V4	1037 mV
UCD9090_0-CH_7-EA1_2V5	2499 mV
UCD9090_0-CH_8-EA1_1V5	1510 mV
UCD9090_0-CH_9-PVCC	797 mV
UCD9090_0-CH_10-PVNN	991 mV
UCD9090_1-CH_1-EA2_PLL_	1008 mV
UCD9090_1-CH_2-EA2_1V4	1009 mV
UCD9090_1-CH_3-EA2_2V5	2499 mV
UCD9090_1-CH_4-EA2_1V5	1513 mV
UCD9090_1-CH_5-1V0-PFPL	1009 mV
UCD9090_1-CH_6-V1P1	1075 mV
UCD9090_1-CH_7-V1P5	1531 mV


```

UCD9090_1-CH_8-V1P35      1359 mV
UCD9090_1-CH_9-VDD1V5     1511 mV
UCD9090_1-CH_10-VDD1V2    1210 mV
LTC3887-EA0-VDD0V9-RAIL    949 mV
LTC3887-EA0-VDD0V9-DEV0    949 mV
LTC3887-EA0-VDD0V9-DEV0    951 mV
LTC3887-EA0-VDD0V9-DEV1    949 mV
LTC3887-EA0-VDD0V9-DEV1    951 mV
LTC3887-EA0-VDD0V9R2-RA    947 mV
LTC3887-EA0-VDD0V9R2-CH    947 mV
LTC3887-EA0-VDD0V9R2-CH    949 mV
LTC3887-EA0-VDD1V0-RAIL    999 mV
LTC3887-EA0-VDD1V0-CH0     999 mV
LTC3887-EA0-VDD1V0-CH1     1001 mV
LTC3887-EA0-XR-VDD0V9      900 mV
LTC3887-EA0-XR-VDD1V2     1199 mV
LTC3887-EA0-HM1-VDD0V9     899 mV
LTC3887-EA0-HM-VDD1V2     1200 mV
LTC3887-EA0-HM-VDDM1V2    1199 mV
LTC3887-EA1-VDD0V9-RAIL    949 mV
LTC3887-EA1-VDD0V9-DEV0    952 mV
LTC3887-EA1-VDD0V9-DEV0    952 mV
LTC3887-EA1-VDD0V9-DEV1    951 mV
LTC3887-EA1-VDD0V9-DEV1    951 mV
LTC3887-EA1-VDD0V9R2-RA    948 mV
LTC3887-EA1-VDD0V9R2-CH    948 mV
LTC3887-EA1-VDD0V9R2-CH    950 mV
LTC3887-EA1-VDD1V0-RAIL    1000 mV
LTC3887-EA1-VDD1V0-CH0     1000 mV
LTC3887-EA1-VDD1V0-CH1     1001 mV
I2C Slave Revision         13
FPC 1 status:
State                       Online
FPC 1 Intake Temp Sensor    27 degrees C / 80 degrees F
FPC 1 Exhaust-A Temp Sensor 60 degrees C / 140 degrees F
FPC 1 Exhaust-B Temp Sensor 46 degrees C / 114 degrees F
FPC 1 EA0 Chip              63 degrees C / 145 degrees F
FPC 1 EA0-XR0 Chip          67 degrees C / 152 degrees F
FPC 1 EA0-XR1 Chip          68 degrees C / 154 degrees F
FPC 1 EA1 Chip              70 degrees C / 158 degrees F
FPC 1 EA1-XR0 Chip          75 degrees C / 167 degrees F
FPC 1 EA1-XR1 Chip          75 degrees C / 167 degrees F
FPC 1 PEX Chip              89 degrees C / 192 degrees F
FPC 1 EA2 Chip              49 degrees C / 120 degrees F
FPC 1 EA2-XR0 Chip          53 degrees C / 127 degrees F
FPC 1 EA2-XR1 Chip          56 degrees C / 132 degrees F
FPC 1 PF Chip               71 degrees C / 159 degrees F
FPC 1 EA0_HMC0 Logic die    74 degrees C / 165 degrees F
FPC 1 EA0_HMC0 DRAM botm    71 degrees C / 159 degrees F
FPC 1 EA0_HMC1 Logic die    78 degrees C / 172 degrees F
FPC 1 EA0_HMC1 DRAM botm    75 degrees C / 167 degrees F
FPC 1 EA0_HMC2 Logic die    78 degrees C / 172 degrees F
FPC 1 EA0_HMC2 DRAM botm    75 degrees C / 167 degrees F
FPC 1 EA1_HMC0 Logic die    84 degrees C / 183 degrees F
FPC 1 EA1_HMC0 DRAM botm    81 degrees C / 177 degrees F
FPC 1 EA1_HMC1 Logic die    82 degrees C / 179 degrees F
FPC 1 EA1_HMC1 DRAM botm    79 degrees C / 174 degrees F
FPC 1 EA1_HMC2 Logic die    85 degrees C / 185 degrees F
FPC 1 EA1_HMC2 DRAM botm    82 degrees C / 179 degrees F
FPC 1 EA2_HMC0 Logic die    62 degrees C / 143 degrees F
FPC 1 EA2_HMC0 DRAM botm    59 degrees C / 138 degrees F

```

FPC 1 EA2_HMC1 Logic die	60 degrees C / 140 degrees F
FPC 1 EA2_HMC1 DRAM botm	57 degrees C / 134 degrees F
FPC 1 EA2_HMC2 Logic die	65 degrees C / 149 degrees F
FPC 1 EA2_HMC2 DRAM botm	62 degrees C / 143 degrees F
Power	
LTC3887-PF-VDD0V9-RAIL	899 mV
LTC3887-PF-VDD0V9-DEV0-	899 mV
LTC3887-PF-VDD0V9-DEV0-	901 mV
LTC3887-PF-VDD0V9-DEV1-	899 mV
LTC3887-PF-VDD0V9-DEV1-	901 mV
LTC3887-PF-AVDD1V0-RAIL	998 mV
LTC3887-PF-AVDD1V0-CH0	998 mV
LTC3887-PF-AVDD1V0-CH1	999 mV
LTC3887-ETHSW-VDD1V0	999 mV
LTC3887-VDD2V5	2499 mV
LTC3887-PCIE-VDD0V9	900 mV
LTC3887-V1P0	1000 mV
LTC3887-PHY-VDD1V0-A	1000 mV
LTC3887-3V3	3300 mV
LTC3887-VDD1V8	1799 mV
UCD9090_0-CH_1-EA0_PLL_	1004 mV
UCD9090_0-CH_2-EA0_1V4	1004 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1511 mV
UCD9090_0-CH_5-EA1_PLL_	999 mV
UCD9090_0-CH_6-EA1_1V4	1008 mV
UCD9090_0-CH_7-EA1_2V5	2499 mV
UCD9090_0-CH_8-EA1_1V5	1510 mV
UCD9090_0-CH_9-PVCC	839 mV
UCD9090_0-CH_10-PVNN	1016 mV
UCD9090_1-CH_1-EA2_PLL_	1011 mV
UCD9090_1-CH_2-EA2_1V4	1046 mV
UCD9090_1-CH_3-EA2_2V5	2499 mV
UCD9090_1-CH_4-EA2_1V5	1501 mV
UCD9090_1-CH_5-1V0_PFP	1000 mV
UCD9090_1-CH_6-V1P1	1037 mV
UCD9090_1-CH_7-V1P5	1530 mV
UCD9090_1-CH_8-V1P35	1360 mV
UCD9090_1-CH_9-VDD1V5	1513 mV
UCD9090_1-CH_10-VDD1V2	1217 mV
LTC3887-EA0-VDD0V9-RAIL	949 mV
LTC3887-EA0-VDD0V9-DEV0	949 mV
LTC3887-EA0-VDD0V9-DEV0	951 mV
LTC3887-EA0-VDD0V9-DEV1	949 mV
LTC3887-EA0-VDD0V9-DEV1	952 mV
LTC3887-EA0-VDD0V9R2-RA	947 mV
LTC3887-EA0-VDD0V9R2-CH	947 mV
LTC3887-EA0-VDD0V9R2-CH	949 mV
LTC3887-EA0-VDD1V0-RAIL	1000 mV
LTC3887-EA0-VDD1V0-CH0	1000 mV
LTC3887-EA0-VDD1V0-CH1	1001 mV
LTC3887-EA0-XR-VDD0V9	899 mV
LTC3887-EA0-XR-VDD1V2	1200 mV
LTC3887-EA0-HM1-VDD0V9	899 mV
LTC3887-EA0-HM-VDD1V2	1199 mV
LTC3887-EA0-HM-VDDM1V2	1199 mV
LTC3887-EA1-VDD0V9-RAIL	948 mV
LTC3887-EA1-VDD0V9-DEV0	950 mV
LTC3887-EA1-VDD0V9-DEV0	950 mV
LTC3887-EA1-VDD0V9-DEV1	951 mV
LTC3887-EA1-VDD0V9-DEV1	951 mV

```

LTC3887-EA1-VDD0V9R2-RA      947 mV
LTC3887-EA1-VDD0V9R2-CH      947 mV
LTC3887-EA1-VDD0V9R2-CH      949 mV
LTC3887-EA1-VDD1V0-RAIL      1000 mV
LTC3887-EA1-VDD1V0-CH0       1000 mV
LTC3887-EA1-VDD1V0-CH1       1002 mV
I2C Slave Revision            99

```

show chassis environment fpc (MX204 Router)

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

```

FPC 0 status:
State                               Online
FPC 0 EA0_HMC0 Logic die           77 degrees C / 170 degrees F
FPC 0 EA0_HMC0 DRAM botm           74 degrees C / 165 degrees F
FPC 0 EA0_HMC1 Logic die           80 degrees C / 176 degrees F
FPC 0 EA0_HMC1 DRAM botm           77 degrees C / 170 degrees F
FPC 0 EA0 Chip                      93 degrees C / 199 degrees F
FPC 0 EA0-XR0 Chip                  63 degrees C / 145 degrees F
FPC 0 EA0-XR1 Chip                  64 degrees C / 147 degrees F
Power
I2C Slave Revision                  0

```

show chassis environment fpc (MX10008 Router)

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

```

FPC 0 status:
State                               Online
FPC 0 Intake-A Temp Sensor          32 degrees C / 89 degrees F
FPC 0 Exhaust-A Temp Sensor         44 degrees C / 111 degrees F
FPC 0 Exhaust-B Temp Sensor         50 degrees C / 122 degrees F
FPC 0 EA0 Temp Sensor                67 degrees C / 152 degrees F
FPC 0 EA0_XR0 Temp Sensor            69 degrees C / 156 degrees F
FPC 0 EA0_XR1 Temp Sensor            73 degrees C / 163 degrees F
FPC 0 EA1 Temp Sensor                61 degrees C / 141 degrees F
FPC 0 EA1_XR0 Temp Sensor            65 degrees C / 149 degrees F
FPC 0 EA1_XR1 Temp Sensor            63 degrees C / 145 degrees F
FPC 0 EA2 Temp Sensor                69 degrees C / 156 degrees F
FPC 0 EA2_XR0 Temp Sensor            73 degrees C / 163 degrees F
FPC 0 EA2_XR1 Temp Sensor            72 degrees C / 161 degrees F
FPC 0 EA3 Temp Sensor                64 degrees C / 147 degrees F
FPC 0 EA3_XR0 Temp Sensor            66 degrees C / 150 degrees F
FPC 0 EA3_XR1 Temp Sensor            66 degrees C / 150 degrees F
FPC 0 EA4 Temp Sensor                70 degrees C / 158 degrees F
FPC 0 EA4_XR0 Temp Sensor            72 degrees C / 161 degrees F
FPC 0 EA4_XR1 Temp Sensor            72 degrees C / 161 degrees F
FPC 0 EA5 Temp Sensor                58 degrees C / 136 degrees F
FPC 0 EA5_XR0 Temp Sensor            61 degrees C / 141 degrees F
FPC 0 EA5_XR1 Temp Sensor            64 degrees C / 147 degrees F
FPC 0 EA0_HMC0 Logic die             75 degrees C / 167 degrees F
FPC 0 EA0_HMC0 DRAM botm            72 degrees C / 161 degrees F
FPC 0 EA0_HMC1 Logic die            76 degrees C / 168 degrees F
FPC 0 EA0_HMC1 DRAM botm            73 degrees C / 163 degrees F
FPC 0 EA0_HMC2 Logic die            77 degrees C / 170 degrees F
FPC 0 EA0_HMC2 DRAM botm            74 degrees C / 165 degrees F
FPC 0 EA1_HMC0 Logic die            72 degrees C / 161 degrees F
FPC 0 EA1_HMC0 DRAM botm            69 degrees C / 156 degrees F
FPC 0 EA1_HMC1 Logic die            73 degrees C / 163 degrees F

```

FPC 0 EA1_HMC1 DRAM botm	70 degrees C / 158 degrees F
FPC 0 EA1_HMC2 Logic die	72 degrees C / 161 degrees F
FPC 0 EA1_HMC2 DRAM botm	69 degrees C / 156 degrees F
FPC 0 EA2_HMC0 Logic die	80 degrees C / 176 degrees F
FPC 0 EA2_HMC0 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA2_HMC1 Logic die	81 degrees C / 177 degrees F
FPC 0 EA2_HMC1 DRAM botm	78 degrees C / 172 degrees F
FPC 0 EA2_HMC2 Logic die	80 degrees C / 176 degrees F
FPC 0 EA2_HMC2 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA3_HMC0 Logic die	77 degrees C / 170 degrees F
FPC 0 EA3_HMC0 DRAM botm	74 degrees C / 165 degrees F
FPC 0 EA3_HMC1 Logic die	78 degrees C / 172 degrees F
FPC 0 EA3_HMC1 DRAM botm	75 degrees C / 167 degrees F
FPC 0 EA3_HMC2 Logic die	77 degrees C / 170 degrees F
FPC 0 EA3_HMC2 DRAM botm	74 degrees C / 165 degrees F
FPC 0 EA4_HMC0 Logic die	80 degrees C / 176 degrees F
FPC 0 EA4_HMC0 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA4_HMC1 Logic die	81 degrees C / 177 degrees F
FPC 0 EA4_HMC1 DRAM botm	78 degrees C / 172 degrees F
FPC 0 EA4_HMC2 Logic die	80 degrees C / 176 degrees F
FPC 0 EA4_HMC2 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA5_HMC0 Logic die	69 degrees C / 156 degrees F
FPC 0 EA5_HMC0 DRAM botm	66 degrees C / 150 degrees F
FPC 0 EA5_HMC1 Logic die	68 degrees C / 154 degrees F
FPC 0 EA5_HMC1 DRAM botm	65 degrees C / 149 degrees F
FPC 0 EA5_HMC2 Logic die	68 degrees C / 154 degrees F
FPC 0 EA5_HMC2 DRAM botm	65 degrees C / 149 degrees F

Power

12V SS 1	12259 mV	9841 mA	120642 mW
12V SS 2	12259 mV	21054 mA	258104 mW
12V SS 3	12285 mV	9841 mA	120902 mW
12V SS 4	12232 mV	20968 mA	256496 mW
12V SS 5	12179 mV	14993 mA	182614 mW
VDD 1.0V_A	1000 mV	95375 mA	95375 mW
VDD 1.0V_B	0 mV	0 mA	0 mW
VDD 3.3V	3298 mV	12500 mA	41235 mW
VDD 0.9V	894 mV	3569 mA	3192 mW
ETH SW 1V	980 mV	4500 mA	4410 mW
VDD 1.8V	1809 mV	895 mA	1619 mW
PVCC	951 mV	0 mA	0 mW
PVNN	1009 mV	0 mA	0 mW
V1P0	1006 mV	0 mA	0 mW
V1P1	1070 mV	0 mA	0 mW
V1P3	1351 mV	0 mA	0 mW
VDDQ	1500 mV	0 mA	0 mW
V1P8	1816 mV	0 mA	0 mW
VDD3V3	3296 mV	0 mA	0 mW
V5V0_BIAS	5025 mV	0 mA	0 mW
VDD12V0	12174 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	40625 mA	36578 mW
EA0 AVDD 1.0V	1000 mV	32500 mA	32500 mW
EA0 HMC Core 0.9V	894 mV	10081 mA	9017 mW
EA0 1.2V	1189 mV	15081 mA	17945 mW
EA01_HMC_VDDM 1.2V	1193 mV	-151 mA	-180 mW
EA0_XR 0.906V	905 mV	13802 mA	12496 mW
EA1 Core 0.9V	900 mV	41000 mA	36916 mW
EA1 AVDD 1.0V	1000 mV	28000 mA	28000 mW
EA1 HMC Core 0.9V	897 mV	9848 mA	8835 mW
EA1 1.2V	1197 mV	15313 mA	18332 mW
EA0_PLL_1V0	1003 mV	0 mA	0 mW
EA0_1V04	1032 mV	0 mA	0 mW

EA0_2V5	2445 mV	0 mA	0 mW
EA0_1V5	1512 mV	0 mA	0 mW
EA1_PLL_1V0	1000 mV	0 mA	0 mW
EA1_1V04	1051 mV	0 mA	0 mW
EA1_2V5	2516 mV	0 mA	0 mW
EA1_1V5	1503 mV	0 mA	0 mW
EA1_XR 0.906V	908 mV	14151 mA	12850 mW
EA2 Core 0.9V	899 mV	40625 mA	36538 mW
EA2 AVDD 1.0V	1000 mV	27250 mA	27276 mW
EA2 HMC Core 0.9V	897 mV	9616 mA	8627 mW
EA2 1.2V	1193 mV	15779 mA	18832 mW
EA23_HMC_VDDM 1.2V	1197 mV	81 mA	97 mW
EA2_XR 0.906V	908 mV	14848 mA	13484 mW
EA3 Core 0.9V	899 mV	40625 mA	36538 mW
EA3 AVDD 1.0V	1000 mV	28000 mA	28000 mW
EA3 HMC Core 0.9V	897 mV	10546 mA	9461 mW
EA3 1.2V	1197 mV	15895 mA	19028 mW
EA2_PLL_1V0	1025 mV	0 mA	0 mW
EA2_1V04	1048 mV	0 mA	0 mW
EA2_2V5	2516 mV	0 mA	0 mW
EA2_1V5	1500 mV	0 mA	0 mW
EA3_PLL_1V0	1009 mV	0 mA	0 mW
EA3_1V04	1032 mV	0 mA	0 mW
EA3_2V5	2551 mV	0 mA	0 mW
EA3_1V5	1496 mV	0 mA	0 mW
EA3_XR 0.906V	908 mV	15895 mA	14434 mW
EA4 Core 0.9V	900 mV	41000 mA	36916 mW
EA4 AVDD 1.0V	999 mV	31250 mA	31219 mW
EA4 HMC Core 0.9V	894 mV	9965 mA	8913 mW
EA4 1.2V	1197 mV	15779 mA	18889 mW
EA45_HMC_VDDM 1.2V	1197 mV	546 mA	654 mW
EA4_XR 0.906V	908 mV	15197 mA	13801 mW
EA5 Core 0.9V	900 mV	39750 mA	35790 mW
EA5 AVDD 1.0V	1000 mV	28000 mA	28000 mW
EA5 HMC Core 0.9V	897 mV	9965 mA	8940 mW
EA5 1.2V	1197 mV	15546 mA	18610 mW
EA4_PLL_1V0	1003 mV	0 mA	0 mW
EA4_1V04	1041 mV	0 mA	0 mW
EA4_2V5	2541 mV	0 mA	0 mW
EA4_1V5	1506 mV	0 mA	0 mW
EA5_PLL_1V0	1022 mV	0 mA	0 mW
EA5_1V04	1048 mV	0 mA	0 mW
EA5_2V5	2532 mV	0 mA	0 mW
EA5_1V5	1509 mV	0 mA	0 mW
VDD2V5	2503 mV	0 mA	0 mW
VDD1V5	1509 mV	0 mA	0 mW
VDD1V2	1206 mV	0 mA	0 mW
EA5_XR 0.906V	902 mV	14500 mA	13088 mW

FPC 2 status:

State	Online
FPC 2 Intake-A Temp Sensor	33 degrees C / 91 degrees F
FPC 2 Exhaust-A Temp Sensor	52 degrees C / 125 degrees F
FPC 2 Exhaust-B Temp Sensor	50 degrees C / 122 degrees F
FPC 2 EA0 Temp Sensor	72 degrees C / 161 degrees F
FPC 2 EA0_XR0 Temp Sensor	76 degrees C / 168 degrees F
FPC 2 EA0_XR1 Temp Sensor	79 degrees C / 174 degrees F
FPC 2 EA1 Temp Sensor	64 degrees C / 147 degrees F
FPC 2 EA1_XR0 Temp Sensor	68 degrees C / 154 degrees F
FPC 2 EA1_XR1 Temp Sensor	66 degrees C / 150 degrees F
FPC 2 EA2 Temp Sensor	75 degrees C / 167 degrees F
FPC 2 EA2_XR0 Temp Sensor	81 degrees C / 177 degrees F

FPC 2 EA2_XR1 Temp Sensor	81 degrees C / 177 degrees F
FPC 2 EA3 Temp Sensor	67 degrees C / 152 degrees F
FPC 2 EA3_XR0 Temp Sensor	69 degrees C / 156 degrees F
FPC 2 EA3_XR1 Temp Sensor	69 degrees C / 156 degrees F
FPC 2 EA4 Temp Sensor	76 degrees C / 168 degrees F
FPC 2 EA4_XR0 Temp Sensor	77 degrees C / 170 degrees F
FPC 2 EA4_XR1 Temp Sensor	76 degrees C / 168 degrees F
FPC 2 EA5 Temp Sensor	60 degrees C / 140 degrees F
FPC 2 EA5_XR0 Temp Sensor	65 degrees C / 149 degrees F
FPC 2 EA5_XR1 Temp Sensor	65 degrees C / 149 degrees F
FPC 2 EA0_HMC0 Logic die	84 degrees C / 183 degrees F
FPC 2 EA0_HMC0 DRAM botm	81 degrees C / 177 degrees F
FPC 2 EA0_HMC1 Logic die	86 degrees C / 186 degrees F
FPC 2 EA0_HMC1 DRAM botm	83 degrees C / 181 degrees F
FPC 2 EA0_HMC2 Logic die	83 degrees C / 181 degrees F
FPC 2 EA0_HMC2 DRAM botm	80 degrees C / 176 degrees F
FPC 2 EA1_HMC0 Logic die	76 degrees C / 168 degrees F
FPC 2 EA1_HMC0 DRAM botm	73 degrees C / 163 degrees F
FPC 2 EA1_HMC1 Logic die	77 degrees C / 170 degrees F
FPC 2 EA1_HMC1 DRAM botm	74 degrees C / 165 degrees F
FPC 2 EA1_HMC2 Logic die	76 degrees C / 168 degrees F
FPC 2 EA1_HMC2 DRAM botm	73 degrees C / 163 degrees F
FPC 2 EA2_HMC0 Logic die	87 degrees C / 188 degrees F
FPC 2 EA2_HMC0 DRAM botm	84 degrees C / 183 degrees F
FPC 2 EA2_HMC1 Logic die	89 degrees C / 192 degrees F
FPC 2 EA2_HMC1 DRAM botm	86 degrees C / 186 degrees F
FPC 2 EA2_HMC2 Logic die	88 degrees C / 190 degrees F
FPC 2 EA2_HMC2 DRAM botm	85 degrees C / 185 degrees F
FPC 2 EA3_HMC0 Logic die	80 degrees C / 176 degrees F
FPC 2 EA3_HMC0 DRAM botm	77 degrees C / 170 degrees F
FPC 2 EA3_HMC1 Logic die	81 degrees C / 177 degrees F
FPC 2 EA3_HMC1 DRAM botm	78 degrees C / 172 degrees F
FPC 2 EA3_HMC2 Logic die	81 degrees C / 177 degrees F
FPC 2 EA3_HMC2 DRAM botm	78 degrees C / 172 degrees F
FPC 2 EA4_HMC0 Logic die	88 degrees C / 190 degrees F
FPC 2 EA4_HMC0 DRAM botm	85 degrees C / 185 degrees F
FPC 2 EA4_HMC1 Logic die	90 degrees C / 194 degrees F
FPC 2 EA4_HMC1 DRAM botm	87 degrees C / 188 degrees F
FPC 2 EA4_HMC2 Logic die	81 degrees C / 177 degrees F
FPC 2 EA4_HMC2 DRAM botm	78 degrees C / 172 degrees F
FPC 2 EA5_HMC0 Logic die	73 degrees C / 163 degrees F
FPC 2 EA5_HMC0 DRAM botm	70 degrees C / 158 degrees F
FPC 2 EA5_HMC1 Logic die	69 degrees C / 156 degrees F
FPC 2 EA5_HMC1 DRAM botm	66 degrees C / 150 degrees F
FPC 2 EA5_HMC2 Logic die	73 degrees C / 163 degrees F
FPC 2 EA5_HMC2 DRAM botm	70 degrees C / 158 degrees F
Power	
12V SS 1	12285 mV 9408 mA 115582 mW
12V SS 2	12338 mV 20881 mA 257637 mW
12V SS 3	12351 mV 10317 mA 127430 mW
12V SS 4	12285 mV 21054 mA 258660 mW
12V SS 5	12153 mV 13954 mA 169591 mW
VDD 1.0V_A	1000 mV 91000 mA 91000 mW
VDD 1.0V_B	0 mV 0 mA 0 mW
VDD 3.3V	3298 mV 9125 mA 30101 mW
VDD 0.9V	897 mV 3337 mA 2993 mW
ETH SW 1V	0 mV 0 mA 0 mW
VDD 1.8V	1809 mV 1127 mA 2040 mW
PVCC	835 mV 0 mA 0 mW
PVNN	1000 mV 0 mA 0 mW
V1P0	1003 mV 0 mA 0 mW

V1P1	1070 mV	0 mA	0 mW
V1P3	1348 mV	0 mA	0 mW
VDDQ	1493 mV	0 mA	0 mW
V1P8	1806 mV	0 mA	0 mW
VDD3V3	3303 mV	0 mA	0 mW
V5V0_BIAS	5000 mV	0 mA	0 mW
VDD12V0	12116 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	38875 mA	35002 mW
EA0 AVDD 1.0V	999 mV	31875 mA	31843 mW
EA0 HMC Core 0.9V	894 mV	9034 mA	8081 mW
EA0 1.2V	1197 mV	15430 mA	18471 mW
EA01_HMC_VDDM 1.2V	1200 mV	-267 mA	-321 mW
EA0_XR 0.906V	908 mV	15430 mA	14012 mW
EA1 Core 0.9V	900 mV	38875 mA	35002 mW
EA1 AVDD 1.0V	1000 mV	28250 mA	28250 mW
EA1 HMC Core 0.9V	899 mV	8802 mA	7920 mW
EA1 1.2V	1197 mV	15081 mA	18054 mW
EA0_PLL_1V0	1003 mV	0 mA	0 mW
EA0_1V04	1048 mV	0 mA	0 mW
EA0_2V5	2425 mV	0 mA	0 mW
EA0_1V5	1483 mV	0 mA	0 mW
EA1_PLL_1V0	1019 mV	0 mA	0 mW
EA1_1V04	1019 mV	0 mA	0 mW
EA1_2V5	2490 mV	0 mA	0 mW
EA1_1V5	1480 mV	0 mA	0 mW
EA1_XR 0.906V	908 mV	14965 mA	13590 mW
EA2 Core 0.9V	900 mV	44000 mA	39617 mW
EA2 AVDD 1.0V	1000 mV	28625 mA	28625 mW
EA2 HMC Core 0.9V	891 mV	10546 mA	9404 mW
EA2 1.2V	1200 mV	15313 mA	18387 mW
EA23_HMC_VDDM 1.2V	1193 mV	-267 mA	-319 mW
EA2_XR 0.906V	908 mV	15197 mA	13801 mW
EA3 Core 0.9V	900 mV	39750 mA	35790 mW
EA3 AVDD 1.0V	1000 mV	27750 mA	27750 mW
EA3 HMC Core 0.9V	897 mV	9267 mA	8314 mW
EA3 1.2V	1197 mV	15430 mA	18471 mW
EA2_PLL_1V0	1009 mV	0 mA	0 mW
EA2_1V04	1041 mV	0 mA	0 mW
EA2_2V5	2496 mV	0 mA	0 mW
EA2_1V5	1493 mV	0 mA	0 mW
EA3_PLL_1V0	1003 mV	0 mA	0 mW
EA3_1V04	1041 mV	0 mA	0 mW
EA3_2V5	2490 mV	0 mA	0 mW
EA3_1V5	1500 mV	0 mA	0 mW
EA3_XR 0.906V	908 mV	15081 mA	13695 mW
EA4 Core 0.9V	899 mV	45750 mA	41148 mW
EA4 AVDD 1.0V	1000 mV	32250 mA	32250 mW
EA4 HMC Core 0.9V	897 mV	10779 mA	9670 mW
EA4 1.2V	1193 mV	16011 mA	19110 mW
EA45_HMC_VDDM 1.2V	1200 mV	-267 mA	-321 mW
EA4_XR 0.906V	905 mV	15779 mA	14286 mW
EA5 Core 0.9V	900 mV	38375 mA	34552 mW
EA5 AVDD 1.0V	1000 mV	27750 mA	27777 mW
EA5 HMC Core 0.9V	899 mV	8453 mA	7606 mW
EA5 1.2V	1200 mV	14732 mA	17689 mW
EA4_PLL_1V0	1012 mV	0 mA	0 mW
EA4_1V04	1029 mV	0 mA	0 mW
EA4_2V5	2496 mV	0 mA	0 mW
EA4_1V5	1490 mV	0 mA	0 mW
EA5_PLL_1V0	1003 mV	0 mA	0 mW
EA5_1V04	1032 mV	0 mA	0 mW

EA5_2V5	2503 mV	0 mA	0 mW
EA5_1V5	1480 mV	0 mA	0 mW
VDD2V5	2461 mV	0 mA	0 mW
VDD1V5	1490 mV	0 mA	0 mW
VDD1V2	1212 mV	0 mA	0 mW
EA5_XR 0.906V	910 mV	13686 mA	12466 mW

FPC 3 status:

State	Online	
FPC 3 Intake-A Temp Sensor		30 degrees C / 86 degrees F
FPC 3 Exhaust-A Temp Sensor		48 degrees C / 118 degrees F
FPC 3 Exhaust-B Temp Sensor		45 degrees C / 113 degrees F
FPC 3 EA0 Temp Sensor		60 degrees C / 140 degrees F
FPC 3 EA0_XR0 Temp Sensor		65 degrees C / 149 degrees F
FPC 3 EA0_XR1 Temp Sensor		67 degrees C / 152 degrees F
FPC 3 EA1 Temp Sensor		54 degrees C / 129 degrees F
FPC 3 EA1_XR0 Temp Sensor		60 degrees C / 140 degrees F
FPC 3 EA1_XR1 Temp Sensor		58 degrees C / 136 degrees F
FPC 3 EA2 Temp Sensor		62 degrees C / 143 degrees F
FPC 3 EA2_XR0 Temp Sensor		67 degrees C / 152 degrees F
FPC 3 EA2_XR1 Temp Sensor		67 degrees C / 152 degrees F
FPC 3 EA3 Temp Sensor		55 degrees C / 131 degrees F
FPC 3 EA3_XR0 Temp Sensor		57 degrees C / 134 degrees F
FPC 3 EA3_XR1 Temp Sensor		57 degrees C / 134 degrees F
FPC 3 EA4 Temp Sensor		69 degrees C / 156 degrees F
FPC 3 EA4_XR0 Temp Sensor		71 degrees C / 159 degrees F
FPC 3 EA4_XR1 Temp Sensor		70 degrees C / 158 degrees F
FPC 3 EA5 Temp Sensor		55 degrees C / 131 degrees F
FPC 3 EA5_XR0 Temp Sensor		58 degrees C / 136 degrees F
FPC 3 EA5_XR1 Temp Sensor		59 degrees C / 138 degrees F
FPC 3 EA0_HMC0 Logic die		69 degrees C / 156 degrees F
FPC 3 EA0_HMC0 DRAM botm		66 degrees C / 150 degrees F
FPC 3 EA0_HMC1 Logic die		70 degrees C / 158 degrees F
FPC 3 EA0_HMC1 DRAM botm		67 degrees C / 152 degrees F
FPC 3 EA0_HMC2 Logic die		70 degrees C / 158 degrees F
FPC 3 EA0_HMC2 DRAM botm		67 degrees C / 152 degrees F
FPC 3 EA1_HMC0 Logic die		68 degrees C / 154 degrees F
FPC 3 EA1_HMC0 DRAM botm		65 degrees C / 149 degrees F
FPC 3 EA1_HMC1 Logic die		65 degrees C / 149 degrees F
FPC 3 EA1_HMC1 DRAM botm		62 degrees C / 143 degrees F
FPC 3 EA1_HMC2 Logic die		64 degrees C / 147 degrees F
FPC 3 EA1_HMC2 DRAM botm		61 degrees C / 141 degrees F
FPC 3 EA2_HMC0 Logic die		74 degrees C / 165 degrees F
FPC 3 EA2_HMC0 DRAM botm		71 degrees C / 159 degrees F
FPC 3 EA2_HMC1 Logic die		77 degrees C / 170 degrees F
FPC 3 EA2_HMC1 DRAM botm		74 degrees C / 165 degrees F
FPC 3 EA2_HMC2 Logic die		74 degrees C / 165 degrees F
FPC 3 EA2_HMC2 DRAM botm		71 degrees C / 159 degrees F
FPC 3 EA3_HMC0 Logic die		70 degrees C / 158 degrees F
FPC 3 EA3_HMC0 DRAM botm		67 degrees C / 152 degrees F
FPC 3 EA3_HMC1 Logic die		68 degrees C / 154 degrees F
FPC 3 EA3_HMC1 DRAM botm		65 degrees C / 149 degrees F
FPC 3 EA3_HMC2 Logic die		68 degrees C / 154 degrees F
FPC 3 EA3_HMC2 DRAM botm		65 degrees C / 149 degrees F
FPC 3 EA4_HMC0 Logic die		82 degrees C / 179 degrees F
FPC 3 EA4_HMC0 DRAM botm		79 degrees C / 174 degrees F
FPC 3 EA4_HMC1 Logic die		80 degrees C / 176 degrees F
FPC 3 EA4_HMC1 DRAM botm		77 degrees C / 170 degrees F
FPC 3 EA4_HMC2 Logic die		81 degrees C / 177 degrees F
FPC 3 EA4_HMC2 DRAM botm		78 degrees C / 172 degrees F
FPC 3 EA5_HMC0 Logic die		69 degrees C / 156 degrees F
FPC 3 EA5_HMC0 DRAM botm		66 degrees C / 150 degrees F

FPC 3 EA5_HMC1 Logic die	70 degrees C / 158 degrees F		
FPC 3 EA5_HMC1 DRAM botm	67 degrees C / 152 degrees F		
FPC 3 EA5_HMC2 Logic die	69 degrees C / 156 degrees F		
FPC 3 EA5_HMC2 DRAM botm	66 degrees C / 150 degrees F		
Power			
12V SS 1	12259 mV	9538 mA	116927 mW
12V SS 2	12259 mV	20491 mA	251202 mW
12V SS 3	12298 mV	9711 mA	119433 mW
12V SS 4	12219 mV	20491 mA	250391 mW
12V SS 5	12206 mV	10447 mA	127520 mW
VDD 1.0V_A	1000 mV	42250 mA	42291 mW
VDD 1.0V_B	996 mV	8918 mA	8890 mW
VDD 3.3V	3301 mV	10375 mA	34255 mW
VDD 0.9V	897 mV	3569 mA	3202 mW
ETH SW 1V	983 mV	4267 mA	4195 mW
VDD 1.8V	1812 mV	1825 mA	3309 mW
PVCC	974 mV	0 mA	0 mW
PVNN	1003 mV	0 mA	0 mW
V1P0	1003 mV	0 mA	0 mW
V1P1	1070 mV	0 mA	0 mW
V1P3	1351 mV	0 mA	0 mW
VDDQ	1496 mV	0 mA	0 mW
V1P8	1809 mV	0 mA	0 mW
VDD3V3	3309 mV	0 mA	0 mW
V5V0_BIAS	4987 mV	0 mA	0 mW
VDD12V0	12212 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	38125 mA	34327 mW
EA0 AVDD 1.0V	999 mV	31125 mA	31094 mW
EA0 HMC Core 0.9V	897 mV	9500 mA	8522 mW
EA0 1.2V	1193 mV	15430 mA	18416 mW
EA01_HMC_VDDM 1.2V	1193 mV	313 mA	374 mW
EA0_XR 0.906V	913 mV	14965 mA	13671 mW
EA1 Core 0.9V	900 mV	39750 mA	35790 mW
EA1 AVDD 1.0V	1000 mV	26000 mA	26000 mW
EA1 HMC Core 0.9V	897 mV	8918 mA	8001 mW
EA1 1.2V	1200 mV	15779 mA	18946 mW
EA0_PLL_1V0	1003 mV	0 mA	0 mW
EA0_1V04	1019 mV	0 mA	0 mW
EA0_2V5	2448 mV	0 mA	0 mW
EA0_1V5	1470 mV	0 mA	0 mW
EA1_PLL_1V0	1016 mV	0 mA	0 mW
EA1_1V04	1035 mV	0 mA	0 mW
EA1_2V5	2506 mV	0 mA	0 mW
EA1_1V5	1483 mV	0 mA	0 mW
EA1_XR 0.906V	908 mV	13918 mA	12639 mW
EA2 Core 0.9V	900 mV	38625 mA	34777 mW
EA2 AVDD 1.0V	1000 mV	26375 mA	26400 mW
EA2 HMC Core 0.9V	897 mV	9383 mA	8418 mW
EA2 1.2V	1200 mV	15779 mA	18946 mW
EA23_HMC_VDDM 1.2V	1193 mV	81 mA	97 mW
EA2_XR 0.906V	908 mV	13918 mA	12639 mW
EA3 Core 0.9V	899 mV	40250 mA	36201 mW
EA3 AVDD 1.0V	1000 mV	26750 mA	26776 mW
EA3 HMC Core 0.9V	894 mV	9267 mA	8289 mW
EA3 1.2V	1197 mV	16127 mA	19306 mW
EA2_PLL_1V0	993 mV	0 mA	0 mW
EA2_1V04	1045 mV	0 mA	0 mW
EA2_2V5	2474 mV	0 mA	0 mW
EA2_1V5	1490 mV	0 mA	0 mW
EA3_PLL_1V0	980 mV	0 mA	0 mW
EA3_1V04	1032 mV	0 mA	0 mW

EA3_2V5	2506 mV	0 mA	0 mW
EA3_1V5	1474 mV	0 mA	0 mW
EA3_XR 0.906V	910 mV	14732 mA	13419 mW
EA4 Core 0.9V	900 mV	42500 mA	38266 mW
EA4 AVDD 1.0V	1000 mV	32250 mA	32281 mW
EA4 HMC Core 0.9V	899 mV	10081 mA	9071 mW
EA4 1.2V	1193 mV	16360 mA	19526 mW
EA45_HMC_VDDM 1.2V	1193 mV	662 mA	791 mW
EA4_XR 0.906V	908 mV	15430 mA	14012 mW
EA5 Core 0.9V	899 mV	37000 mA	33278 mW
EA5 AVDD 1.0V	1000 mV	26125 mA	26150 mW
EA5 HMC Core 0.9V	897 mV	9267 mA	8314 mW
EA5 1.2V	1197 mV	15662 mA	18750 mW
EA4_PLL_1V0	1000 mV	0 mA	0 mW
EA4_1V04	1029 mV	0 mA	0 mW
EA4_2V5	2487 mV	0 mA	0 mW
EA4_1V5	1496 mV	0 mA	0 mW
EA5_PLL_1V0	1009 mV	0 mA	0 mW
EA5_1V04	1032 mV	0 mA	0 mW
EA5_2V5	2503 mV	0 mA	0 mW
EA5_1V5	1496 mV	0 mA	0 mW
VDD2V5	2483 mV	0 mA	0 mW
VDD1V5	1470 mV	0 mA	0 mW
VDD1V2	1203 mV	0 mA	0 mW
EA5_XR 0.906V	908 mV	14500 mA	13167 mW

show chassis environment fpc (T320, T640, and T1600 Routers)

```

user@host> show chassis environment fpc
FPC 0 status:
  State                               Online
  Temperature Top                     42 degrees C / 107 degrees F
  Temperature Bottom                  36 degrees C / 96 degrees F
  Temperature MMB1                    39 degrees C / 102 degrees F
  Power:
    1.8 V                             1959 mV
    2.5 V                             2495 mV
    3.3 V                             3344 mV
    5.0 V                             5047 mV
    1.8 V bias                         1787 mV
    3.3 V bias                         3291 mV
    5.0 V bias                         4998 mV
    8.0 V bias                         7343 mV
  BUS Revision                        40
FPC 1 status:
  State                               Online
  Temperature Top                     42 degrees C / 107 degrees F
  Temperature Bottom                  39 degrees C / 102 degrees F
  Temperature MMB1                    40 degrees C / 104 degrees F
  Power:
    1.8 V                             1956 mV
    2.5 V                             2498 mV
    3.3 V                             3340 mV
    5.0 V                             5023 mV
    1.8 V bias                         1782 mV
    3.3 V bias                         3277 mV
    5.0 V bias                         4989 mV
    8.0 V bias                         7289 mV
  BUS Revision                        40
FPC 2 status:
  State                               Online

```

```

Temperature Top          43 degrees C / 109 degrees F
Temperature Bottom       39 degrees C / 102 degrees F
Temperature MMB1         41 degrees C / 105 degrees F
Power:
  1.8 V                  1963 mV
  2.5 V                  2503 mV
  3.3 V                  3340 mV
  5.0 V                  5042 mV
  1.8 V bias             1797 mV
  3.3 V bias             3311 mV
  5.0 V bias             5013 mV
  8.0 V bias             7221 mV
BUS Revision            40

```

show chassis environment fpc (T4000 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                Online
Fan Intake           34 degrees C / 93 degrees F
Fan Exhaust          48 degrees C / 118 degrees F
PMB                  47 degrees C / 116 degrees F
LMB0                 50 degrees C / 122 degrees F
LMB1                 41 degrees C / 105 degrees F
LMB2                 35 degrees C / 95 degrees F
PFE1 LU2             46 degrees C / 114 degrees F
PFE1 LU0             41 degrees C / 105 degrees F
PFE0 LU0             57 degrees C / 134 degrees F
XF1                  47 degrees C / 116 degrees F
XF0                  52 degrees C / 125 degrees F
XM1                  41 degrees C / 105 degrees F
XM0                  50 degrees C / 122 degrees F
PFE0 LU1             56 degrees C / 132 degrees F
PFE0 LU2             45 degrees C / 113 degrees F
PFE1 LU1             37 degrees C / 98 degrees F
Power 1
  1.0 V              991 mV
  1.2 V bias        1195 mV
  1.8 V             1788 mV
  2.5 V            2483 mV
  3.3 V            3289 mV
  3.3 V bias       3299 mV
  12.0 V A         10608 mV
  12.0 V B         10637 mV
Power 2
  0.9 V             881 mV
  0.9 V PFE0        916 mV
  0.9 V PFE1        903 mV
  1.0 V PFE0       1012 mV
  1.0 V PFE1       1002 mV
  1.1 V            1095 mV
  1.5 V_0          1494 mV
  1.5 V_1          1479 mV
Power 3
  1.0 V PFE0       1000 mV
  1.0 V PFE1       1002 mV
  1.0 V PFE0 *     995 mV
  1.0 V PFE1 *     995 mV
  1.8 V PFE 0      1788 mV
  1.8 V PFE 1      1789 mV
  2.5 V           2482 mV

```

12.0 V	11614 mV
Power 4	
1.0 V PFE0 LU0	1003 mV
1.0 V PFE1 LU0	1003 mV
1.0 V PFE1 LU2	1004 mV
1.0 V PFE0 LU0 *	995 mV
1.0 V PFE1 LU0 *	998 mV
1.0 V PFE1 LU2 *	996 mV
12.0 V	11643 mV
12.0 V C	11711 mV
Power (Base/PMB/MMB)	
LMB0 VDD2V5	2488 mV
LMB0 VDD1V8	1788 mV
LMB0 VDD1V5	1496 mV
LMB0 PFE0 LU0 AVDD1V0	1002 mV
LMB0 PFE0 LU0 VDD1V0	1000 mV
LMB0 VDD12V0	10752 mV
LMB1 VDD2V5	2472 mV
LMB1 VDD1V8	1792 mV
LMB1 VDD1V5	1480 mV
LMB1 PFE0 LU2 AVDD1V0	994 mV
LMB1 PFE0 LU2 VDD1V0	1002 mV
LMB1 VDD12V0	10800 mV
LMB2 VDD2V5	2472 mV
LMB2 VDD1V8	1792 mV
LMB2 VDD1V5	1486 mV
LMB2 PFE1 LU1 AVDD1V0	996 mV
LMB2 PFE1 LU1 VDD1V0	998 mV
LMB2 VDD12V0	10704 mV
PMB 1.05v	1049 mV
PMB 1.5v	1500 mV
PMB 2.5v	2500 mV
PMB 3.3v	3299 mV
Bus Revision	113
FPC 3 status:	
State	Online
Fan Intake	37 degrees C / 98 degrees F
Fan Exhaust	51 degrees C / 123 degrees F
PMB	43 degrees C / 109 degrees F
LMB0	57 degrees C / 134 degrees F
LMB1	54 degrees C / 129 degrees F
LMB2	38 degrees C / 100 degrees F
PFE1 LU2	63 degrees C / 145 degrees F
PFE1 LU0	45 degrees C / 113 degrees F
PFE0 LU0	69 degrees C / 156 degrees F
XF1	62 degrees C / 143 degrees F
XF0	63 degrees C / 145 degrees F
XM1	43 degrees C / 109 degrees F
XMO	67 degrees C / 152 degrees F
PFE0 LU1	63 degrees C / 145 degrees F
PFE0 LU2	66 degrees C / 150 degrees F
PFE1 LU1	41 degrees C / 105 degrees F
Power 1	
1.0 V	1002 mV
1.2 V bias	1201 mV
1.8 V	1785 mV
2.5 V	2485 mV
3.3 V	3288 mV
3.3 V bias	3285 mV
12.0 V A	10412 mV
12.0 V B	10515 mV

```

Power 2
0.9 V                882 mV
0.9 V PFE0           920 mV
0.9 V PFE1           905 mV
1.0 V PFE0           1015 mV
1.0 V PFE1           1001 mV
1.1 V                1094 mV
1.5 V_0              1495 mV
1.5 V_1              1478 mV
Power 3
0.92 V PFE1          998 mV
1.0 V PFE0           997 mV
1.0 V PFE0 *          992 mV
1.0 V PFE1 *          991 mV
1.8 V PFE 0          1780 mV
1.8 V PFE 1          1797 mV
2.5 V                2492 mV
12.0 V               11604 mV
Power 4
1.0 V PFE0 LU0        1003 mV
1.0 V PFE1 LU0        1004 mV
1.0 V PFE1 LU2        1003 mV
1.0 V PFE0 LU0 *      1000 mV
1.0 V PFE1 LU0 *      1001 mV
1.0 V PFE1 LU2 *      1003 mV
12.0 V               11653 mV
12.0 V C              11672 mV
Power (Base/PMB/MMB)
LMB0 VDD2V5          2512 mV
LMB0 VDD1V8          1790 mV
LMB0 VDD1V5          1500 mV
LMB0 PFE0 LU0 AVDD1V0 1004 mV
LMB0 PFE0 LU0 VDD1V0  1002 mV
LMB0 VDD12V0         10608 mV
LMB1 VDD2V5          2472 mV
LMB1 VDD1V8          1788 mV
LMB1 VDD1V5          1480 mV
LMB1 PFE0 LU2 AVDD1V0 1000 mV
LMB1 PFE0 LU2 VDD1V0  1004 mV
LMB1 VDD12V0         10672 mV
LMB2 VDD2V5          2488 mV
LMB2 VDD1V8          1798 mV
LMB2 VDD1V5          1494 mV
LMB2 PFE1 LU1 AVDD1V0 1000 mV
LMB2 PFE1 LU1 VDD1V0  1004 mV
LMB2 VDD12V0         10528 mV
PMB 1.05v            1050 mV
PMB 1.5v              1500 mV
PMB 2.5v              2499 mV
PMB 3.3v              3299 mV
Bus Revision          113
FPC 5 status:
State                 Online
Temperature Top        39 degrees C / 102 degrees F
Temperature Bottom     38 degrees C / 100 degrees F
Power
1.8 V                 1804 mV
1.8 V bias            1802 mV
3.3 V                 3294 mV
3.3 V bias            3277 mV
5.0 V bias            5008 mV

```

5.0 V TOP	5067 mV
8.0 V bias	6642 mV
Power (Base/PMB/MMB)	
1.2 V	1202 mV
1.5 V	1504 mV
5.0 V BOT	5079 mV
12.0 V TOP Base	11848 mV
12.0 V BOT Base	11780 mV
1.1 V PMB	1111 mV
1.2 V PMB	1189 mV
1.5 V PMB	1494 mV
1.8 V PMB	1819 mV
2.5 V PMB	2503 mV
3.3 V PMB	3294 mV
5.0 V PMB	5035 mV
12.0 V PMB	11788 mV
0.75 MMB TOP	766 mV
1.5 V MMB TOP	1484 mV
1.8 V MMB TOP	1772 mV
2.5 V MMB TOP	2485 mV
1.2 V MMB TOP	1137 mV
5.0 V MMB TOP	4946 mV
12.0 V MMB TOP	11772 mV
3.3 V MMB TOP	3289 mV
0.75 MMB BOT	759 mV
1.5 V MMB BOT	1482 mV
1.8 V MMB BOT	1792 mV
2.5 V MMB BOT	2490 mV
1.2 V MMB BOT	1145 mV
5.0 V MMB BOT	4922 mV
12.0 V MMB BOT	11625 mV
3.3 V MMB BOT	3282 mV
APS 00	2495 mV
APS 01	3308 mV
APS 02	3301 mV
5.0 V PIC 0	4967 mV
APS 10	2512 mV
APS 11	3316 mV
APS 12	3304 mV
5.0 V PIC 1	5081 mV
Bus Revision	49
FPC 6 status:	
State	Online
Fan Intake	34 degrees C / 93 degrees F
Fan Exhaust	49 degrees C / 120 degrees F
PMB	40 degrees C / 104 degrees F
LMB0	60 degrees C / 140 degrees F
LMB1	58 degrees C / 136 degrees F
LMB2	40 degrees C / 104 degrees F
PFE1 LU2	69 degrees C / 156 degrees F
PFE1 LU0	45 degrees C / 113 degrees F
PFE0 LU0	71 degrees C / 159 degrees F
XF1	58 degrees C / 136 degrees F
XF0	65 degrees C / 149 degrees F
XM1	40 degrees C / 104 degrees F
XM0	66 degrees C / 150 degrees F
PFE0 LU1	69 degrees C / 156 degrees F
PFE0 LU2	68 degrees C / 154 degrees F
PFE1 LU1	42 degrees C / 107 degrees F
Power 1	
1.0 V	998 mV

1.2 V bias	1191 mV
1.8 V	1781 mV
2.5 V	2487 mV
3.3 V	3302 mV
3.3 V bias	3300 mV
12.0 V A	10388 mV
12.0 V B	10388 mV
Power 2	
0.9 V	902 mV
0.9 V PFE0	921 mV
0.9 V PFE1	907 mV
1.0 V PFE0	996 mV
1.0 V PFE1	974 mV
1.1 V	1095 mV
1.5 V_0	1495 mV
1.5 V_1	1478 mV
Power 3	
1.0 V PFE0	997 mV
1.0 V PFE1	998 mV
1.0 V PFE0 *	993 mV
1.0 V PFE1 *	991 mV
1.8 V PFE 0	1796 mV
1.8 V PFE 1	1789 mV
2.5 V	2465 mV
12.0 V	11609 mV
Power 4	
1.0 V PFE0 LU0	1003 mV
1.0 V PFE1 LU0	1006 mV
1.0 V PFE1 LU2	1002 mV
1.0 V PFE0 LU0 *	1000 mV
1.0 V PFE1 LU0 *	998 mV
1.0 V PFE1 LU2 *	998 mV
12.0 V	11638 mV
12.0 V C	11702 mV
Power (Base/PMB/MMB)	
LMB0 VDD2V5	2484 mV
LMB0 VDD1V8	1780 mV
LMB0 VDD1V5	1496 mV
LMB0 PFE0 LU0 AVDD1V0	998 mV
LMB0 PFE0 LU0 VDD1V0	1004 mV
LMB0 VDD12V0	10528 mV
LMB1 VDD2V5	2472 mV
LMB1 VDD1V8	1776 mV
LMB1 VDD1V5	1474 mV
LMB1 PFE0 LU2 AVDD1V0	994 mV
LMB1 PFE0 LU2 VDD1V0	1004 mV
LMB1 VDD12V0	10544 mV
LMB2 VDD2V5	2476 mV
LMB2 VDD1V8	1790 mV
LMB2 VDD1V5	1492 mV
LMB2 PFE1 LU1 AVDD1V0	996 mV
LMB2 PFE1 LU1 VDD1V0	1010 mV
LMB2 VDD12V0	10528 mV
PMB 1.05v	1050 mV
PMB 1.5v	1499 mV
PMB 2.5v	2500 mV
PMB 3.3v	3300 mV
Bus Revision	80

show chassis environment fpc lcc (TX Matrix Router)

```

user@host> show chassis environment fpc lcc 0
lcc0-re0:
-----
FPC 1 status:
State                               Online
Temperature Top                     30 degrees C / 86 degrees F
Temperature Bottom                   25 degrees C / 77 degrees F
Temperature MMB0                     Absent
Temperature MMB1                     27 degrees C / 80 degrees F
Power:
  1.8 V                             1813 mV
  2.5 V                             2504 mV
  3.3 V                             3338 mV
  5.0 V                             5037 mV
  1.8 V bias                         1797 mV
  3.3 V bias                         3301 mV
  5.0 V bias                         5013 mV
  8.0 V bias                         7345 mV
BUS Revision                         40
FPC 2 status:
State                               Online
Temperature Top                     37 degrees C / 98 degrees F
Temperature Bottom                   26 degrees C / 78 degrees F
Temperature MMB0                     32 degrees C / 89 degrees F
Temperature MMB1                     27 degrees C / 80 degrees F
Power:
  1.8 V                             1791 mV
  2.5 V                             2517 mV
  3.3 V                             3308 mV
  5.0 V                             5052 mV
  1.8 V bias                         1797 mV
  3.3 V bias                         3289 mV
  5.0 V bias                         4991 mV
  8.0 V bias                         7477 mV
BUS Revision                         40

```

show chassis environment fpc lcc (TX Matrix Plus Router)

```

user@host> show chassis environment fpc lcc 0
lcc0-re0:
-----
FPC 1 status:
State                               Online
Temperature Top                     46 degrees C / 114 degrees F
Temperature Bottom                   47 degrees C / 116 degrees F
Power
  1.8 V                             1788 mV
  1.8 V bias                         1787 mV
  3.3 V                             3321 mV
  3.3 V bias                         3306 mV
  5.0 V bias                         5018 mV
  5.0 V TOP                          5037 mV
  8.0 V bias                         7223 mV
Power (Base/PMB/MMB)
  1.2 V                             1205 mV
  1.5 V                             1503 mV
  5.0 V BOT                          5084 mV
  12.0 V TOP Base                    11775 mV

```


12.0 V BOT Base	11794 mV
1.1 V PMB	1108 mV
1.2 V PMB	1196 mV
1.5 V PMB	1499 mV
1.8 V PMB	1811 mV
2.5 V PMB	2515 mV
3.3 V PMB	3318 mV
5.0 V PMB	5030 mV
12.0 V PMB	11832 mV
0.75 MMB TOP	752 mV
1.5 V MMB TOP	1489 mV
1.8 V MMB TOP	1782 mV
2.5 V MMB TOP	2498 mV
1.2 V MMB TOP	1155 mV
5.0 V MMB TOP	4902 mV
12.0 V MMB TOP	11721 mV
3.3 V MMB TOP	3316 mV
0.75 MMB BOT	754 mV
1.5 V MMB BOT	1482 mV
1.8 V MMB BOT	1758 mV
2.5 V MMB BOT	2488 mV
1.2 V MMB BOT	1157 mV
5.0 V MMB BOT	4962 mV
12.0 V MMB BOT	11691 mV
3.3 V MMB BOT	3308 mV
APS 00	1484 mV
APS 01	2503 mV
APS 02	3313 mV
5.0 V PIC 0	5025 mV
APS 10	1501 mV
APS 11	2466 mV
APS 12	3311 mV
5.0 V PIC 1	5081 mV
Bus Revision	49

show chassis environment fpc (QFX Series and OCX Series)

```
user@switch> show chassis environment fpc 0
FPC 0 status:
State                Online
Temperature           42 degrees C / 107 degrees F
```

show chassis environment fpc interconnect-device (QFabric Systems)

```
user@switch> show chassis environment fpc interconnect-device interconnect1 0
FC 0 FPC 0 status:
State                Online
Left Intake Temperature 24 degrees C / 75 degrees F
Right Intake Temperature 24 degrees C / 75 degrees F
Left Exhaust Temperature 27 degrees C / 80 degrees F
Right Exhaust Temperature 27 degrees C / 80 degrees F
Power
  BIAS 3V3            3330 mV
  VDD 3V3              3300 mV
  VDD 2V5              2502 mV
  VDD 1V5              1496 mV
  VDD 1V2              1194 mV
  VDD 1V0              1000 mV
  SW0 VDD 1V0          1020 mV
  SW0 CVDD 1V025       1032 mV
```

```

SW1 VDD 1V0          1022 mV
SW1 CVDD 1V025       1030 mV
VDD 12V0 DIV3_33     3414 mV

```

show chassis environment fpc 5 (PTX3000 Packet Transport Router)

```

user@host> show chassis environment fpc 5
FPC 5 status:
State                               Online
Intake Temperature                  31 degrees C / 87 degrees F
Exhaust Temperature                 41 degrees C / 105 degrees F
Power
  FPC 12.0v                         12221 mV
  FPC VCC 0.5-1.3v                  1640 mV
  FPC VNN 0.5-1.3v                  1640 mV
  FPC 1.0v                           1640 mV
  FPC 1.1v                           1640 mV
  FPC 1.35v                          1640 mV
  FPC VDDQ 1.5v                     1640 mV
  FPC 1.8v                           1640 mV
  FPC 3.3v                           3280 mV
  FPC 5.0v bias                      5143 mV
  FPC 5.0v usb                       5143 mV
  FPC VCC 12.0v                     12289 mV
  FPC Vref 3.3v                     3280 mV
  MAIN 12.0v-i                       2265 mA

```

show chassis environment fpc 0 (PTX5000 Packet Transport Router)

```

user@host> show chassis environment fpc 0
FPC 0 status:
State                               Online
PMB Temperature                     35 degrees C / 95 degrees F
Intake Temperature                   33 degrees C / 91 degrees F
Exhaust A Temperature                51 degrees C / 123 degrees F
Exhaust B Temperature                43 degrees C / 109 degrees F
TL0 Temperature                      48 degrees C / 118 degrees F
TQ0 Temperature                      53 degrees C / 127 degrees F
TL1 Temperature                      56 degrees C / 132 degrees F
TQ1 Temperature                      58 degrees C / 136 degrees F
TL2 Temperature                      55 degrees C / 131 degrees F
TQ2 Temperature                      57 degrees C / 134 degrees F
TL3 Temperature                      59 degrees C / 138 degrees F
TQ3 Temperature                      59 degrees C / 138 degrees F
Power
  PMB 1.05v                         1049 mV
  PMB 1.5v                           1500 mV
  PMB 2.5v                           2500 mV
  PMB 3.3v                           3299 mV
  PFE0 1.5v                          1500 mV
  PFE0 1.0v                           999 mV
  TQ0 0.9v                            900 mV
  TL0 0.9v                            900 mV
  PFE1 1.5v                          1499 mV
  PFE1 1.0v                           999 mV
  TQ1 0.9v                            899 mV
  TL1 0.9v                            900 mV
  PFE2 1.5v                          1500 mV
  PFE2 1.0v                           1000 mV
  TQ2 0.9v                            900 mV

```

TL2	0.9v	900 mV
PFE3	1.5v	1499 mV
PFE3	1.0v	1000 mV
TQ3	0.9v	900 mV
TL3	0.9v	900 mV
Bias	3.3v	3327 mV
FPC	3.3v	3300 mV
FPC	2.5v	2500 mV
SAM	0.9v	900 mV
A	12.0v	2014 mV
B	12.0v	2030 mV

show chassis environment fpc 07 (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis environment fpc 07
```

```
FPC 7 status:
```

State	Online
PMB TEMPO Temperature	32 degrees C / 89 degrees F
PMB TEMP1 Temperature	28 degrees C / 82 degrees F
PMB CPU Temperature	46 degrees C / 114 degrees F
Intake Temperature	35 degrees C / 95 degrees F
Exhaust A Temperature	55 degrees C / 131 degrees F
Exhaust B Temperature	54 degrees C / 129 degrees F
TL5 Temperature	59 degrees C / 138 degrees F
TQ5 Temperature	57 degrees C / 134 degrees F
TL6 Temperature	57 degrees C / 134 degrees F
TQ6 Temperature	51 degrees C / 123 degrees F
TL1 Temperature	76 degrees C / 168 degrees F
TQ1 Temperature	58 degrees C / 136 degrees F
TL2 Temperature	75 degrees C / 167 degrees F
TQ2 Temperature	57 degrees C / 134 degrees F
TL4 Temperature	52 degrees C / 125 degrees F
TQ4 Temperature	66 degrees C / 150 degrees F
TL7 Temperature	52 degrees C / 125 degrees F
TQ7 Temperature	60 degrees C / 140 degrees F
TL0 Temperature	72 degrees C / 161 degrees F
TQ0 Temperature	73 degrees C / 163 degrees F
TL3 Temperature	64 degrees C / 147 degrees F
TQ3 Temperature	70 degrees C / 158 degrees F

```
Power
```

PMB	1.05v	1049 mV
PMB	3.3v	3299 mV
PMB	1.1v-a	1100 mV
PMB	1.5v	1499 mV
PMB	1.1v-b	1100 mV
Base	3.3v	3300 mV
FPC Base	2.5v	2499 mV
TL1	0.9v	897 mV
TQ1	0.9v	897 mV
PFE1	1.0v	999 mV
PFE1	1.5v	1499 mV
TL2	0.9v	897 mV
TQ2	0.9v	897 mV
PFE2	1.0v	999 mV
PFE2	1.5v	1499 mV
FPC Base	1.0v	1000 mV
FPC Base	1.2v	1199 mV
TL5	0.9v	898 mV
TQ5	0.9v	898 mV
PFE5	1.0v	1000 mV
PFE5	1.5v	1500 mV

TL6	0.9v	897 mV
TQ6	0.9v	897 mV
PFE6	1.0v	1000 mV
PFE6	1.5v	1499 mV
Mezz Base	2.5v	2500 mV
TL0	0.9v	896 mV
TQ0	0.9v	896 mV
PFE0	1.0v	999 mV
PFE0	1.5v	1499 mV

show chassis environment fpc (PTX10008 router)

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

```
FPC 0 status:
```

State	Online
FPC 0 Intake-A Temp Sensor	37 degrees C / 98 degrees F
FPC 0 Intake-B Temp Sensor	34 degrees C / 93 degrees F
FPC 0 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F
FPC 0 Exhaust-B Temp Sensor	38 degrees C / 100 degrees F
FPC 0 Exhaust-C Temp Sensor	40 degrees C / 104 degrees F
FPC 0 PE0 Temp Sensor	41 degrees C / 105 degrees F
FPC 0 PE1 Temp Sensor	42 degrees C / 107 degrees F
FPC 0 PE2 Temp Sensor	44 degrees C / 111 degrees F
FPC 0 LCPU Temp Sensor	40 degrees C / 104 degrees F

```
Power
```

PE0 Core 0.9V	872 mV	28777 mA	25146 mW
PE0 HMC0 Core 0.9V	899 mV	10359 mA	9328 mW
PE1 Core 0.9V	896 mV	29476 mA	26414 mW
PE1 HMC0 Core 0.9V	899 mV	10218 mA	9187 mW
PE2 Core 0.9V	872 mV	28839 mA	25199 mW
PE2 HMC0 Core 0.9V	900 mV	10296 mA	9265 mW
PE0 Serdes 1.0V	1020 mV	29000 mA	29593 mW
PE1 Serdes 1.0V	1019 mV	29109 mA	29718 mW
PE2 Serdes 1.0V	1019 mV	28484 mA	29078 mW
LCPU Platform 1.1V	1099 mV	3515 mA	3867 mW
LCPU Core 1.0V	1000 mV	8750 mA	8703 mW
PHY VDD B 1.0V	1000 mV	17062 mA	17031 mW
PHY VDD A 1.0V	999 mV	15640 mA	15625 mW
BCM Core 1.0V	999 mV	7054 mA	7054 mW
BCM PEX 1.0V	999 mV	3562 mA	3558 mW
HMC Core 1.2V	1199 mV	1280 mA	1513 mW
HMC Serdes 1.2V	1199 mV	32937 mA	39500 mW
VDD 1.5V	1500 mV	2824 mA	4234 mW
VDD 2.5V	2449 mV	3812 mA	9343 mW
VDD 3.3V	3299 mV	5085 mA	16796 mW
12V	12259 mV	29609 mA	368196 mW

```
FPC 1 status:
```

State	Online
FPC 1 Intake-A Temp Sensor	37 degrees C / 98 degrees F
FPC 1 Intake-B Temp Sensor	34 degrees C / 93 degrees F
FPC 1 Exhaust-A Temp Sensor	38 degrees C / 100 degrees F
FPC 1 Exhaust-B Temp Sensor	38 degrees C / 100 degrees F
FPC 1 Exhaust-C Temp Sensor	40 degrees C / 104 degrees F
FPC 1 PE0 Temp Sensor	41 degrees C / 105 degrees F
FPC 1 PE1 Temp Sensor	42 degrees C / 107 degrees F
FPC 1 PE2 Temp Sensor	44 degrees C / 111 degrees F
FPC 1 LCPU Temp Sensor	39 degrees C / 102 degrees F

```
Power
```

PE0 Core 0.9V	898 mV	29351 mA	26421 mW
PE0 HMC0 Core 0.9V	899 mV	9734 mA	8750 mW
PE1 Core 0.9V	873 mV	28539 mA	24933 mW

PE1 HMC0 Core 0.9V	899 mV	9937 mA	8937 mW
PE2 Core 0.9V	875 mV	28906 mA	25316 mW
PE2 HMC0 Core 0.9V	899 mV	10140 mA	9125 mW
PE0 Serdes 1.0V	1019 mV	28312 mA	28890 mW
PE1 Serdes 1.0V	1020 mV	28656 mA	29234 mW
PE2 Serdes 1.0V	1020 mV	29437 mA	30015 mW
LCPU Platform 1.1V	1100 mV	4617 mA	5078 mW
LCPU Core 1.0V	1000 mV	8781 mA	8781 mW
PHY VDD B 1.0V	1000 mV	15953 mA	15984 mW
PHY VDD A 1.0V	1000 mV	15484 mA	15484 mW
BCM Core 1.0V	999 mV	7945 mA	7937 mW
BCM PEX 1.0V	999 mV	3515 mA	3515 mW
HMC Core 1.2V	1199 mV	1269 mA	1521 mW
HMC Serdes 1.2V	1199 mV	33000 mA	39593 mW
VDD 1.5V	1500 mV	2691 mA	4062 mW
VDD 2.5V	2449 mV	3582 mA	8781 mW
VDD 3.3V	3300 mV	2563 mA	8458 mW
12V	12311 mV	29002 mA	357577 mW

FPC 2 status:

State	Online
FPC 2 Intake-A Temp Sensor	43 degrees C / 109 degrees F
FPC 2 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 2 Exhaust-A Temp Sensor	50 degrees C / 122 degrees F
FPC 2 Exhaust-B Temp Sensor	52 degrees C / 125 degrees F
FPC 2 Exhaust-C Temp Sensor	51 degrees C / 123 degrees F
FPC 2 PE0 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE1 Temp Sensor	56 degrees C / 132 degrees F
FPC 2 PE2 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE3 Temp Sensor	57 degrees C / 134 degrees F
FPC 2 PE4 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE5 Temp Sensor	60 degrees C / 140 degrees F
FPC 2 LCPU Temp Sensor	47 degrees C / 116 degrees F

Power

PE0 Core 0.9V	874 mV	28117 mA	24617 mW
PE1 Core 0.9V	899 mV	29601 mA	26632 mW
PE0 Serdes 1.0V	1019 mV	41031 mA	41843 mW
PE1 Serdes 1.0V	1019 mV	35656 mA	36343 mW
PE0 HMC Core 0.9V	899 mV	8125 mA	7312 mW
PE0,1 HMC Memory 1.2V	1199 mV	565 mA	688 mW
PE1 HMC Core 0.9V	899 mV	7921 mA	7125 mW
PE0,1 HMC Serdes 1.2V	1199 mV	21281 mA	25562 mW
PE2 Core 0.9V	899 mV	29187 mA	26242 mW
PE3 Core 0.9V	899 mV	29976 mA	27074 mW
PE2 Serdes 1.0V	1019 mV	38562 mA	39343 mW
PE3 Serdes 1.0V	1019 mV	34937 mA	35656 mW
PE2 HMC Core 0.9V	899 mV	8093 mA	7281 mW
PE2,3 HMC Memory 1.2V	1199 mV	610 mA	732 mW
PE3 HMC Core 0.9V	899 mV	7710 mA	6937 mW
PE2,3 HMC Serdes 1.2V	1199 mV	21500 mA	25812 mW
VDD 3.3V	3300 mV	7937 mA	26187 mW
VDD 1.5V	1499 mV	3234 mA	4851 mW
VDD 2.5V	2449 mV	4539 mA	11109 mW
PE4 Core 0.9V	874 mV	29914 mA	26183 mW
PE5 Core 0.9V	874 mV	29820 mA	26031 mW
PE4 Serdes 1.0V	1020 mV	43968 mA	44843 mW
PE5 Serdes 1.0V	1019 mV	27453 mA	28031 mW
PE4 HMC Core 0.9V	900 mV	7937 mA	7140 mW
PE4,5 HMC Memory 1.2V	1200 mV	1185 mA	1421 mW
PE5 HMC Core 0.9V	899 mV	8718 mA	7843 mW
PE4,5 HMC Serdes 1.2V	1199 mV	21125 mA	25343 mW
LCPU platform 1.1V	1099 mV	3777 mA	4156 mW

LCPU core 1.0V	1000 mV	9062 mA	9062 mW
BCM core 1.0V	1000 mV	9328 mA	9328 mW
BCM & PEX Serdes 1.0V	999 mV	4125 mA	4125 mW
12V	12311 mV	53347 mA	660345 mW

FPC 3 status:

State	Online
FPC 3 Intake-A Temp Sensor	43 degrees C / 109 degrees F
FPC 3 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 3 Exhaust-A Temp Sensor	48 degrees C / 118 degrees F
FPC 3 Exhaust-B Temp Sensor	49 degrees C / 120 degrees F
FPC 3 Exhaust-C Temp Sensor	47 degrees C / 116 degrees F
FPC 3 PE0 Temp Sensor	48 degrees C / 118 degrees F
FPC 3 PE1 Temp Sensor	55 degrees C / 131 degrees F
FPC 3 PE2 Temp Sensor	47 degrees C / 116 degrees F
FPC 3 PE3 Temp Sensor	54 degrees C / 129 degrees F
FPC 3 PE4 Temp Sensor	48 degrees C / 118 degrees F
FPC 3 PE5 Temp Sensor	58 degrees C / 136 degrees F
FPC 3 LCPU Temp Sensor	46 degrees C / 114 degrees F

Power

PE0 Core 0.9V	899 mV	29695 mA	26718 mW
PE1 Core 0.9V	899 mV	29695 mA	26710 mW
PE0 Serdes 1.0V	1020 mV	40156 mA	40906 mW
PE1 Serdes 1.0V	1020 mV	35281 mA	35968 mW
PE0 HMC Core 0.9V	900 mV	7492 mA	6742 mW
PE0,1 HMC Memory 1.2V	1199 mV	569 mA	683 mW
PE1 HMC Core 0.9V	899 mV	7570 mA	6812 mW
PE0,1 HMC Serdes 1.2V	1199 mV	20562 mA	24656 mW
PE2 Core 0.9V	899 mV	29734 mA	26765 mW
PE3 Core 0.9V	900 mV	29960 mA	26968 mW
PE2 Serdes 1.0V	1019 mV	37718 mA	38500 mW
PE3 Serdes 1.0V	1020 mV	35250 mA	35937 mW
PE2 HMC Core 0.9V	899 mV	7750 mA	6976 mW
PE2,3 HMC Memory 1.2V	1200 mV	546 mA	656 mW
PE3 HMC Core 0.9V	899 mV	7718 mA	6945 mW
PE2,3 HMC Serdes 1.2V	1199 mV	20625 mA	24750 mW
VDD 3.3V	3299 mV	5917 mA	19515 mW
VDD 1.5V	1499 mV	4015 mA	6015 mW
VDD 2.5V	2449 mV	4335 mA	10625 mW
PE4 Core 0.9V	899 mV	29835 mA	26875 mW
PE5 Core 0.9V	924 mV	30554 mA	28277 mW
PE4 Serdes 1.0V	1019 mV	43281 mA	44187 mW
PE5 Serdes 1.0V	1020 mV	27140 mA	27703 mW
PE4 HMC Core 0.9V	899 mV	7476 mA	6726 mW
PE4,5 HMC Memory 1.2V	1199 mV	531 mA	637 mW
PE5 HMC Core 0.9V	899 mV	7539 mA	6781 mW
PE4,5 HMC Serdes 1.2V	1199 mV	20375 mA	24468 mW
LCPU platform 1.1V	1099 mV	3453 mA	3796 mW
LCPU core 1.0V	999 mV	8984 mA	8984 mW
BCM core 1.0V	999 mV	7929 mA	7921 mW
BCM & PEX Serdes 1.0V	1000 mV	4046 mA	4046 mW
12V	12351 mV	51918 mA	644880 mW

FPC 5 status:

State	Online
FPC 5 Intake-A Temp Sensor	Failed
FPC 5 Intake-B Temp Sensor	Failed
FPC 5 Exhaust-A Temp Sensor	41 degrees C / 105 degrees F
FPC 5 Exhaust-B Temp Sensor	41 degrees C / 105 degrees F
FPC 5 Exhaust-C Temp Sensor	42 degrees C / 107 degrees F
FPC 5 PE0 Temp Sensor	47 degrees C / 116 degrees F
FPC 5 PE1 Temp Sensor	49 degrees C / 120 degrees F
FPC 5 PE2 Temp Sensor	53 degrees C / 127 degrees F

```

FPC 5 LCPu Temp Sensor      Failed
Power
  PE0 Core 0.9V              923 mV   30976 mA   28578 mW
  PE0 HMC0 Core 0.9V         899 mV   10093 mA    9078 mW
  PE1 Core 0.9V              897 mV   29398 mA   26414 mW
  PE1 HMC0 Core 0.9V         899 mV    9734 mA    8750 mW
  PE2 Core 0.9V              922 mV   30226 mA   27886 mW
  PE2 HMC0 Core 0.9V         899 mV    9984 mA    8968 mW
  PE0 Serdes 1.0V            1019 mV  29296 mA   29890 mW
  PE1 Serdes 1.0V            1020 mV  28687 mA   29296 mW
  PE2 Serdes 1.0V            1020 mV  28187 mA   28765 mW
  LCPu Platform 1.1V         1100 mV   3664 mA    4031 mW
  LCPu Core 1.0V             999 mV   9125 mA    9125 mW
  PHY VDD B 1.0V             999 mV  15593 mA   15593 mW
  PHY VDD A 1.0V             1000 mV  15453 mA   15453 mW
  BCM Core 1.0V              999 mV   7773 mA    7765 mW
  BCM PEX 1.0V               1000 mV   3460 mA    3464 mW
  HMC Core 1.2V              1199 mV   1328 mA    1628 mW
  HMC Serdes 1.2V            1199 mV  32203 mA   38625 mW
  VDD 1.5V                   1499 mV   2675 mA    4007 mW
  VDD 2.5V                   2450 mV   3675 mA    9000 mW
  VDD 3.3V                   3300 mV   1814 mA    5980 mW
  12V                        12272 mV  29045 mA  361369 mW

FPC 6 status:
State                               Online
FPC 6 Intake-A Temp Sensor 41 degrees C / 105 degrees F
FPC 6 Intake-B Temp Sensor 37 degrees C / 98 degrees F
FPC 6 Exhaust-A Temp Sensor40 degrees C / 104 degrees F
FPC 6 Exhaust-B Temp Sensor40 degrees C / 104 degrees F
FPC 6 Exhaust-C Temp Sensor40 degrees C / 104 degrees F
FPC 6 PE0 Temp Sensor       45 degrees C / 113 degrees F
FPC 6 PE1 Temp Sensor       47 degrees C / 116 degrees F
FPC 6 PE2 Temp Sensor       51 degrees C / 123 degrees F
FPC 6 LCPu Temp Sensor      41 degrees C / 105 degrees F

Power
  PE0 Core 0.9V              897 mV   30214 mA   27179 mW
  PE0 HMC0 Core 0.9V         899 mV   10000 mA    8984 mW
  PE1 Core 0.9V              873 mV   29332 mA   25601 mW
  PE1 HMC0 Core 0.9V         899 mV    9828 mA    8828 mW
  PE2 Core 0.9V              898 mV   30781 mA   27675 mW
  PE2 HMC0 Core 0.9V         899 mV   10328 mA    9296 mW
  PE0 Serdes 1.0V            1019 mV  28921 mA   29531 mW
  PE1 Serdes 1.0V            1020 mV  29437 mA   30046 mW
  PE2 Serdes 1.0V            1019 mV  29671 mA   30281 mW
  LCPu Platform 1.1V         1100 mV   3671 mA    4039 mW
  LCPu Core 1.0V             1000 mV   8218 mA    8187 mW
  PHY VDD B 1.0V             1000 mV  15984 mA   15984 mW
  PHY VDD A 1.0V             999 mV   16093 mA   16093 mW
  BCM Core 1.0V              1000 mV   8046 mA    8062 mW
  BCM PEX 1.0V               1000 mV   3500 mA    3500 mW
  HMC Core 1.2V              1199 mV   1327 mA    1579 mW
  HMC Serdes 1.2V            1199 mV  33031 mA   39593 mW
  VDD 1.5V                   1499 mV   2722 mA    4078 mW
  VDD 2.5V                   2449 mV   3539 mA    8671 mW
  VDD 3.3V                   3299 mV   8082 mA   26656 mW
  12V                        12311 mV  31124 mA  385270 mW

```

`show chassis environment fpc (PTX10016 router)`

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

FPC 1 status:

```

State                               Online
FPC 1 Intake-A Temp Sensor 36 degrees C / 96 degrees F
FPC 1 Intake-B Temp Sensor 32 degrees C / 89 degrees F
FPC 1 Exhaust-A Temp Sensor37 degrees C / 98 degrees F
FPC 1 Exhaust-B Temp Sensor36 degrees C / 96 degrees F
FPC 1 Exhaust-C Temp Sensor36 degrees C / 96 degrees F
FPC 1 PE0 Temp Sensor      45 degrees C / 113 degrees F
FPC 1 PE1 Temp Sensor      46 degrees C / 114 degrees F
FPC 1 PE2 Temp Sensor      53 degrees C / 127 degrees F
FPC 1 LCPU Temp Sensor     35 degrees C / 95 degrees F

```

Power

```

PE0 Core 0.9V                897 mV   28992 mA   26027 mW
PE0 HMC0 Core 0.9V           899 mV   10156 mA   9156 mW
PE1 Core 0.9V                871 mV   28800 mA   25164 mW
PE1 HMC0 Core 0.9V           899 mV   10125 mA   9109 mW
PE2 Core 0.9V                898 mV   29914 mA   26906 mW
PE2 HMC0 Core 0.9V           899 mV   10343 mA   9296 mW
PE0 Serdes 1.0V              1019 mV  27515 mA   28093 mW
PE1 Serdes 1.0V              1020 mV  27968 mA   28546 mW
PE2 Serdes 1.0V              1019 mV  27796 mA   28359 mW
LCPU Platform 1.1V           1100 mV   3347 mA   3289 mW
LCPU Core 1.0V               1000 mV   7960 mA   7960 mW
PHY VDD B 1.0V               1000 mV  16437 mA   16437 mW
PHY VDD A 1.0V               999 mV   15656 mA   15656 mW
BCM Core 1.0V                1000 mV   7289 mA   7335 mW
BCM PEX 1.0V                 999 mV   3453 mA   3453 mW
HMC Core 1.2V                1199 mV   1218 mA   1453 mW
HMC Serdes 1.2V              1199 mV  32093 mA   38562 mW
VDD 1.5V                     1500 mV   2859 mA   4289 mW
VDD 2.5V                     2449 mV   3875 mA   9500 mW
VDD 3.3V                     3299 mV   2806 mA   9257 mW
12V                           12351 mV  28569 mA  354877 mW

```

FPC 3 status:

```

State                               Online
FPC 3 Intake-A Temp Sensor 35 degrees C / 95 degrees F
FPC 3 Intake-B Temp Sensor 31 degrees C / 87 degrees F
FPC 3 Exhaust-A Temp Sensor36 degrees C / 96 degrees F
FPC 3 Exhaust-B Temp Sensor34 degrees C / 93 degrees F
FPC 3 Exhaust-C Temp Sensor33 degrees C / 91 degrees F
FPC 3 PE0 Temp Sensor      43 degrees C / 109 degrees F
FPC 3 PE1 Temp Sensor      45 degrees C / 113 degrees F
FPC 3 PE2 Temp Sensor      49 degrees C / 120 degrees F
FPC 3 LCPU Temp Sensor     35 degrees C / 95 degrees F

```

Power

```

PE0 Core 0.9V                897 mV   28832 mA   25871 mW
PE0 HMC0 Core 0.9V           899 mV   10359 mA   9328 mW
PE1 Core 0.9V                873 mV   28230 mA   24671 mW
PE1 HMC0 Core 0.9V           899 mV   10468 mA   9421 mW
PE2 Core 0.9V                898 mV   29539 mA   26539 mW
PE2 HMC0 Core 0.9V           899 mV   10656 mA   9593 mW
PE0 Serdes 1.0V              1020 mV  27484 mA   28031 mW
PE1 Serdes 1.0V              1019 mV  27515 mA   28078 mW
PE2 Serdes 1.0V              1020 mV  27625 mA   28187 mW
LCPU Platform 1.1V           1099 mV   3050 mA   3355 mW
LCPU Core 1.0V               999 mV   7820 mA   7804 mW
PHY VDD B 1.0V               999 mV  15406 mA   15406 mW
PHY VDD A 1.0V               1000 mV  14953 mA   14953 mW
BCM Core 1.0V                1000 mV   7648 mA   7648 mW
BCM PEX 1.0V                 1000 mV   3531 mA   3531 mW
HMC Core 1.2V                1200 mV   1234 mA   1476 mW

```


HMC Serdes 1.2V	1199 mV	34671 mA	41593 mW
VDD 1.5V	1499 mV	3484 mA	5226 mW
VDD 2.5V	2449 mV	3218 mA	7890 mW
VDD 3.3V	3299 mV	2468 mA	8148 mW
12V	12311 mV	28785 mA	355950 mW

FPC 6 status:

State	Online
FPC 6 Intake-A Temp Sensor	34 degrees C / 93 degrees F
FPC 6 Intake-B Temp Sensor	31 degrees C / 87 degrees F
FPC 6 Exhaust-A Temp Sensor	34 degrees C / 93 degrees F
FPC 6 Exhaust-B Temp Sensor	35 degrees C / 95 degrees F
FPC 6 Exhaust-C Temp Sensor	35 degrees C / 95 degrees F
FPC 6 PE0 Temp Sensor	42 degrees C / 107 degrees F
FPC 6 PE1 Temp Sensor	43 degrees C / 109 degrees F
FPC 6 PE2 Temp Sensor	47 degrees C / 116 degrees F
FPC 6 LCPU Temp Sensor	34 degrees C / 93 degrees F

Power

PE0 Core 0.9V	922 mV	29394 mA	27160 mW
PE0 HMC0 Core 0.9V	899 mV	10078 mA	9062 mW
PE1 Core 0.9V	923 mV	29636 mA	27304 mW
PE1 HMC0 Core 0.9V	899 mV	9890 mA	8890 mW
PE2 Core 0.9V	898 mV	29734 mA	26757 mW
PE2 HMC0 Core 0.9V	899 mV	9968 mA	8968 mW
PE0 Serdes 1.0V	1020 mV	26968 mA	27515 mW
PE1 Serdes 1.0V	1019 mV	27421 mA	27984 mW
PE2 Serdes 1.0V	1019 mV	27625 mA	28171 mW
LCPU Platform 1.1V	1099 mV	3230 mA	4742 mW
LCPU Core 1.0V	999 mV	8171 mA	8171 mW
PHY VDD B 1.0V	1000 mV	15671 mA	15687 mW
PHY VDD A 1.0V	999 mV	15703 mA	15703 mW
BCM Core 1.0V	999 mV	7500 mA	7492 mW
BCM PEX 1.0V	1000 mV	3480 mA	3468 mW
HMC Core 1.2V	1199 mV	1199 mA	1440 mW
HMC Serdes 1.2V	1199 mV	31046 mA	37250 mW
VDD 1.5V	1499 mV	2804 mA	4203 mW
VDD 2.5V	2449 mV	3746 mA	9171 mW
VDD 3.3V	3300 mV	3173 mA	10476 mW
12V	12311 mV	28786 mA	355654 mW

FPC 8 status:

State	Online
FPC 8 Intake-A Temp Sensor	34 degrees C / 93 degrees F
FPC 8 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 8 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F
FPC 8 Exhaust-B Temp Sensor	37 degrees C / 98 degrees F
FPC 8 Exhaust-C Temp Sensor	37 degrees C / 98 degrees F
FPC 8 PE0 Temp Sensor	42 degrees C / 107 degrees F
FPC 8 PE1 Temp Sensor	44 degrees C / 111 degrees F
FPC 8 PE2 Temp Sensor	47 degrees C / 116 degrees F
FPC 8 LCPU Temp Sensor	33 degrees C / 91 degrees F

Power

PE0 Core 0.9V	897 mV	29382 mA	26437 mW
PE0 HMC0 Core 0.9V	899 mV	10265 mA	9250 mW
PE1 Core 0.9V	872 mV	28867 mA	25175 mW
PE1 HMC0 Core 0.9V	899 mV	10171 mA	9109 mW
PE2 Core 0.9V	899 mV	30210 mA	27214 mW
PE2 HMC0 Core 0.9V	900 mV	10187 mA	9171 mW
PE0 Serdes 1.0V	1020 mV	27843 mA	28421 mW
PE1 Serdes 1.0V	1020 mV	28265 mA	28828 mW
PE2 Serdes 1.0V	1019 mV	28406 mA	29000 mW
LCPU Platform 1.1V	1099 mV	3000 mA	3300 mW
LCPU Core 1.0V	1000 mV	7937 mA	7937 mW

```

PHY VDD B 1.0V          1000 mV   15843 mA   15843 mW
PHY VDD A 1.0V          1000 mV   15250 mA   15250 mW
BCM Core 1.0V            999 mV    6914 mA    6898 mW
BCM PEX 1.0V             999 mV    3445 mA    3445 mW
HMC Core 1.2V            1199 mV    1162 mA    1390 mW
HMC Serdes 1.2V          1199 mV   33437 mA   40125 mW
VDD 1.5V                 1499 mV    2851 mA    4273 mW
VDD 2.5V                 2450 mV    3867 mA    9484 mW
VDD 3.3V                 3300 mV    3258 mA   10753 mW
12V                     12338 mV   28656 mA  356171 mW

FPC 9 status:
State                               Online
FPC 9 Intake-A Temp Sensor 44 degrees C / 111 degrees F
FPC 9 Intake-B Temp Sensor 28 degrees C / 82 degrees F
FPC 9 Exhaust-A Temp Sensor 51 degrees C / 123 degrees F
FPC 9 Exhaust-B Temp Sensor 52 degrees C / 125 degrees F
FPC 9 Exhaust-C Temp Sensor 48 degrees C / 118 degrees F
FPC 9 PE0 Temp Sensor      52 degrees C / 125 degrees F
FPC 9 PE1 Temp Sensor      65 degrees C / 149 degrees F
FPC 9 PE2 Temp Sensor      50 degrees C / 122 degrees F
FPC 9 PE3 Temp Sensor      65 degrees C / 149 degrees F
FPC 9 PE4 Temp Sensor      50 degrees C / 122 degrees F
FPC 9 PE5 Temp Sensor      67 degrees C / 152 degrees F
FPC 9 LCPU Temp Sensor     45 degrees C / 113 degrees F
Power
PE0 Core 0.9V              875 mV    28316 mA   24808 mW
PE1 Core 0.9V              875 mV    28546 mA   24996 mW
PE0 Serdes 1.0V            1019 mV   38906 mA   39687 mW
PE1 Serdes 1.0V            1020 mV   33078 mA   33781 mW
PE0 HMC Core 0.9V          899 mV    7718 mA    6945 mW
PE0,1 HMC Memory 1.2V     1199 mV    579 mA     695 mW
PE1 HMC Core 0.9V          899 mV    7289 mA    6570 mW
PE0,1 HMC Serdes 1.2V     1199 mV   20187 mA   24250 mW
PE2 Core 0.9V              924 mV    29062 mA   26894 mW
PE3 Core 0.9V              900 mV    28914 mA   26039 mW
PE2 Serdes 1.0V            1020 mV   36375 mA   37093 mW
PE3 Serdes 1.0V            1019 mV   32640 mA   33296 mW
PE2 HMC Core 0.9V          900 mV    7695 mA    6921 mW
PE2,3 HMC Memory 1.2V     1199 mV    562 mA     674 mW
PE3 HMC Core 0.9V          899 mV    7554 mA    6796 mW
PE2,3 HMC Serdes 1.2V     1199 mV   20156 mA   24218 mW
VDD 3.3V                   3300 mV    8964 mA    29609 mW
VDD 1.5V                   1499 mV    3968 mA    5945 mW
VDD 2.5V                   2449 mV    4414 mA   10890 mW
PE4 Core 0.9V              900 mV    28527 mA   25679 mW
PE5 Core 0.9V              899 mV    28902 mA   26035 mW
PE4 Serdes 1.0V            1019 mV   41281 mA   42125 mW
PE5 Serdes 1.0V            1019 mV   25781 mA   26328 mW
PE4 HMC Core 0.9V          900 mV    7382 mA    6648 mW
PE4,5 HMC Memory 1.2V     1199 mV    626 mA     750 mW
PE5 HMC Core 0.9V          899 mV    7562 mA    6796 mW
PE4,5 HMC Serdes 1.2V     1199 mV   20312 mA   24375 mW
LCPU platform 1.1V        1099 mV    3687 mA    4054 mW
LCPU core 1.0V            1000 mV    9000 mA    9000 mW
BCM core 1.0V              999 mV    7843 mA    7835 mW
BCM & PEX Serdes 1.0V      999 mV    4062 mA    4062 mW
12V                       12417 mV   51659 mA  643215 mW

```

show chassis environment FPC 1 (MX Routers with Media Services Blade [MSB])

```
user@switch> show chassis environment fpc 1
```

```

FPC 1 status:
State                               Online
Temperature Intake                  36 degrees C / 96 degrees F
Temperature Exhaust A               39 degrees C / 102 degrees F
Temperature LU TSen                 52 degrees C / 125 degrees F
Temperature LU Chip                 54 degrees C / 129 degrees F
Temperature XM TSen                 52 degrees C / 125 degrees F
Temperature XM Chip                 60 degrees C / 140 degrees F
Temperature PCIe TSen               52 degrees C / 125 degrees F
Temperature PCIe Chip               69 degrees C / 156 degrees F
Power
MPC-BIAS3V3-z12106                 3302 mV
MPC-VDD3V3-z16100                  3325 mV
MPC-AVDD1V0-z16100                 1007 mV
MPC-PCIE_1V0-z16100                 904 mV
MPC-LU0_1V0-z12004                 996 mV
MPC-VDD_1V5-z12004                 1498 mV
MPC-12VA-BMR453                    11733 mV
MPC-12VB-BMR453                    11728 mV
MPC-XM_0V9-vt273m                  900 mV
I2C Slave Revision                  81

```

show chassis environment fpc (EX9251 Switches)

```

user@switch> show chassis environment fpc
FPC 0 status:
State                               Online
Power
I2C Slave Revision                  0

```

show chassis environment fpc (EX9253 Switches)

```

user@switch> show chassis environment fpc
FPC 0 status:
State                               Online
FPC 0 Intake Temp Sensor            32 degrees C / 89 degrees F
FPC 0 Exhaust-A Temp Sensor         60 degrees C / 140 degrees F
FPC 0 Exhaust-B Temp Sensor         48 degrees C / 118 degrees F
Power
I2C Slave Revision                  13
FPC 1 status:
State                               Online
FPC 1 Intake Temp Sensor            30 degrees C / 86 degrees F
FPC 1 Exhaust-A Temp Sensor         60 degrees C / 140 degrees F
FPC 1 Exhaust-B Temp Sensor         50 degrees C / 122 degrees F
Power
I2C Slave Revision                  13

```

show chassis environment pem

List of Syntax	Syntax on page 304 Syntax (ACX4000 Router) on page 304 Syntax (TX Matrix Routers) on page 304 Syntax (TX Matrix Plus Routers) on page 304 Syntax (MX Series Router) on page 304 Syntax (PTX Series Router) on page 304 Syntax (MX104 Universal Routing Platforms) on page 304 Syntax (MX10003 , MX204, and MX10008 Universal Routing Platforms) on page 304 Syntax (QFX Series) on page 305 Syntax (OCX Series) on page 305 Syntax (EX9251, EX9253 Switches) on page 305
Syntax	show chassis environment pem <slot>
Syntax (ACX4000 Router)	show chassis environment pem
Syntax (TX Matrix Routers)	show chassis environment pem <lcc number scc> <slot>
Syntax (TX Matrix Plus Routers)	show chassis environment pem <lcc number sfc number> <slot>
Syntax (MX Series Router)	show chassis environment pem <slot> <all-members> <local> <member member-id>
Syntax (PTX Series Router)	show chassis environment pem <slot> <all-members> <local> <member member-id>
Syntax (MX104 Universal Routing Platforms)	show chassis environment pem <slot> <satellite [fpc-slot slot-id device-alias alias-name]
Syntax (MX10003 , MX204, and MX10008 Universal Routing Platforms)	show chassis environment pem <slot>

Syntax (QFX Series) `show chassis environment pem`
`<slot (interconnect-device name slot) | (node-device name)>`

Syntax (OCX Series) `show chassis environment pem`
`<slot>`

Syntax (EX9251, EX9253 Switches) `show chassis environment pem`
`<slot>`

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 11.3 for the QFX Series.
 Command introduced in Junos OS Release 12.3R2 for EX Series.
 Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
satellite option introduced in Junos OS Release 14.2R3.
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.
 Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.
 Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.
 Command introduced in Junos OS Release 18.2 for EX9253 Switches.
 Command introduced in Junos OS Release 18.2R1 for MX10008 Routers

Description Display Power Entry Module (PEM) environmental status information.



NOTE: The new high-capacity (4100W) enhanced DC PEM on MX960 routers includes a new design that can condition the input voltage. This results in the output voltage differing from the input voltage. The earlier generation of DC PEMs coupled the input power directly to the output, thereby making it safe to assume that the output voltage was equal to the input voltage.

Options **none**—Display environmental information about both PEMs. For the TX Matrix router, display environmental information about the PEMs, the TX Matrix router, and its attached T640 routers. For the TX Matrix Plus router, display environmental information about the PEMs, the TX Matrix Plus router, and its attached routers.

all-members—(MX Series routers only) (Optional) Display environmental information about the PEMs in all the member routers of the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Interconnect device.

lcc *number*—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(MX Series routers only) (Optional) Display environmental information about the PEM in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display environmental information about the PEM in the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

node-device *name*—(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Node device.

satellite [*fpc-slot slot-id* | device-alias *alias-name*]—(Junos Fusion only)(Optional) Display environmental information about the PEM in the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix routers only) (Optional) Display environmental information about the PEM in the TX Matrix router (or switch-card chassis).

sfc—(TX Matrix Plus routers only) (Optional) Display environmental information about the PEM in the TX Matrix Plus router (or switch-fabric chassis).

slot —(Optional) Display environmental information about an individual PEM. Replace *slot* with 0 or 1.

Required Privilege Level

view

Related Documentation

- [show chassis hardware on page 359](#)

List of Sample Output

[show chassis environment pem \(M40e Router\) on page 308](#)
[show chassis environment pem \(M120 Router\) on page 308](#)
[show chassis environment pem \(M160 Router\) on page 308](#)
[show chassis environment pem \(M320 Router\) on page 309](#)
[show chassis environment pem \(MX150\) on page 309](#)
[show chassis environment pem \(MX104 Router\) on page 309](#)
[show chassis environment pem \(MX240 Router\) on page 309](#)

[show chassis environment pem \(MX480 Router\) on page 310](#)
[show chassis environment pem \(MX960 Router\) on page 310](#)
[show chassis environment pem \(MX10003 Router\) on page 310](#)
[show chassis environment pem \(MX204 Router\) on page 311](#)
[show chassis environment pem \(MX10008 Router\) on page 311](#)
[show chassis environment pem \(PTX10016 Router\) on page 312](#)
[show chassis environment pem \(T320 Router\) on page 313](#)
[show chassis environment pem \(T640 Router\) on page 313](#)
[show chassis environment pem \(T4000 Router\) on page 313](#)
[show chassis environment pem \(T640/T1600/T4000 Routers With Six-Input DC Power Supply\) on page 313](#)
[show chassis environment pem lcc \(TX Matrix Routing Matrix\) on page 314](#)
[show chassis environment pem scc \(TX Matrix Routing Matrix\) on page 314](#)
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[show chassis environment pem node-device \(QFabric System\) on page 315](#)
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[show chassis environment pem interconnect-device \(QFabric System\) on page 316](#)
[show chassis environment pem \(EX9251 Switches\) on page 316](#)
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Output Fields [Table 11 on page 307](#) lists the output fields for the **show chassis environment pem** command. Output fields are listed in the approximate order in which they appear.

Table 11: show chassis environment pem Output Fields

Field Name	Field Description
PEMslotstatus	Number of the PEM slot.
State	Status of the PEM.
Temperature	Temperature of the air flowing past the PEM.
AC Input	Status of the AC input for the specified component
AC Output	Status of the AC output for the specified component.
DC input	Status of the DC input for the specified component.
DC output	Status of the DC output for the specified component.
Load	(Not available on M40e or M160 routers) Information about the load on supply, in percentage of rated current being used.
Voltage	(M120, M160, M320, T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about voltage supplied to the PEM. (MX104 routers only) Information about voltage supplied by the PEM to the system.
Current	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about the PEM current.

Table 11: show chassis environment pem Output Fields (continued)

Field Name	Field Description
Power	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about the PEM power.
SCG/CB/SIB	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) SONET Clock Generator/Control Board/Switch Interface Board.
FAN	(T640, T1600, and T4000 routers with six-input DC power supply only) Information about the DC output to the fan.

Sample Output

show chassis environment pem (M40e Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  AC input             OK
  DC output            OK

```

show chassis environment pem (M120 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC Input:            OK
  DC Output:           OK
  Load                Less than 20 percent
  Voltage:
    48.0 V input       52864 mV
    48.0 V fan supply  41655 mV
    3.3 V              3399 mV
PEM 1 status:
  State                Online
  Temperature          OK
  DC Input:            OK
  DC Output:           OK
  Load                Less than 20 percent
  Voltage:
    48.0 V input       54537 mV
    48.0 V fan supply  42910 mV
    3.3 V              3506 mV

```

show chassis environment pem (M160 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC input             OK
  DC output            OK
  Load                Less than 20 percent
  Voltage:

```


48.0 V input	54833 mV
48.0 V fan supply	50549 mV
8.0 V bias	8239 mV
5.0 V bias	5006 mV

show chassis environment pem (M320 Router)

```

user@host> show chassis environment pem
PEM 2 status:
  State                Online
  Temperature           OK
  DC input              OK
  Load                 Less than 40 percent
    48.0 V input        51853 mV
    48.0 V fan supply    48877 mV
    8.0 V bias          8449 mV
    5.0 V bias          4998 mV
PEM 3 status:
  State                Online
  Temperature           OK
  DC input              OK
  Load                 Less than 40 percent
    48.0 V input        51717 mV
    48.0 V fan supply    49076 mV
    8.0 V bias          8442 mV
    5.0 V bias          4998 mV

```

show chassis environment pem (MX150)

```

user@host> show chassis environment pem
FPC 0 PEM 0 status:
  State                Online
  Airflow              Front to Back
  Temperature           OK

```

show chassis environment pem (MX104 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature           OK
  DC Output:           OK
  Voltage:
    12.0 V output       12281 mV
    3.3 V output        3353 mV
PEM 1 status:
  State                Empty

```

show chassis environment pem (MX240 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature           OK
  DC Output:           OK
PEM 1 status:
  State                Online
  Temperature           OK
  DC Output:           OK

```

show chassis environment pem (MX480 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State           Online
  Temperature      OK
  DC Input:        OK
  DC Output:       OK
  Voltage:
PEM 1 status:
  State           Online
  Temperature      OK
  DC Input:        OK
  DC Output:       OK
  Voltage:

```

show chassis environment pem (MX960 Router)

```

user@host> show chassis environment pem
PEM 2 status:
  State           Present
PEM 3 status:
  State           Online
  Temperature      OK
  DC Output:       OK

```

show chassis environment pem (MX10003 Router)

```

user@host> show chassis environment pem

PEM 0 status:
  State           Online
  Airflow          Front to Back
  Temperature      OK    34 degrees C / 93 degrees F
  Temperature      OK    26 degrees C / 78 degrees F
  Temperature      OK    24 degrees C / 75 degrees F
  Firmware version 0x22
  Cooling Fan      8752 RPM
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   12.00      26          312      10

PEM 1 status:
  State           Online
  Airflow          Front to Back
  Temperature      OK    35 degrees C / 95 degrees F
  Temperature      OK    26 degrees C / 78 degrees F
  Temperature      OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan      8480 RPM
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   12.00      27          324      11

PEM 2 status:
  State           Online
  Airflow          Front to Back
  Temperature      OK    37 degrees C / 98 degrees F
  Temperature      OK    29 degrees C / 84 degrees F
  Temperature      OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan      8656 RPM
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   12.00      25          300      10

```

```

PEM 3 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   35 degrees C / 95 degrees F
  Temperature          OK   26 degrees C / 78 degrees F
  Temperature          OK   25 degrees C / 77 degrees F
  Firmware version     0x22
  Cooling Fan          8448 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                        12.00      26          312      10

PEM 4 status:
  State                Empty

PEM 5 status:
  State                Empty

```

show chassis environment pem (MX204 Router)

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

```

PEM 0 status:
  State                Empty

PEM 1 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   48 degrees C / 118 degrees F
  Temperature          OK   51 degrees C / 123 degrees F
  Fan Sensor           5400 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                        11.94      16          191      29

```

show chassis environment pem (MX10008 Router)

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

```

PEM 0 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   29 degrees C / 84 degrees F
  Firmware version     0x36
  Fan 0                5880 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                        12.00      104          1248      46

PEM 1 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   27 degrees C / 80 degrees F
  Firmware version     0x36
  Fan 0                5940 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                        12.00      104          1248      46

PEM 2 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   30 degrees C / 86 degrees F
  Firmware version     0x36
  Fan 0                5940 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                        12.00      105          1260      46

PEM 3 status:
  State                Present

PEM 4 status:

```

```

State                               Present
PEM 5 status:
State                               Present

```

show chassis environment pem (PTX10016 Router)

```

user@host> show chassis environment pem
PEM 0 status:
State                               Online
Airflow                            Front to Back
Temperature                         OK   21 degrees C / 69 degrees F
Firmware version                    0x36
Fan 0                               5760 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      51      612      22
PEM 1 status:
State                               Online
Airflow                            Front to Back
Temperature                         OK   23 degrees C / 73 degrees F
Firmware version                    0x36
Fan 0                               5760 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      52      624      23
PEM 2 status:
State                               Online
Airflow                            Front to Back
Temperature                         OK   23 degrees C / 73 degrees F
Firmware version                    0x36
Fan 0                               5760 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      51      612      22
PEM 3 status:
State                               Online
Airflow                            Front to Back
Temperature                         OK   21 degrees C / 69 degrees F
Firmware version                    0x36
Fan 0                               5760 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      51      612      22
PEM 4 status:
State                               Online
Airflow                            Front to Back
Temperature                         OK   22 degrees C / 71 degrees F
Firmware version                    0x36
Fan 0                               5760 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      52      624      23
PEM 5 status:
State                               Online
Airflow                            Front to Back
Temperature                         OK   24 degrees C / 75 degrees F
Firmware version                    0x36
Fan 0                               5700 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      51      612      22
PEM 6 status:
State                               Online
Airflow                            Front to Back
Temperature                         OK   21 degrees C / 69 degrees F
Firmware version                    0x36
Fan 0                               5700 RPM

```

DC Output	Voltage(V)	Current(A)	Power(W)	Load(%)
	12.00	50	600	22

show chassis environment pem (T320 Router)

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

```
PEM 0 status:
```

State	Online
Temperature	OK
DC input:	OK

show chassis environment pem (T640 Router)

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

```
PEM 0 status:
```

State	Online
Temperature	22 degrees C / 71 degrees F
AC input:	OK

DC output:	Voltage	Current	Power	Load
FPC 0	56875	606	34	4
FPC 1	57016	525	29	3
FPC 2	0	0	0	0
FPC 3	0	0	0	0
FPC 4	0	0	0	0
FPC 5	0	0	0	0
FPC 6	57158	1581	90	12
FPC 7	0	0	0	0
SCG/CB/SIB	56750	1125	63	5

show chassis environment pem (T4000 Router)

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

```
PEM 0 status:
```

State	Online
Temperature	33 degrees C / 91 degrees F
DC Input:	OK

	Voltage(V)	Current(A)	Power(W)	Load(%)
INPUT 0	54.625	9.812	535	22
INPUT 1	54.625	10.250	559	23
INPUT 2	55.125	0.125	6	0
INPUT 3	54.500	10.062	548	22
INPUT 4	54.750	9.375	513	21
INPUT 5	54.750	10.187	557	23
DC Output	Voltage(V)	Current(A)	Power(W)	Load(%)
FPC 0	55.750	10.125	564	37
FPC 1	51.625	0.000	0	0
FPC 2	52.000	0.000	0	0
FPC 3	55.062	10.437	574	38
FPC 4	52.125	0.000	0	0
FPC 5	55.000	9.375	515	34
FPC 6	55.187	9.687	534	35
FPC 7	51.437	0.000	0	0
SCG/CB/SIB	55.375	15.750	872	35
FAN	54.562	14.750	804	42

show chassis environment pem (T640/T1600/T4000 Routers With Six-Input DC Power Supply)

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

```
PEM 1 status:
```

State	Online
-------	--------

```

Temperature          36 degrees C / 96 degrees F
DC Input:            OK
                    Voltage(V)  Current(A)  Power(W)  Load(%)
INPUT 0              0.000      0.000      0         0
INPUT 1              54.875      3.812      209        27
INPUT 2              55.375      3.937      218        29
INPUT 3              54.625      3.750      204        27
INPUT 4              55.125      3.375      186        24
INPUT 5              55.125      3.375      186        24
DC Output            Voltage(V)  Current(A)  Power(W)  Load(%)
FPC 0                52.312      0.000      0         0
FPC 1                52.687      0.000      0         0
FPC 2                52.812      0.000      0         0
FPC 3                55.812      7.062      394        52
FPC 4                52.625      0.000      0         0
FPC 5                52.625      0.000      0         0
FPC 6                52.750      0.000      0         0
FPC 7                52.750      0.000      0         0
SCG/CB/SIB           55.937      11.937     667        55
FAN                  55.812      4.937      275        36

```

show chassis environment pem lcc (TX Matrix Routing Matrix)

```

user@host> show chassis environment pem 0 lcc 0
lcc0-re0:

```

```

-----
PEM 0 status:
State          Present
Temperature    27 degrees C / 80 degrees F
DC input:      Check
DC output:     Voltage  Current  Power  Load
FPC 0          0        0        0      0
FPC 1          0        0        0      0
FPC 2          0        0        0      0
FPC 3          0        0        0      0
FPC 4          0        0        0      0
FPC 5          0        0        0      0
FPC 6          0        0        0      0
FPC 7          0        0        0      0
SCG/CB/SIB     0        0        0      0

```

show chassis environment pem scc (TX Matrix Routing Matrix)

```

user@host> show chassis environment pem scc
scc-re0:

```

```

-----
PEM 1 status:
State          Online
Temperature    24 degrees C / 75 degrees F
DC input:      OK
DC output:     Voltage  Current  Power  Load
SIB 0          0        0        0      0
SIB 1          0        0        0      0
SIB 2          0        0        0      0
SIB 3          56550     0        0      0
SIB 4          55958     6912     386    51

```

show chassis environment pem sfc (TX Matrix Plus Routing Matrix)

```

user@host> show chassis environment pem sfc 0

```

sfc0-re0:

```
-----
PEM 0 status:
  State                Online
  Temperature          35 degrees C / 95 degrees F
  DC Input:           OK
  DC Output            Voltage    Current      Power      Load
  Channel 0            53820      14140       761        59
  Channel 1            53550      12720       681        53
  Channel 2            53840      12930       696        54
  Channel 3            53690      14990       804        63
  Channel 4            53620      15070       808        63
  Channel 5            53900      14820       798        62
  Channel 6            54120      5020        271        21
```

show chassis environment pem lcc (TX Matrix Plus Routing Matrix)

user@host> show chassis environment lcc 0

lcc0-re1:

```
-----
PEM 0 status:
  State                Online
  Temperature          38 degrees C / 100 degrees F
  DC Input:           OK
  DC Output            Voltage    Current      Power      Load
  FPC 0                0          0           0          0
  FPC 1                0          0           0          0
  FPC 2                0          0           0          0
  FPC 3                0          0           0          0
  FPC 4                56408      7575        427        56
  FPC 5                0          0           0          0
  FPC 6                56266      7956        447        59
  FPC 7                56283      6100        343        45
  SCG/CB/SIB          55916      8950        500        41

PEM 1 status:
  State                Present
  Temperature          35 degrees C / 95 degrees F
  DC Input:           Check
  DC Output            Voltage    Current      Power      Load
  FPC 0                0          0           0          0
  FPC 1                0          0           0          0
  FPC 2                0          0           0          0
  FPC 3                0          0           0          0
  FPC 4                0          0           0          0
  FPC 5                0          0           0          0
  FPC 6                0          0           0          0
  FPC 7                0          0           0          0
  SCG/CB/SIB          0          0           0          0
```

show chassis environment pem node-device (QFabric System)

user@switch> show chassis environment pem node-device node1

```
FPC 0 PEM 0 status:
  State                Check
  Airflow              Front to Back
  Temperature          OK
  AC Input:           OK
  DC Output            Voltage(V)  Current(A)  Power(W)   Load(%)
                    12          10          120        18
```

```
FPC 0 PEM 1 status:
  State           Online
  Airflow         Back to Front
  Temperature      OK
  AC Input:       OK
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  11          10       110      17
```

show chassis environment pem (QFX Series and OCX Series)

```
user@switch> show chassis environment pem
FPC 0 PEM 1 status:
  State           Online
  Airflow         Front to Back
  Temperature      OK
  AC Input:       OK
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12          17       204      31
```

show chassis environment pem interconnect-device (QFabric System)

```
user@switch> show chassis environment pem interconnect-device IC11
IC1 PEM 1 status:
  State           Online
  Airflow         Front to Back
  Temperature      OK
  AC Input:       OK
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12          18       216      33
```

show chassis environment pem (EX9251 Switches)

```
user@switch> show chassis environment pem
PEM 0 status:
  State           Present
PEM 1 status:
  State           Online
  Airflow         Front to Back
  Temperature      OK    36 degrees C / 96 degrees F
  Temperature      OK    35 degrees C / 95 degrees F
  Fan Sensor       5940 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  11.85      17       201      30
```

show chassis environment pem (EX9253 Switches)

```
user@switch> show chassis environment pem
PEM 0 status:
  State           Online
  Airflow         Front to Back
  Temperature      OK    56 degrees C / 132 degrees F
  Temperature      OK    46 degrees C / 114 degrees F
  Temperature      OK    28 degrees C / 82 degrees F
  Firmware version 04.10
  Cooling Fan      9056 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      47       564      19
PEM 1 status:
  State           Present
PEM 2 status:
```



```
State Empty
PEM 3 status:
State Empty
PEM 4 status:
State Present
PEM 5 status:
State Online
Airflow Front to Back
Temperature OK 61 degrees C / 141 degrees F
Temperature OK 49 degrees C / 120 degrees F
Temperature OK 28 degrees C / 82 degrees F
Firmware version 04.10
Cooling Fan 8656 RPM
DC Output Voltage(V) Current(A) Power(W) Load(%)
          12.00      51      612      21
```

show chassis environment routing-engine

List of Syntax	Syntax on page 318 Syntax (TX Matrix Routers) on page 318 Syntax (TX Matrix Plus Routers) on page 318 Syntax (MX104, MX2010, MX2020, MX10003, MX204, and MX2008 Universal Routing Platforms) on page 318 Syntax (MX Series Routers) on page 318 Syntax (PTX Series Routers) on page 318 Syntax (QFX Series) on page 318 Syntax (OCX Series) on page 318 Syntax (ACX5048 and ACX5096 Routers) on page 319 Syntax (ACX500 Routers) on page 319 Syntax (EX9251, EX9253 Switches) on page 319
Syntax	show chassis environment routing-engine <slot>
Syntax (TX Matrix Routers)	show chassis environment routing-engine <lcc <i>number</i> scc> <slot>
Syntax (TX Matrix Plus Routers)	show chassis environment routing-engine <lcc <i>number</i> sfc <i>number</i> > <slot>
Syntax (MX104, MX2010, MX2020, MX10003, MX204, and MX2008 Universal Routing Platforms)	show chassis environment routing-engine <slot> <satellite [fpc-slot <i>slot-id</i> device-alias <i>alias-name</i>]
Syntax (MX Series Routers)	show chassis environment routing-engine <slot> <all-members> <local> <member <i>member-id</i> >
Syntax (PTX Series Routers)	show chassis environment routing-engine <slot> <all-members> <local> <member <i>member-id</i> >
Syntax (QFX Series)	show chassis environment routing-engine interconnect-device <i>name</i>
Syntax (OCX Series)	show chassis environment routing-engine

	<code>interconnect-device <i>name</i></code>
Syntax (ACX5048 and ACX5096 Routers)	<code>show chassis environment routing-engine</code>
Syntax (ACX500 Routers)	<code>show chassis environment routing-engine</code>
Syntax (EX9251, EX9253 Switches)	<code>show chassis environment routing-engine</code>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><code>sfc</code> option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Routers and T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> <p>Command introduced in Junos OS Release 18.2R1 for MX10008 Routers.</p>
Description	Display Routing Engine environmental status information.
Options	<p>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 routers.</p> <p>all-members—(MX Series routers only) (Optional) Display environmental information about the Routing Engines in all member routers in the Virtual Chassis configuration.</p> <p>interconnect-device <i>name</i>—(QFabric systems only) (Optional) Display environmental information about the Routing Engines for the Interconnect device.</p> <p>lcc <i>number</i>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p>

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the specified member in the Virtual Chassis configuration. Replace *member-id* with the value of 0 or 1.

satellite [*fpc-slot slot-id* | *device-alias alias-name*]—(Junos Fusion only)(Optional) Display environmental information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix router (switch-card chassis).

sfc—(TX Matrix Plus router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix Plus router (or switch-fabric chassis).

slot—(Optional) Display environmental information about an individual Routing Engine. On M10i, M20, M40e, M120, M160, M320, MX Series, MX104 routers, MX2010 routers, MX2020 routers, MX2008 routers, and T Series routers, replace *slot* with 0 or 1. On M5, M7i, M10, and M40 routers, replace *slot* with 0. On EX3200 and EX4200 standalone switches, replace *slot* with 0. On EX4200 switches in a Virtual Chassis configuration and on EX8208 and EX8216 switches, replace *slot* with 0 or 1. On the QFX3500 switch, there is only one Routing Engine, so you do not need to specify the slot number. On PTX Series Packet Transport Routers, replace *slot* with 0 or 1

Required Privilege Level view

Related Documentation

- [request chassis routing-engine master](#)
- [show chassis routing-engine on page 621](#)

List of Sample Output

- [show chassis environment routing-engine \(Nonredundant\) on page 321](#)
- [show chassis environment routing-engine \(Redundant\) on page 322](#)
- [show chassis environment routing-engine \(MX150\) on page 322](#)

[show chassis environment routing-engine \(MX104 Router\) on page 322](#)
[show chassis environment routing-engine \(MX2010 Router\) on page 322](#)
[show chassis environment routing-engine \(MX2020 Router\) on page 322](#)
[show chassis environment routing-engine \(MX2008 Router\) on page 323](#)
[show chassis environment routing-engine \(TX Matrix Plus Router\) on page 323](#)
[show chassis environment routing-engine \(T4000 Core Router\) on page 323](#)
[show chassis environment routing-engine \(QFX Series and OCX Series\) on page 323](#)
[show chassis environment routing-engine interconnect-device \(QFabric System\) on page 323](#)
[show chassis environment routing-engine \(PTX5000 Packet Transport Router\) on page 324](#)
[show chassis environment routing-engine \(PTX10008 Router\) on page 324](#)
[show chassis environment routing-engine \(PTX10016 Router\) on page 324](#)
[show chassis environment routing-engine \(ACX5048 and ACX5096 Routers\) on page 324](#)
[show chassis environment routing-engine \(ACX500 Routers\) on page 324](#)
[show chassis environment routing-engine \(PTX5000 \(RE-PTX-X8-64G\), MX240 \(RE-S-X6-64G\), MX480 \(RE-S-X6-64G\), MX960 \(RE-S-X6-64G\), MX2010 \(RE-MX2K-X8-64G\), MX2020 \(RE-MX2K-X8-64G\) on page 324](#)
[show chassis environment routing-engine \(MX204 Routers\) on page 325](#)
[show chassis environment routing-engine \(MX10008 Routers\) on page 325](#)
[show chassis environment routing-engine \(EX9251 Switches\) on page 325](#)
[show chassis environment routing-engine \(EX9253 Switches\) on page 325](#)

Output Fields [Table 12 on page 321](#) 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 12: show chassis environment routing-engine Output Fields

Field Name	Field Description
Routing engine <i>slot</i> status	Number of the Routing Engine slot: 0 or 1.
State	Status of the Routing Engine: <ul style="list-style-type: none"> • 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 routing-engine (MX150)

```
user@ host >show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  CPU Temperature      42 degrees C / 107 degrees F
```

show chassis environment routing-engine (MX104 Router)

```
user@ host >show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          34 degrees C / 93 degrees F
  CPU Temperature      43 degrees C / 109 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          33 degrees C / 91 degrees F
  CPU Temperature      39 degrees C / 102 degrees F
```

show chassis environment routing-engine (MX2010 Router)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          37 degrees C / 98 degrees F
  CPU Temperature      37 degrees C / 98 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          35 degrees C / 95 degrees F
  CPU Temperature      34 degrees C / 93 degrees F
```

show chassis environment routing-engine (MX2020 Router)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          35 degrees C / 95 degrees F
  CPU Temperature      34 degrees C / 93 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          44 degrees C / 111 degrees F
  CPU Temperature      43 degrees C / 109 degrees F
```

show chassis environment routing-engine (MX2008 Router)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  CPU Temperature      75 degrees C / 167 degrees F
Routing Engine 1 status:
  State                Online Standby
  CPU Temperature      47 degrees C / 116 degrees F

```

show chassis environment routing-engine (TX Matrix Plus Router)

```

user@host> show chassis environment routing-engine
sfc0-re0:
-----
Routing Engine 0 status:
  State                Online Master
  Temperature          26 degrees C / 78 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          28 degrees C / 82 degrees F

lcc0-re0:
-----
Routing Engine 0 status:
  State                Online Master
  Temperature          30 degrees C / 86 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          29 degrees C / 84 degrees F

```

show chassis environment routing-engine (T4000 Core Router)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          33 degrees C / 91 degrees F
  CPU Temperature      50 degrees C / 122 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          33 degrees C / 91 degrees F
  CPU Temperature      46 degrees C / 114 degrees F

```

show chassis environment routing-engine (QFX Series and OCX Series)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          42 degrees C / 107 degrees F

```

show chassis environment routing-engine interconnect-device (QFabric System)

```

user@switch> show chassis environment routing-engine interconnect-device interconnect1
routing-engine interconnect-device interconnect1
Routing Engine 0 status:
  State                Online Standby
  Temperature          52 degrees C / 125 degrees F
Routing Engine 1 status:

```

```

State                               Online Master
Temperature                         57 degrees C / 134 degrees F

```

show chassis environment routing-engine (PTX5000 Packet Transport Router)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                               Online Master
  Temperature                         55 degrees C / 131 degrees F
  CPU Temperature                     66 degrees C / 150 degrees F
Routing Engine 1 status:
  State                               Online Standby
  Temperature                         52 degrees C / 125 degrees F
  CPU Temperature                     64 degrees C / 147 degrees F

```

show chassis environment routing-engine (PTX10008 Router)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                               Online Master
  CPU Temperature                     40 degrees C / 104 degrees F
Routing Engine 1 status:
  State                               Online Standby
  CPU Temperature                     40 degrees C / 104 degrees F

```

show chassis environment routing-engine (PTX10016 Router)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                               Online Master
  CPU Temperature                     33 degrees C / 91 degrees F
Routing Engine 1 status:
  State                               Online Standby
  CPU Temperature                     38 degrees C / 100 degrees F

```

show chassis environment routing-engine (ACX5048 and ACX5096 Routers)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                               Online Master
  Temperature                         33 degrees C / 91 degrees F

```

show chassis environment routing-engine (ACX500 Routers)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                               Online Master
  Temperature                         54 degrees C / 129 degrees F

```

Sample Output

show chassis environment routing-engine (PTX5000 (RE-PTX-X8-64G), MX240 (RE-S-X6-64G), MX480 (RE-S-X6-64G), MX960 (RE-S-X6-64G), MX2010 (RE-MX2K-X8-64G), MX2020 (RE-MX2K-X8-64G))

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                               Online Master
  Temperature                         37 degrees C / 98 degrees F
  CPU Temperature                     52 degrees C / 125 degrees F

```



```
Routing Engine 1 status:
  State           Online Standby
  Temperature      37 degrees C / 98 degrees F
  CPU Temperature  51 degrees C / 123 degrees F
```

show chassis environment routing-engine (MX204 Routers)

```
user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
```

show chassis environment routing-engine (MX10008 Routers)

```
Routing Engine 0 status:
  State           Online Master
  CPU Temperature      41 degrees C / 105 degrees F
Routing Engine 1 status:
  State           Online Standby
  CPU Temperature  40 degrees C / 104 degrees F
```

show chassis environment routing-engine (EX9251 Switches)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
```

show chassis environment routing-engine (EX9253 Switches)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
Routing Engine 1 status:
  State           Present
```

show chassis firmware

List of Syntax	Syntax on page 326 Syntax (TX Matrix Routers) on page 326 Syntax (TX Matrix Plus Routers) on page 326 Syntax (MX Series Routers) on page 326 Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms) on page 326 Syntax (MX10008 Universal Routing Platforms) on page 326 Syntax (PTX Series) on page 326 Syntax (QFX Series) on page 326 Syntax (OCX Series) on page 326 Syntax (ACX Series Universal Metro Routers) on page 327 Syntax (ACX5048 and ACX5096 Routers) on page 327 Syntax (ACX500 Routers) on page 327 Syntax (EX Series Switches) on page 327
Syntax	show chassis firmware
Syntax (TX Matrix Routers)	show chassis firmware <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers)	show chassis firmware <lcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Routers)	show chassis firmware <all-members> <local> <member <i>member-id</i> >
Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms)	show chassis firmware <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]>
Syntax (MX10008 Universal Routing Platforms)	show chassis firmware
Syntax (PTX Series)	show chassis firmware
Syntax (QFX Series)	show chassis firmware interconnect-device <i>name</i> node-device <i>name</i>
Syntax (OCX Series)	show chassis firmware

Syntax (ACX Series Universal Metro Routers)	<code>show chassis firmware</code>
Syntax (ACX5048 and ACX5096 Routers)	<code>show chassis firmware interconnect-device <i>name</i> node-device <i>name</i></code>
Syntax (ACX500 Routers)	<code>show chassis firmware</code>
Syntax (EX Series Switches)	<code>show chassis firmware <detail> <satellite [slot-id <i>slot-id</i> [device-alias <i>alias-name</i>]]></code>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p>sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.</p> <p>Command introduced for EX8200 switches in Junos OS Release 10.2 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms, and ACX4000 Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.</p> <p>satellite option introduced in Junos OS Release 14.2R3.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p>
Description	<p>On routers and switches, display the version levels of the firmware running on the System Control Board (SCB), Switching and Forwarding Module (SFM), System and Switch Board (SSB), Forwarding Engine Board (FEB), Flexible PIC Concentrators (FPCs), and Routing Engines. On a TX Matrix Plus router, display the version levels of the firmware running on the FPCs and the Switch Processor Mezzanine Board (SPMBs).</p> <p>On EX2200, EX3200, EX4200, QFX Series, and OCX Series switches, display the version levels of the firmware running on the switch. On an EX8208 switch, display the version levels of the firmware running on the Switch Fabric and Routing Engine (SRE) modules and on the line cards (shown as FPCs). On an EX8216 switch, display the version levels</p>

of the firmware running on the Routing Engine (RE) modules and on the line cards (shown as FPCs).

Options **none**—Display the version levels of the firmware running. For an EX4200 switch that is a member of a Virtual Chassis, display version levels for all members. For a TX Matrix router, display version levels for the firmware on the TX Matrix router and on all the T640 routers connected to the TX Matrix router. For a TX Matrix Plus router, display version levels for the firmware on the TX Matrix Plus router and on all the routers connected to the TX Matrix Plus router.

all-members—(MX Series routers only) (Optional) Display the version levels of the firmware running for all members of the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems) (Optional) Display the version levels of the firmware running on the Interconnect device.

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display version levels for the firmware on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the version levels for the firmware on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(MX Series routers only) (Optional) Display the version levels of the firmware running for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the version levels of the firmware running for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

node-device—(QFabric systems only) (Optional) Display the version levels of the firmware running on the Node device.

satellite [*slot-id slot-id* | *device-alias alias-name*]—(Junos Fusion only) (Optional) Display version levels of the firmware running for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.

scc—(TX Matrix router only) (Optional) Display version levels for the firmware on the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router only) (Optional) Display version levels for the firmware on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

detail—(EX3200, EX3300, EX4200, and EX4500 standalone and Virtual Chassis member switches only) (Optional) Display version levels of the firmware running on the switch for its programmable hardware components.

Required Privilege Level view

List of Sample Output

- [show chassis firmware \(M10 Router\) on page 330](#)
- [show chassis firmware \(M20 Router\) on page 330](#)
- [show chassis firmware \(M40 Router\) on page 331](#)
- [show chassis firmware \(M120 Router\) on page 331](#)
- [show chassis firmware \(M160 Router\) on page 331](#)
- [show chassis firmware \(MX150\) on page 331](#)
- [show chassis firmware \(MX104 Router\) on page 331](#)
- [show chassis firmware \(MX240 Router\) on page 332](#)
- [show chassis firmware \(MX480 Router\) on page 332](#)
- [show chassis firmware \(MX960 Router\) on page 332](#)
- [show chassis firmware \(MX2010 Router\) on page 332](#)
- [show chassis firmware \(MX2020 Router\) on page 333](#)
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- [show chassis firmware \(MX240, MX480, MX960 Router with Application Services Modular Line Card\) on page 335](#)
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- [show chassis firmware \(ACX5048 Router\) on page 340](#)
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Output Fields Table 13 on page 330 lists the output fields for the show chassis firmware command. Output fields are listed in the approximate order in which they appear.

Table 13: show chassis firmware Output Fields

Field Name	Field Description
Part	(MX Series, MX2010, MX2020, and MX2008 routers) Chassis part name.
Type	(MX Series, MX2010, MX2020, and MX2008 routers) Type of firmware: On routers: ROM or O/S. On switches: uboot or loader.
Version	(MX Series, MX2010, MX2020, and MX2008 routers) Version of firmware running on the chassis part.
FPC	(<i>detail</i> option only) Number of FPC. For a standalone switch, the value is 0. For a Virtual Chassis configuration, value in the range of 0-9; refers to the member ID assigned to the switch.
AFEB	(MX104 routers) Version of the compact Forwarding Engine Board.
Boot	(<i>detail</i> option only) Version of the SYSPLD.
PoE	(<i>detail</i> option only) Version of the PoE firmware.
PFE-<number>	(<i>detail</i> option only) Version of the Packet Forwarding Engine used in the switch.
PHY-	(<i>detail</i> option only) Version of the physical layer device (PHY) used in the switch.
microcode	(<i>detail</i> option only) Microcode of the physical layer devices (PHY) used in the switch.
uboot	(<i>detail</i> option only) Version of the u-boot used in the switch.
loader	(<i>detail</i> option only) Version of the loader used in the switch.

Sample Output

show chassis firmware (M10 Router)

```

user@host> show chassis firmware
Part          Type      Version
Forwarding engine board  ROM      Juniper ROM Monitor Version 4.1b2
O/S           Version 4.1I1 by usera on 2000-04-24 11:27

```

show chassis firmware (M20 Router)

```

user@host> show chassis firmware
Part          Type      Version
System switch board    ROM      Juniper ROM Monitor Version 3.4b26

```

	O/S	Version 3.4I16 by userc on 2000-02-29 2
FPC 1	ROM	Juniper ROM Monitor Version 3.0b1
	O/S	Version 3.4I4 by userc on 2000-02-25 21
FPC 2	ROM	Juniper ROM Monitor Version 3.0b1
	O/S	Version 3.4I4 by userc on 2000-02-25 21

show chassis firmware (M40 Router)

```
user@host> show chassis firmware
Part                Type      Version
System control board ROM      Juniper ROM Monitor Version 2.0i126Copyri
                  O/S      Version 2.0i1 by root on Thu Jul 23 00:51
FPC 5               ROM      Juniper ROM Monitor Version 2.0i49Copyrig
                  O/S      Version 2.0i1 by root on Thu Jul 23 00:59
```

show chassis firmware (M120 Router)

```
user@host> show chassis firmware
FPC 2               ROM      Juniper ROM Monitor Version 8.0b29
                  O/S      Version 8.2B1 by userb on 2006-10-18 16:2
FPC 3               ROM      Juniper ROM Monitor Version 8.0b29
                  O/S      Version 8.2B1 by userb on 2006-10-18 16:2
FPC 4               ROM      Juniper ROM Monitor Version 8.0b29
                  O/S      Version 8.2B1 by userb on 2006-10-18 16:2
FEB 3               ROM      Juniper ROM Monitor Version 8.0b29
                  O/S      Version 8.2B1 by userb on 2006-10-18 16:1
FEB 4               ROM      Juniper ROM Monitor Version 8.0b29
                  O/S      Version 8.2B1 by userb on 2006-10-18 16:1
```

show chassis firmware (M160 Router)

```
user@host> show chassis firmware
Part                Type      Version
SFM 0               ROM      Juniper ROM Monitor Version 4.0b2
                  O/S      Version 4.0I1 by usera on 2000-02-29 11:50
SFM 1               ROM      Juniper ROM Monitor Version 4.0b2
                  O/S      Version 4.0I1 by usera on 2000-02-29 11:50
FPC 0               ROM      Juniper ROM Monitor Version 4.0b2
                  O/S      Version 4.0I1 by usera on 2000-02-29 11:56
FPC 1               ROM      Juniper ROM Monitor Version 4.0b2
                  O/S      Version 4.0I1 by usera on 2000-02-29 11:56
FPC 2               ROM      Juniper ROM Monitor Version 4.0b3
                  O/S      Version 4.0I1 by usera on 2000-02-29 11:56
```

show chassis firmware (MX150)

```
user@host > show chassis firmware
Part                Type      Version
FPC                 ROM      PC Bios
                  O/S      Version 17.2I20170220_0929_rohitn by rohitn
on 2017-02-20 09:38:59 UTC
```

show chassis firmware (MX104 Router)

```
user@host > show chassis firmware
Part                Type      Version
FPC 0               ROM      Juniper ROM Monitor Version 13.1b24
                  O/S      Version 13.2-20130514.1 by userb on 2013-
FPC 1               ROM      Juniper ROM Monitor Version 13.1b24
```

	O/S	Version 13.2-20130514.1 by userb on 2013-
FPC 2	ROM	Juniper ROM Monitor Version 13.1b24
	O/S	Version 13.2-20130514.1 by userb on 2013-
AFEB	ROM	Juniper ROM Monitor Version 13.1b24
	O/S	Version 13.2-20130514.1 by userb on 2013-

show chassis firmware (MX240 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 8.3b1
	O/S	Version 9.0-20080103.0 by userb on 2008-0
FPC 2	ROM	Juniper ROM Monitor Version 8.3b1
	O/S	Version 9.0-20080103.0 by userb on 2008-0

show chassis firmware (MX480 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 8.3b1
	O/S	Version 9.0-20070916.3 by userb on 2007-0

show chassis firmware (MX960 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 8.0b8
	O/S	Version 8.2I59 by user3 on 2006-10-31 19:22
FPC 7	ROM	Juniper ROM Monitor Version 8.2b1
	O/S	Version 8.2-20061026.1 by userb on 2006-1

show chassis firmware (MX2010 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 12.3b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 1	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 2	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 3	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 4	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 5	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 6	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 7	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 8	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 9	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
SPMB 0	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
SPMB 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20121220.0 by userb on 2012-

show chassis firmware (MX2020 Router)

```

user@host> show chassis firmware

```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 1	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 2	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 3	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 4	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 5	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 6	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 7	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 8	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 9	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 10	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 11	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 12	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 13	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 14	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 15	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 16	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 17	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 18	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 19	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 0	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-

show chassis firmware (MX2008 Router)

```

user@host> show chassis firmware

```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 17.2-20170412.0 by builder on
2017-04-12 01:15:48 UTC		
FPC 3	ROM	Juniper ROM Monitor Version 13.3b1
	O/S	Version 17.2-20170412.0 by builder on
2017-04-12 01:16:31 UTC		

```

FPC 5          ROM      Juniper ROM Monitor Version 13.3b1
                O/S      Version 17.2-20170412.0 by builder on
2017-04-12 01:16:31 UTC
FPC 7          ROM      Juniper ROM Monitor Version 11.4b2
                O/S      Version 17.2-20170412.0 by builder on
2017-04-12 01:15:48 UTC
FPC 9          ROM      Juniper ROM Monitor Version 13.2b1
                O/S      Version 17.2-20170412.0 by builder on
2017-04-12 01:15:58 UTC

```

show chassis firmware (MX10003)

```
user@host> show chassis firmware
```

```

Part          Type      Version
RE 0          PRI BIOS  CBEP_P_SUM0_00.11.01
              RE-FPGA  402
RE 1          PRI BIOS  CBEP_P_SUM0_00.11.01
              RE-FPGA  301
FPC 0         ROM       PC Bios
              O/S      Version 17.3-20170719.0 by builder on
2017-07-19 01:27:58 UTC
FPC 1         ROM       PC Bios
              O/S      Version 17.3-20170719.0 by builder on
2017-07-19 01:27:58 UTC

```

show chassis firmware (MX204 Router)

```
user@host> show chassis firmware
```

```

Part          Type      Version
RE 0          PRI BIOS  CBEP_P_SUM1_00.11.01
              RE-FPGA  300
FPC           ROM       PC Bios
              O/S      Version 17.4I20171105_0609_aahluwalia by
aahluwalia on 2017-11-05 06:09:28 UTC

```

show chassis firmware (MX10008 Router)

```
user@host> show chassis firmware
```

```

Part          Type      Version
RE 0          PRI BIOS  CBEP_P_VAL0_00.14.1
              FPGA      264.0
              RE-FPGA  41.0
              RE-SSD1  SF-SBR12050
              RE-SSD2  SF-SBR12050
              i40e-NVM  6.01
RE 1          PRI BIOS  CBEP_P_VAL0_00.13.01
              FPGA      261.0
              RE-FPGA  41.0
              RE-SSD1  SF-SBR12034
              RE-SSD2  SF-SBR12034
              i40e-NVM  5.02
FPC 0         ROM       PC Bios
              O/S      Version 18.4-20180716_dev_common.0 by builder
on 2018-07-16 00:43:35 UTC
              ROM Monitor 0 9.14.0
              PCIE Sw(0) 1.0.0
              MPCS(0)   0.2.0
              I2CS CPLD 0.4.0

```

```

FPC 2          BOOT CPLD  0.4.0
              ROM        PC Bios
              O/S        Version 18.4-20180716_dev_common.0 by builder
on 2018-07-16 00:43:35 UTC
              ROM Monitor 0 9.14.0
              PCIE Sw(0) 1.0.0
              MPCS(0)   0.2.0
              I2CS CPLD  0.4.0
              BOOT CPLD  0.4.0
FPC 3          ROM        PC Bios
              O/S        Version 18.4-20180716_dev_common.0 by builder
on 2018-07-16 00:43:35 UTC
              ROM Monitor 0 9.14.0
              PCIE Sw(0) 1.0.0
              MPCS(0)   0.4.0
              I2CS CPLD  0.8.0
              BOOT CPLD  0.8.0
FPM            FPGA       1.9
FTC 0          FPGA       2.0
FTC 1          FPGA       2.0
SFB 0          FPGA       3.0
SFB 1          FPGA       3.0
SFB 2          FPGA       3.0
SFB 3          FPGA       3.0
SFB 4          FPGA       3.0
SFB 5          FPGA       3.0

```

show chassis firmware (MX240, MX480, MX960 Router with Application Services Modular Line Card)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.2I21 by user1 on 2012-06-19 17:

show chassis firmware (EX4200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 0	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 1	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 2	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1

show chassis firmware (EX8200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 0	U-Boot	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 3	U-Boot	U-Boot 1.1.6 (Dec 4 2009 - 13:17:34) 3.1.0
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 5	U-Boot	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 7	U-Boot	U-Boot 1.1.6 (Feb 6 2009 - 05:31:46) 2.4.0
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.2

Routing Engine 0	U-Boot	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
	loader	
Routing Engine 1	U-Boot	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
	loader	

show chassis firmware (EX9200 Switch)

```
user@switch> show chassis firmware
Part      Type      Version
FPC 2     ROM       Juniper ROM Monitor Version 11.4b2
           O/S      Version 14.1I20140312_0741 by userd o
FPC 3     ROM       Juniper ROM Monitor Version 10.4b1
           O/S      Version 14.1I20140312_0741 by userd o
```

show chassis firmware (EX9251 Switch)

```
user@switch> show chassis firmware
Part      Type      Version
RE 0      PRI BIOS  CBEP_P_SUM1_00.11.01
           RE-FPGA  301
FPC        ROM       PC Bios
           O/S      Version 18.1R1.4 by builder on 2018-03-06
00:31:54 UTC
```

show chassis firmware (EX9253 Switch)

```
user@switch> show chassis firmware
Part      Type      Version
RE 0      PRI BIOS  CBEP_P_SUM1_00.11.01
           RE-FPGA  402
RE 1      PRI BIOS  CBEP_P_SUM1_00.11.01
           RE-FPGA  402
FPC 0     ROM       PC Bios
           O/S      Version 18.2-20180129_dev_common.1 by builder
on 2018-01-29 13:35:11 UTC
FPC 1     ROM       PC Bios
           O/S      Version 18.2-20180129_dev_common.1 by builder
on 2018-01-29 13:35:11 UTC
```

show chassis firmware lcc (TX Matrix Router)

```
user@host> show chassis firmware lcc 0
lcc0-re0:
-----
Part      Type      Version
FPC 1     ROM       Juniper ROM Monitor Version 6.4b18
           O/S      Version 7.0-20040804.0 by userb on 2004-0
FPC 2     ROM       Juniper ROM Monitor Version 6.4b20
           O/S      Version 7.0-20040804.0 by userb on 2004-0
SPMB 0    ROM       Juniper ROM Monitor Version 6.4b18
           O/S      Version 7.0-20040804.0 by userb on 2004-0
```

show chassis firmware scc (TX Matrix Router)

```
user@host> show chassis firmware scc
scc-re0:
-----
```

Part	Type	Version
SPMB 0	ROM	Juniper ROM Monitor Version 6.4b18
	O/S	Version 7.0-20040804.0 by userb on 2004-0

show chassis firmware (TX Matrix Plus Router)

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

Part	Type	Version
Global FPC 4		
Global FPC 6		
Global FPC 7		
Global FPC 12		
Global FPC 14		
Global FPC 15		
Global FPC 20		
Global FPC 21		
Global FPC 22		
Global FPC 23		
Global FPC 24		
Global FPC 25		
Global FPC 26		
Global FPC 28		
Global FPC 29		
Global FPC 31		
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

```
lcc0-re1:
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

```
lcc1-re1:
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

```
lcc2-re1:
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 5	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 7.5b4
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

lcc3-re1:

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 1	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 2	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 4	ROM	Juniper ROM Monitor Version 7.5b4
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 5	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

show chassis firmware lcc (TX Matrix Plus Router)

```
user@host> show chassis firmware lcc 0
lcc0-re1:
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

show chassis firmware sfc (TX Matrix Plus Router)

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

Part	Type	Version
Global FPC 4		
Global FPC 6		
Global FPC 7		

```

Global FPC 12
Global FPC 14
Global FPC 15
Global FPC 20
Global FPC 21
Global FPC 22
Global FPC 23
Global FPC 24
Global FPC 25
Global FPC 26
Global FPC 28
Global FPC 29
Global FPC 31
SPMB 0
ROM Juniper ROM Monitor Version 9.5b1
O/S Version 9.6-20090507.0 by userb on 2009-0
SPMB 1
ROM Juniper ROM Monitor Version 9.5b1
O/S Version 9.6-20090507.0 by userb on 2009-0

```

show chassis firmware (QFX Series and OCX Series)

```

user@switch> show chassis firmware
Part Type Version
FPC 0
Routing Engine 0 U-Boot U-Boot 1.1.6 (Sep 15 2010 - 02:11:11) 1.0.5
loader FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

show chassis firmware (PTX1000 Packet Transport Routers)

```

user@host> show chassis firmware
Part Type Version
FPC 0 U-Boot ***
loader FreeBSD/i386 bootstrap loader 1.2
BIOS V0018.2U
EC FPGA 2.0
MAIN_CPLD 1.f
MEZZ_CPLD 1.f
RE FPGA 2.3

```

show chassis firmware (PTX10008 Routers)

```

user@host> show chassis firmware
Part Type Version
RE 0 PRI BIOS QFXS_SFP_00.31_01.01
GDN BIOS QFXS_SFP_00.31_01.01
FPGA 2.4
RE-FPGA 3.2
RE 1 PRI BIOS QFXS_SFP_00.31_01.01
GDN BIOS QFXS_SFP_00.31_01.01
FPGA 2.3
RE-FPGA 3.2
FPC 0 U-Boot Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)
CTRL FPGA 4.1
PORT FPGA 2.0
FPC 5 U-Boot Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)
CTRL FPGA 3.1
PORT FPGA 2.0
FPC 6 U-Boot Bank B: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)

```

	CTRL	FPGA	3.1
	PORT	FPGA	2.0
FPM		FPGA	1.9
FTC 0		FPGA	2.0
FTC 1		FPGA	2.0
SIB 0		FPGA	3.0
SIB 1		FPGA	3.0

show chassis firmware interconnect-device (QFabric System)

```

user@switch> show chassis firmware interconnect-device interconnect1
Part                Type      Version
Routing Engine 0    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                  loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1
Routing Engine 1    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                  loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

show chassis firmware (ACX2000 Universal Metro Router)

```

user@switch> show chassis firmware
Part      Type      Version
FPC       O/S       Version 12.2I13 by user2 on 2012-05-29 06:
FEB       O/S       Version 12.2I13 by user2 on 2012-05-29 06:

```

show chassis firmware detail (EX3300 Switch)

```

user@switch> show chassis firmware detail
FPC 0
  Boot SYSPLD          3
  PoE firmware         4.1.6
  PFE-0                3
  PFE-1                3
  PHY
    microcode          0x514
  Boot Firmware
    uboot              U-Boot 1.1.6 (Aug 21 2011 - 01:45:26) 1.0.0
    loader              FreeBSD/arm U-Boot loader 1.0

```

show chassis firmware (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis firmware
Part      Type      Version
FPC 1     ROM       Juniper ROM Monitor Version 12.1b1
          O/S       Version 12.2I21 by user1 on 2012-06-19 17:

```

show chassis firmware (ACX5048 Router)

```

user@host> show chassis firmware
Part      Type      Version
FPC       Loader    FreeBSD/i386 bootstrap loader 1.2
          BIOS     V0018.7
          TMC FPGA  6.d8
          PICO CPLD0 7.b
          PICO CPLD1 7.b
          PICO CPLD2 7.b
          PICO CPLD3 7.b
          PICO CPLD4 7.b
          PICO CPLD5 7.b
          PICO CPLD6 6.a

```



```

MRE          17.9
Power CPLD   3.a

```

show chassis firmware (ACX5096 Router)

```

user@host> show chassis firmware
Part          Type          Version
FPC
loader        FreeBSD/i386 bootstrap loader 1.2
BIOS          V0018.7
TMC FPGA      3000001.5
PICO CPLD0    7.b
PICO CPLD1    7.b
PICO CPLD2    7.b
PICO CPLD3    7.b
PICO CPLD4    7.b
PICO CPLD5    7.b
PICO CPLD6    c6.a
PICO CPLD7    -NA-
PICO CPLD8    7.b
PICO CPLD9    7.b
PICO CPLD10   7.b

PICO CPLD11   7.b

PICO CPLD12   7.b

PICO CPLD13   7.b

PICO CPLD14   c6.a

MRE           7.5
Power CPLD    4.1

```

show chassis firmware (ACX500 Router)

```

user@host> show chassis firmware

Part          Type          Version
FPC           O/S           Version 15.2-20150815_dev_rbu_1_16q1.0 by
userb on 2015-08-15 04:18:02 UTC
FEB           O/S           Version 15.2-20150815_dev_rbu_1_16q1.0 by
userb on 2015-08-15 04:18:02 UTC

```

show chassis fan

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[Syntax \(MX Series Routers\) on page 342](#)
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[Syntax \(MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform\) on page 342](#)
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[Syntax \(QFX Series\) on page 342](#)
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Syntax show chassis fan

Syntax (ACX4000 Series Router) show chassis fan

Syntax (ACX5048 and ACX5096 Routers) show chassis fan

Syntax (MX Series Routers) show chassis fan
 <all-members>
 <local>
 <member *member-id*>

Syntax (T Series Routers) show chassis fan

Syntax (MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform) show chassis fan
 <satellite [*slot-id slot-id* [*device-alias alias-name*]]>

Syntax (MX10003 Universal Routing Platform) show chassis fan

Syntax (PTX Series) show chassis fan

Syntax (QFX Series) show chassis fan
 <interconnect-device *name*>

Syntax (OCX Series)	<code>show chassis fan</code>
Syntax (TX Matrix Router)	<code>show chassis fan</code> <code><fcc number scc></code>
Syntax (TX Matrix Plus Router)	<code>show chassis fan</code> <code><fcc number sfc number></code>
Syntax (EX9251, EX9253 Switches)	<code>show chassis fan</code>
Release Information	<p>Command introduced in Junos OS Release 10.0 on MX Series 5G Universal Routing Platforms, 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 12.1 for T4000 routers.</p> <p>Command introduced in Junos OS Release 12.3 for PTX5000 Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms, and ACX Series Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>satellite option introduced in Junos OS Release 14.2R3.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p>
Description	(T Series routers, TX Matrix routers, TX Matrix Plus routers, M120 routers, M320 routers, MX104 routers, MX2010 routers, MX2020 routers, MX2008 routers, MX Series 5G Universal Routing Platforms, QFX3008-I Interconnect devices, QFX Series, OCX Series, EX Series switches, and PTX Series Packet Transport Routers only) Show information about the fan tray and fans.
Options	<p>all-members—(MX Series routers only) (Optional) Display information about the fan tray and fans for all members of the Virtual Chassis configuration.</p> <p>local—(MX Series routers only) (Optional) Display information about the fan tray and fans for the local Virtual Chassis member.</p> <p>member <i>member-id</i>—(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 <i>member-id</i> variable with a value 0 or 1.</p>

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 and TX Matrix Plus routers 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 router (line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

satellite [*slot-id slot-id* | device-alias *alias-name*]—(Junos Fusion only) (Optional) Display information about the fan tray and fans for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.

scc—(TX Matrix routers only) (Optional) Display information about the fan tray and fans for the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Display information about the fan tray and fans for the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

Required Privilege Level

view

List of Sample Output

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[show chassis fan \(EX Series Switches\) on page 347](#)
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[show chassis fan \(TX Matrix Router\) on page 349](#)
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[show chassis fan \(EX9251 switches\) on page 358](#)
[show chassis fan \(EX9253 switches\) on page 358](#)

Output Fields Table 14 on page 345 lists the output fields for the **show chassis fan** command. Output fields are listed in the approximate order in which they appear.

Table 14: 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 routers, MX Series 5G Universal Routing Platforms, QFX3108 Interconnect devices, and EX Series switches only) Fan speed in revolutions per minute (RPM).
% RPM	(MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series Packet Transport Routers only) Percentage of the fan speed being used.
Measurement	(T Series routers, TX Matrix routers, TX Matrix Plus routers, MX Series 5G Universal Routing Platforms, 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, MX2008 routers, and PTX Series Packet Transport Routers 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

1cc2-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	

1cc0-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 Router)

```

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 (PTX10008 Router)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Fan Tray 0 Fan 0	OK	9000	Spinning at normal speed
Fan Tray 0 Fan 1	OK	9000	Spinning at normal speed
Fan Tray 0 Fan 2	OK	9150	Spinning at normal speed
Fan Tray 0 Fan 3	OK	9150	Spinning at normal speed
Fan Tray 0 Fan 4	OK	9000	Spinning at normal speed
Fan Tray 0 Fan 5	OK	9150	Spinning at normal speed
Fan Tray 0 Fan 6	OK	9000	Spinning at normal speed
Fan Tray 0 Fan 7	OK	9150	Spinning at normal speed
Fan Tray 0 Fan 8	OK	8850	Spinning at normal speed
Fan Tray 0 Fan 9	OK	8850	Spinning at normal speed
Fan Tray 0 Fan 10	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 0	OK	9150	Spinning at normal speed
Fan Tray 1 Fan 1	OK	9150	Spinning at normal speed
Fan Tray 1 Fan 2	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 3	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 4	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 5	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 6	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 7	OK	9150	Spinning at normal speed
Fan Tray 1 Fan 8	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 9	OK	9000	Spinning at normal speed
Fan Tray 1 Fan 10	OK	9000	Spinning at normal speed

show chassis fan (MX150)

```
user@host > show chassis fan
```

Item	Status	RPM	Measurement
FPC 0 Tray 0 Fan 0	OK	7419	Spinning at normal speed
FPC 0 Tray 1 Fan 0	OK	7419	Spinning at normal speed

show chassis fan (MX104 Router)

```
user@host > show chassis fan
```

Item	Status	RPM	Measurement
Fan 1	OK	5640	Spinning at normal speed
Fan 2	OK	5640	Spinning at normal speed
Fan 3	OK	5760	Spinning at normal speed
Fan 4	OK	5640	Spinning at normal speed
Fan 5	OK	5640	Spinning at normal speed

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

show chassis fan (MX2008 Router)

```
user@host > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 1	OK	64%	5760 RPM
Fan Tray 0 Fan 2	OK	62%	5640 RPM
Fan Tray 0 Fan 3	OK	64%	5760 RPM
Fan Tray 0 Fan 4	OK	60%	5400 RPM
Fan Tray 0 Fan 5	OK	61%	5520 RPM
Fan Tray 0 Fan 6	OK	62%	5640 RPM
Fan Tray 1 Fan 1	OK	61%	5520 RPM
Fan Tray 1 Fan 2	OK	61%	5520 RPM
Fan Tray 1 Fan 3	OK	61%	5520 RPM
Fan Tray 1 Fan 4	OK	62%	5640 RPM
Fan Tray 1 Fan 5	OK	62%	5640 RPM
Fan Tray 1 Fan 6	OK	64%	5760 RPM

show chassis fan (MX10003 Router)

```
user@host> show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 0	OK	40%	7296 RPM
Fan Tray 0 Fan 1	OK	40%	6656 RPM
Fan Tray 0 Fan 2	OK	40%	7296 RPM
Fan Tray 0 Fan 3	OK	40%	6400 RPM
Fan Tray 1 Fan 0	OK	40%	7296 RPM
Fan Tray 1 Fan 1	OK	40%	6528 RPM
Fan Tray 1 Fan 2	OK	40%	7296 RPM
Fan Tray 1 Fan 3	OK	40%	6784 RPM
Fan Tray 2 Fan 0	OK	40%	7552 RPM
Fan Tray 2 Fan 1	OK	40%	6784 RPM
Fan Tray 2 Fan 2	OK	40%	7424 RPM
Fan Tray 2 Fan 3	OK	40%	6528 RPM
Fan Tray 3 Fan 0	OK	40%	7552 RPM
Fan Tray 3 Fan 1	OK	40%	6528 RPM
Fan Tray 3 Fan 2	OK	40%	7296 RPM
Fan Tray 3 Fan 3	OK	40%	6656 RPM

show chassis fan (MX204 Router)

```
user@host> show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 0	OK	40%	9344 RPM
Fan Tray 0 Fan 1	OK	40%	8576 RPM
Fan Tray 1 Fan 0	OK	40%	9344 RPM
Fan Tray 1 Fan 1	OK	40%	8832 RPM
Fan Tray 2 Fan 0	OK	40%	9344 RPM
Fan Tray 2 Fan 1	OK	40%	8576 RPM

show chassis fan (MX10008 Router)

```

user@host> show chassis fan

```

Item	Status	RPM	Measurement
Fan Tray 0 Fan 0	OK	9750	Spinning at normal speed
Fan Tray 0 Fan 1	OK	9750	Spinning at normal speed
Fan Tray 0 Fan 2	OK	9900	Spinning at normal speed
Fan Tray 0 Fan 3	OK	9600	Spinning at normal speed
Fan Tray 0 Fan 4	Failed		
Fan Tray 0 Fan 5	Failed		
Fan Tray 0 Fan 6	OK	9750	Spinning at normal speed
Fan Tray 0 Fan 7	OK	9750	Spinning at normal speed
Fan Tray 0 Fan 8	OK	9600	Spinning at normal speed
Fan Tray 0 Fan 9	OK	9600	Spinning at normal speed
Fan Tray 0 Fan 10	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 0	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 1	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 2	OK	9750	Spinning at normal speed
Fan Tray 1 Fan 3	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 4	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 5	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 6	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 7	OK	9750	Spinning at normal speed
Fan Tray 1 Fan 8	OK	9750	Spinning at normal speed
Fan Tray 1 Fan 9	OK	9600	Spinning at normal speed
Fan Tray 1 Fan 10	OK	9600	Spinning at normal speed

show chassis fan (ACX4000 Router)

```

user@host > show chassis fan

```

Item	Status	RPM	Measurement
Fan 1	OK	4140	Spinning at normal speed
Fan 2	OK	4200	Spinning at normal speed

show chassis fan (ACX5048 Router)

```

user@host > show chassis fan

```

Item	Status	RPM	Measurement
FPC 0 Tray 0 Fan 0	OK	18305	Spinning at normal speed
FPC 0 Tray 0 Fan 1	OK	15743	Spinning at normal speed
FPC 0 Tray 1 Fan 0	OK	18305	Spinning at normal speed
FPC 0 Tray 1 Fan 1	OK	15606	Spinning at normal speed
FPC 0 Tray 2 Fan 0	OK	19014	Spinning at normal speed
FPC 0 Tray 2 Fan 1	OK	16167	Spinning at normal speed
FPC 0 Tray 3 Fan 0	OK	18947	Spinning at normal speed
FPC 0 Tray 3 Fan 1	OK	16265	Spinning at normal speed
FPC 0 Tray 4 Fan 0	OK	18120	Spinning at normal speed
FPC 0 Tray 4 Fan 1	OK	15743	Spinning at normal speed

show chassis fan (QFX5100 Switch and OCX Series)

```

user@switch > show chassis fan

```

Item	Status	RPM	Measurement
FPC 0 Tray 0 Fan 0	OK	6428	Spinning at normal speed
FPC 0 Tray 0 Fan 1	OK	5515	Spinning at normal speed
FPC 0 Tray 1 Fan 0	OK	6360	Spinning at normal speed
FPC 0 Tray 1 Fan 1	OK	5532	Spinning at normal speed

show chassis fan (EX9251 switches)

```
user@switch > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 0	OK	40%	9600 RPM
Fan Tray 0 Fan 1	OK	40%	8832 RPM
Fan Tray 1 Fan 0	OK	40%	9728 RPM
Fan Tray 1 Fan 1	OK	40%	9088 RPM
Fan Tray 2	Absent		

show chassis fan (EX9253 switches)

```
user@switch > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 0	OK	40%	7552 RPM
Fan Tray 0 Fan 1	OK	40%	6272 RPM
Fan Tray 0 Fan 2	OK	40%	7552 RPM
Fan Tray 0 Fan 3	OK	40%	6272 RPM
Fan Tray 1 Fan 0	OK	40%	7552 RPM
Fan Tray 1 Fan 1	OK	40%	6272 RPM
Fan Tray 1 Fan 2	OK	40%	7552 RPM
Fan Tray 1 Fan 3	OK	40%	6272 RPM
Fan Tray 2 Fan 0	OK	40%	7552 RPM
Fan Tray 2 Fan 1	OK	40%	6400 RPM
Fan Tray 2 Fan 2	OK	40%	7552 RPM
Fan Tray 2 Fan 3	OK	40%	6272 RPM
Fan Tray 3 Fan 0	OK	40%	7552 RPM
Fan Tray 3 Fan 1	OK	40%	6400 RPM
Fan Tray 3 Fan 2	OK	40%	7552 RPM
Fan Tray 3 Fan 3	OK	40%	6272 RPM

show chassis hardware

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Syntax	<pre>show chassis hardware <detail extensive> <clei-models> <models></pre>
Syntax (EX Series)	<pre>show chassis hardware <clei-models> <detail extensive> <models> <satellite [slot-id slot-id device-alias alias-name]></pre>
Syntax (T4000 Router)	<pre>show chassis hardware <clei-models> <detail extensive> <models></pre>
Syntax (TX Matrix Router)	<pre>show chassis hardware <clei-models> <detail extensive> <models> <lcc number scc></pre>
Syntax (TX Matrix Plus Router)	<pre>show chassis hardware <clei-models> <detail extensive> <models> <lcc number sfc number></pre>
Syntax (MX Series Routers)	<pre>show chassis hardware <detail extensive> <clei-models> <models></pre>

	<pre> <all-members> <local> <member <i>member-id</i>> </pre>
Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms)	<pre> show chassis hardware <clei-models> <detail extensive> <models> <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]> </pre>
Syntax (QFX Series)	<pre> show chassis hardware <detail extensive> <clei-models> <interconnect-device <i>name</i>> <node-device <i>name</i>> <models> </pre>
Syntax (OCX Series)	<pre> show chassis hardware <detail extensive> <clei-models> <models> </pre>
Syntax (PTX Series Packet Transport Routers)	<pre> show chassis hardware <detail extensive> <clei-models> <models> </pre>
Syntax (ACX Series Universal Metro Routers)	<pre> show chassis hardware <detail extensive> <clei-models> <models> </pre>
Syntax (ACX5048 and ACX5096 Routers)	<pre> show chassis hardware <detail extensive> <clei-models> <models> </pre>
Syntax (ACX500 Routers)	<pre> show chassis hardware <detail extensive> <clei-models> <models> </pre>
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 in Junos OS Release 9.6 for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p>

Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.

Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

Information for **disk** and **usb** introduced in Junos OS Release 15.1X53-D60 for QFX10002, QFX10008, and QFX10016 switches.

Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.

Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.

Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.

Command introduced in Junos OS Release 17.4 for MX204 Routers.

Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.

Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Command introduced in Junos OS Release 18.2R1 for MX10008 Routers

Description Display a list of all Flexible PIC Concentrators (FPCs) and PICs installed in the router or switch chassis, including the hardware version level and serial number.

In the EX Series switch command output, FPC refers to the following:

- On EX2200 switches, EX3200 switches, EX4200 standalone switches, and EX4500 switches—Refers to the switch; FPC *number* is always 0.
- On EX4200 switches in a Virtual Chassis configuration—Refers to the member of a Virtual Chassis; FPC *number* equals the member ID, from 0 through 9.
- On EX8208 and EX8216 switches—Refers to a line card; FPC *number* equals the slot number for the line card.

On QFX3500, QFX5100, and OCX Series standalone switches, and PTX1000 routers both the FPC and FPC *number* are always 0.

On T4000 Type 5 FPCs, there are no **top temperature sensor** or **bottom temperature sensor** parameters. Instead, **fan intake temperature sensor** and **fan exhaust temperature sensors** parameters are displayed.

Starting from Junos OS Release 11.4, the output of the **show chassis hardware models** operational mode command displays the enhanced midplanes FRU model numbers (CHAS-BP3-MX240-S, CHAS-BP3-MX480-S or CHAS-BP3-MX960-S) based on the router. Prior to release 11.4, the FRU model numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through the Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 14.1, the output of the **show chassis hardware detail | extensive | clei-models | models** operational mode command displays the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-P1A) and other components in a PTX5000 Packet Transport Router.

- Options** **none**—Display information about hardware. For a TX Matrix router, display information about the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display information about the TX Matrix Plus router and its attached routers.
- clei-models**—(Optional) Display Common Language Equipment Identifier (CLEI) barcode and model number for orderable field-replaceable units (FRUs).
- detail**—(Optional) Include RAM and disk information in output.
- extensive**—(Optional) Display ID EEPROM information.
- all-members**—(MX Series routers only) (Optional) Display hardware-specific information for all the members of the Virtual Chassis configuration.
- interconnect-device *name***—(QFabric systems only) (Optional) Display hardware-specific information for the Interconnect device.
- lcc *number***—(TX Matrix routers and TX Matrix Plus router only) (Optional) On a TX Matrix router, display hardware information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display hardware information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.
- Replace *number* with the following values depending on the LCC configuration:
- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
 - 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
 - 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
 - 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- local**—(MX Series routers only) (Optional) Display hardware-specific information for the local Virtual Chassis members.
- member *member-id***—(MX Series routers and EX Series switches) (Optional) Display hardware-specific information for the specified member of the Virtual Chassis configuration. Replace *member-id* variable with a value 0 or 1.
- models**—(Optional) Display model numbers and part numbers for orderable FRUs and, for components that use ID EEPROM format v2, the CLEI code.
- node-device *name***—(QFabric systems only) (Optional) Display hardware-specific information for the Node device.
- satellite [*slot-id slot-id* | *device-alias alias-name*]**—(Junos Fusion only) (Optional) Display hardware information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix router only) (Optional) Display hardware information for the TX Matrix router (switch-card chassis).

sfc number—(TX Matrix Plus router only) (Optional) Display hardware information for the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

Additional Information The **show chassis hardware detail** command now displays DIMM information for the following Routing Engines, as shown in [Table 15 on page 363](#).

Table 15: Routing Engines Displaying DIMM Information

Routing Engines	Routers
RE-S-1800x2 and RE-S-1800x4	MX240, MX480, and MX960 routers
RE-A-1800x2	M120 and M320 routers

In Junos OS Release 11.4 and later, the output for the **show chassis hardware models** operational mode command for MX Series routers display the enhanced midplanes FRU model numbers—CHAS-BP3-MX240-S, CHAS-BP3-MX480-S, or CHAS-BP3-MX960-S—based on the router. In releases before Junos OS Release 11.4, the FRU model numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 17.3R1, the output of the **show chassis hardware** command displays the mode in which vMX is running (performance mode or lite mode) in the part number field for the FPC. **RIOT-PERF** indicates performance mode and **RIOT-LITE** indicates lite mode.

Required Privilege Level view

Related Documentation

- [show chassis power](#)

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Output Fields [Table 16 on page 368](#) lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.

Table 16: 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. (MX Series routers and EX Series switches)—Information about the backplane, Routing Engine, Power Entry Modules (PEMs), and fan trays. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs), Modular Port Concentrators (MPCs) and associated Modular Interface Cards (MICs), or Dense Port Concentrators (DPCs). MX80 routers have a single Routing Engine and a built-in Packet Forwarding Engine that attaches directly to MICs. The Packet Forwarding Engine has two “pseudo” FPCs (FPC 0 and FPC1). MX80 routers also have a Forwarding Engine Board (FEB). MX104 routers have a built-in Packet forwarding Engine and a Forwarding Engine Board (FEB). The Packet Forwarding Engine of the MX104 router has three “pseudo” FPCs (FPC0, FPC1, and FPC2). (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, Pseudo CB, Routing Engine, power supplies, fan trays, Interconnect devices, and Node devices. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs). (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, MX2020, and MX2008 routers)—Information about the chassis, midplane, craft interface (FPM), power midplane (PMP), Power Supply Modules (PSMs), Power Distribution Modules (PDMs), Routing Engines, Control Boards (CBs) and Switch Processor Mezzanine Boards (SPMBs), Switch Fabric Boards (SFBs), Flexible PIC Concentrators (FPCs), PICs, adapter cards (ADCs) and fan trays. (vMX routers)—Information about the chassis, midplane, Routing Engines, and Control Boards (CBs). Also displays information about Flexible PIC Concentrators (FPCs) and associated Modular Interface Cards (MICs) and Physical Interface Cards (PICs). 	All levels
Version	Revision level of the chassis component.	All levels
Part number	Part number of the chassis component.	All levels

Table 16: show chassis hardware Output Fields (continued)

Field Name	Field Description	Level of Output
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>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) • 2x Serial—Dual-port serial PIM • 2x T1—Dual-port T1 PIM • 2x E1—Dual-port E1 PIM • 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) 	All levels

Table 16: show chassis hardware Output Fields (continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> • 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). • MPC4E—Fixed configuration MPC4E that is available in two flavors: MPC4E-3D-32XGE-SFP and MPC4E-3D-2CGE-8XGE on MX2020, MX960, MX480, and MX240 routers. • 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   710-016845   BA0909120112  EX8216
Midplane      REV 06   710-020771   AX0109197723  EX8216-MP
CB 0          REV 22   710-020771   AX0109197723  EX8216-RE320
CB 1          REV 22   710-020771   AX0109197726  EX8216-RE320
Routing Engine 1  BUILTIN BUILTIN      RE-EX8216

```

FPC 3	REV 19	710-020683	BC0109083125	EX8200-48F
CPU	REV 13	710-020598	BF0109144549	EX8200-CPU
FPC 4	REV 17	710-020683	BC0108500127	EX8200-48F
CPU	REV 10	710-020598	BF0108460510	EX8200-CPU
PIC 0		BUILTIN	BUILTIN	48x 100 Base-QFX/1000
Base-X				
Xcvr 1	REV 01	740-011613	PE70V89	SFP-SX
Xcvr 11	REV 01	740-011613	PE70YCE	SFP-SX
Xcvr 12	REV 01	740-011613	PE70VSH	SFP-SX
Xcvr 13	REV 01	740-011613	E08C02063	SFP-SX
Xcvr 14	REV 01	740-011613	PE70VKU	SFP-SX
Xcvr 15	REV 01	740-011613	E08E03372	SFP-SX
Xcvr 21	REV 01	740-011613	PE70VAD	SFP-SX
Xcvr 22	REV 01	740-011613	E08E01228	SFP-SX
Xcvr 23	REV 01	740-011613	PE70VSL	SFP-SX
Xcvr 24	REV 01	740-011613	E08E03409	SFP-SX
Xcvr 25	REV 01	740-011613	PE70VL4	SFP-SX
Xcvr 26	REV 01	740-011613	PDQ4L2Z	SFP-SX
Xcvr 27	REV 01	740-011613	PE70WFK	SFP-SX
Xcvr 28	REV 01	740-011782	PBD2B5U	SFP-SX
Xcvr 29	REV 01	740-011613	PE70UQX	SFP-SX
Xcvr 30	REV 01	740-011613	PE70VL5	SFP-SX
Xcvr 31	REV 01	740-011613	PE70VOF	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	PE70VOL	SFP-SX
Xcvr 35	REV 01	740-011613	E08E03390	SFP-SX
Xcvr 36	REV 01	740-011613	PDQ4VL9	SFP-SX
Xcvr 37	REV 01	740-011613	E08E03370	SFP-SX
Xcvr 38	REV 01	740-011613	E08E03362	SFP-SX
Xcvr 39	REV 01	740-011613	E08C02065	SFP-SX
Xcvr 40	REV 01	740-011613	E08E03405	SFP-SX
Xcvr 41	REV 01	740-011613	E08E03411	SFP-SX
Xcvr 43	REV 01	740-011613	E08C02171	SFP-SX
Xcvr 45	REV 01	740-011613	E08E03410	SFP-SX
FPC 13	REV 16	710-016837	BB0109051344	EX8200-8XS
CPU				
SIB 0	REV 10	710-021613	AY0109166244	EX8216-SF320
SIB 1	REV 10	710-021613	AY0109166357	EX8216-SF320
SIB 2	REV 10	710-021613	AY0109166362	EX8216-SF320
SIB 3	REV 10	710-021613	AY0109166338	EX8216-SF320
SIB 4	REV 10	710-021613	AY0109166350	EX8216-SF320
SIB 5	REV 10	710-021613	AY0109166365	EX8216-SF320
SIB 6	REV 10	710-021613	AY0109166361	EX8216-SF320
SIB 7	REV 10	710-021613	AY0109166399	EX8216-SF320
PSU 0	REV 17	740-021466	BG0709170003	EX8200-AC2K
PSU 1	REV 17	740-021466	BG0709170004	EX8200-AC2K
PSU 2	REV 17	740-021466	BG0709170020	EX8200-AC2K
PSU 3	REV 17	740-021466	BG0709170017	EX8200-AC2K
PSU 4	REV 17	740-021466	BG0709170008	EX8200-AC2K
PSU 5	REV 17	740-021466	BG0709170018	EX8200-AC2K
Top Fan Tray				
FTC 0	REV 4	760-022620	CX1209140212	EX8216-FT
FTC 1	REV 4	760-022620	CX1209140212	EX8216-FT
Bottom Fan Tray				
FTC 0	REV 4	760-022620	CX1209140211	EX8216-FT
FTC 1	REV 4	760-022620	CX1209140211	EX8216-FT
LCD 0	REV 04	710-025742	CE0109186919	EX8200 LCD

show chassis hardware clei-models (EX8216 Switch)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 08   710-016845
PSU 0         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 1         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 2         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 3         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 4         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 5         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
Top Fan Tray
Bottom Fan Tray

```

show chassis hardware clei-models (T1600 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 03   710-005608
FPM Display   REV 05   710-002897
CIP           REV 06   710-002895
PEM 0         Rev 07   740-017906  IPUPAC7KTA PWR-T1600-3-80-DC-S
PEM 1         Rev 18   740-002595  PWR-T-DC-S
SCG 0         REV 15   710-003423  SCG-T-S
Routing Engine 0 REV 08   740-014082  RE-A-2000-4096-S
Routing Engine 1 REV 07   740-014082  RE-A-2000-4096-S
CB 0          REV 05   710-007655  CB-T-S
CB 1          REV 03   710-017707  CB-T-S
FPC 0         REV 07   710-013558  T640-FPC2-E2
  PIC 0       REV 01   750-010618  PB-4GE-SFP
  PIC 1       REV 06   750-001900  PB-10C48-SON-SMSR
  PIC 2       REV 14   750-001901  PB-40C12-SON-SMIR
  PIC 3       REV 07   750-001900  PB-10C48-SON-SMSR
FPC 1         REV 06   710-013553  T640-FPC1-E2
  PIC 0       REV 08   750-001072  P-1GE-SX
  PIC 1       REV 10   750-012266  PB-4GE-TYPE1-SFP-IQ2
  PIC 2       REV 22   750-005634  PB-1CHOC12SMIR-QPP
FPC 2
  PIC 0       REV 16   750-007141  PC-10GE-SFP
  PIC 1       REV 06   750-015217  PC-8GE-TYPE3-SFP-IQ2
  PIC 2       REV 05   750-004695  PC-TUNNEL
  PIC 3       REV 17   750-009553  PC-40C48-SON-SFP
FPC 3         REV 01   710-010154  T640-FPC3-E
  PIC 0       REV 07   750-012793  PC-1XGE-TYPE3-XFP-IQ2
  PIC 1       REV 25   750-007141  PC-10GE-SFP
  PIC 2       REV 17   750-009553  PC-40C48-SON-SFP
  PIC 3       REV 32   750-003700  PC-10C192-SON-VSR
FPC 4         REV 16   710-013037  T1600-FPC4-ES
  PIC 1       REV 06   750-034781  PD-1CE-CFP
FPC 5         REV 02   710-013037  T1600-FPC4-ES
  PIC 0       REV 16   750-012518  PD-40C192-SON-XFP
  PIC 1       REV 01   750-010850  PD-10C768-SON-SR
FPC 6         REV 14   710-013037  T1600-FPC4-ES
  PIC 0       REV 11   750-017405  PD-4XGE-XFP
  PIC 1       REV 13   750-017405  PD-4XGE-XFP
FPC 7         REV 09   710-007529  T640-FPC3
  PIC 0       REV 10   750-012793  PC-1XGE-TYPE3-XFP-IQ2
  PIC 1       REV 01   750-015217  PC-8GE-TYPE3-SFP-IQ2

```


PIC 2	REV 01	750-015217	PC-8GE-TYPE3-SFP-IQ2
PIC 3	REV 15	750-009450	PC-10C192-SON-SR2
SIB 0	REV 07	710-013074	SIB-I-T1600-S
SIB 1	REV 07	710-013074	SIB-I-T1600-S
SIB 2	REV 07	710-013074	SIB-I-T1600-S
SIB 3	REV 07	710-013074	SIB-I-T1600-S
SIB 4	REV 07	710-013074	SIB-I-T1600-S
Fan Tray 0			FANTRAY-T-S
Fan Tray 1			FANTRAY-T-S
Fan Tray 2			FAN-REAR-TX-T640-S

show chassis hardware clei-models (PTX10008 Routers)

```

user@host> show chassis hardware clei-models
Hardware inventory:

```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 27	750-054097	CMMUM00ARA	QFX10008-CHAS
CB 0	REV 02	750-068820	CMUCAH3CTB	QFX10000-RE
CB 1	REV 02	750-068820	CMUCAH3CTB	QFX10000-RE
FPC 0	REV 36	750-051354	CMUIAM9BAA	QFX10000-36Q
PIC 0		BUILTIN		
FPC 1	REV 33	750-051354	CMUIAM9BAA	QFX10000-36Q
PIC 0		BUILTIN		
FPC 2	REV 32	750-051357	CMUIANABAA	QFX10000-30C
PIC 0		BUILTIN		
FPC 3	REV 35	750-051357	CMUIANABAA	QFX10000-30C
PIC 0		BUILTIN		
FPC 5	REV 08	750-068822	CMUIAM9BAB	QFX10000-36Q
PIC 0		BUILTIN		
FPC 6	REV 08	750-068822	CMUIAM9BAB	QFX10000-36Q
PIC 0		BUILTIN		
FPD Board	REV 07	711-054687		
Power Supply 0	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 1	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 2	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 3	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 4	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 5	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
Fan Tray 0	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN
Fan Tray 1	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN
SIB 0	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 1	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 2	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 3	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 4	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 5	REV 23	750-050058	CMUCAH0CAA	QFX10008-SF

show chassis hardware clei-models (PTX10016 Routers)

```

user@host> show chassis hardware clei-models
Hardware inventory:

```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 24	750-077138	CMMUN00ARA	JNP10016
CB 0	REV 04	711-065897	PROTOXCLEI	PROTO-ASSEMBLY
CB 1	REV 05	711-065897	PROTOXCLEI	PROTO-ASSEMBLY
FPC 2		BUILTIN		
PIC 0		BUILTIN		
FPC 4	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101

PIC 0		BUILTIN		
FPC 5	REV 13	750-068822	CMUIAM9BAC	QFX10000-36Q
PIC 0		BUILTIN		
FPC 6	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 7	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 8	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 9	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 10	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 11	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 13	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 15	REV 37	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
Power Supply 0	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 1	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 2	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 3	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 4	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 5	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 6	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 7	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 8	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 9	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Fan Tray 0				QFX5100-FAN-AFO
Fan Tray 1				QFX5100-FAN-AFO
SIB 0	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 1	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 2	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 3	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 4	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 5	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
FPD Board	REV 07	711-054687		

show chassis hardware (EX2300-C Switch)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
FPC 0          REV 04    650-059984  HV0215410003  EX2300-C-12P
  CPU          BUILTIN   BUILTIN     12x10/100/1000 Base-T
  PIC 0        REV 04    650-059984  HV0215410003  2x10G SFP/SFP+
    Xcvr 0     REV 01    740-021309  T09K00695     SFP+-10G-LR
    Xcvr 1     REV 01    740-030658  AD1146A05JT   SFP+-10G-USR
Power Supply 0
JPSU-170W-AC

```

show chassis hardware (EX2300 Switch)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description

```

Chassis		JY0215410033	EX2300-24P
Pseudo CB 0			
Routing Engine 0	BUILTIN	BUILTIN	RE-EX2300-24P
FPC 0	REV 05	650-059968	JY0215410033
CPU		BUILTIN	BUILTIN
PIC 0	REV 05	BUILTIN	BUILTIN
PIC 1	REV 05	650-059968	JY0215410033
Xcvr 0	REV 01	740-030658	AD1125A03ES
Xcvr 1	REV 01	740-021308	AJP0TDZ
Xcvr 3	REV 01	740-021309	A9401FL
Power Supply 0			JPSU-450W-AC-AFO
Fan Tray 0	(AFO)		Fan Module, Airflow Out
Fan Tray 1	(AFO)		Fan Module, Airflow Out

show chassis hardware detail (EX4200 Switch)

```
user@host> show chassis hardware detail
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			BM0208327733	EX4200-24T
Routing Engine 0	REV 11	750-021256	BM0208327733	EX4200-24T, 8 POE
Routing Engine 0			BM0208327733	EX4200-24T, 8 POE
FPC 0	REV 11	750-021256	BM0208327733	EX4200-24T, 8 POE
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	24x 10/100/1000 Base-T
PIC 1	REV 03B	711-021270	AR0208162285	4x GE SFP
BRD	REV 08	711-021264	AK0208328289	EX4200-24T, 8 POE
Power Supply 0	REV 03	740-020957	AT0508346354	PS 320W AC
Fan Tray				Fan Tray

show chassis hardware (EX4300 Switch)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			PD3713160055	EX4300-48P
Routing Engine 0	REV 04	650-044930	PD3713160055	EX4300-48P
FPC 0	REV 04	650-044930	PD3713160055	EX4300-48P
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0	REV 04	BUILTIN	BUILTIN	48x 10/100/1000 Base-T
PIC 1	REV 04	BUILTIN	BUILTIN	4x 40GE
Power Supply 0	REV 01	740-046871	1EDA3090026	JPSU-1100-AC-AFO-A
Fan Tray 0	(AFO)			Fan Module, Airflow Out
Fan Tray 1	(AFO)			Fan Module, Airflow Out

show chassis hardware models (EX4500 Switch)

```
user@host> show chassis hardware models
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Routing Engine 0	REV 01	750-035700	GG0210271867	EX4500-40F-FB-C
FPC 0	REV 01	750-035700	GG0210271867	EX4500-40F-FB-C
PIC 0		BUILTIN	BUILTIN	EX4500-40F-FB-C
Power Supply 1	REV 01	740-029654	H884FS00JC09	EX4500-PWR1-AC-FB

show chassis hardware detail (EX9200 Switch)

```
user@switch> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN111DA44RFB	EX9208
Midplane	REV 05	710-017414	TS2912	EX9208-BP
FPM Board	REV 02	710-017254	XN1804	Front Panel Display
PEM 0	Rev 01	740-022697	QCS0906C033	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 01	740-022697	QCS0906C095	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 08	740-031116	9009122883	RE-S-EX9200-1800X4
CB 0	REV 16	750-031391	CAAW4391	EX9200-SCBEF
PC 0	REV 07	750-049612	CABJ9312	EX9200 40x1G Copper
CPU	REV 04	711-038484	CABH8268	MPCE PMB 2G
MIC 0	REV 02	750-049607	CABT9623	40x 1GE RJ45
PIC 0		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 1		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 2		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 3		BUILTIN	BUILTIN	10x 1GE RJ45
FPC 1	REV 10	710-013699	CAAN3529	EX9200-40x1G-SFP
CPU	REV 04	711-038484	CAAL7608	MPCE PMB 2G
MIC 0	REV 26	750-028392	CAAS5151	20x 1GE SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE SFP
PIC 1		BUILTIN	BUILTIN	10x 1GE SFP
MIC 1	REV 26	750-028392	CAAC8006	20x 1GE SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 8	REV 01	740-011613	E08L03674	SFP-SX
Xcvr 9	REV 01	740-011613	E08M00243	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE SFP
FPC 3	REV 10	710-013699	CAAR5261	EX9200-40x1G-SFP
CPU	REV 04	711-038484	CAAS2118	MPCE PMB 2G
MIC 0	REV 26	750-028392	CAAS5067	20x 1GE SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 2	REV 01	740-031851	PNA7L8U	SFP-SX
Xcvr 3	REV 02	740-011613	AM0943SEKGZ	SFP-SX
Xcvr 4	REV 02	740-011613	AM0943SEJZ9	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE SFP
MIC 1	REV 26	750-028392	CAAS5132	20x 1GE SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 4	REV 01	740-011613	E08D02625	SFP-SX
Xcvr 9	REV 02	740-011613	PJH4RD9	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 0	REV 01	740-011613	AM0813S8YME	SFP-SX
Fan Tray				Left Fan Tray

show chassis hardware detail (EX9251 Switch)

```
user@switch> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			BLANK	EX9251
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 05	750-069579	CAGT1382	EX9251
FPC 0		BUILTIN	BUILTIN	MPC
PIC 0		BUILTIN	BUILTIN	4XSFP28 PIC
Xcvr 0	REV 01	740-044512	APF14500007NHC	QSFP+-40G-CU50CM
Xcvr 2	REV 01	740-046565	QH21035H	QSFP+-40G-SR4

PIC 1		BUILTIN	BUILTIN	8XSFP PIC
Xcvr 0	REV 01	740-031980	AA15393URH7	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AA162832LVG	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	MXA0NKJ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	MXA0K75	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	MXA138L	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	13T511102684	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	MXA138E	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	MXA152N	SFP+-10G-SR
PEM 0	REV 02	740-070749	1F186390060	AC AFO 650W PSU
PEM 1	REV 02	740-070749	1F186390045	AC AFO 650W PSU
Fan Tray 0				Fan Tray, Front to Back
Airflow - AFO				
Fan Tray 1				Fan Tray, Front to Back
Airflow - AFO				

show chassis hardware detail (EX9253 Switch)

```
user@switch> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN126145CJCB	EX9253
Midplane	REV 06	750-074276	CAJE4108	Midplane 2
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 24	750-067071	CAJF6414	Control Board
Mezz	REV 14	711-066896	CAJF6327	Control Mezz Board
CB 1	REV 24	750-067071	CAJF6398	Control Board
Mezz	REV 14	711-066896	CAJF6314	Control Mezz Board
FPC 0	REV 19	750-066879	CAJD1692	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
Xcvr 0	REV 01	740-054053	QH20019A	QSFP+-4X10G-SR
PIC 1	REV 15	750-068806	CAJD1416	MIC1
Xcvr 0	REV 01	740-061405	1ECQ1151163	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-061405	1ECQ11511AK	QSFP-100GBASE-SR4
Xcvr 2	REV 01	740-032986	QB160112	QSFP+-40G-SR4
FPC 1	REV 19	750-066879	CAJD1685	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
PIC 1	REV 15	750-068806	CAJD1393	MIC1
Xcvr 0	REV 01	740-032986	QB120887	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QD465034	QSFP+-40G-SR4
Xcvr 2	REV 01	740-052009	UWE2CBQ	QSFP+-40G-LR4
Xcvr 4	REV 01	740-032986	QB120701	QSFP+-40G-SR4
PEM 0	REV 01	740-066937	1HS17070027	JNP-PWR1600-AC
PEM 1	REV 01	740-066937	1HS17070151	JNP-PWR1600-AC
PEM 4	REV 01	740-066937	1HS17070090	JNP-PWR1600-AC
PEM 5	REV 01	740-066937	1HS16480119	JNP-PWR1600-AC
Fan Tray 0	REV 08	760-069329	CAJF6944	JNP FAN 3RU
Fan Tray 1	REV 08	760-069329	CAJF6863	JNP FAN 3RU
Fan Tray 2	REV 08	760-069329	CAJF6891	JNP FAN 3RU
Fan Tray 3	REV 08	760-069329	CAJF6937	JNP FAN 3RU

show chassis hardware detail (PTX10008 Routers)

```
user@switch> show chassis hardware detail

Hardware inventory:
```

Item	Version	Part number	Serial number	Description
------	---------	-------------	---------------	-------------

Chassis			DE487	JNP10008 [PTX10008 -
PILOT BUILD V1.1]				
Midplane	REV 27	750-054097	ACPD4307	Midplane 8
Routing Engine 0		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB	QEMU		QM00002	Virtio Block Disk
usb0 (addr 0.1)	EHCI root HUB 0		Intel	uhub0
usb1 (addr 0.2)	product 0x0020 32		vendor 0x8087	uhub1
Routing Engine 1		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB	QEMU		QM00002	Virtio Block Disk
usb0 (addr 0.1)	EHCI root HUB 0		Intel	uhub0
usb1 (addr 0.2)	product 0x0020 32		vendor 0x8087	uhub1
CB 0	REV 02	750-068820	ACNZ4440	Control Board
CB 1	REV 02	750-068820	ACNZ8284	Control Board
FPC 0	REV 36	750-051354	ACNP4679	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058734	1ECQ113834D	QSFP-100GBASE-SR4
Xcvr 5	REV 01	740-058734	1ECQ1137067	QSFP-100GBASE-SR4
Xcvr 6	REV 01	740-054053	QF3205SD	QSFP+-4X10G-SR
Xcvr 7	REV 01	740-058734	1ECQ11381MP	QSFP-100GBASE-SR4
Xcvr 11	REV 01	740-061405	1ACQ110507K	QSFP-100GBASE-SR4
Xcvr 13	REV 01	740-058734	1ECQ11390ZB	QSFP-100GBASE-SR4
Xcvr 17	REV 01	740-058734	1ECQ11381M1	QSFP-100GBASE-SR4
Xcvr 19	REV 01	740-058734	1ECQ11381JS	QSFP-100GBASE-SR4
Xcvr 23	REV 01	740-058734	1ACQ112000E	QSFP-100GBASE-SR4
Xcvr 25	REV 01	740-058734	1ECQ11381NT	QSFP-100GBASE-SR4
Xcvr 28	REV 01	740-054053	QG1502WV	QSFP+-4X10G-SR
Xcvr 29	REV 01	740-058734	1ACQ112000D	QSFP-100GBASE-SR4
Xcvr 33	REV 01	740-058734	1ACQ1134065	QSFP-100GBASE-SR4
Xcvr 34	REV 01	740-067442	XV20L4L	QSFP+-40G-SR4
FPC 1	REV 33	750-051354	ACNX8831	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 5		NON-JNPR	37700171YY0084	QSFP-100GBASE-LR4
Xcvr 25		NON-JNPR	GDA2017459	QSFP-100GBASE-LR4
Xcvr 29		NON-JNPR	GDF2008750	QSFP-100GBASE-LR4
FPC 2	REV 32	750-051357	ACPB0341	LC1101 - 30C / 30Q / 96X
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	30x100GE/30x40GE/96x10GE
Xcvr 0		NON-JNPR	37700170YZC305	QSFP-100GBASE-LR4
Xcvr 4		NON-JNPR	37700170YZC306	QSFP-100GBASE-LR4
Xcvr 9	REV 01	740-054053	QF36013S	QSFP+-4X10G-SR
Xcvr 12	REV 01	740-067442	XV301AU	QSFP+-40G-SR4
Xcvr 14	REV 01	740-043308	UWE2CG9	QSFP+-40G-LR4
Xcvr 16	REV 01	740-043308	UWH141S	QSFP+-40G-LR4
Xcvr 17	REV 01	740-058734	1ECQ11180VH	QSFP-100GBASE-SR4
Xcvr 18	REV 01	740-054050	INF AJ0492237	QSFP+-4X10G-LR
Xcvr 26	REV 01	740-058734	1ACQ111803N	QSFP-100GBASE-SR4
Xcvr 27	REV 01	740-058734	1ACQ113405S	QSFP-100GBASE-SR4
FPC 3	REV 35	750-051357	ACPD2186	LC1101 - 30C / 30Q / 96X

CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 30x100GE/30x40GE/96x10GE
Xcvr 0	REV 01	740-061409	1GCQA1470A3	QSFP-100GBASE-LR4-T2
Xcvr 1	REV 01	740-061409	1GCQA1470XC	QSFP-100GBASE-LR4-T2
Xcvr 7		NON-JNPR	FG4550500008	QSFP-100G-CWDM4
Xcvr 24	REV 01	740-058734	1ECQ11381LX	QSFP-100GBASE-SR4
Xcvr 29	REV 01	740-043308	UWE0UYS	QSFP+-40G-LR4
FPC 5	REV 08	750-068822	ACPF0057	LC1102 - 12C / 36Q /
144X				
CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 12x100GE/36x40GE/144x10GE
FPC 6	REV 08	750-068822	ACPE9951	LC1102 - 12C / 36Q /
144X				
CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-054053	QF3208LG	QSFP+-4X10G-SR
Xcvr 7	REV 01	740-067442	XV20LGN	QSFP+-40G-SR4
Xcvr 8	REV 01	740-067442	XV20VMV	QSFP+-40G-SR4
Xcvr 9	REV 01	740-067442	XV20KCN	QSFP+-40G-SR4
Xcvr 10	REV 01	740-067442	XU504QD	QSFP+-40G-SR4
Xcvr 11	REV 01	740-067442	XU504X7	QSFP+-40G-SR4
Xcvr 12	REV 01	740-067442	XU504W8	QSFP+-40G-SR4
Xcvr 16	REV 01	740-032986	QF4301JP	QSFP+-40G-SR4
Xcvr 17	REV 01	740-032986	QF4303AE	QSFP+-40G-SR4
Xcvr 18	REV 01	740-054050	INF4J0492400	QSFP+-4X10G-LR
Xcvr 19	REV 01	740-054050	INF4J0492142	QSFP+-4X10G-LR
Xcvr 24	REV 01	740-032986	QF4301KB	QSFP+-40G-SR4
Xcvr 25	REV 01	740-032986	QF4303YP	QSFP+-40G-SR4
Xcvr 30	REV 01	740-067442	XV300ZX	QSFP+-40G-SR4
Xcvr 31	REV 01	740-043308	UWH2KBW	QSFP+-40G-LR4
Xcvr 34	REV 01	740-054053	QG1501YU	QSFP+-4X10G-SR
FPD Board	REV 07	711-054687	ACPC7142	Front Panel Display
Power Supply 0	REV 02	740-049388	1EDL62102N9	Power Supply AC
Power Supply 1	REV 02	740-049388	1EDL60300KX	Power Supply AC
Power Supply 2	REV 02	740-049388	1EDL60300DL	Power Supply AC
Power Supply 3	REV 02	740-049388	1EDL61701BT	Power Supply AC
Power Supply 4	REV 02	740-049388	1EDL62102P7	Power Supply AC
Power Supply 5	REV 02	740-049388	1EDL62102PP	Power Supply AC
FTC 0	REV 14	750-050108	ACPE4038	Fan Controller 8
FTC 1	REV 14	750-050108	ACPE4032	Fan Controller 8
Fan Tray 0	REV 09	760-054372	ACPD6799	Fan Tray 8
Fan Tray 1	REV 09	760-054372	ACNZ3584	Fan Tray 8
SIB 0	REV 24	750-050058	ACPD4587	Switch Fabric 8
SIB 1	REV 24	750-050058	ACNZ0635	Switch Fabric 8
SIB 2	REV 24	750-050058	ACPD4908	Switch Fabric 8
SIB 3	REV 24	750-050058	ACNZ0617	Switch Fabric 8
SIB 4	REV 24	750-050058	ACNZ0527	Switch Fabric 8
SIB 5	REV 23	750-050058	ACNX6980	Switch Fabric 8

show chassis hardware detail (PTX10016 Routers)

```
user@switch> show chassis hardware detail
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			DH995	JNP10016 [PTX10016]
Midplane	REV 22	750-056555	ACPM7810	Midplane 16
Routing Engine 0		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk

vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB QEMU			QM00002	Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0			Intel	uhub0
usb1 (addr 0.2) product 0x0020 32			vendor 0x8087	uhub1
Routing Engine 1		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB QEMU			QM00002	Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0			Intel	uhub0
usb1 (addr 0.2) product 0x0020 32			vendor 0x8087	uhub1
CB 0	REV 03	750-068820	ACPL7238	Control Board
CB 1	REV 03	750-068820	ACPL7298	Control Board
FPC 1	REV 36	750-077140	ACNP4590	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-054053	QF3600AV	QSFP+-4X10G-SR
Xcvr 35	REV 01	740-061405	1ACQ110507K	QSFP-100GBASE-SR4
FPC 3	REV 07	750-071975	CAHA2224	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-054053	QG1505YM	QSFP+-4X10G-SR
Xcvr 11		NON-JNPR	GDA2017459	QSFP-100GBASE-LR4
Xcvr 35		NON-JNPR	GDF2008750	QSFP-100GBASE-LR4
FPC 5	REV 13	750-068822	ACPD6501	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058734	1ECQ11381LA	QSFP-100GBASE-SR4
Xcvr 2	REV 01	740-043308	UWH141S	QSFP+-40G-LR4
Xcvr 3	REV 01	740-043308	UWE2CG9	QSFP+-40G-LR4
FPC 6	REV 37	750-077140	ACNS2793	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-032986	QH0400VH	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QH0400VM	QSFP+-40G-SR4
Xcvr 35	REV 01	740-058734	1ECQ11390ZB	QSFP-100GBASE-SR4
FPC 8	REV 36	750-077140	ACNP4625	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058732	1AMQA14206D	QSFP-100GBASE-LR4
Xcvr 10	REV 01	740-032986	QF4301KB	QSFP+-40G-SR4
Xcvr 24	REV 01	740-054050	INFJA0492244	QSFP+-4X10G-LR
FPC 9	REV 35	750-071976	ACPD3055	LC1101 - 30C / 30Q / 96X
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	30x100GE/30x40GE/96x10GE
Xcvr 0		NON-JNPR	INGBT7970007	QSFP-100GBASE-LR4
Xcvr 1		NON-JNPR	UWQ24D9	QSFP-100GBASE-LR4
Xcvr 2		NON-JNPR	INGBT7970011	QSFP-100GBASE-LR4
Xcvr 3		NON-JNPR	UX60AF1	QSFP-100G-CWDM4
Xcvr 4		NON-JNPR	UX408JJ	QSFP-100GBASE-LR4

Xcvr 11	REV 01	740-058734	1ECQ113835F	QSFP-100GBASE-SR4
Xcvr 18		NON-JNPR	Q7496	QSFP-100G-CWDM4
Xcvr 29	REV 01	740-058734	1ECQ11380LZ	QSFP-100GBASE-SR4
Power Supply 0	REV 02	740-049388	1EDL625039E	Power Supply AC
Power Supply 1	REV 02	740-049388	1EDL62503AD	Power Supply AC
Power Supply 2	REV 02	740-049388	1EDL625039P	Power Supply AC
Power Supply 3	REV 02	740-049388	1EDL702004E	Power Supply AC
Power Supply 4	REV 02	740-049388	1EDL625039D	Power Supply AC
Power Supply 5	REV 02	740-049388	1EDL63706JD	Power Supply AC
Power Supply 6	REV 02	740-049388	1EDL63706JH	Power Supply AC
FTC 0	REV 10	750-050309	ACPM2918	Fan Controller 16
FTC 1	REV 10	750-050309	ACPE8185	Fan Controller 16
Fan Tray 0	REV 10	760-077141	ACPV7288	Fan Tray 16
Fan Tray 1	REV 10	760-057901	ACPL0546	Fan Tray 16
SIB 0	REV 15	750-058270	ACPM2804	Switch Fabric 16
SIB 1	REV 15	750-058270	ACPM2808	Switch Fabric 16
SIB 2	REV 15	750-058270	ACPL4450	Switch Fabric 16
SIB 3	REV 15	750-058270	ACPJ9834	Switch Fabric 16
SIB 4	REV 15	750-058270	ACPM2814	Switch Fabric 16
SIB 5	REV 15	750-058270	ACPL4277	Switch Fabric 16
FPD Board	REV 07	711-054687	ACPL1407	Front Panel Display

show chassis hardware (M7i Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			31959	M7i
Midplane	REV 02	710-008761	CA0209	M7i Midplane
Power Supply 0	Rev 04	740-008537	PD10272	AC Power Supply
Routing Engine	REV 01	740-008846	1000396803	RE-5.0
CFEB	REV 02	750-009492	CA0166	Internet Processor IIV1
FPC 0				E-FPC
PIC 0	REV 04	750-003163	HJ6416	1x G/E, 1000 BASE-SX
PIC 1	REV 04	750-003163	HJ6423	1x G/E, 1000 BASE-SX
PIC 2	REV 04	750-003163	HJ6421	1x G/E, 1000 BASE-SX
PIC 3	REV 02	750-003163	HJ0425	1x G/E, 1000 BASE-SX
FPC 1				E-FPC
PIC 2	REV 01	750-009487	HM2275	ASP - Integrated
PIC 3	REV 01	750-009098	CA0142	2x F/E, 100 BASE-TX

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			B1157	M7i
Midplane	REV 05	710-008761	DM0840	M7i Midplane
Power Supply 0	Rev 08	740-008537	TE53755	AC Power Supply
Routing Engine	REV 07	740-011202	1000736567	RE-850
CFEB	REV 09	750-010463	DK6952	Internet Processor II
FPC 0				E-FPC
PIC 0	REV 12	750-012838	DL7993	4x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011614	PD94TDJ	SFP-LX10
Xcvr 1	REV 01	740-011615	PA05EER	UNSUPPORTED
Xcvr 2	REV 01	740-011614	PD94THU	SFP-LX10
Xcvr 3		NON-JNPR	PDC2E7A	SFP-LX10
PIC 1	REV 03	750-023116	JT0203	4x CHSTM1 SDH CE SFP
Xcvr 0	REV 01	740-012434	AGT063832PS	SFP-SR
Xcvr 1	REV 01	740-012434	AGT063832LY	SFP-SR
Xcvr 3	REV 01	740-016064	C06J19018	SFP-LR
PIC 2	REV 15	750-014895	DM5757	MultiServices 100
PIC 3	REV 01	750-025390	JW9448	12x T1/E1 CE
FPC 1				E-FPC

PIC 2		BUILTIN	BUILTIN	1x Tunnel
PIC 3	REV 09	750-009099	DM0899	1x G/E, 1000 BASE
Xcvr 0	REV 01	740-012434	AGT07150HGJ	UNSUPPORTED
Fan Tray				Rear Fan Tray

show chassis hardware (M10 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			1122	M10
Midplane	REV 1.1	710-001950	S/N AC6626	
Power supply A	Rev 01	740-002497	S/N LC36095	AC
Power supply B	Rev 01	740-002497	S/N LC36100	AC
Display	REV 1.2	710-001995	S/N AC6656	
Host			18000005dfb3fb01	teknor
FEB	REV 01	710-001948	S/N AC6632	Internet Processor II
FPC 0				
PIC 0	REV 08	750-001072	S/N AB2485	1x G/E, 1000 BASE-SX
PIC 1	REV 01	750-000613	S/N AA1048	1x OC-12 SONET, SMIR
FPC 1				
Fan Tray 0				FANTRAY-M10I-S
Fan Tray 1				FANTRAY-M10I-S

show chassis hardware models (M10 Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	710-008920		CHAS-MP-M10i-S
Power Supply 0	Rev 06	740-008537		PWR-M10i-M7i-AC-S
Power Supply 1	Rev 06	740-008537		PWR-M10i-M7i-AC-S
HCM 0	REV 03	710-010580		HCM-M10i-S
HCM 1	REV 03	710-010580		HCM-M10i-S
Routing Engine 0	REV 09	740-009459		RE-400-256-S
CFEB 0	REV 05	750-010465		FEB-M10i-M7i-S
FPC 0				
PIC 0	REV 10	750-002971		PE-40C3-SON-MM
PIC 1	REV 11	750-002992		PE-4FE-TX
PIC 2	REV 03	750-002977		PE-20C3-ATM-MM
PIC 3	REV 08	750-005724		PE-20C3-ATM2-MM
FPC 1				
PIC 2	REV 12	750-008425		PE-AS
PIC 3	REV 13	750-005636		PE-4CHDS3-QPP
Fan Tray 0				FANTRAY-M10I-S
Fan Tray 1				FANTRAY-M10I-S

show chassis hardware (M20 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			20033	M20
Backplane	REV 07	710-001517	S/N AA7940	
Power supply B	Rev 01	740-001465	S/N 000001	AC
Display	REV 02	710-001519	S/N AA9704	
Host 0			98000004f8f27501	teknor
SSB slot 0	REV 01	710-001951	S/N AD5905	Internet Processor II
SSRAM bank 0	REV 01	710-001385	S00480	2 MB
SSRAM bank 1	REV 01	710-001385	S00490	2 MB

SSRAM bank 2	REV 01	710-001385	S001:?	2 MB
SSRAM bank 3	REV 01	710-001385	S00483	2 MB
SSB slot 1	N/A	N/A	N/A	Backup
FPC 1	REV 01	710-001292	S/N AB7528	
SSRAM	REV 01	710-000077	S/N 304209	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 000603	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 000414	64 MB
PIC 0	REV 03	750-000612	S/N AB8433	2x OC-3 ATM, MM
PIC 1	REV 01	750-000616	S/N AA1168	1x OC-12 ATM, MM
PIC 2	REV 01	750-000613	S/N AA1008	1x OC-12 SONET, SMIR
PIC 3	REV 01	750-002501	S/N AD5810	4x E3
FPC 2	REV 01	710-001292	S/N AC0119	
SSRAM	REV 01	710-000077	S/N 503241	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 306835	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 306832	64 MB
Fan Tray 0				Front Upper Fan Tray
Fan Tray 1				Front Middle Fan Tray
Fan Tray 2				Front Bottom Fan Tray
Fan Tray 3				Rear Fan Tray

show chassis hardware models (M20 Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Backplane	REV 03	710-002334		CHAS-MP-M20-S
Power Supply A	REV 06	740-001465		PWR-M20-AC-S
Display	REV 04	710-001519		CRAFT-M20-S
Routing Engine 0	REV 06	740-003239		RE-333-768-S
Routing Engine 1	REV 06	740-003239		RE-333-768-S
SSB 0	REV 02	710-001951		SSB-E-M20
SSB 1	N/A	N/A		
FPC 0	REV 03	710-003308		FPC-E
PIC 0	REV 08	750-002303		P-4FE-TX
PIC 1	REV 07	750-004745		P-2MCD53
PIC 2	REV 03	750-002965		PE-4CHDS3
FPC 1	REV 03	710-003308		FPC-E
PIC 0	REV 03	750-002914		P-2OC3-ATM-MM
Fan Tray 0				FANTRAY-F-M20-S
Fan Tray 1				FANTRAY-F-M20-S
Fan Tray 2				FANTRAY-F-M20-S
Fan Tray 3				FANTRAY-R-M20-S

show chassis hardware (M40 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Backplane	REV 02	710-000073	S/N AA0053	
Power supply A	Rev 2	740-000235	S/N 000042	DC
Maxicab	REV X1	710-000229	S/N AA0139	
Minicab	REV X1	710-000482	S/N AA0201	
Display	REV 06	710-000150	S/N AA0905	
Host				cpv5000
SCB	REV X1	710-000075	S/N AA0158	Internet Processor I
SSRAM bank 0	REV 02	710-000077	S/N AA2267	1 MB
SSRAM bank 1	REV 02	710-000077	S/N AA2270	1 MB
SSRAM bank 2	REV 02	710-000077	S/N AA2269	1 MB
SSRAM bank 3	REV 02	710-000077	S/N AA2268	1 MB
FPC 0	REV 01	710-000175	S/N AA0048	

SSRAM	REV 01	710-000077	S/N AA2333	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2332	64 MB
SDRAM bank 1	REV X1	710-000099	S/N AA2337	64 MB
PIC 0	REV 04	750-000613	S/N aa0343	1x OC-12 SONET, SMIR
PIC 1	REV 04	750-000613	S/N AA0379	1x OC-12 SONET, SMIR
PIC 2	REV 04	750-000613	S/N AA0377	1x OC-12 SONET, SMIR
PIC 3	REV 04	750-000613	S/N AA0378	1x Tunnel
FPC 2	REV 01	710-000175	S/N AA0042	
SSRAM	REV 02	710-000077	S/N AA2288	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2331	64 MB
SDRAM bank 1	REV 01	710-000099	S/N AA2330	64 MB
PIC 0	REV X1	750-000603	S/N AA0143	4x OC-3 SONET, SMIR
PIC 1	REV X1	750-000615	S/N AA0149	4x OC-3 SONET, MM
PIC 2	REV X1	750-000611	S/N AA0148	4x OC-3 SONET, MM
PIC 3	REV 04	750-000613	S/N AA0330	1x OC-12 SONET, SMIR
FPC 4	REV 01	710-000175	S/N AA0050	
SSRAM	REV 01	710-000077	S/N AA2327	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2329	64 MB
SDRAM bank 1	REV 01	710-000099	S/N AA2328	64 MB
PIC 0	REV 04	750-000613	S/N AA0320	1x OC-12 SONET, SMIR
PIC 2	REV 05	750-000616	S/N AA1341	1x OC-12 ATM, MM
PIC 3	REV 08	750-001072	S/N AB2462	1x G/E, 1000 BASE-SX
FPC 5	REV 10	710-000175	S/N AA7663	
SSRAM	REV 01	710-000077	S/N 501590	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 300949	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 300868	64 MB
PIC 1	REV 01	750-001323	S/N AB1670	1x Tunnel

show chassis hardware (M40e Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				m40e
Midplane	REV 01	710-005071	AX3671	
FPM CMB	REV 03	710-001642	AR9074	
FPM Display	REV 03	710-001647	AR7331	
CIP	REV 04	710-002649	BB4449	
PEM 0	Rev 01	740-003787	MC12364	Power Entry Module
PEM 1	Rev 01	740-003787	MC12383	Power Entry Module
PCG 0	REV 07	710-001568	AG1332	
PCG 1	REV 07	710-001568	AR3789	
Host 0			3e000007c8176601	Present
MCS 0	REV 11	710-001226	AN5813	
SFM 0 SPP	REV 07	710-001228	AG4676	
SFM 0 SPR	REV 05	710-002189	AE4735	Internet Processor II
SFM 1 SPP	REV 07	710-001228	AP1347	
SFM 1 SPR	REV 05	710-002189	BE0063	Internet Processor II
FPC 0	REV 01	710-011725	BE0669	M40e-EP-FPC Type 1
CPU	REV 01	710-004600	BD9504	
PIC 0	REV 03	750-003737	AY3991	4x G/E, 1000 BASE-SX
FPC 1	REV 01	710-005197	BD9842	M40e-FPC Type 2
CPU	REV 01	710-004600	BB4869	
PIC 0	REV 07	750-001900	AR8278	1x OC-48 SONET, SMSR
FPC 2	REV 02	710-005197	BD9824	M40e-FPC Type 2
CPU	REV 01	710-004600	BD9531	
PIC 0	REV 03	750-003737	AY3986	4x G/E, 1000 BASE-SX
FPC 4	REV 02	710-005078	BE0664	M40e-FPC Type 1
CPU	REV 01	710-004600	BD9559	
PIC 0	REV 03	750-001894	AG7963	1x G/E, 1000 BASE-SX
PIC 2	REV 01	750-002575	AF2472	4x OC-3 SONET, SMIR

FPC 6	REV 02	710-005078	BE0652	M40e-FPC Type 1
CPU	REV 01	710-004600	BD9607	
PIC 0	REV 02	750-002911	AN2286	4x F/E, 100 BASE-TX
PIC 2	REV 01	750-002577	AP6345	4x OC-3 SONET, MM

show chassis hardware (M120 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN000054AC	M120
Midplane	REV 01	710-013667	RB4170	M120 Midplane
FPM Board	REV 02	710-011407	CJ9186	M120 FPM Board
FPM Display	REV 02	710-011405	CJ9173	M120 FPM Display
FPM CIP	REV 02	710-011410	CJ9221	M120 FPM CIP
PEM 0	Rev 05	740-011936	RM28320	AC Power Entry Module
PEM 1	Rev 05	740-011936	RM28321	AC Power Entry Module
Routing Engine 0	REV 03	740-014080	1000642883	RE-A-1000
CB 0	REV 03	710-011403	CM8346	M120 Control Board
CB 1	REV 06	710-011403	CP6728	M120 Control Board
FPC 1	REV 02	710-015908	CP6925	M120 CFPC 10GE
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN) XFP
Xcvr 0	REV 01	740-014279	62E204N00007	XFP-10G-LR
FPC 3	REV 03	710-011393	CJ9234	M120 FPC Type 2
PIC 0	REV 16	750-008155	NB5229	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F15JB	SFP-SX
Xcvr 1	REV 01	740-007326	P4QOR9G	SFP-SX
PIC 1	REV 09	750-007745	CG4360	4x OC-3 SONET, SMIR
PIC 2	REV 16	750-008155	ND7787	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F12AS	SFP-SX
Xcvr 1	REV 01	740-011613	P9F1ALU	SFP-SX
PIC 3	REV 07	750-011800	JW1284	8x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011613	P9F1AM6	SFP-SX
Xcvr 6	REV 01	740-011613	P9F16NN	SFP-SX
Xcvr 7	REV 01	740-011782	P8C29Y7	SFP-SX
Board B	REV 02	710-011395	CN3754	M120 FPC Mezz
FPC 4	REV 02	710-011398	CP6741	M120 FPC Type 3
PIC 0	REV 16	750-007141	NB2855	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011782	P922A1F	SFP-SX
Xcvr 1	REV 01	740-011782	P922A16	SFP-SX
Xcvr 2	REV 01	740-011782	P922A0U	SFP-SX
Xcvr 3	REV 01	740-011782	P9229UZ	SFP-SX
Xcvr 4	REV 01	740-009029	P11JXWP	SFP-LX
Xcvr 6	REV 01	740-011613	P9F1ALW	SFP-SX
FPC 5	REV 01	710-011388	CJ9088	M120 FPC Type 1
PIC 0	*** Hardware Not Supported ***			
PIC 1	REV 05	750-012052	NB0410	1x CHOC3 IQ SONET, SMLR
PIC 2	REV 01	750-013167	CM3824	4x CHDS3 IQ
PIC 3	REV 01	750-010240	CB5366	1x G/E SFP, 1000 BASE
Board B	REV 01	710-011390	CJ9103	M120 FPC Mezz Board
FEB 3	REV 04	710-011663	CP6673	M120 FEB
FEB 4	REV 04	710-011663	CJ9368	M120 FEB
FEB 5	REV 04	710-011663	CJ9386	M120 FEB
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Top Fan Tray
Fan Tray 3				Rear Bottom Fan Tray

show chassis hardware detail (M120 Router)

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user@host> show chassis hardware detail
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              REV 01   710-013667   JN000054AC     M120
Midplane             REV 02   710-011407   RB4170         M120 Midplane
FPM Board            REV 02   710-011407   CJ9186         M120 FPM Board
FPM Display          REV 02   710-011405   CJ9173         M120 FPM Display
FPM CIP              REV 02   710-011410   CJ9221         M120 FPM CIP
PEM 0                Rev 05   740-011936   RM28320        AC Power Entry Module
PEM 1                Rev 05   740-011936   RM28321        AC Power Entry Module
Routing Engine 0     REV 03   740-014080   1000642883     RE-A-1000
  ad0      248 MB   SILICONSYSTEMS INC 256M 126CT505S0763SC00110 Compact Flash
  ad2      38154 MB HTE541040G9SA00    MPBBTOX2HS2E3M Hard Disk
CB 0                 REV 03   710-011403   CM8346         M120 Control Board
CB 1                 REV 06   710-011403   CP6728         M120 Control Board
FPC 1                REV 02   710-015908   CP6925         M120 CFPC 10GE
  PIC 0              BUILTIN  BUILTIN        1x 10GE(LAN/WAN) XFP
    Xcvr 0           REV 01   740-014279   62E204N00007   XFP-10G-LR
FPC 3                REV 03   710-011393   CJ9234         M120 FPC Type 2
  PIC 0              REV 16   750-008155   NB5229         2x G/E IQ, 1000 BASE
    Xcvr 0           REV 01   740-011613   P9F15JB        SFP-SX
    Xcvr 1           REV 01   740-007326   P4Q0R9G        SFP-SX
  PIC 1              REV 09   750-007745   CG4360         4x OC-3 SONET, SMIR
  PIC 2              REV 16   750-008155   ND7787         2x G/E IQ, 1000 BASE
    Xcvr 0           REV 01   740-011613   P9F12AS        SFP-SX
    Xcvr 1           REV 01   740-011613   P9F1ALU        SFP-SX
  PIC 3              REV 07   750-011800   JW1284         8x 1GE(LAN), IQ2
    Xcvr 0           REV 01   740-011613   P9F1AM6        SFP-SX
    Xcvr 6           REV 01   740-011613   P9F16NN        SFP-SX
    Xcvr 7           REV 01   740-011782   P8C29Y7        SFP-SX
Board B              REV 02   710-011395   CN3754         M120 FPC Mezz
FPC 4                REV 02   710-011398   CP6741         M120 FPC Type 3
  PIC 0              REV 16   750-007141   NB2855         10x 1GE(LAN), 1000 BASE

    Xcvr 0           REV 01   740-011782   P922A1F        SFP-SX
    Xcvr 1           REV 01   740-011782   P922A16        SFP-SX
    Xcvr 2           REV 01   740-011782   P922A0U        SFP-SX
    Xcvr 3           REV 01   740-011782   P9229UZ        SFP-SX
    Xcvr 4           REV 01   740-009029   P11JXWP        SFP-LX
    Xcvr 6           REV 01   740-011613   P9F1ALW        SFP-SX
FPC 5                REV 01   710-011388   CJ9088         M120 FPC Type 1
  PIC 0              *** Hardware Not Supported ***
  PIC 1              REV 05   750-012052   NB0410         1x CHOC3 IQ SONET, SMLR

    PIC 2              REV 01   750-013167   CM3824         4x CHDS3 IQ
    PIC 3              REV 01   750-010240   CB5366         1x G/E SFP, 1000 BASE
Board B              REV 01   710-011390   CJ9103         M120 FPC Mezz Board
FEB 3                REV 04   710-011663   CP6673         M120 FEB
FEB 4                REV 04   710-011663   CJ9368         M120 FEB
FEB 5                REV 04   710-011663   CJ9386         M120 FEB
Fan Tray 0           Front Top Fan Tray
Fan Tray 1           Front Bottom Fan Tray
Fan Tray 2           Rear Top Fan Tray
Fan Tray 3           Rear Bottom Fan Tray

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show chassis hardware models (M120 Router)

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user@host> show chassis hardware models

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Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-013667		
FPM CIP	REV 02	710-011410		CRAFT-M120-S
PEM 0	Rev 05	740-011936		PWR-M120-AC-S
PEM 1	Rev 05	740-011936		PWR-M120-AC-S
Routing Engine 0	REV 03	740-014080		RE-A-1000-2048-S
CB 0	REV 03	710-011403		CB-M120-S
CB 1	REV 06	710-011403		CB-M120-S
FPC 1	REV 02	710-015908		M120-cFPC-1XGE-XFP
FPC 3				
PIC 0	REV 16	750-008155		PB-2GE-SFP-QPP
PIC 1	REV 09	750-007745		PC-40C3-SON-SMIR
PIC 2	REV 16	750-008155		PB-2GE-SFP-QPP
PIC 3	REV 07	750-011800		PB-8GE-TYPE2-SFP-IQ2
FPC 4				
PIC 0	REV 16	750-007141		PC-10GE-SFP
FPC 5				
PIC 1	REV 05	750-012052		PB-1CHOC3-SMIR-QPP
PIC 2	REV 01	750-013167		PE-4CHDS3-QPP
PIC 3	REV 01	750-010240		PB-1GE-SFP
Fan Tray 0				FFANTRAY-M120-S
Fan Tray 1				FFANTRAY-M120-S
Fan Tray 2				RFANTRAY-M120-S
Fan Tray 3				RFANTRAY-M120-S

show chassis hardware (M160 Router)

user@host> 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)

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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
Hardware inventory:

```

Item	Version	Part number	Serial number	Description
Chassis			101	M160
Midplane	REV 02	710-001245	S/N AB4107	
FPM CMB	REV 01	710-001642	S/N AA2911	
FPM Display	REV 01	710-001647	S/N AA2999	
CIP	REV 02	710-001593	S/N AA9563	
PEM 0	Rev 01	740-001243	S/N KJ35769	DC


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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
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
... SSRAM      REV 01  710-000077  S/N 306466      1 MB

```

show chassis hardware (M320 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			67245	M320
Midplane	REV 05	710-009120	RB1202	M320 Midplane
FPM GBUS	REV 04	710-005928	HZ5697	M320 Board

FPM Display	REV 05	710-009351	HR1464	M320 FPM Display
CIP	REV 04	710-005926	HT8672	M320 CIP
PEM 0	Rev 05	740-009148	QK34208	DC Power Entry Module
PEM 1	Rev 05	740-009148	QK34262	DC Power Entry Module
PEM 2	Rev 05	740-009148	QF10449	DC Power Entry Module
PEM 3	Rev 05	740-009148	QJ18257	DC Power Entry Module
Routing Engine 0	REV 06	740-008883	P11123901185	RE-4.0
CB 0	REV 07	710-009115	JB2382	M320 Control Board
FPC 0	REV 02	710-005017	CD9926	M320 FPC Type 2
CPU	REV 01	710-011659	CJ6940	M320 PCA SCPU
PIC 0	REV 07	750-001900	AT1594	1x OC-48 SONET, SMSR
PIC 1	REV 03	750-001850	HS2746	1x Tunnel
PIC 2	REV 05	750-010618	JE7117	4x G/E SFP, 1000 BASE
PIC 3	REV 06	750-001900	HE6083	1x OC-48 SONET, SMSR
FPC 2	REV 02	710-005017	CH0319	M320 FPC Type 1
CPU	REV 01	710-011659	CJ6942	M320 PCA SCPU
PIC 0	REV 05	750-003034	BD8705	4x OC-3 SONET, SMIR
FPC 5	REV 02	710-005017	CD9938	M320 FPC Type 2
CPU				
FPC 7	REV 02	710-005017	CD9934	M320 FPC Type 2
CPU				
SIB 0	REV 09	710-009184	JA6540	M320 SIB
SIB 1	REV 09	710-009184	HV9511	M320 SIB
SIB 2	REV 09	710-009184	HW2057	M320 SIB
SIB 3	REV 09	710-009184	JA6687	M320 SIB
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

show chassis hardware models (M320 Router)

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

Hardware inventory:				
Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 03	710-009120		CHAS-BP-M320-S
FPM Display	REV 02	710-009351		CRAFT-M320-S
CIP	REV 03	710-005926		CIP-M320-S
PEM 2	Rev X4	740-009148		PWR-M-DC-S
PEM 3	Rev X4	740-009148		PWR-M-DC-S
Routing Engine 0	REV 02	740-008883		RE-1600-2048-S
Routing Engine 1	REV 02	740-008883		RE-1600-2048-S
FPC 0	REV 02	710-010419		M320-FPC1
PIC 0	REV 01	750-001323		P-TUNNEL
PIC 1	REV 02	750-002987		PE-10C12-SON-SMIR
PIC 2	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 04	750-001896		PB-10C12-SON-SMIR
FPC 1	REV 02	710-010419		M320-FPC1
PIC 0	REV 04	750-001894		PB-1GE-SX
PIC 1	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 03	750-001894		PB-1GE-SX
FPC 2	REV 02	710-010419		M320-FPC1
PIC 0	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
FPC 3				
PIC 0	REV 03	750-001895		PB-10C12-SON-MM
PIC 1	REV 04	750-001894		PB-1GE-SX

PIC 3	REV 04	750-003141	PB-1GE-SX-B
FPC 4	REV 02	710-010419	M320-FPC1
FPC 5	REV 02	710-010419	M320-FPC1
FPC 6	REV 02	710-010419	M320-FPC1
FPC 7			
PIC 0	REV 15	750-001901	PB-40C12-SON-SMIR
PIC 1	REV 06	750-001900	PB-10C48-SON-SMSR
PIC 2	REV 07	750-001900	PB-10C48-SON-SMSR
PIC 3	REV 05	750-003737	PB-4GE-SX
SIB 0	REV 03	710-009184	SIB-M-S
SIB 1	REV 03	710-009184	SIB-M-S
SIB 2	REV 03	710-009184	SIB-M-S
SIB 3	REV 03	710-009184	SIB-M-S
Fan Tray 0			FFANTRAY-M320-S
Fan Tray 1			FFANTRAY-M320-S
Fan Tray 2			RFANTRAY-M320-S

show chassis hardware (MX5 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               E1368         MX5-T
Midplane      REV 01   711-038215   YF5288        MX5-T
PEM 0         Rev 04   740-028288   VA01215       AC Power Entry Module
PEM 1         Rev 04   740-028288   VA01218       AC Power Entry Module
Routing Engine
TFEB 0        BUILTIN  BUILTIN      BUILTIN       Routing Engine
TFEB 0        BUILTIN  BUILTIN      BUILTIN       Forwarding Engine
Processor
QXM 0         REV 05   711-028408   ZA9136        MPC QXM
FPC 0         BUILTIN  BUILTIN      BUILTIN       MPC BUILTIN
MIC 0         BUILTIN  BUILTIN      BUILTIN       4x 10GE XFP
PIC 0         BUILTIN  BUILTIN      BUILTIN       4x 10GE XFP
FPC 1         BUILTIN  BUILTIN      BUILTIN       MPC BUILTIN
MIC 0         REV 24   750-028392   YX9820        3D 20x 1GE(LAN) SFP
PIC 0         BUILTIN  BUILTIN      BUILTIN       10x 1GE(LAN) SFP
Xcvr 0        REV 01   740-031851   AM1045SUAQ3   SFP-SX
Xcvr 1        REV 01   740-031851   AM1045SUAPA   SFP-SX
Xcvr 2        REV 01   740-031851   AM1045SUAN7   SFP-SX
Xcvr 3        REV 01   740-031851   AM1045SU91Q   SFP-SX
Xcvr 4        REV 01   740-031851   AM1045SUDDR   SFP-SX
Xcvr 9        REV 01   740-011613   AM0848SB6A1   SFP-SX
PIC 1         BUILTIN  BUILTIN      BUILTIN       10x 1GE(LAN) SFP
Xcvr 0        REV 01   740-031851   AM1045SUANO   SFP-SX
Xcvr 1        REV 01   740-011613   AS0812S0719   SFP-SX
Xcvr 2        REV 01   740-011613   AM0821SA121   SFP-SX
Xcvr 3        REV 01   740-011613   PF21K21       SFP-SX
Xcvr 4        REV 01   740-011613   AM0848SB69Z   SFP-SX
Xcvr 5        REV 01   740-011782   P9POXV3       SFP-SX
Xcvr 6        REV 01   740-011613   AM0812S8WJN   SFP-SX
Xcvr 7        REV 01   740-011613   PAM3G9Q       SFP-SX
Xcvr 8        REV 01   740-011613   AM0848SB4A6   SFP-SX
Xcvr 9        REV 01   740-011782   P9MOU37       SFP-SX
MIC 1         REV 20   750-028380   ZG2657        3D 2x 10GE XFP
PIC 2         BUILTIN  BUILTIN      BUILTIN       1x 10GE XFP
PIC 3         BUILTIN  BUILTIN      BUILTIN       1x 10GE XFP
Fan Tray

```

show chassis hardware (MX10 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               E1372         MX10-T
Midplane          REV 01   711-038211   YF5285        MX10-T
PEM 0             Rev 04   740-028288   VB01678       AC Power Entry Module
Routing Engine    BUILTIN  BUILTIN      BUILTIN        Routing Engine
TFEB 0            BUILTIN  BUILTIN      BUILTIN        Forwarding Engine
Processor
  QXM 0           REV 05   711-028408   ZA9053        MPC QXM
  FPC 0            BUILTIN  BUILTIN      BUILTIN        MPC BUILTIN
    MIC 0          BUILTIN  BUILTIN      BUILTIN        4x 10GE XFP
      PIC 0        BUILTIN  BUILTIN      BUILTIN        4x 10GE XFP
  FPC 1            BUILTIN  BUILTIN      BUILTIN        MPC BUILTIN
    MIC 0           REV 24   750-028392   YX9436        3D 20x 1GE(LAN) SFP
      PIC 0        BUILTIN  BUILTIN      BUILTIN        10x 1GE(LAN) SFP
        Xcvr 0     REV 01   740-031851   AM1107SUFQW   SFP-SX
          PIC 1    BUILTIN  BUILTIN      BUILTIN        10x 1GE(LAN) SFP
Fan Tray

```

show chassis hardware (MX40 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               E1367         MX40-T
Midplane          REV 01   711-038211   YF5284        MX40-T
PEM 0             Rev 04   740-028288   VB01680       AC Power Entry Module
PEM 1             Rev 04   740-028288   VB01700       AC Power Entry Module
Routing Engine    BUILTIN  BUILTIN      BUILTIN        Routing Engine
TFEB 0            BUILTIN  BUILTIN      BUILTIN        Forwarding Engine
Processor
  QXM 0           REV 05   711-028408   ZA9048        MPC QXM
  FPC 0            BUILTIN  BUILTIN      BUILTIN        MPC BUILTIN
    MIC 0          BUILTIN  BUILTIN      BUILTIN        4x 10GE XFP
      PIC 0        BUILTIN  BUILTIN      BUILTIN        4x 10GE XFP
        Xcvr 0     REV 01   740-014279   M7067UUPP     XFP-10G-LR
          Xcvr 1    NON-JNPR  K9J02UN       XFP-10G-LR
  FPC 1            BUILTIN  BUILTIN      BUILTIN        MPC BUILTIN
    MIC 0           REV 24   750-028392   YX3504        3D 20x 1GE(LAN) SFP
      PIC 0        BUILTIN  BUILTIN      BUILTIN        10x 1GE(LAN) SFP
        Xcvr 0     REV 01   740-011613   AM0812S8WTE   SFP-SX
          Xcvr 1    REV 01   740-011613   PFA6KV2        SFP-SX
            Xcvr 2  REV 01   740-031851   AM1045SUDDM    SFP-SX
              Xcvr 3 REV 01   740-011613   PD63C7M        SFP-SX
                Xcvr 4 REV 01   740-011613   PD63DJY        SFP-SX
                  Xcvr 5 REV 02   740-011613   AA0950STLL9    SFP-SX
                    Xcvr 6 REV 01   740-011782   PAR1YHC        SFP-SX
                      Xcvr 7 REV 01   740-011782   P9P0XXL        SFP-SX
                        Xcvr 8 REV 01   740-011613   PD63D95        SFP-SX
                          Xcvr 9 REV 01   740-031851   AM1045SU9B8    SFP-SX
  PIC 1            BUILTIN  BUILTIN      BUILTIN        10x 1GE(LAN) SFP
    Xcvr 0          REV 01   740-011613   PF21L3Z        SFP-SX
      Xcvr 1        REV 01   740-031851   AM1045SU7M9    SFP-SX
        Xcvr 2      REV 01   740-031851   AM1045SUAPT    SFP-SX
          Xcvr 3    REV 01   740-011613   PFF2BZH        SFP-SX
            Xcvr 4  REV 01   740-031851   AM1045SUDDN    SFP-SX
              Xcvr 5 REV 01   740-031851   AM1039S00ZR    SFP-SX

```

Xcvr 6	REV 01	740-031851	AM1045SUD6Y	SFP-SX
Xcvr 8	REV 01	740-011613	PFM1QBS	SFP-SX
Xcvr 9	REV 01	740-011613	PFF2E25	SFP-SX
MIC 1	REV 01	750-021130	KG4391	3D 2x 10GE XFP
PIC 2		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-011571	C645XJ04G	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0		NON-JNPR	CA49BK0AE	XFP-10G-SR
Fan Tray				Fan Tray

show chassis hardware (Fixed MX80 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX80-48T
Midplane	REV 01	711-031603	KF9250	MX80-48T
Routing Engine		BUILTIN	BUILTIN	Routing Engine
FEB 0		BUILTIN	BUILTIN	Forwarding Engine Board
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
Xcvr 0		NON-JNPR	M6439D41	XFP-10G-LR
Xcvr 1	REV 01	740-014279	6XE931N00202	XFP-10G-LR
Xcvr 2	REV 01	740-014289	C715XU05F	XFP-10G-SR
Xcvr 3	REV 01	740-014289	C650XU0EP	XFP-10G-SR
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 01	711-029399	JR6981	12x 1GE(LAN) RJ45
PIC 0		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 1		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
MIC 1	REV 01	BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 2		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 3		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
Fan Tray				Fan Tray

show chassis hardware (Modular MX80 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX80
Midplane	REV 02	711-031594	JR7084	MX80
PEM 0	Rev 01	740-028288	000018	AC Power Entry Module
Routing Engine		BUILTIN	BUILTIN	Routing Engine
FEB 0		BUILTIN	BUILTIN	Forwarding Engine Board
QXM 0	REV 05	711-028408	JR7041	MPC QXM
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 02	750-028380	JR6598	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M86365	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M71094	XFP-10G-SR
MIC 1	REV 02	750-028380	JG8548	3D 2x 10GE XFP
PIC 2		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	T08L86302	XFP-10G-SR

PIC 3		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	C810XU0BA	XFP-10G-SR
Fan Tray				Fan Tray

show chassis hardware (MX150)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DD2316AF0078  MX150
Midplane      REV 04   650-066113  DD2316AF0078  MX150
Power Supply 0
Routing Engine 0
CB 0          RE-VMX
CB 1          VMX SCB
FPC 0         VMX SCB
              Virtual FPC
CPU           Rev. 1.0 RIOT      BUILTIN
MIC 0
PIC 0
Xcvr 10      REV 02   740-013111  A331846        SFP-T
Xcvr 11      REV 02   740-013111  C248517        SFP-T
Fan Tray 0    fan-ctrl-0 0, Front to
Back Airflow - AFO
Fan Tray 1    fan-ctrl-0 1, Front to
Back Airflow - AFO
```

show chassis hardware models (MX150)

```
user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 04   650-066113  DD2316AF0163  MX150
Fan Tray 0    Assy,Sub,Fan
Tray,AFO,Opus-AFO
Fan Tray 1    Assy,Sub,Fan
Tray,AFO,Opus-AFO
```

show chassis hardware (MX104 Router)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               G3503         MX104
Midplane      REV 28   750-044219  CAAX5741      MX104
PEM 0         REV 03   740-045933  1H072500016  AC Power Entry Module
PEM 1         REV 03   740-045932  1H073050017  DC Power Entry Module
Routing Engine 0 REV 20   750-044228  CAAY7935     RE-MX-104
Routing Engine 1 REV 13   750-044228  CAAM6380     RE-MX-104
AFEB 0        BUILTIN  BUILTIN      Forwarding Engine
Processor
FPC 0         BUILTIN  BUILTIN      MPC BUILTIN
FPC 1         BUILTIN  BUILTIN      MPC BUILTIN
MIC 0         REV 15   750-036132  CAAF7948     2xOC12/8xOC3 CC-CE
PIC 0
Xcvr 0        REV 01   740-011615  PCQ0U2J      SFP-IR
Xcvr 1        REV 01   740-016068  PJL7A6G      SFP-SR
Xcvr 2        REV 01   740-016068  PJL7A5J      SFP-SR
Xcvr 3        REV 01   740-016065  PJN5HPZ      SFP-SR
Xcvr 4        REV 01   740-029122  PKB38TL      SFP-LR
Xcvr 5        REV 01   740-011787  P6A107G      SFP-LR
```

```

Xcvr 6      REV 01  740-029122  PKB38TR      SFP-LR
Xcvr 7      REV 01  740-011787  PBKONK3      SFP-LR
MIC 1
FPC 2
MIC 0
PIC 0
Xcvr 0      REV 01  740-031980  B10F00465    SFP+-10G-SR
Xcvr 1      REV 01  740-031980  B10F00461    SFP+-10G-SR
Xcvr 2      REV 01  740-031980  B10G01545    SFP+-10G-SR
Xcvr 3      REV 01  740-031980  B10G01385    SFP+-10G-SR
Fan Tray 0  REV 02  711-049570  CAAX6538     Fan Tray

```

show chassis hardware detail (MX104 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 28   750-044219  CAAX5741      MX104
PEM 0         REV 03   740-045933  1H072500016  AC Power Entry Module
PEM 1         REV 03   740-045932  1H073050017  DC Power Entry Module
Routing Engine 0 REV 20   750-044228  CAAY7935     RE-MX-104
  da0 7836 MB ATP IG eUSB SSD Nand Flash 0
  usb0 (addr 1) EHCI root hub 0 Freescale uhub0
  usb0 (addr 2) USB2513Bi 9491 SMSC uhub1
  usb0 (addr 3) ATP IG eUSB SSD 44801 ATP Electronics umass0
Routing Engine 1 REV 13   750-044228  CAAM6380     RE-MX-104
  da0 7836 MB ATP IG eUSB SSD Nand Flash 0
AFEB 0
Processor
FPC 0
MIC 0         REV 15   750-036132  CAAF7948     2xOC12/8xOC3 CC-CE
PIC 0
Xcvr 0      REV 01  740-011615  PCQOU2J      SFP-IR
Xcvr 1      REV 01  740-016068  PjL7A6G      SFP-SR
Xcvr 2      REV 01  740-016068  PjL7A5J      SFP-SR
Xcvr 3      REV 01  740-016065  PjN5HPZ      SFP-SR
Xcvr 4      REV 01  740-029122  PKB38TL      SFP-LR
Xcvr 5      REV 01  740-011787  P6A107G      SFP-LR
Xcvr 6      REV 01  740-029122  PKB38TR      SFP-LR
Xcvr 7      REV 01  740-011787  PBKONK3      SFP-LR
MIC 1
FPC 2
MIC 0
PIC 0
Xcvr 0      REV 01  740-031980  B10F00465    SFP+-10G-SR
Xcvr 1      REV 01  740-031980  B10F00461    SFP+-10G-SR
Xcvr 2      REV 01  740-031980  B10G01545    SFP+-10G-SR
Xcvr 3      REV 01  740-031980  B10G01385    SFP+-10G-SR
Fan Tray 0  REV 02  711-049570  CAAX6538     Fan Tray

```

show chassis hardware detail (MX480 Packet Transport Router with details of virtual disk size)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 05   710-017414  ACRB8882     MX480 Midplane
FPM Board     REV 02   710-017254  CADF7623     Front Panel Display

```

PEM 0	Rev 07	740-017343	QCS1128A0TY	DC Power Entry Module
PEM 1	Rev 07	740-017343	QCS1128A0JM	DC Power Entry Module
Routing Engine 0	REV 07	750-054758	CADG2028	RE-S-2X00x6
vtbd0	15361 MB			Virtio Block Disk
vtbd1	15360 MB			Virtio Block Disk
ada0	511 MB	QEMU HARDDISK	QM00002	Emulated IDE Disk
usb0 (addr 1)	UHCI root HUB 0		Intel	uhub0
Routing Engine 1	REV 00	750-054758		RE-S-2X00x6
vtbd0	15361 MB			Virtio Block Disk
vtbd1	15360 MB			Virtio Block Disk
ada0	511 MB	QEMU HARDDISK	QM00002	Emulated IDE Disk
usb0 (addr 1)	UHCI root HUB 0		Intel	uhub0
CB 0	REV 01	750-055976	CACS1837	Enhanced MX SCB 2
CB 1	REV 01	750-055976	CADD9894	Enhanced MX SCB 2
Xcvr 1	REV 01	740-031980	AP41KCL	SFP+-10G-SR
FPC 0	REV 09	750-049040	CACX1759	LOAD MPC Type 2
CPU	REV 10	711-035209	CACP9324	HMPC PMB 2G
FPC 4	REV 28	750-037355	CACY8384	MPC4E 3D 2CGE+8XGE
CPU	REV 10	711-035209	CACX0428	HMPC PMB 2G
Fan Tray				Enhanced Left Fan Tray

show chassis hardware extensive (MX104 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
  Jedec Code:       0x7fb0                EEPROM Version: 0x02
                                     S/N:           G3503
  Assembly ID:      0x0560                Assembly Version: 00.00
  Date:             00-00-0000            Assembly Flags:  0x00
  ID: MX104
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 05 60 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x20: 47 33 35 30 33 00 00 00 00 00 00 00 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane
  REV 28      750-044219  CAAX5741      MX104
  Jedec Code:  0x7fb0                EEPROM Version: 0x02
  P/N:         750-044219            S/N:           CAAX5741
  Assembly ID: 0x0560                Assembly Version: 01.28
  Date:        03-27-2013            Assembly Flags: 0x00
  Version:     REV 28                CLEI Code:     PROTOXCLEI
  ID: MX104                        FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ad 01 08 00 b0 a8 6e a7 f8 00 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 05 60 01 1c 52 45 56 20 32 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 31 39 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 58 35 37 34 31 00 1b 03 07
  Address 0x30: dd ff ff ff ad 01 08 00 b0 a8 6e a7 f8 00 ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 47 33 35 30 33 00 00 00 00 00 00 00

```



```

PEM 0          REV 03  740-045933  1H072500016  AC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-045933      S/N:          1H072500016
Assembly ID:   0x0475          Assembly Version: 00.03
Date:         12-14-2012      Assembly Flags: 0x00
Version:      REV 03          CLEI Code:    IPUPAJ9KAA
ID: AC Power Entry Module     FRU Model Number: PWR-AMX1100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 75 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 33 00 00
Address 0x20: 31 48 30 37 32 35 30 30 30 31 36 00 00 0e 0c 07
Address 0x30: dc 30 43 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 02 02 00 ff 01 49 50 55 50 41 4a 39 4b 41 41 50
Address 0x50: 57 52 2d 41 4d 58 31 31 30 30 2d 41 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 70 ff ff ff ff ff ff ff ff ff ff ff ff

PEM 1          REV 03  740-045932  1H073050017  DC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-045932      S/N:          1H073050017
Assembly ID:   0x0476          Assembly Version: 00.03
Date:         01-30-2013      Assembly Flags: 0x00
Version:      REV 03          CLEI Code:    IPUPAJ8KAA
ID: DC Power Entry Module     FRU Model Number: PWR-AMX1100-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 76 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 32 00 00
Address 0x20: 31 48 30 37 33 30 35 30 30 31 37 00 00 1e 01 07
Address 0x30: dd 30 44 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 02 02 00 ff 01 49 50 55 50 41 4a 38 4b 41 41 50
Address 0x50: 57 52 2d 41 4d 58 31 31 30 30 2d 44 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 72 ff ff ff ff ff ff ff ff ff ff ff ff

Routing Engine 0 REV 20  750-044228  CAAY7935  RE-MX-104
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          750-044228      S/N:          CAAY7935
Assembly ID:   0x0b81          Assembly Version: 01.20
Date:         03-18-2013      Assembly Flags: 0x00
Version:      REV 20          CLEI Code:    PROTOXCLEI
ID: RE-MX-104          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 08 b0 a8 6e a6 fc 10 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 81 01 14 52 45 56 20 32 30 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 32 38 00 00
Address 0x20: 53 2f 4e 20 43 41 41 59 37 39 33 35 00 12 03 07
Address 0x30: dd ff ff ff ad 01 00 08 b0 a8 6e a6 fc 10 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
da0  7836 MB  ATP IG eUSB SSD  Nand Flash 0
usb0 (addr 1) EHCI root hub 0  Freescale  uhub0
usb0 (addr 2) USB2513Bi 9491  SMSC  uhub1
usb0 (addr 3) ATP IG eUSB SSD 44801 ATP Electronics  umass0
Routing Engine 1 REV 13  750-044228  CAAM6380  RE-MX-104
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          750-044228      S/N:          CAAM6380

```

```

Assembly ID: 0x0b81      Assembly Version: 01.13
Date:          09-17-2012    Assembly Flags: 0x00
Version:       REV 13        CLEI Code:      PROTOXCLEI
ID: RE-MX-104            FRU Model Number:  PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ad 01 00 08 64 87 88 27 08 18 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 81 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 32 38 00 00
Address 0x20: 53 2f 4e 20 43 41 41 4d 36 33 38 30 00 11 09 07
Address 0x30: dc ff ff ff ad 01 00 08 64 87 88 27 08 18 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
da0      7836 MB  ATP IG eUSB SSD      Nand Flash 0
AFEB 0      BUILTIN      BUILTIN      Forwarding Engine
Processor
FPC 0      BUILTIN      BUILTIN      MPC BUILTIN
FPC 1      BUILTIN      BUILTIN      MPC BUILTIN
MIC 0      REV 15      750-036132    CAAF7948      2x0C12/8x0C3 CC-CE
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        750-036132    S/N:        CAAF7948
Assembly ID: 0x0a1a      Assembly Version: 01.15
Date:       07-03-2012    Assembly Flags: 0x00
Version:    REV 15        CLEI Code:    IP9IAM2DAA
ID: 2x0C12/8x0C3 CC-CE    FRU Model Number: MIC-3D-80C3-20C12-ATM

Board Information Record:
Address 0x00: 12 01 05 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 1a 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 36 31 33 32 00 00
Address 0x20: 53 2f 4e 20 43 41 41 46 37 39 34 38 00 03 07 07
Address 0x30: dc ff ff ff 12 01 05 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 39 49 41 4d 32 44 41 41 4d
Address 0x50: 49 43 2d 33 44 2d 38 4f 43 33 2d 32 4f 43 31 32
Address 0x60: 2d 41 54 4d 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff e3 c0 02 a3 9c 00 00 00 00 0a 60 00 00
PIC 0      BUILTIN      BUILTIN      2x0C12/8x0C3 CC-CE
Xcvr 0      REV 01      740-011615    PCQ0U2J      SFP-IR
Xcvr 1      REV 01      740-016068    P3L7A6G      SFP-SR
Xcvr 2      REV 01      740-016068    P3L7A5J      SFP-SR
Xcvr 3      REV 01      740-016065    PJN5HPZ      SFP-SR
Xcvr 4      REV 01      740-029122    PKB38TL      SFP-LR
Xcvr 5      REV 01      740-011787    P6A107G      SFP-LR
Xcvr 6      REV 01      740-029122    PKB38TR      SFP-LR
Xcvr 7      REV 01      740-011787    PBK0NK3      SFP-LR
MIC 1
FPC 2      BUILTIN      BUILTIN      MPC BUILTIN
MIC 0      BUILTIN      BUILTIN      4x 10GE(LAN) SFP+
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:        BUILTIN      S/N:        BUILTIN
Assembly ID: 0x0a60      Assembly Version: 00.00
Date:       00-00-0000    Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+

Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 60 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 4d 58 43 00
Address 0x20: 42 55 49 4c 54 49 4e 00 4d 58 43 00 00 00 00 00

```

```

Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 a5 04 7f b0 02 ff 0a 1a 01 0f
PIC 0
  Xcvr 0      REV 01    740-031980    B10F00465    4x 10GE(LAN) SFP+
  Xcvr 1      REV 01    740-031980    B10F00461    SFP+-10G-SR
  Xcvr 2      REV 01    740-031980    B10G01545    SFP+-10G-SR
  Xcvr 3      REV 01    740-031980    B10G01385    SFP+-10G-SR
Fan Tray 0    REV 02    711-049570    CAAX6538      Fan Tray
Jedec Code:   0x7fb0      EEPROM Version: 0x02
P/N:          711-049570  S/N:           CAAX6538
Assembly ID:  0x0b82      Assembly Version: 01.02
Date:         03-01-2013  Assembly Flags:  0x00
Version:      REV 02      CLEI Code:      PROTOXCLEI
ID: Fan Tray  FRU Model Number: PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 82 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 39 35 37 30 00 00
Address 0x20: 53 2f 4e 20 43 41 41 58 36 35 33 38 00 01 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware extensive (PTX10008 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DE487         JNP10008 [PTX10008 -
PILOT BUILD V1.1]
Jedec Code:   0x7fb0      EEPROM Version: 0x02
S/N:          DE487
Assembly ID:  0x0566      Assembly Version: 01.27
Date:         08-08-2016  Assembly Flags:  0x00
CLEI Code:    CMMUM00ARA
ID: JNP10008  FRU Model Number: QFX10008-CHAS

Board Information Record:
Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 66 01 1b 00 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 00 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 44 45 34 38 37 00 00 00 00 00 00 00 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Midplane      REV 27    750-054097    ACPD4307      Midplane 8
Jedec Code:   0x7fb0      EEPROM Version: 0x02
P/N:          750-054097  S/N:           ACPD4307
Assembly ID:  0x0be3      Assembly Version: 01.27
Date:         08-08-2016  Assembly Flags:  0x00
Version:      REV 27      CLEI Code:    CMMUM00ARA
ID: QFX10008 Midplane  FRU Model Number: QFX10008-CHAS

Board Information Record:

```

```

Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e3 01 1b 52 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 33 30 37 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Routing Engine 0          BUILTIN          BUILTIN          RE-PTX-2X00x4
vtbd0 15360 MB            Virtio Block Disk
vtbd1 15360 MB            Virtio Block Disk
ada0 128 MB QEMU          QM00002          Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel          uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
Routing Engine 1          BUILTIN          BUILTIN          RE-PTX-2X00x4
vtbd0 15360 MB            Virtio Block Disk
vtbd1 15360 MB            Virtio Block Disk
ada0 128 MB QEMU          QM00002          Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel          uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
CB 0          REV 02 750-068820 ACNZ4440          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-068820          S/N: ACNZ4440
Assembly ID: 0x0b9d          Assembly Version: 01.02
Date: 06-13-2016          Assembly Flags: 0x00
Version: REV 02          CLEI Code: CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 84 c1 c1 54 10 be ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 34 34 34 30 00 0d 06 07
Address 0x30: e0 ff ff ff ad 01 00 10 84 c1 c1 54 10 be ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 02 750-068820 ACNZ8284          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-068820          S/N: ACNZ8284
Assembly ID: 0x0b9d          Assembly Version: 01.02
Date: 06-27-2016          Assembly Flags: 0x00
Version: REV 02          CLEI Code: CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 84 c1 c1 e5 b1 46 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 38 32 38 34 00 1b 06 07
Address 0x30: e0 ff ff ff ad 01 00 10 84 c1 c1 e5 b1 46 ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff ff
FPC 0          REV 36 750-051354 ACNP4679          LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0          EEPROM Version: 0x02

```

```

P/N:          750-051354          S/N:          ACNP4679
Assembly ID:  0x0be7             Assembly Version: 01.36
Date:         11-11-2016         Assembly Flags:  0x00
Version:      REV 36             CLEI Code:       CMUIAM9BAA
ID: ULC-36Q-12Q28              FRU Model Number: QFX10000-36Q

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 34 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 36 37 39 00 0b 0b 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:  0x7fb0           EEPROM Version: 0x02
P/N:         BUILTIN          S/N:          BUILTIN
Assembly ID: 0xf020           Assembly Version: 02.17
Date:        04-19-2012       Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 e0 3c fa 09 00 70 87
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 e0 3c fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0           EEPROM Version: 0x02
P/N:         BUILTIN          S/N:          BUILTIN
Assembly ID: 0xf050           Assembly Version: 02.17
Date:        04-19-2012       Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 1      REV 01      740-058734      1ECQ113834D      QSFP-100GBASE-SR4
Xcvr 5      REV 01      740-058734      1ECQ1137067      QSFP-100GBASE-SR4
Xcvr 6      REV 01      740-054053      QF3205SD         QSFP+-4X10G-SR
Xcvr 7      REV 01      740-058734      1ECQ11381MP      QSFP-100GBASE-SR4
Xcvr 11     REV 01      740-061405      1ACQ110507K      QSFP-100GBASE-SR4
Xcvr 13     REV 01      740-058734      1ECQ11390ZB      QSFP-100GBASE-SR4
Xcvr 17     REV 01      740-058734      1ECQ11381M1      QSFP-100GBASE-SR4
Xcvr 19     REV 01      740-058734      1ECQ11381JS      QSFP-100GBASE-SR4
Xcvr 23     REV 01      740-058734      1ACQ112000E      QSFP-100GBASE-SR4
Xcvr 25     REV 01      740-058734      1ECQ11381NT      QSFP-100GBASE-SR4
Xcvr 28     REV 01      740-054053      QG1502WV         QSFP+-4X10G-SR
Xcvr 29     REV 01      740-058734      1ACQ112000D      QSFP-100GBASE-SR4

```

```

Xcvr 33      REV 01  740-058734  1ACQ1134065  QSFP-100GBASE-SR4
Xcvr 34      REV 01  740-067442  XV20L4L      QSFP+-40G-SR4
FPC 1        REV 33  750-051354  ACNX8831     LC1102 - 12C / 36Q /
144X
Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         750-051354  S/N:           ACNX8831
Assembly ID: 0x0be7     Assembly Version: 01.33
Date:        06-03-2016  Assembly Flags:  0x00
Version:     REV 33     CLEI Code:      CMUIAM9BAA
ID: ULC-36Q-12Q28      FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 21 52 45 56 20 33 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 34 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 58 38 38 33 31 00 03 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fb ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN    BUILTIN    FPC CPU
Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         BUILTIN    S/N:           BUILTIN
Assembly ID: 0xf020     Assembly Version: 02.17
Date:        04-19-2012  Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 20 3e fa 09 00 10 8a
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 20 3e fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN    12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         BUILTIN    S/N:           BUILTIN
Assembly ID: 0xf050     Assembly Version: 02.17
Date:        04-19-2012  Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 5       NON-JNPR   37700171YY0084  QSFP-100GBASE-LR4
Xcvr 25      NON-JNPR   GDA2017459      QSFP-100GBASE-LR4
Xcvr 29      NON-JNPR   GDF2008750      QSFP-100GBASE-LR4
FPC 2        REV 32  750-051357  ACPB0341     LC1101 - 30C / 30Q / 96X

Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         750-051357  S/N:           ACPB0341

```

```

Assembly ID: 0x0be8      Assembly Version: 01.32
Date:          06-04-2016  Assembly Flags: 0x00
Version:       REV 32     CLEI Code:      CMUIANABAA
ID: ULC-30Q28          FRU Model Number: QFX10000-30C

```

Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b e8 01 20 52 45 56 20 33 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 42 30 33 34 31 00 04 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 30 43 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ef ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN     S/N:        BUILTIN
Assembly ID: 0xf020     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 20 02 11 00 00 67 00 0a 00 b0 8c
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 00 67 00
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      30x100GE/30x40GE/96x10GE

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN     S/N:        BUILTIN
Assembly ID: 0xf050     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 de ad be ef de ad be ef de ad be ef
Xcvr 0          NON-JNPR    37700170YZC305    QSFP-100GBASE-LR4
Xcvr 4          NON-JNPR    37700170YZC306    QSFP-100GBASE-LR4
Xcvr 9          REV 01      740-054053        QF36013S          QSFP+-4X10G-SR
Xcvr 12         REV 01      740-067442        XV301AU           QSFP+-40G-SR4
Xcvr 14         REV 01      740-043308        UWE2CG9           QSFP+-40G-LR4
Xcvr 16         REV 01      740-043308        UWH141S           QSFP+-40G-LR4
Xcvr 17         REV 01      740-058734        1ECQ11180VH       QSFP-100GBASE-SR4
Xcvr 18         REV 01      740-054050        INF4J0492237      QSFP+-4X10G-LR
Xcvr 26         REV 01      740-058734        1ACQ111803N       QSFP-100GBASE-SR4
Xcvr 27         REV 01      740-058734        1ACQ113405S       QSFP-100GBASE-SR4
FPC 3          REV 35      750-051357        ACPD2186          LC1101 - 30C / 30Q / 96X

```

```
Jedec Code: 0x7fb0      EEPROM Version: 0x02
```

```

P/N:          750-051357          S/N:          ACPD2186
Assembly ID:  0x0be8             Assembly Version: 01.35
Date:         09-21-2016         Assembly Flags:  0x00
Version:      REV 35             CLEI Code:       CMUIANABAA
ID: ULC-30Q28                    FRU Model Number: QFX10000-30C

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e8 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 32 31 38 36 00 15 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 30 43 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:  0x7fb0             EEPROM Version:  0x02
P/N:         BUILTIN            S/N:           BUILTIN
Assembly ID:  0xf020             Assembly Version: 02.17
Date:         04-19-2012         Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 80 70 fa 09 00 50 8f
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 80 70 fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          30x100GE/30x40GE/96x10GE

Jedec Code:  0x7fb0             EEPROM Version:  0x02
P/N:         BUILTIN            S/N:           BUILTIN
Assembly ID:  0xf050             Assembly Version: 02.17
Date:         04-19-2012         Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0       REV 01      740-061409    1GCQA1470A3    QSFP-100GBASE-LR4-T2
Xcvr 1       REV 01      740-061409    1GCQA1470XC    QSFP-100GBASE-LR4-T2
Xcvr 7              NON-JNPR    FG4550500008    QSFP-100G-CWDM4
Xcvr 24      REV 01      740-058734    1ECQ11381LX    QSFP-100GBASE-SR4
Xcvr 29      REV 01      740-043308    UWE0UYS        QSFP+-40G-LR4
FPC 5        REV 08      750-068822    ACPF0057        LC1102 - 12C / 36Q /
144X
Jedec Code:  0x7fb0             EEPROM Version:  0x02
P/N:         750-068822         S/N:            ACPF0057
Assembly ID:  0x0be7             Assembly Version: 01.08
Date:         09-01-2016         Assembly Flags:  0x00
Version:      REV 08             CLEI Code:       CMUIAM9BAB

```


ID: ULC-36Q-12Q28 FRU Model Number: QFX10000-36Q

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b e7 01 08 52 45 56 20 30 38 00 00

Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 32 00 00

Address 0x20: 53 2f 4e 20 41 43 50 46 30 30 35 37 00 01 09 07

Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 42 51

Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

CPU BUILTIN BUILTIN FPC CPU

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: BUILTIN S/N: BUILTIN

Assembly ID: 0xf020 Assembly Version: 02.17

Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 20 02 11 00 00 3d fa 09 00 90 94

Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 00 3d fa

Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07

Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff

Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00

PIC 0 BUILTIN BUILTIN 12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: BUILTIN S/N: BUILTIN

Assembly ID: 0xf050 Assembly Version: 02.17

Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45

Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20

Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07

Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff

Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff

Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

FPC 6 REV 08 750-068822 ACPE9951 LC1102 - 12C / 36Q / 144X

Jedec Code: 0x7fb0 EEPROM Version: 0x02

P/N: 750-068822 S/N: ACPE9951

Assembly ID: 0x0be7 Assembly Version: 01.08

Date: 09-01-2016 Assembly Flags: 0x00

Version: REV 08 CLEI Code: CMUIAM9BAB

ID: ULC-36Q-12Q28 FRU Model Number: QFX10000-36Q

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b e7 01 08 52 45 56 20 30 38 00 00

Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 32 00 00

Address 0x20: 53 2f 4e 20 41 43 50 45 39 39 35 31 00 01 09 07

Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 42 51

```

Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         BUILTIN        S/N:         BUILTIN
Assembly ID: 0xf020          Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 3e fa 09 00 30 97
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 c0 3e fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         BUILTIN        S/N:         BUILTIN
Assembly ID: 0xf050          Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 1       REV 01 740-054053 QF3208LG QSFPA+-4X10G-SR
Xcvr 7       REV 01 740-067442 XV20LGN  QSFPA+-40G-SR4
Xcvr 8       REV 01 740-067442 XV20VMV  QSFPA+-40G-SR4
Xcvr 9       REV 01 740-067442 XV20KCN  QSFPA+-40G-SR4
Xcvr 10      REV 01 740-067442 XU504QD  QSFPA+-40G-SR4
Xcvr 11      REV 01 740-067442 XU504X7  QSFPA+-40G-SR4
Xcvr 12      REV 01 740-067442 XU504W8  QSFPA+-40G-SR4
Xcvr 16      REV 01 740-032986 QF4301JP QSFPA+-40G-SR4
Xcvr 17      REV 01 740-032986 QF4303AE QSFPA+-40G-SR4
Xcvr 18      REV 01 740-054050 INF4J0492400 QSFPA+-4X10G-LR
Xcvr 19      REV 01 740-054050 INF4J0492142 QSFPA+-4X10G-LR
Xcvr 24      REV 01 740-032986 QF4301KB QSFPA+-40G-SR4
Xcvr 25      REV 01 740-032986 QF4303YP QSFPA+-40G-SR4
Xcvr 30      REV 01 740-067442 XV300ZX  QSFPA+-40G-SR4
Xcvr 31      REV 01 740-043308 UWH2KBW  QSFPA+-40G-LR4
Xcvr 34      REV 01 740-054053 QG1501YU QSFPA+-4X10G-SR
FPD Board    REV 07 711-054687 ACPC7142 Front Panel Display
Jedec Code:  0x7fb0          EEPROM Version: 0x01
P/N:         711-054687     S/N:         ACPC7142
Assembly ID: 0x0bf2          Assembly Version: 01.07
Date:        07-22-2016     Assembly Flags: 0x00
Version:     REV 07
ID: QFX10000 FPD
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

```

I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b f2 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 34 36 38 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 43 37 31 34 32 00 16 07 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Power Supply 0  REV 02  740-049388  1EDL62102N9  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102N9
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 4e 39 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff

Power Supply 1  REV 02  740-049388  1EDL60300KX  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL60300KX
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-20-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 30 33 30 30 4b 58 00 00 14 01 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff

Power Supply 2  REV 02  740-049388  1EDL60300DL  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL60300DL
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-20-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 30 33 30 30 44 4c 00 00 14 01 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00

```

```

Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 3  REV 02  740-049388  1EDL61701BT  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL61701BT
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-01-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 31 37 30 31 42 54 00 00 01 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 4  REV 02  740-049388  1EDL62102P7  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102P7
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 37 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 5  REV 02  740-049388  1EDL62102PP  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102PP
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 50 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
FTC 0  REV 14  750-050108  ACPE4038  Fan Controller 8
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 750-050108  S/N: ACPE4038
Assembly ID: 0x0bee  Assembly Version: 01.14
Date: 09-27-2016  Assembly Flags: 0x00

```

```

Version:      REV 14          CLEI Code:      CMUCAHZCAA
ID: QFX10000 FTC          FRU Model Number:  QFX10008-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ee 01 0e 52 45 56 20 31 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 31 30 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 45 34 30 33 38 00 1b 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 5a 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 98 ff ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 0      REV 09      760-054372  ACPD6799      Fan Tray 8
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          760-054372   S/N:          ACPD6799
Assembly ID:   0x0bf0      Assembly Version: 01.09
Date:         09-28-2016   Assembly Flags:  0x00
Version:      REV 09      CLEI Code:    CMUCAHYCAA
ID: QFX10008 FHB          FRU Model Number: QFX10008-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 44 36 37 39 39 00 1c 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1      REV 09      760-054372  ACNZ3584      Fan Tray 8
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          760-054372   S/N:          ACNZ3584
Assembly ID:   0x0bf0      Assembly Version: 01.09
Date:         08-30-2016   Assembly Flags:  0x00
Version:      REV 09      CLEI Code:    CMUCAHYCAA
ID: QFX10008 FHB          FRU Model Number: QFX10008-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00

```

```

Address 0x20: 53 2f 4e 20 41 43 4e 5a 33 35 38 34 00 1e 08 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff
SIB 0          REV 24    750-050058    ACPD4587          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACPD4587
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-19-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 35 38 37 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 1          REV 24    750-050058    ACNZ0635          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACNZ0635
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-06-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 33 35 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 2          REV 24    750-050058    ACPD4908          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACPD4908
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          07-12-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 39 30 38 00 0c 07 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 3          REV 24    750-050058    ACNZ0617          Switch Fabric 8

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNZ0617
Assembly ID: 0x0bec     Assembly Version: 01.24
Date: 06-07-2016       Assembly Flags: 0x00
Version: REV 24         CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB        FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 31 37 00 07 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 4      REV 24      750-050058      ACNZ0527      Switch Fabric 8
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNZ0527
Assembly ID: 0x0bec     Assembly Version: 01.24
Date: 06-06-2016       Assembly Flags: 0x00
Version: REV 24         CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB        FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 35 32 37 00 06 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 5      REV 23      750-050058      ACNX6980      Switch Fabric 8
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNX6980
Assembly ID: 0x0bec     Assembly Version: 01.23
Date: 05-16-2016       Assembly Flags: 0x00
Version: REV 23         CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB        FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 17 52 45 56 20 32 33 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 58 36 39 38 30 00 10 05 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ce 00 00 00 00 00 00 00 00 00 00 00 00

```

show chassis hardware extensive (PTX10016 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			DH995	JNP10016 [PTX10016]

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
                        S/N: DH995
Assembly ID: 0x0566     Assembly Version: 01.22
Date: 02-16-2017       Assembly Flags: 0x00
                        CLEI Code: CMMUN00ARA
ID: JNP10016           FRU Model Number: QFX10016-CHAS

Board Information Record:
Address 0x00: ad 01 10 00 44 aa 50 ab 1b b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 66 01 16 00 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 00 35 30 2d 30 35 36 35 35 35 00 00
Address 0x20: 44 48 39 39 35 00 00 00 00 00 00 00 00 10 02 07
Address 0x30: e1 ff ff ff ad 01 10 00 44 aa 50 ab 1b b6 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4e 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 32 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 51 44 48 39 39 35 00 00 00 00 00 00 00

Midplane REV 22 750-056555 ACPM7810 Midplane 16
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-056555         S/N: ACPM7810
Assembly ID: 0x0be4     Assembly Version: 01.22
Date: 02-16-2017       Assembly Flags: 0x00
Version: REV 22         CLEI Code: CMMUN00ARA
ID: QFX10016 Midplane   FRU Model Number: QFX10016-CHAS

Board Information Record:
Address 0x00: ad 01 10 00 44 aa 50 ab 1b b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e4 01 16 52 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 36 35 35 35 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 37 38 31 30 00 10 02 07
Address 0x30: e1 ff ff ff ad 01 10 00 44 aa 50 ab 1b b6 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4e 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 32 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 51 44 48 39 39 35 00 00 00 00 00 00 00

Routing Engine 0 BUILTIN BUILTIN RE-PTX-2X00x4
vtbd0 15360 MB Virtio Block Disk
vtbd1 15360 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
Routing Engine 1 BUILTIN BUILTIN RE-PTX-2X00x4
vtbd0 15360 MB Virtio Block Disk
vtbd1 15360 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
CB 0 REV 03 750-068820 ACPL7238 Control Board
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-068820         S/N: ACPL7238
Assembly ID: 0x0b9d     Assembly Version: 01.03
Date: 03-15-2017       Assembly Flags: 0x00
Version: REV 03         CLEI Code: CMUCAH3CTB
ID: Control Board       FRU Model Number: QFX10000-RE

Board Information Record:
Address 0x00: ad 01 00 10 e8 b6 c2 46 aa 29 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 37 32 33 38 00 0f 03 07
Address 0x30: e1 ff ff ff ad 01 00 10 e8 b6 c2 46 aa 29 ff ff

```



```

Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 03    750-068820    ACPL7298          Control Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-068820      S/N:         ACPL7298
Assembly ID: 0x0b9d          Assembly Version: 01.03
Date:        03-15-2017      Assembly Flags: 0x00
Version:     REV 03          CLEI Code:    CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 e8 b6 c2 46 99 b9 ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 37 32 39 38 00 0f 03 07
Address 0x30: e1 ff ff ff ad 01 00 10 e8 b6 c2 46 99 b9 ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff
FPC 1          REV 36    750-077140    ACNP4590          LC1102 - 12C / 36Q /
144X
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-077140      S/N:         ACNP4590
Assembly ID: 0x0be7          Assembly Version: 01.36
Date:        10-17-2016      Assembly Flags: 0x00
Version:     REV 36          CLEI Code:    CMUIAM9BAA
ID: ULC-36Q-12Q28          FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 35 39 30 00 11 0a 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         BUILTIN          S/N:         BUILTIN
Assembly ID: 0xf020          Assembly Version: 02.17
Date:        04-19-2012      Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 40 36 bd 09 40 25 32
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 40 36 bd
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         BUILTIN          S/N:         BUILTIN

```

```

Assembly ID: 0xf050          Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0      REV 01      740-054053      QF3600AV      QSF+4X10G-SR
Xcvr 35     REV 01      740-061405      1ACQ110507K     QSF+100GBASE-SR4
FPC 3       REV 07      750-071975      CAHA2224        LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-071975            S/N: CAHA2224
Assembly ID: 0x0be7         Assembly Version: 01.07
Date: 01-17-2017           Assembly Flags: 0x00
Version: REV 07             CLEI Code: PROTOXCLEI
ID: ULC-36Q-12Q28          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 31 39 37 35 00 00
Address 0x20: 53 2f 4e 20 43 41 48 41 32 32 32 34 00 11 01 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: BUILTIN                S/N: BUILTIN
Assembly ID: 0xf020         Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 60 b6 be 09 c0 cf 38
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 60 b6 be
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: BUILTIN                S/N: BUILTIN
Assembly ID: 0xf050         Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20

```

```

Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0          REV 01    740-054053    QG1505YM          QSFP+-4X10G-SR
Xcvr 11         NON-JNPR    GDA2017459        QSFP-100GBASE-LR4
Xcvr 35         NON-JNPR    GDF2008750        QSFP-100GBASE-LR4
FPC 5           REV 13    750-068822    ACPD6501          LC1102 - 12C / 36Q /
144X
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-068822      S/N:              ACPD6501
Assembly ID:   0x0be7          Assembly Version:  01.13
Date:          06-29-2017      Assembly Flags:    0x00
Version:       REV 13          CLEI Code:         CMUIAM9BAC
ID: ULC-36Q-12Q28             FRU Model Number:  QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 32 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 36 35 30 31 00 1d 06 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 43 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 43 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fd ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:             BUILTIN
Assembly ID:  0xf020          Assembly Version:  02.17
Date:         04-19-2012      Assembly Flags:    0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 c6 bc 09 c0 ca 40
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 c0 c6 bc
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:             BUILTIN
Assembly ID:  0xf050          Assembly Version:  02.17
Date:         04-19-2012      Assembly Flags:    0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

```

```

Xcvr 1      REV 01  740-058734  1ECQ11381LA  QSPF-100GBASE-SR4
Xcvr 2      REV 01  740-043308  UWH141S      QSPF+-40G-LR4
Xcvr 3      REV 01  740-043308  UWE2CG9      QSPF+-40G-LR4
FPC 6       REV 37  750-077140  ACNS2793     LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        750-077140  S/N:         ACNS2793
Assembly ID: 0x0be7     Assembly Version: 01.37
Date:       03-25-2017  Assembly Flags: 0x00
Version:    REV 37     CLEI Code:    CMUIAM9BAA
ID: ULC-36Q-12Q28      FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 25 52 45 56 20 33 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 53 32 37 39 33 00 19 03 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN    BUILTIN    FPC CPU
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf020     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 a0 e6 d4 09 00 bd 43
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 a0 e6 d4
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN    12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf050     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0      REV 01  740-032986  QH0400VH     QSPF+-40G-SR4
Xcvr 1      REV 01  740-032986  QH0400VM     QSPF+-40G-SR4
Xcvr 35     REV 01  740-058734  1ECQ11390ZB  QSPF-100GBASE-SR4
FPC 8       REV 36  750-077140  ACNP4625     LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0      EEPROM Version: 0x02

```

```

P/N:          750-077140      S/N:          ACNP4625
Assembly ID:  0x0be7         Assembly Version: 01.36
Date:         10-17-2016     Assembly Flags:  0x00
Version:      REV 36         CLEI Code:      CMUIAM9BAA
ID: ULC-36Q-12Q28          FRU Model Number:  QFX10000-36Q

```

Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 36 32 35 00 11 0a 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff

```

```
CPU          BUILTIN      BUILTIN      FPC CPU
```

```

Jedec Code:  0x7fb0         EEPROM Version:  0x02
P/N:         BUILTIN        S/N:            BUILTIN
Assembly ID: 0xf020         Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags:  0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 e6 d4 09 40 59 4a
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 c0 e6 d4
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      12x100GE/36x40GE/144x10GE

```

```

Jedec Code:  0x7fb0         EEPROM Version:  0x02
P/N:         BUILTIN        S/N:            BUILTIN
Assembly ID: 0xf050         Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags:  0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 1      REV 01  740-058732  1AMQA14206D  QSFP-100GBASE-LR4
Xcvr 10     REV 01  740-032986  QF4301KB    QSFP+-40G-SR4
Xcvr 24     REV 01  740-054050  INFJA0492244 QSFP+-4X10G-LR
FPC 9       REV 35  750-071976  ACPD3055    LC1101 - 30C / 30Q / 96X

```

```

Jedec Code:  0x7fb0         EEPROM Version:  0x02
P/N:         750-071976     S/N:            ACPD3055
Assembly ID: 0x0be8         Assembly Version: 01.35
Date:        05-26-2016     Assembly Flags:  0x00
Version:      REV 35         CLEI Code:      CMUIANABAA
ID: ULC-30Q28              FRU Model Number: JNP10K-LC1101
Board Information Record:

```

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e8 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 31 39 37 36 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 33 30 35 35 00 1a 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 4a
Address 0x50: 4e 50 31 30 4b 2d 4c 43 31 31 30 31 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ef ff ff ff ff ff ff ff ff ff ff ff ff
CPU                               BUILTIN    BUILTIN    FPC CPU
Jedec Code: 0x7fb0                EEPROM Version: 0x02
P/N:        BUILTIN              S/N:        BUILTIN
Assembly ID: 0xf020              Assembly Version: 02.17
Date:       04-19-2012          Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 20 e7 d4 09 00 a6 4d
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 20 e7 d4
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0                               BUILTIN    BUILTIN    30x100GE/30x40GE/96x10GE

Jedec Code: 0x7fb0                EEPROM Version: 0x02
P/N:        BUILTIN              S/N:        BUILTIN
Assembly ID: 0xf050              Assembly Version: 02.17
Date:       04-19-2012          Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0                NON-JNPR      INGBT7970007      QSFP-100GBASE-LR4
Xcvr 1                NON-JNPR      UWQ24D9           QSFP-100GBASE-LR4
Xcvr 2                NON-JNPR      INGBT7970011      QSFP-100GBASE-LR4
Xcvr 3                NON-JNPR      UX60AF1           QSFP-100G-CWDM4
Xcvr 4                NON-JNPR      UX408JJ           QSFP-100GBASE-LR4
Xcvr 11              REV 01      740-058734        1ECQ113835F      QSFP-100GBASE-SR4
Xcvr 18              NON-JNPR      Q7496             QSFP-100G-CWDM4
Xcvr 29              REV 01      740-058734        1ECQ11380LZ      QSFP-100GBASE-SR4
Power Supply 0      REV 02      740-049388        1EDL625039E      Power Supply AC
Jedec Code: 0x7fb0                EEPROM Version: 0x02
P/N:        740-049388            S/N:        1EDL625039E
Assembly ID: 0x0483              Assembly Version: 01.02
Date:       06-19-2016          Assembly Flags: 0x00
Version:    REV 02              CLEI Code:    CMUPADNBAA
ID: QFX10000 AC                FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 45 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 1  REV 02  740-049388  1EDL62503AD  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62503AD
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 06-19-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 41 44 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 2  REV 02  740-049388  1EDL625039P  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL625039P
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 06-19-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 50 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 3  REV 02  740-049388  1EDL702004E  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL702004E
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-18-2017  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 37 30 32 30 30 34 45 00 00 12 01 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff

```

```

Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 4  REV 02  740-049388  1EDL625039D  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL625039D
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 06-19-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 44 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 5  REV 02  740-049388  1EDL63706JD  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL63706JD
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 09-13-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 33 37 30 36 4a 44 00 00 0d 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 6  REV 02  740-049388  1EDL63706JH  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL63706JH
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 09-13-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 33 37 30 36 4a 48 00 00 0d 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
FTC 0  REV 10  750-050309  ACPM2918  Fan Controller 16
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 750-050309  S/N: ACPM2918
Assembly ID: 0x0b9c  Assembly Version: 01.10
Date: 01-13-2017  Assembly Flags: 0x00
Version: REV 10  CLEI Code: CMUCAH5CAA

```



```

ID: QFX10016 FTC                      FRU Model Number: QFX10016-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 9c 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 33 30 39 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 4d 32 39 31 38 00 0d 01 07
  Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 35 43 41 41 51
  Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 6f ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1          REV 10    750-050309    ACPE8185          Fan Controller 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-050309          S/N: ACPE8185
Assembly ID: 0x0b9c        Assembly Version: 01.10
Date: 12-22-2016          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH5CAA
ID: QFX10016 FTC          FRU Model Number: QFX10016-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 9c 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 33 30 39 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 45 38 31 38 35 00 16 0c 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 35 43 41 41 51
  Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 6f ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 0          REV 10    760-077141    ACPV7288          Fan Tray 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 760-077141          S/N: ACPV7288
Assembly ID: 0x0bf1        Assembly Version: 01.10
Date: 06-07-2017          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH4CAA
ID: QFX10016 FHB          FRU Model Number: JNP10016-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f1 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 37 37 31 34 31 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 56 37 32 38 38 00 07 06 07
  Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 34 43 41 41 4a
  Address 0x50: 4e 50 31 30 30 31 36 2d 46 41 4e 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 0d ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1          REV 10    760-057901    ACPL0546          Fan Tray 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 760-057901          S/N: ACPL0546
Assembly ID: 0x0bf1        Assembly Version: 01.10
Date: 02-14-2017          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH4CAA
ID: QFX10016 FHB          FRU Model Number: QFX10016-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f1 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 37 39 30 31 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 4c 30 35 34 36 00 0e 02 07

```

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Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 34 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 0d ff ff ff ff ff ff ff ff ff ff ff ff
SIB 0          REV 15    750-058270    ACPM2804          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPM2804
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          12-21-2016      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 30 34 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 1          REV 15    750-058270    ACPM2808          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPM2808
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          12-21-2016      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 30 38 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 2          REV 15    750-058270    ACPL4450          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPL4450
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          02-17-2017      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 34 34 35 30 00 11 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 3          REV 15    750-058270    ACPJ9834          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02

```

```

P/N:          750-058270      S/N:          ACPJ9834
Assembly ID:  0x0bed          Assembly Version: 01.15
Date:         12-17-2016     Assembly Flags:  0x00
Version:      REV 15         CLEI Code:       CMUCAH6CAA
ID: QFX10016 SIB            FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4a 39 38 33 34 00 11 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00

SIB 4          REV 15      750-058270      ACPM2814      Switch Fabric 16
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-058270   S/N:          ACPM2814
Assembly ID:   0x0bed      Assembly Version: 01.15
Date:         12-21-2016  Assembly Flags:  0x00
Version:      REV 15      CLEI Code:    CMUCAH6CAA
ID: QFX10016 SIB          FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 31 34 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00

SIB 5          REV 15      750-058270      ACPL4277      Switch Fabric 16
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-058270   S/N:          ACPL4277
Assembly ID:   0x0bed      Assembly Version: 01.15
Date:         02-17-2017  Assembly Flags:  0x00
Version:      REV 15      CLEI Code:    CMUCAH6CAA
ID: QFX10016 SIB          FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 34 32 37 37 00 11 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00

FPD Board      REV 07      711-054687      ACPL1407      Front Panel Display
Jedec Code:    0x7fb0      EEPROM Version: 0x01
P/N:          711-054687   S/N:          ACPL1407
Assembly ID:   0x0bf2      Assembly Version: 01.07
Date:         02-12-2017  Assembly Flags:  0x00
Version:      REV 07
ID: QFX10000 FPD
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

I2C Hex Data:

```

Address 0x00: 7f b0 01 ff 0b f2 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 34 36 38 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 31 34 30 37 00 0c 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware models (MX104 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 20	750-044219	CAAS5849	PROTO-ASSEMBLY
PEM 0	REV 01	740-045932	1H072400065	
Routing Engine 0	REV 16	750-044228	CAAR5915	PROTO-ASSEMBLY
AFEB 0		BUILTIN	BUILTIN	
FPC 0		BUILTIN	BUILTIN	
FPC 1		BUILTIN	BUILTIN	
MIC 0	REV 01	750-046905	CAAK7103	MIC-3D-20GE-SFP-EH
FPC 2		BUILTIN	BUILTIN	
Fan Tray	REV 02	711-049570	CAAX6538	PROTO-ASSEMBLY

show chassis hardware models (PTX10008 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 27	750-054097	ACPD4307	QFX10008-CHAS
CB 0	REV 02	750-068820	ACNZ4440	QFX10000-RE
CB 1	REV 02	750-068820	ACNZ8284	QFX10000-RE
FPC 0	REV 36	750-051354	ACNP4679	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 1	REV 33	750-051354	ACNX8831	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 2	REV 32	750-051357	ACPB0341	QFX10000-30C
PIC 0		BUILTIN	BUILTIN	
FPC 3	REV 35	750-051357	ACPD2186	QFX10000-30C
PIC 0		BUILTIN	BUILTIN	
FPC 5	REV 08	750-068822	ACPF0057	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 6	REV 08	750-068822	ACPE9951	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPD Board	REV 07	711-054687	ACPC7142	
Power Supply 0	REV 02	740-049388	1EDL62102N9	QFX10000-PWR-AC
Power Supply 1	REV 02	740-049388	1EDL60300KX	QFX10000-PWR-AC
Power Supply 2	REV 02	740-049388	1EDL60300DL	QFX10000-PWR-AC
Power Supply 3	REV 02	740-049388	1EDL61701BT	QFX10000-PWR-AC
Power Supply 4	REV 02	740-049388	1EDL62102P7	QFX10000-PWR-AC
Power Supply 5	REV 02	740-049388	1EDL62102PP	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	ACPE4038	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	ACPE4032	QFX10008-FAN-CTRL
Fan Tray 0	REV 09	760-054372	ACPD6799	QFX10008-FAN
Fan Tray 1	REV 09	760-054372	ACNZ3584	QFX10008-FAN
SIB 0	REV 24	750-050058	ACPD4587	QFX10008-SF
SIB 1	REV 24	750-050058	ACNZ0635	QFX10008-SF
SIB 2	REV 24	750-050058	ACPD4908	QFX10008-SF
SIB 3	REV 24	750-050058	ACNZ0617	QFX10008-SF

SIB 4	REV 24	750-050058	ACNZ0527	QFX10008-SF
SIB 5	REV 23	750-050058	ACNX6980	QFX10008-SF

show chassis hardware models (PTX10016 Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 24	750-077138	ACPR5157	JNP10016
CB 0	REV 04	711-065897	CAHA9983	PROTO-ASSEMBLY
CB 1	REV 05	711-065897	CAJD3802	PROTO-ASSEMBLY
FPC 2				
PIC 0		BUILTIN	BUILTIN	
FPC 4	REV 35	750-071976	ACPD2168	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 5	REV 13	750-068822	ACPA0336	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 6	REV 41	750-071976	ACPF0695	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 7	REV 35	750-071976	ACPD2139	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 8	REV 35	750-071976	ACPD2142	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 9	REV 41	750-071976	ACPM5461	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 10	REV 35	750-071976	ACNS6795	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 11	REV 35	750-071976	ACPD1831	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 13	REV 41	750-071976	ACPS2075	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 15	REV 37	750-071976	ACPL7163	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
Power Supply 0	REV 01	740-073147	1EDM6171155	JNP10K-PWR-DC
Power Supply 1	REV 01	740-073147	1EDM6281575	JNP10K-PWR-DC
Power Supply 2	REV 01	740-073147	1EDM6171044	JNP10K-PWR-DC
Power Supply 3	REV 01	740-073147	1EDM6281244	JNP10K-PWR-DC
Power Supply 4	REV 01	740-073147	1EDM6282093	JNP10K-PWR-DC
Power Supply 5	REV 01	740-073147	1EDM6281413	JNP10K-PWR-DC
Power Supply 6	REV 01	740-073147	1EDM6171071	JNP10K-PWR-DC
Power Supply 7	REV 01	740-073147	1EDM6170709	JNP10K-PWR-DC
Power Supply 8	REV 01	740-073147	1EDM6171169	JNP10K-PWR-DC
Power Supply 9	REV 01	740-073147	1EDM6170754	JNP10K-PWR-DC
Fan Tray 0				QFX5100-FAN-AFO
Fan Tray 1				QFX5100-FAN-AFO
SIB 0	REV 15	750-077140	ACPV3933	JNP10016-SF
SIB 1	REV 15	750-077140	ACPV3938	JNP10016-SF
SIB 2	REV 15	750-077140	ACPV3974	JNP10016-SF
SIB 3	REV 15	750-077140	ACPV3879	JNP10016-SF
SIB 4	REV 15	750-077140	ACPV3964	JNP10016-SF
SIB 5	REV 15	750-077140	ACPV3981	JNP10016-SF
FPD Board	REV 07	711-054687	ACPS8855	

show chassis hardware clei-models (MX104 Router)

```
user@host> show chassis hardware clei-models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 20	750-044219	PROTOXCLEI	PROTO-ASSEMBLY
PEM 0	REV 01	740-045932		

Routing Engine 0	REV 16	750-044228	PROTOXCLEI	PROTO-ASSEMBLY
AFEB 0		BUILTIN		
FPC 0		BUILTIN		
FPC 1		BUILTIN		
MIC 0	REV 01	750-046905	PROTOXCLEI	MIC-3D-20GE-SFP-EH
FPC 2		BUILTIN		
Fan Tray	REV 02	711-049570	CAAX6538	PROTO-ASSEMBLY

show chassis hardware (MX240 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7EAFC	MX240
Midplane	REV 01	710-021041	TR1502	MX240 Backplane
FPM Board	REV 01	710-017254	KD4017	Front Panel Display
PEM 0	Rev 02	740-017330	000332	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	000226	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 06	740-013063	1000703522	RE-S-2000
Routing Engine 1	REV 06	740-015113	1000687625	RE-S-1300
CB 0	REV 07	710-013385	KC9057	MX SCB
CB 1	REV 05	710-013385	JY4760	MX SCB
FPC 1	REV 01	750-021679	KC7340	DPCE 40x 1GE R
CPU	REV 06	710-013713	KD4078	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18ME	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
FPC 2	REV 04	710-016669	JS4529	DPCE 40x 1GE R EQ
CPU	REV 06	710-013713	KB3969	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y79	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XU8	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YG6	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3XUG	SFP-SX
Xcvr 4	REV 01	740-011613	PBG3XTJ	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3ZUM	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3Y5H	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3UZT	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3US1	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3YG7	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XZ9	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3XTY	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3UZG	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y8W	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3YVX	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YB3	SFP-SX
Xcvr 3	REV 01	740-011613	PBG43VQ	SFP-SX
Fan Tray 0	REV 01	710-021113	JS4642	MX240 Fan Tray

show chassis hardware detail (MX 240 Router with Routing Engine Displaying DIMM Information)

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

Item	Version	Part number	Serial number	Description
Chassis			JN11279B4AFC	MX240 Backplane
Midplane	REV 07	760-021404	TS2474	MX240 Backplane
FPM Board	REV 03	760-021392	XC2643	Front Panel Display
PEM 0	Rev 03	740-017343	QCS0908A068	DC Power Entry Module
Routing Engine 0	REV 01	740-031117	AARCH00	RE-S-1800x4
ad0 3764 MB	STEC M2+	CF 9.0.2	STM2Q3209239145303	Removable Compact Flash
ad1 28626 MB	WDC SSD-F0030S-5000		C933Z036237215548S00	Compact Flash
usb0 (addr 1)	EHCI root hub 0		Intel	uhub0
usb0 (addr 2)	product 0x0020 32		vendor 0x8087	uhub1
DIMM 0	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 1	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 2	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 3	SL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
CB 0	REV 03	710-021523	XD7225	MX SCB
Fan Tray 0	REV 01	710-021113	WZ4986	MX240 Fan Tray

show chassis hardware (MX240 Router with Enhanced MX SCB)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7EAFC	MX240
Midplane	REV 01	710-021041	TR1502	MX240 Backplane
FPM Board	REV 01	710-017254	KD4017	Front Panel Display
PEM 0	Rev 02	740-017330	000332	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	000226	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 06	740-013063	1000703522	RE-S-2000
Routing Engine 1	REV 06	740-015113	1000687625	RE-S-1300
CB 0	REV 02	710-031391	YE8494	Enhanced MX SCB
CB 1	REV 05	710-031391	YOP5764	Enhanced MX SCB
FPC 1	REV 01	750-021679	KC7340	DPCE 40x 1GE R
CPU	REV 06	710-013713	KD4078	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18ME	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
FPC 2	REV 04	710-016669	JS4529	DPCE 40x 1GE R EQ
CPU	REV 06	710-013713	KB3969	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y79	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XU8	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YG6	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3XUG	SFP-SX
Xcvr 4	REV 01	740-011613	PBG3XTJ	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3ZUM	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3Y5H	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3UZT	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3US1	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3YG7	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XZ9	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3XTY	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3UZG	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ

Xcvr 0	REV 01	740-011613	PBG3Y8W	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3YVX	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YB3	SFP-SX
Xcvr 3	REV 01	740-011613	PBG43VQ	SFP-SX
Fan Tray 0	REV 01	710-021113	JS4642	MX240 Fan Tray

show chassis hardware (MX480 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               JN10C7F7FAFB  MX480
Midplane          REV 04    710-017414   TR2071        MX480 Midplane
FPM Board         REV 02    710-017254   KB8459        Front Panel Display
PEM 0             Rev 02    740-017330   QCS07519029   PS 1.2-1.7kW; 100-240V
AC in
PEM 1             Rev 02    740-017330   QCS07519041   PS 1.2-1.7kW; 100-240V
AC in
PEM 2             Rev 02    740-017330   QCS07519097   PS 1.2-1.7kW; 100-240V
AC in
Routing Engine 0  REV 07    740-013063   1000733381    RE-S-2000
Routing Engine 1  REV 07    740-013063   1000733540    RE-S-2000
CB 0              REV 07    710-013385   KA8022        MX SCB
CB 1              REV 07    710-013385   KA8303        MX SCB
FPC 0             REV 09    750-020452   KA8660        DPCE 40x 1GE X EQ
CPU               REV 06    710-013713   KA8185        DPC PMB
PIC 0             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
PIC 1             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
PIC 2             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
PIC 3             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
Fan Tray          Left Fan Tray

```

show chassis hardware (MX480 Router with Enhanced MX SCB)

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               JN10C7F7FAFB  MX480
Midplane          REV 04    710-017414   TR2071        MX480 Midplane
FPM Board         REV 02    710-017254   KB8459        Front Panel Display
PEM 0             Rev 02    740-017330   QCS07519029   PS 1.2-1.7kW; 100-240V
AC in
PEM 1             Rev 02    740-017330   QCS07519041   PS 1.2-1.7kW; 100-240V
AC in
PEM 2             Rev 02    740-017330   QCS07519097   PS 1.2-1.7kW; 100-240V
AC in
Routing Engine 0  REV 07    740-013063   1000733381    RE-S-2000
Routing Engine 1  REV 07    740-013063   1000733540    RE-S-2000
CB 0              REV 07    710-013385   KA8022        Enhanced MX SCB
CB 1              REV 07    710-013385   KA8303        Enhanced MX SCB
FPC 0             REV 09    750-020452   KA8660        DPCE 40x 1GE X EQ
CPU               REV 06    710-013713   KA8185        DPC PMB
PIC 0             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
PIC 1             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
PIC 2             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
PIC 3             BUILTIN   BUILTIN      10x 1GE(LAN) EQ
Fan Tray          Left Fan Tray

```


show chassis hardware (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11C0338AFB  MX480
Midplane      REV 05   710-017414   ABAB8430      MX480 Midplane
FPM Board     REV 02   710-017254   ZS8005        Front Panel Display
PEM 0         Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
PEM 1         Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
PEM 2         Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Routing Engine 0 REV 05   740-031116   9009092471    RE-S-1800x4
Routing Engine 1 REV 05   740-031116   9009097958    RE-S-1800x4
CB 0          REV 16   750-031391   CAAX0789      Enhanced MX SCB
CB 1          REV 16   750-031391   CAAX0856      Enhanced MX SCB
FPC 0         REV 32   750-028467   ABBP1782      MPC 3D 16x 10GE
CPU           REV 10   711-029089   ABBP5410      AMPC PMB
PIC 0         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   983152A00038  SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   B11F00211     SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   AQ72LPB       SFP+-10G-SR
  Xcvr 3      REV 01   740-031980   AHNOWR5       SFP+-10G-SR
PIC 1         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-031980   B11J03627     SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   B11F00300     SFP+-10G-SR
  Xcvr 2      REV 01   740-021308   AQ42WSS       SFP+-10G-SR
  Xcvr 3      REV 01   740-021308   AQ43HGC       SFP+-10G-SR
PIC 2         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   ANAONDO       SFP+-10G-SR
  Xcvr 1      REV 01   740-021308   ANAONGF       SFP+-10G-SR
  Xcvr 2      REV 01   740-021308   ANAONG9       SFP+-10G-SR
  Xcvr 3      REV 01   740-021308   ANAOMP9       SFP+-10G-SR
PIC 3         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   AQA06CG       SFP+-10G-SR
  Xcvr 1      REV 01   740-021308   19T511100493 SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   APR040J       SFP+-10G-SR
FPC 1         REV 26   750-046005   CACN1894      MPC5E 3D Q 2CGE+4XGE
CPU           REV 09   711-045719   CACN8698      RMPC PMB
PIC 0         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      REV 01   740-031980   163363A03046 SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   AJ40JS8       SFP+-10G-SR
PIC 1         BUILTIN  BUILTIN       1X100GE CFP2 OTN
PIC 2         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      REV 01   740-031980   153363A00593 SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   AJ40JUJ       SFP+-10G-SR
PIC 3         BUILTIN  BUILTIN       1X100GE CFP2 OTN
  Xcvr 0      NON-JNPR UQCOB53       CFP2-100G-LR4-D
FPC 2         REV 26   750-046005   CACN1891      MPC5E 3D Q 2CGE+4XGE
CPU           REV 09   711-045719   CACN8694      RMPC PMB
PIC 0         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      NON-JNPR URA012A       SFP+-10G-LR
PIC 1         BUILTIN  BUILTIN       1X100GE CFP2 OTN
  Xcvr 0      NON-JNPR J13F47042     CFP2-100G-LR4-D
PIC 2         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      REV 01   740-031980   AJC0BM3       SFP+-10G-SR
  Xcvr 1      REV 01   740-021308   11T511100917 SFP+-10G-SR
PIC 3         BUILTIN  BUILTIN       1X100GE CFP2 OTN
  Xcvr 0      NON-JNPR UQK07SU       CFP2-100G-LR4-D

```

FPC 3	REV 03	750-045372	CAAD9425	MPCE Type 3 3D
CPU	REV 08	711-035209	CAAD9094	HMPC PMB 2G
MIC 0	REV 14	750-033196	CAAW9204	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC034	CFP2-100G-SR10
MIC 1	REV 19	750-033199	CAAJ1814	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 4	REV 21.0.11	750-045715	CAAY3568	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7430	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AP406NG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AR41NLP	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11D05630	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFP
WAN MEZZ	REV 12	750-049136	CACM6678	MPC5E 24XGE OTN Mezz
FPC 5	REV 11	750-045372	CABK7539	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ2466	HMPC PMB 2G
MIC 0	REV 19	750-033199	CAAJ9719	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	UP1020P	CFP-100G-SR10
MIC 1	REV 07	750-033196	YZ0797	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XC42FC022	CFP2-100G-SR10
Fan Tray				Enhanced Left Fan Tray

show chassis hardware detail (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 05   710-017414   ABAB8430      MX480 Midplane
FPM Board     REV 02   710-017254   ZS8005        Front Panel Display
PEM 0         Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
PEM 1         Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
PEM 2         Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Routing Engine 0 REV 05   740-031116   9009092471    RE-S-1800x4
  ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6862 Compact Flash
  ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-478612-001127 Disk 1
  usb0 (addr 1) EHCI root hub 0 Intel uhub0
  usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
  DIMM 0 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 1 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 2 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 3 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 05   740-031116   9009097958    RE-S-1800x4
  ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6145 Compact Flash
  ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000273 Disk 1
CB 0          REV 16   750-031391   CAAX0789      Enhanced MX SCB
CB 1          REV 16   750-031391   CAAX0856      Enhanced MX SCB
FPC 0         REV 32   750-028467   ABBP1782      MPC 3D 16x 10GE
CPU           REV 10   711-029089   ABBP5410      AMPC PMB
PIC 0         BUILTIN BUILTIN      4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   983152A00038 SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   B11F00211     SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   AQ72LPB       SFP+-10G-SR

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Xcvr 3	REV 01	740-031980	AHNRW5	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11J03627	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11F00300	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ42WSS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HGC	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	ANAOND0	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANAONGF	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	ANAONG9	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	ANAOMP9	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQA06CG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	19T511100493	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	APR040J	SFP+-10G-SR
FPC 1	REV 26	750-046005	CACN1894	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACN8698	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	163363A03046	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ40JS8	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	153363A00593	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ40JUJ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQC0B53	CFP2-100G-LR4-D
FPC 2	REV 26	750-046005	CACN1891	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACN8694	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0		NON-JNPR	URA012A	SFP+-10G-LR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	J13F47042	CFP2-100G-LR4-D
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AJC0BM3	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	11T511100917	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQK07SU	CFP2-100G-LR4-D
FPC 3	REV 03	750-045372	CAAD9425	MPCE Type 3 3D
CPU	REV 08	711-035209	CAAD9094	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9204	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC034	CFP2-100G-SR10
MIC 1	REV 19	750-033199	CAAJ1814	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 4	REV 21.0.11	750-045715	CAAY3568	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7430	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AP406NG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AR41NLP	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11D05630	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 12	750-049136	CACM6678	MPC5E 24XGE OTN Mezz
FPC 5	REV 11	750-045372	CABK7539	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ2466	HMPD PMB 2G
MIC 0	REV 19	750-033199	CAAJ9719	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	UP1020P	CFP-100G-SR10
MIC 1	REV 07	750-033196	YZ0797	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP

Xcvr 0	REV 01	740-046563	XC42FC022	CFP2-100G-SR10
Fan Tray				Enhanced Left Fan Tray

show chassis hardware extensive (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis
Jedec Code:       0x7fb0          EEPROM Version: 0x02
S/N:              JN11C0338AFB
Assembly ID:      0x01fe          Assembly Version: 00.00
Date:             00-00-0000      Assembly Flags:  0x02
ID: MX480
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 01 fe 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 43 30 33 33 38 41 46 42 02 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane          REV 05   710-017414  ABAB8430      MX480 Midplane
Jedec Code:       0x7fb0          EEPROM Version: 0x01
P/N:              710-017414      S/N:          ABAB8430
Assembly ID:      0x01fe          Assembly Version: 01.05
Date:             12-13-2011      Assembly Flags: 0x00
Version:          REV 05
ID: MX480 Midplane          FRU Model Number: CHAS-BP-MX480-S
Board Information Record:
Address 0x00: ad 01 08 00 00 23 9c fc 98 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 01 fe 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 31 37 34 31 34 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 38 34 33 30 00 0d 0c 07
Address 0x30: db ff ff ff ad 01 08 00 00 23 9c fc 98 00 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 34 38 30 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board          REV 02   710-017254  ZS8005        Front Panel Display
Jedec Code:       0x7fb0          EEPROM Version: 0x01
P/N:              710-017254      S/N:          ZS8005
Assembly ID:      0x01ff          Assembly Version: 01.02
Date:             11-21-2011      Assembly Flags: 0x00
Version:          REV 02
ID: Front Panel Display          FRU Model Number: CRAFT-MX480-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 01 ff 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 31 37 32 35 34 00 00
Address 0x20: 53 2f 4e 20 5a 53 38 30 30 35 00 00 00 15 0b 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
Address 0x50: 52 41 46 54 2d 4d 58 34 38 30 2d 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff

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Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PEM 0          Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1024U089
Assembly ID:   0x0432          Assembly Version: 01.05
Date:          06-17-2010      Assembly Flags: 0x00
Version:       Rev 05
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 05 52 65 76 20 30 35 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 30 32 34 55 30 38 39 00 00 11 06 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 1          Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1314U0FJ
Assembly ID:   0x0432          Assembly Version: 01.10
Date:          04-04-2013      Assembly Flags: 0x00
Version:       Rev 10
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 0a 52 65 76 20 31 30 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 33 31 34 55 30 46 4a 00 00 04 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 2          Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1121U076
Assembly ID:   0x0432          Assembly Version: 01.07
Date:          05-23-2011      Assembly Flags: 0x00
Version:       Rev 07
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 07 52 65 76 20 30 37 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 31 32 31 55 30 37 36 00 00 17 05 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 05   740-031116   9009092471   RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-031116      S/N:           9009092471

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Assembly ID: 0x09c0      Assembly Version: 01.05
Date: 11-01-2011        Assembly Flags: 0x00
Version: REV 05          CLEI Code: COUCALDBAA
ID: RE-S-1800x4          FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
  Address 0x00: 54 32 30 32 37 43 41 2d 34 32 46 42 23 23 23 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 09 c0 01 05 52 45 56 20 30 35 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
  Address 0x20: 39 30 30 39 30 39 32 34 37 31 00 00 00 01 0b 07
  Address 0x30: db ff ff ff 54 32 30 32 37 43 41 2d 34 32 46 42
  Address 0x40: 23 23 23 00 01 43 4f 55 43 41 4c 44 42 41 41 52
  Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 4b ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6862 Compact Flash
ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-478612-001127 Disk 1
usb0 (addr 1) EHCI root hub 0 Intel uhub0
usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 1 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 2 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 3 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 05 740-031116 9009097958 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009097958
Assembly ID: 0x09c0      Assembly Version: 01.05
Date: 02-06-2012        Assembly Flags: 0x00
Version: REV 05          CLEI Code: COUCALDBAA
ID: RE-S-1800x4          FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
  Address 0x00: 54 32 30 32 37 43 41 2d 34 32 46 42 23 23 23 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 09 c0 01 05 52 45 56 20 30 35 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
  Address 0x20: 39 30 30 39 30 39 37 39 35 38 00 00 00 06 02 07
  Address 0x30: dc ff ff ff 54 32 30 32 37 43 41 2d 34 32 46 42
  Address 0x40: 23 23 23 00 01 43 4f 55 43 41 4c 44 42 41 41 52
  Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 4b ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6145 Compact Flash
ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000273 Disk 1

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...

show chassis hardware (MX960 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 01    710-013698   AA6082         MX960 Midplane
PIM           Rev 01    740-013110   000008         Power Inlet Module
PEM 2
PEM 3         Rev 01    740-013682   000038         PS 1.7kW; 200-240VAC in
Routing Engine 0 REV 00    740-015113   1000617944     RE-S-1300
CB 0          REV 05    710-013725   JK6947         MX960 Test SCB
FPC 4         REV 01    710-013305   JM7617         MX960 Test DPC
CPU
PIC 0
              BUILTIN    BUILTIN        1x 10GE(LAN/WAN)

```

PIC 1		BUILTIN	BUILTIN	10x 1GE
FPC 7	REV 01	710-013305	JL9634	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
Xcvr 0		NON-JNPR	MYBG65I82C	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	10x 1GE
Xcvr 1	REV 01	740-011782	P7N0368	SFP-SX
Xcvr 4	REV 01	740-011782	P8J1W27	SFP-SX
Xcvr 6	REV 01	740-011782	P8J1VSD	SFP-SX
Xcvr 9	REV 01	740-011782	P8J1W25	SFP-SX
Fan Tray 0				
Fan Tray 1				

show chassis hardware (MX960 Router with Bidirectional Optics)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10BA5B9AFA	MX960
Midplane	REV 03	710-013698	TR0234	MX960 Backplane
FPM Board	REV 03	710-014974	JA0878	Front Panel Display
PDM	Rev 03	740-013110	QCS11135028	Power Distribution Module
PEM 0	Rev 03	740-013682	QCS11154036	PS 1.7kW; 200-240VAC in
PEM 1	Rev 03	740-013682	QCS11154010	PS 1.7kW; 200-240VAC in
PEM 2	Rev 03	740-013682	QCS11154022	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 06	740-013063	1000691458	RE-S-2000
CB 0	REV 07	710-013385	KA2190	MX SCB
CB 1	REV 07	710-013385	KA0837	MX SCB
FPC 3	REV 02	750-018122	KB3890	DPCE 40x 1GE R
CPU				
FPC 4	REV 01	750-018122	KB3889	DPCE 40x 1GE R
CPU	REV 06	710-013713	KB3976	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 1	REV 01	740-020426	4910549	SFP-1000BASE-BX40-D
Xcvr 2	REV 01	740-020426	4910551	SFP-1000BASE-BX40-D
Xcvr 5	REV 01	740-021340	77E245N00006	SFP-1000BASE-BX10-U
Xcvr 6	REV 01	740-020425	4882821	SFP-1000BASE-BX40-U
Xcvr 8	REV 01	740-020425	4882820	SFP-1000BASE-BX40-U
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-020465	77E555N00894	SFP-1000BASE-BX10-D
Xcvr 1	REV 01	740-020465	75E467X00818	SFP-1000BASE-BX10-D
Xcvr 2	REV 01	740-020465	75E467X00573	SFP-1000BASE-BX10-D
Xcvr 3	REV 01	740-020465	4888227	SFP-1000BASE-BX10-D
Xcvr 4	REV 01	740-020465	4888241	SFP-1000BASE-BX10-D
Xcvr 5	REV 01	740-021340	77E245N00005	SFP-1000BASE-BX10-U
Xcvr 6	REV 01	740-021340	76E245X00487	SFP-1000BASE-BX10-U
Xcvr 7	REV 01	740-021341	5255889	SFP-1000BASE-BX10-U
Xcvr 8	REV 01	740-021341	5255887	SFP-1000BASE-BX10-U
Xcvr 9	REV 01	740-021340	77E245N00004	SFP-1000BASE-BX10-U
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-020424	5007582	SFP-1000BASE-BX10-D
Xcvr 1	REV 01	740-020424	4888187	SFP-1000BASE-BX10-D
Xcvr 2	REV 01	740-020424	4656500	SFP-1000BASE-BX10-D
Xcvr 5	REV 01	740-021341	5255886	SFP-1000BASE-BX10-U
Xcvr 7	REV 01	740-021340	77E245N00003	SFP-1000BASE-BX10-U
Xcvr 8	REV 01	740-021341	5255888	SFP-1000BASE-BX10-U
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-017726	74S184H30341	SFP-EX
Xcvr 1	REV 01	740-017726	4814061	SFP-EX
Xcvr 5	REV 01	740-017726	6ZS184H31108	SFP-EX
Xcvr 9	REV 01	740-021340	76E245X00486	SFP-1000BASE-BX10-U

```

Fan Tray 0
Fan Tray 1      REV 03   740-014971   TP0850      Fan Tray

```

show chassis hardware (MX960 Router with Enhanced MX SCB)

```

user@host> show chassis hardware
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              REV 03   740-013698   TR0183         MX960
Midplane             REV 02   710-018051   JY5227         MX960 Backplane
Fan Extender         REV 03   710-014974   JZ6876         Extended Cable Manager
FPM Board            REV 03   740-013110   QCS11035023    Front Panel Display
PDM                  Rev 03   740-013682   QCS1109400L    Power Distribution Module
PEM 1                Rev 03   740-013682   QCS11094015    PS 1.7kW; 200-240VAC in
PEM 2                Rev 03   740-013682   QCS11094012    PS 1.7kW; 200-240VAC in
PEM 3                Rev 06   740-013063   1000687969     PS 1.7kW; 200-240VAC in
Routing Engine 0     REV 06   740-013063   1000687955     RE-S-2000
Routing Engine 1     REV 06   740-013063   1000687955     RE-S-2000
CB 0                 REV 11   750-031391   YZ6072         Enhanced MX SCB
CB 1                 REV 11   750-031391   YZ6068         Enhanced MX SCB
CB 2                 REV 11   750-031391   YZ6081         Enhanced MX SCB
FPC 0                REV 01   750-018122   KA5576         DPCE 40x 1GE R
CPU                  REV 06   710-013713   KB3961         DPC PMB
PIC 0                BUILTIN  BUILTIN        10x 1GE(LAN)
  Xcvr 0             REV 01   740-011613   P9F18GF        SFP-SX
  Xcvr 2             REV 01   740-011782   P9M0TL9        SFP-SX
  Xcvr 7             REV 01   740-011782   P9POXXH        SFP-SX
  Xcvr 9             REV 01   740-011782   P9M0TN1        SFP-SX
PIC 1                BUILTIN  BUILTIN        10x 1GE(LAN)
  Xcvr 0             REV 01   740-011613   PAJ4UHC        SFP-SX
PIC 2                BUILTIN  BUILTIN        10x 1GE(LAN)
  Xcvr 0             REV 01   740-011613   PFF2CD0        SFP-SX
  Xcvr 1             REV 01   740-011613   PBG3ZUT        SFP-SX
  Xcvr 2             REV 01   740-011613   PFF2DDV        SFP-SX
  Xcvr 5             REV 01   740-011613   P8E2SST        SFP-SX
  Xcvr 9             REV 01   740-011782   PB8329N        SFP-SX
PIC 3                BUILTIN  BUILTIN        10x 1GE(LAN)
  Xcvr 0             REV 01   740-026192   1U0201084503342 SFP-100BASE-BX10-U
  Xcvr 1             REV 01   740-026193   1U1201084503313 SFP-100BASE-BX10-D
  Xcvr 2             REV 01   740-011613   PAJ4Y5B        SFP-SX
  Xcvr 6             REV 01   740-011782   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)

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Xcvr 0	REV 03	740-011571	C931BK028	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
FPC 3	REV 10	750-024199	XJ6692	MX FPC Type 3
CPU	REV 03	710-022351	XF5182	DPC PMB
PIC 0	REV 17	750-009553	RJ2945	4x OC-48 SONET
Xcvr 1	REV 01	740-011785	PCP3YLL	SFP-SR
Xcvr 3	REV 01	740-011785	PDSOMRY	SFP-SR
PIC 1	REV 32	750-003700	DP2113	1x OC-192 12xMM VSR
FPC 5	REV 25	750-028467	YM8256	MPC 3D 16x 10GE
CPU	REV 10	711-029089	YL3029	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 1	REV 01	740-031980	AHNOX1Z	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
FPC 7	REV 02	750-031092	JR6658	MPC Type 1 3D Q
CPU	REV 01	711-030884	JZ9038	MPC PMB 2G
MIC 0	REV 08	750-028392	JZ8737	3D 20x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011782	PBE2C6Y	SFP-SX
Xcvr 2		NON-JNPR	U8105N8	SFP-SX
Xcvr 4	REV 01	740-011613	PFM18EF	SFP-SX
Xcvr 7	REV 01	740-011613	PFF2AM8	SFP-SX
Xcvr 8	REV 01	740-011613	PFF2CT6	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011782	PB82VHH	SFP-SX
Xcvr 1	REV 01	740-011613	PFF2CSW	SFP-SX
Xcvr 9	REV 01	740-011613	PFF2BY0	SFP-SX
QXM 0	REV 04	711-028408	JR6372	MPC QXM
FPC 8	REV 05	750-024387	JW9754	MX FPC Type 2
CPU	REV 03	710-022351	KF1651	DPC PMB
PIC 0	REV 08	750-014730	DM3664	4x OC-3 1x OC-12 SFP
Xcvr 0	REV 01	740-016065	81S290N00077	SFP-SR
Xcvr 1		NON-JNPR	2191844	SFP-SR
Xcvr 2	REV 01	740-011618	PD81EE5	SFP-IR
PIC 1	REV 08	750-014637	DM3671	4x OC-12-3 SFP
Xcvr 0	REV 01	740-011785	PCK3UNK	SFP-SR
Xcvr 3	REV 01	740-011785	PDSOMPZ	SFP-SR
FPC 10	REV 04	710-013699	JY4654	DPCE 40x 1GE R
CPU	REV 05	710-013713	JS9717	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 5	REV 01	740-011782	PAR1L72	SFP-SX
Xcvr 6	REV 01	740-011782	P8N1YQ4	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011782	P8Q2AVL	SFP-SX
Xcvr 5	REV 01	740-011782	PAR1L7B	SFP-SX
Xcvr 6	REV 01	740-011782	PAR1L2J	SFP-SX
Xcvr 8	REV 01	740-011782	P8N1YMY	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Fan Tray 0	REV 03	740-014971	TP0567	Fan Tray
Fan Tray 1	REV 03	740-014971	TP0702	Fan Tray

show chassis hardware models (MX960 Router with Enhanced MX SCB)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 03	710-013698	TR0183	CHAS-BP-MX960-S
Fan Extender	REV 02	710-018051	JY5227	ECM-MX960
FPM Board	REV 03	710-014974	JZ6876	CRAFT-MX960-S

Routing Engine 0	REV 06	740-013063	1000687969	RE-S-2000-4096-S
Routing Engine 1	REV 06	740-013063	1000687955	RE-S-2000-4096-S
CB 0	REV 11	750-031391	YZ6072	SCBE-MX-S
CB 1	REV 11	750-031391	YZ6068	SCBE-MX-S
CB 2	REV 11	750-031391	YZ6081	SCBE-MX-S
FPC 0	REV 01	750-018122	KA5576	DPCE-R-40GE-SFP
FPC 1	REV 16	750-031089	YL0719	MX-MPC2-3D
MIC 0	REV 07	750-028387	JR6500	MIC-3D-4XGE-XFP
MIC 1	REV 24	750-028387	YJ3950	MIC-3D-4XGE-XFP
FPC 2	REV 08	710-014219	JY9654	DPC-R-4XGE-XFP
FPC 3	REV 10	750-024199	XJ6692	MX-FPC3
PIC 0	REV 17	750-009553	RJ2945	PC-40C48-SON-SFP
PIC 1	REV 32	750-003700	DP2113	PC-10C192-SON-VSR
FPC 5	REV 25	750-028467	YM8256	MPC-3D-16XGE-SFPP
FPC 7	REV 02	750-031092	JR6658	MX-MPC1-3D-Q
MIC 0	REV 08	750-028392	JZ8737	MIC-3D-20GE-SFP
FPC 8	REV 05	750-024387	JW9754	MX-FPC2
PIC 0	REV 08	750-014730	DM3664	PB-40C3-10C12-SON2-SFP
PIC 1	REV 08	750-014637	DM3671	PB-40C3-40C12-SON-SFP
FPC 10	REV 04	710-013699	JY4654	DPC-R-40GE-SFP
Fan Tray 0	REV 03	740-014971	TP0567	FFANTRAY-MX960-S
Fan Tray 1	REV 03	740-014971	TP0702	FFANTRAY-MX960-S

show chassis hardware (MX960 Router with MPC5EQ)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1214852AFA	MX960
Midplane	REV 01	710-030012	ACAX3674	MX960 Backplane
FPM Board	REV 03	710-014974	CAAZ9326	Front Panel Display
PDM	Rev 03	740-013110	QCS17025017	Power Distribution Module
PEM 0	Rev 10	740-027760	QCS1702N062	PS 4.1kW; 200-240V AC
in				
PEM 1	Rev 04	740-027760	QCS1422N02C	PS 4.1kW; 200-240V AC
in				
PEM 2	Rev 09	740-027760	QCS1614N01X	PS 4.1kW; 200-240V AC
in				
Routing Engine 0	REV 08	740-031116	9009131803	RE-S-1800x4
Routing Engine 1	REV 08	740-031116	9009124913	RE-S-1800x4
CB 0	REV 18	750-031391	CABF0579	Enhanced MX SCB
CB 1	REV 16	750-031391	CAAZ2471	Enhanced MX SCB
CB 2	REV 16	750-031391	CAAW9595	Enhanced MX SCB
FPC 0	REV 18	750-046005	CACE6574	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8908	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA0DYT	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMS7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03Z	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	ANAONAJ	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRQ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-049775	J13K72993	CFP2-100G-LR4
FPC 1	REV 11	750-045372	CABK8154	MPCE Type 3 3D
CPU	REV 08	711-035209	CABE7370	HMPC PMB 2G
MIC 0	REV 07	750-033307	CABD5255	10X10GE SFPP
PIC 0		BUILTIN	BUILTIN	10X10GE SFPP
Xcvr 0	REV 01	740-021308	AQ50319	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ5035V	SFP+-10G-SR

Xcvr 2	REV 01	740-021308	AQ502XJ	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HHR	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQ502YA	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ502EU	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ502HR	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ502A6	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ43H8M	SFP+-10G-SR
MIC 1	REV 14	750-033196	CAAP1398	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC064	CFP-100G-SR10
FPC 3	REV 35	750-028467	CAAT9156	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAV4645	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HZ1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43HZC	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HD2	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502HN	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HGF	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501RZ	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5029V	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ501X9	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ502ZN	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43H86	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502ZY	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502PZ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ503E6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502XN	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11F00213	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ50336	SFP+-10G-SR
FPC 4	REV 18	750-046005	CACE6568	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8900	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA095A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOM1E	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000F	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLYC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLYB	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE00Z	CFP2-100G-SR10
FPC 5	REV 18	750-046005	CACE6577	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8902	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOMXE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLVY	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03T	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLW1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLW3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000J	CFP2-100G-SR10
FPC 7	REV 09	750-037355	CAAF0937	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAD8004	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	ANAOMM3	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP

Xcvr 0	REV 01	740-035329	X000C163	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQGOMS6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRX	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOM6Y	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQGOLZM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00499	CFP-100G-SR10
FPC 8	REV 39	750-045715	CACD1903	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1815	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QC480289	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QC480274	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130190	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130197	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130180	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130199	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0415	MPC5E 24XGE OTN Mezz
FPC 9	REV 05	750-044444	CAAY9801	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3673	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1071	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T12L92342	XFP-10G-SR
Xcvr 1		NON-JNPR	T12L92303	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	CC07BK02X	XFP-10G-SR
QXM 0	REV 06	711-028408	CAAW4883	MPC QXM
QXM 1	REV 06	711-028408	CAAW4603	MPC QXM
FPC 10	REV 21.0.11	750-045715	CAAY3541	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7426	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-031980	AHK01AP	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502ZU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP41BLS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQA08YA	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQA0K26	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA06S3	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQA06AS	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQA053N	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0E97	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA0GS4	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA0JVA	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-021308	AQA057A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANA0MLS	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQA093A	SFP+-10G-SR
Xcvr 3	REV 01	740-021309	943153A00075	SFP+-10G-LR
Xcvr 4	REV 01	740-021308	AQA077B	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQA0JSC	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA0735	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ5028N	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AP40VN5	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0K0J	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA07AP	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA08YB	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 07	750-045717	CAAX3123	MPC5E 24XGE Mezz

FPC 11	REV 17	750-037355	CAAT3986	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAR3972	HMPG PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQA0DSE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501Y3	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ501XU	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ5036Y	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00247	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	ALQ1DKF	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ403YA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP40TY0	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14G0	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00095	CFP-100G-SR10
Fan Tray 0	REV 08	740-031521	ACAF4219	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACAF4225	Enhanced Fan Tray

show chassis hardware detail (MX960 Router)

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user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               MX960
Midplane      REV 01    710-013698   AA6082         MX960 Midplane
PIM           Rev 01    740-013110   000008         Power Inlet Module
PEM 2
PEM 3         Rev 01    740-013682   000038         PS 1.7kW; 200-240VAC in
Routing Engine 0 REV 00    740-015113   1000617944     RE-S-1300
  ad0         245 MB   SanDisk     SDCFB-256      111419E1805T1141 Compact Flash
  ad2         38154 MB FUJITSU     MHT2040BH      NROWT5925N77    Hard Disk
CB 0          REV 05    710-013725   JK6947         MX960 Test SCB
FPC 4         REV 01    710-013305   JM7617         MX960 Test DPC
CPU
PIC 0                               BUILTIN        BUILTIN        1x 10GE(LAN/WAN)
PIC 1                               BUILTIN        BUILTIN        10x 1GE
FPC 7         REV 01    710-013305   JL9634         MX960 Test DPC
CPU
PIC 0                               BUILTIN        BUILTIN        1x 10GE(LAN/WAN)
Xcvr 0        NON-JNPR   MYBG65I82C    XFP-10G-SR
PIC 1          BUILTIN   BUILTIN        10x 1GE
Xcvr 1        REV 01    740-011782   P7N0368        SFP-SX
Xcvr 4        REV 01    740-011782   P8J1W27        SFP-SX
Xcvr 6        REV 01    740-011782   P8J1VSD        SFP-SX
Xcvr 9        REV 01    740-011782   P8J1W25        SFP-SX
Fan Tray 0
Fan Tray 1

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show chassis hardware detail (MX960 Router with MPC5EQ)

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user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               MX960
Midplane      REV 01    710-030012   ACAX3674       MX960 Backplane
FPM Board     REV 03    710-014974   CAAZ9326       Front Panel Display
PDM           Rev 03    740-013110   QCS17025017    Power Distribution Module
PEM 0         Rev 10    740-027760   QCS1702N062    PS 4.1kW; 200-240V AC
in

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PEM 1	Rev 04	740-027760	QCS1422N02C	PS 4.1kW; 200-240V AC
in				
PEM 2	Rev 09	740-027760	QCS1614N01X	PS 4.1kW; 200-240V AC
in				
Routing Engine 0	REV 08	740-031116	9009131803	RE-S-1800x4
ad0 3831 MB	UGB30SFA4000T1		SFA4000T1 000016CD	Compact Flash
ad1 30533 MB	UGB94BPH32H0S1-KCI		11000061346	Disk 1
usb0 (addr 1)	EHCI root hub 0		Intel	uhub0
usb0 (addr 2)	product 0x0020 32		vendor 0x8087	uhub1
DIMM 0	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
DIMM 1	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
DIMM 2	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
DIMM 3	VL31B5263F-F8SD DIE	REV-0 PCB REV-0		MFR ID-ce80
Routing Engine 1	REV 08	740-031116	9009124913	RE-S-1800x4
ad0 3831 MB	UGB30SFA4000T1		SFA4000T1 0000106D	Compact Flash
ad1 30533 MB	UGB94BPH32H0S1-KCI		11000052402	Disk 1
CB 0	REV 18	750-031391	CABF0579	Enhanced MX SCB
CB 1	REV 16	750-031391	CAAZ2471	Enhanced MX SCB
CB 2	REV 16	750-031391	CAAW9595	Enhanced MX SCB
FPC 0	REV 18	750-046005	CACE6574	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8908	RMPD PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA0DYT	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMS7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03Z	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	ANAONAJ	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRQ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-049775	J13K72993	CFP2-100G-LR4
FPC 1	REV 11	750-045372	CABK8154	MPCE Type 3 3D
CPU	REV 08	711-035209	CABE7370	HMPD PMB 2G
MIC 0	REV 07	750-033307	CABD5255	10X10GE SFPP
PIC 0		BUILTIN	BUILTIN	10X10GE SFPP
Xcvr 0	REV 01	740-021308	AQ50319	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ5035V	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502XJ	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HHR	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQ502YA	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ502EU	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ502HR	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ502A6	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ43H8M	SFP+-10G-SR
MIC 1	REV 14	750-033196	CAAP1398	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC064	CFP2-100G-SR10
FPC 3	REV 35	750-028467	CAAT9156	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAV4645	AMPD PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HZ1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43HZC	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HD2	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502HN	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HGF	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501RZ	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5029V	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ501X9	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ502ZN	SFP+-10G-SR

Xcvr 1	REV 01	740-021308	AQ43H86	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502ZY	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502PZ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ503E6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502XN	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11F00213	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ50336	SFP+-10G-SR
FPC 4	REV 18	750-046005	CACE6568	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8900	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA095A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOM1E	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000F	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLYC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLYB	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE00Z	CFP2-100G-SR10
FPC 5	REV 18	750-046005	CACE6577	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8902	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOMXE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLVY	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03T	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLW1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLW3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000J	CFP2-100G-SR10
FPC 7	REV 09	750-037355	CAAF0937	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAD8004	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	ANAOMM3	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X000C163	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQGOMS6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRX	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOM6Y	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQGOLZM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00499	CFP-100G-SR10
FPC 8	REV 39	750-045715	CACD1903	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1815	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QC480289	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QC480274	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130190	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130197	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130180	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130199	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0415	MPC5E 24XGE OTN Mezz
FPC 9	REV 05	750-044444	CAAY9801	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3673	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1071	3D 4x 10GE XFP

PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T12L92342	XFP-10G-SR
Xcvr 1		NON-JNPR	T12L92303	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	CC07BK02X	XFP-10G-SR
QXM 0	REV 06	711-028408	CAAW4883	MPC QXM
QXM 1	REV 06	711-028408	CAAW4603	MPC QXM
FPC 10	REV 21.0.11	750-045715	CAAY3541	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7426	RMPM PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-031980	AHK01AP	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502ZU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP41BLS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQA08YA	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQA0K26	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA06S3	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQA06AS	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQA053N	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0E97	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA0GS4	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA0JVA	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-021308	AQA057A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANA0MLS	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQA093A	SFP+-10G-SR
Xcvr 3	REV 01	740-021309	943153A00075	SFP+-10G-LR
Xcvr 4	REV 01	740-021308	AQA077B	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQA0JSC	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA0735	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ5028N	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AP40VN5	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0K0J	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA07AP	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA08YB	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 07	750-045717	CAAX3123	MPC5E 24XGE Mezz
FPC 11	REV 17	750-037355	CAAT3986	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAR3972	HMPM PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQA0DSE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501Y3	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ501XU	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ5036Y	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00247	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	ALQ1DKF	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ403YA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP40TY0	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14G0	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00095	CFP-100G-SR10
Fan Tray 0	REV 08	740-031521	ACAF4219	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACAF4225	Enhanced Fan Tray

show chassis hardware extensive (MX960 Router with MPC5EQ)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
------	---------	-------------	---------------	-------------


```

Chassis                               JN1214852AFA      MX960
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
                                           S/N: JN1214852AFA
Assembly ID: 0x0512                    Assembly Version: 00.00
Date: 00-00-0000                       Assembly Flags: 0x00
ID: MX960
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 05 12 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x20: 4a 4e 31 32 31 34 38 35 32 41 46 41 00 00 00 00
  Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane                               REV 01 710-030012 ACAX3674 MX960 Backplane
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
P/N: 710-030012                      S/N: ACAX3674
Assembly ID: 0x01df                    Assembly Version: 01.01
Date: 01-19-2013                     Assembly Flags: 0x00
Version: REV 01                      CLEI Code: COM8T00CRB
ID: MX960 Backplane                  FRU Model Number: CHAS-BP-MX960-S
Board Information Record:
  Address 0x00: ad 01 08 00 54 e0 32 bc 68 00 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 01 df 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 33 30 30 31 32 00 00
  Address 0x20: 53 2f 4e 20 41 43 41 58 33 36 37 34 00 13 01 07
  Address 0x30: dd ff ff ff ad 01 08 00 54 e0 32 bc 68 00 ff ff
  Address 0x40: ff ff ff ff 01 43 4f 4d 38 54 30 30 43 52 42 43
  Address 0x50: 48 41 53 2d 42 50 2d 4d 58 39 36 30 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff aa ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board                             REV 03 710-014974 CAAZ9326 Front Panel Display
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 710-014974                      S/N: CAAZ9326
Assembly ID: 0x01e6                    Assembly Version: 01.03
Date: 12-31-2012                     Assembly Flags: 0x00
Version: REV 03                      FRU Model Number: CRAFT-MX960-S
ID: Front Panel Display
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 01 e6 01 03 52 45 56 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 31 34 39 37 34 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 5a 39 33 32 36 00 1f 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
  Address 0x50: 52 41 46 54 2d 4d 58 39 36 30 2d 53 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PDM                                   Rev 03 740-013110 QCS17025017 Power Distribution Module
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 740-013110                      S/N: QCS17025017
Assembly ID: 0x0416                    Assembly Version: 01.03
Date: 01-10-2013                     Assembly Flags: 0x00
Version: Rev 03
ID: Power Distribution Module
Board Information Record:

```

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 16 01 03 52 65 76 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 31 33 31 31 30 00 00
Address 0x20: 51 43 53 31 37 30 32 35 30 31 37 00 00 0a 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 0          Rev 10   740-027760   QCS1702N062   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version:  0x01
P/N:           740-027760      S/N:             QCS1702N062
Assembly ID:   0x0430          Assembly Version: 01.10
Date:          01-15-2013      Assembly Flags:   0x00
Version:       Rev 10
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 0a 52 65 76 20 31 30 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 37 30 32 4e 30 36 32 00 00 0f 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 1          Rev 04   740-027760   QCS1422N02C   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version:  0x01
P/N:           740-027760      S/N:             QCS1422N02C
Assembly ID:   0x0430          Assembly Version: 01.04
Date:          06-04-2010      Assembly Flags:   0x00
Version:       Rev 04
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 04 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 34 32 32 4e 30 32 43 00 00 04 06 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 2          Rev 09   740-027760   QCS1614N01X   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version:  0x01
P/N:           740-027760      S/N:             QCS1614N01X
Assembly ID:   0x0430          Assembly Version: 01.09
Date:          04-07-2012      Assembly Flags:   0x00
Version:       Rev 09
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 09 52 65 76 20 30 39 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00

```

```

Address 0x20: 51 43 53 31 36 31 34 4e 30 31 58 00 00 07 04 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 08 740-031116 9009131803 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009131803
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 03-04-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 33 31 38 30 33 00 00 00 04 03 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 000016CD Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000061346 Disk 1
usb0 (addr 1) EHCI root hub 0 Intel uhub0
usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 1 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 2 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 3 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
Routing Engine 1 REV 08 740-031116 9009124913 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009124913
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 01-09-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 32 34 39 31 33 00 00 00 09 01 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 0000106D Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000052402 Disk 1
CB 0 REV 18 750-031391 CABF0579 Enhanced MX SCB
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-031391 S/N: CABF0579
Assembly ID: 0x09b0 Assembly Version: 01.18
Date: 04-15-2013 Assembly Flags: 0x00
Version: REV 18 CLEI Code: COUCASRBAA
ID: Enhanced MX SCB FRU Model Number: SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

```

I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 42 46 30 35 37 39 00 0f 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 53 52 42 41 41 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 43 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 7d ff ff ff ff ff ff ff ff ff ff ff ff

CB 1          REV 16    750-031391    CAAZ2471          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:            CAAZ2471
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         03-09-2013      Assembly Flags:  0x00
Version:      REV 16          CLEI Code:       COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number: SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 5a 32 34 37 31 00 09 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff ff

CB 2          REV 16    750-031391    CAAW9595          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:            CAAW9595
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         02-01-2013      Assembly Flags:  0x00
Version:      REV 16          CLEI Code:       COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number: SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 57 39 35 39 35 00 01 02 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff ff

FPC 0          REV 18    750-046005    CACE6574          MPC5E 3D Q 2CGE+4XGE
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-046005      S/N:            CACE6574
Assembly ID:  0x0b8c          Assembly Version: 01.18
Date:         11-20-2013      Assembly Flags:  0x00
Version:      REV 18          CLEI Code:       PROTOXCLEI
ID: MPC5E 3D Q 2CGE+4XGE      FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 8c 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 36 30 30 35 00 00
Address 0x20: 53 2f 4e 20 43 41 43 45 36 35 37 34 00 14 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00

```

```

Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 09   711-045719   CACG8908           RMPC PMB
Jedec Code:  0x7fb0           EEPROM Version:  0x02
P/N:         711-045719       S/N:         CACG8908
Assembly ID: 0x0b85           Assembly Version: 01.09
Date:        11-13-2013       Assembly Flags: 0x00
Version:     REV 09
ID: RMPC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 85 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 35 37 31 39 00 00
Address 0x20: 53 2f 4e 20 43 41 43 47 38 39 30 38 00 0d 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN          2X10GE SFPP OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:         BUILTIN
Assembly ID: 0x0a90           Assembly Version: 00.00
Date:        00-00-0000       Assembly Flags: 0x00
ID: 2X10GE SFPP OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ae dc 00 00 00 00 0a 6e 00 00
Xcvr 0          REV 01   740-021308   AQA0DYT           SFP+-10G-SR
Xcvr 1          REV 01   740-021308   AQGOMS7           SFP+-10G-SR
PIC 1          BUILTIN      BUILTIN          1X100GE CFP2 OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:         BUILTIN
Assembly ID: 0x0a6e           Assembly Version: 00.00
Date:        00-00-0000       Assembly Flags: 0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 03 f3 8c 31 5c e7 80 00 00 00 02
Xcvr 0          REV 01   740-046563   XD16FC03Z         CFP2-100G-SR10
PIC 2          BUILTIN      BUILTIN          2X10GE SFPP OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:         BUILTIN
Assembly ID: 0x0a90           Assembly Version: 00.00

```

```

Date:          00-00-0000      Assembly Flags:    0x00
ID: 2X10GE SFPP OTN
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 03 f5 6c 31 5c db 40 00 00 00 02
  Xcvr 0      REV 01    740-021308    ANA0NAJ      SFP+-10G-SR
  Xcvr 1      REV 01    740-021308    AQGOMRQ      SFP+-10G-SR
  PIC 3              BUILTIN    BUILTIN    1X100GE CFP2 OTN
Jedec Code:    0x0000      EEPROM Version:    0x00
P/N:          BUILTIN      S/N:        BUILTIN
Assembly ID:   0x0a6e      Assembly Version:    00.00
Date:          00-00-0000      Assembly Flags:    0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 03 ed ec 31 5c e2 e8 00 00 00 02
  Xcvr 0      REV 01    740-049775    J13K72993    CFP2-100G-LR4
  FPC 1      REV 11    750-045372    CABK8154    MPCE Type 3 3D
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:          750-045372    S/N:        CABK8154
Assembly ID:   0x09db      Assembly Version:    04.11
Date:          05-18-2013    Assembly Flags:    0x00
Version:       REV 11      CLEI Code:      COUIBBNBAA
ID: MPCE Type 3 3D      FRU Model Number:    MX-MPC3E-3D
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 09 db 04 0b 52 45 56 20 31 31 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 35 33 37 32 00 00
  Address 0x20: 53 2f 4e 20 43 41 42 4b 38 31 35 34 00 12 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4e 42 41 41 4d
  Address 0x50: 58 2d 4d 50 43 33 45 2d 33 44 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 44 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff cf ff ff ff ff ff ff ff ff ff ff ff ff
  CPU          REV 08    711-035209    CABE7370    HMPC PMB 2G
Jedec Code:    0x7fb0      EEPROM Version:    0x01
P/N:          711-035209    S/N:        CABE7370
Assembly ID:   0x0b04      Assembly Version:    01.08
Date:          05-08-2013    Assembly Flags:    0x00
Version:       REV 08
ID: HMPC PMB 2G
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 01 ff 0b 04 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 35 32 30 39 00 00
Address 0x20: 53 2f 4e 20 43 41 42 45 37 33 37 30 00 08 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
MIC 0          REV 07    750-033307    CABD5255          10X10GE SFPP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033307      S/N:           CABD5255
Assembly ID:   0x0a2a          Assembly Version: 02.07
Date:          04-25-2013      Assembly Flags: 0x00
Version:       REV 07          CLEI Code:     COUIBBJBAA
ID: 10X10GE SFPP              FRU Model Number: MIC3-3D-10XGE-SFPP
Board Information Record:
Address 0x00: 34 01 03 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 2a 02 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 33 30 37 00 00
Address 0x20: 53 2f 4e 20 43 41 42 44 35 32 35 35 00 19 04 07
Address 0x30: dd ff ff ff 34 01 03 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4a 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 30 58 47 45 2d 53 46 50
Address 0x60: 50 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 82 c0 03 f0 bc 57 79 83 80 00 00 00 02
PIC 0          BUILTIN      BUILTIN          10X10GE SFPP
Xcvr 0         REV 01    740-021308    AQ50319          SFP+-10G-SR
Xcvr 1         REV 01    740-021308    AQ5035V          SFP+-10G-SR
Xcvr 2         REV 01    740-021308    AQ502XJ          SFP+-10G-SR
Xcvr 3         REV 01    740-021308    AQ43HHR          SFP+-10G-SR
Xcvr 4         REV 01    740-021308    AQ502YA          SFP+-10G-SR
Xcvr 5         REV 01    740-021308    AQ502EU          SFP+-10G-SR
Xcvr 6         REV 01    740-021308    AQ502HR          SFP+-10G-SR
Xcvr 7         REV 01    740-021308    AQ502A6          SFP+-10G-SR
Xcvr 8         REV 01    740-021308    AQ43H8M          SFP+-10G-SR
MIC 1          REV 14    750-033196    CAAP1398         1X100GE CXP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033196      S/N:           CAAP1398
Assembly ID:   0x0a29          Assembly Version: 03.14
Date:          10-27-2012      Assembly Flags: 0x00
Version:       REV 14          CLEI Code:     COUIBBKBAA
ID: 1X100GE CXP              FRU Model Number: MIC3-3D-1X100GE-CXP
Board Information Record:
Address 0x00: 34 01 07 07 08 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 29 03 0e 52 45 56 20 31 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 31 39 36 00 00
Address 0x20: 53 2f 4e 20 43 41 41 50 31 33 39 38 00 1b 0a 07
Address 0x30: dc ff ff ff 34 01 07 07 08 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4b 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 58 31 30 30 47 45 2d 43
Address 0x60: 58 50 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 96 c0 03 ef cc 57 79 85 08 00 00 00 02
PIC 2          BUILTIN      BUILTIN          1X100GE CXP
Xcvr 0         REV 01    740-046563    XD16FC064        CFP2-100G-SR10
FPC 3          REV 35    750-028467    CAAT9156         MPC 3D 16x 10GE
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:           750-028467      S/N:           CAAT9156
Assembly ID:   0x0997          Assembly Version: 01.35
Date:          12-17-2012      Assembly Flags: 0x00

```

```

Version:      REV 35
ID: MPC 3D 16x 10GE      FRU Model Number: MPC-3D-16XGE-SFPP
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 09 97 01 23 52 45 56 20 33 35 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 32 38 34 36 37 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 54 39 31 35 36 00 11 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 4d
  Address 0x50: 50 43 2d 33 44 2d 31 36 58 47 45 2d 53 46 50 50
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CPU      REV 11      711-029089      CAAV4645      AMPC PMB
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N:      711-029089      S/N:      CAAV4645
Assembly ID: 0x0998      Assembly Version: 01.11
Date:      12-13-2012      Assembly Flags: 0x00
Version:      REV 11
ID: AMPC PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 09 98 01 0b 52 45 56 20 31 31 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 32 39 30 38 39 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 56 34 36 34 35 00 0d 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0      BUILTIN      BUILTIN      4x 10GE(LAN) SFP+
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:      BUILTIN      S/N:      BUILTIN
Assembly ID: 0x02fe      Assembly Version: 00.00
Date:      00-00-0000      Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 02 fe 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 02 6b 94 00 00 00 00 02 fe 00 00
  Xcvr 0      REV 01      740-021308      AQ43HZ1      SFP+-10G-SR
  Xcvr 1      REV 01      740-021308      AQ43HZC      SFP+-10G-SR
  Xcvr 2      REV 01      740-021308      AQ43HD2      SFP+-10G-SR
  Xcvr 3      REV 01      740-021308      AQ502HN      SFP+-10G-SR
PIC 1      BUILTIN      BUILTIN      4x 10GE(LAN) SFP+
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:      BUILTIN      S/N:      BUILTIN
Assembly ID: 0x02fe      Assembly Version: 00.00
Date:      00-00-0000      Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:

```



```

Address 0x00: 00 00 00 00 02 fe 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ac 0c 00 00 00 00 02 fe 00 00
  Xcvr 0      REV 01  740-021308  AQ43HGF      SFP+-10G-SR
  Xcvr 1      REV 01  740-021308  AQ501RZ      SFP+-10G-SR
  Xcvr 2      REV 01  740-021308  AQ5029V      SFP+-10G-SR
  Xcvr 3      REV 01  740-021308  AQ501X9      SFP+-10G-SR
  PIC 2              BUILTIN      BUILTIN      4x 10GE(LAN) SFP+
Jedec Code:  0x0000      EEPROM Version:  0x00
P/N:         BUILTIN      S/N:         BUILTIN
Assembly ID: 0x02fe      Assembly Version: 00.00
Date:        00-00-0000   Assembly Flags: 0x00
.....

```

show chassis hardware models (MX960 Router with MPC5EQ)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 01  710-030012  ACAX3674      CHAS-BP-MX960-S
FPM Board     REV 03  710-014974  CAAZ9326      CRAFT-MX960-S
PEM 0         Rev 10  740-027760  QCS1702N062   PWR-MX960-4100-AC-S
PEM 1         Rev 04  740-027760  QCS1422N02C   PWR-MX960-4100-AC-S
PEM 2         Rev 09  740-027760  QCS1614N01X   PWR-MX960-4100-AC-S
Routing Engine 0 REV 08  740-031116  9009131803    RE-S-1800X4-16G-S
Routing Engine 1 REV 08  740-031116  9009124913    RE-S-1800X4-16G-S
CB 0          REV 18  750-031391  CABF0579      SCBE-MX-S
CB 1          REV 16  750-031391  CAAZ2471      SCBE-MX-S
CB 2          REV 16  750-031391  CAAW9595      SCBE-MX-S
FPC 0         REV 18  750-046005  CACE6574      PROTO-ASSEMBLY
FPC 1         REV 11  750-045372  CABK8154      MX-MPC3E-3D
  MIC 0       REV 07  750-033307  CABD5255      MIC3-3D-10XGE-SFP
  MIC 1       REV 14  750-033196  CAAP1398      MIC3-3D-1X100GE-CXP
FPC 3         REV 35  750-028467  CAAT9156      MPC-3D-16XGE-SFP
FPC 4         REV 18  750-046005  CACE6568      PROTO-ASSEMBLY
FPC 5         REV 18  750-046005  CACE6577      PROTO-ASSEMBLY
FPC 7         REV 09  750-037355  CAAF0937      MPC4E-2CGE-8XGE
FPC 8         REV 39  750-045715  CACD1903      PROTO-ASSEMBLY
FPC 9         REV 05  750-044444  CAAY9801      MX-MPC2E-3D-P
  MIC 0       REV 28  750-028387  CAAX1071      MIC-3D-4XGE-XFP
FPC 10        REV 21.0.11 750-045715  CAAY3541      PROTO-ASSEMBLY
FPC 11        REV 17  750-037355  CAAT3986      MPC4E-3D-2CGE-8XGE
Fan Tray 0    REV 08  740-031521  ACAF4219      FFANTRAY-MX960-HC-S
Fan Tray 1    REV 08  740-031521  ACAF4225      FFANTRAY-MX960-HC-S

```

show chassis hardware clei-models (MX960 Router with MPC5EQ)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Midplane      REV 01  710-030012  COM8T00CRB     CHAS-BP-MX960-S
FPM Board     REV 03  710-014974  CAAZ9326      CRAFT-MX960-S
PEM 0         Rev 10  740-027760  QCS1702N062   PWR-MX960-4100-AC-S
PEM 1         Rev 04  740-027760  QCS1422N02C   PWR-MX960-4100-AC-S
PEM 2         Rev 09  740-027760  QCS1614N01X   PWR-MX960-4100-AC-S

```

Routing Engine 0	REV 08	740-031116	COUCASKBAA	RE-S-1800X4-16G-S
Routing Engine 1	REV 08	740-031116	COUCASKBAA	RE-S-1800X4-16G-S
CB 0	REV 18	750-031391	COUCASRBAA	SCBE-MX-S
CB 1	REV 16	750-031391	COUCARCBAB	SCBE-MX-S
CB 2	REV 16	750-031391	COUCARCBAB	SCBE-MX-S
FPC 0	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	COUIBBNBAA	MX-MPC3E-3D
MIC 0	REV 07	750-033307	COUIBBJBAA	MIC3-3D-10XGE-SFPP
MIC 1	REV 14	750-033196	COUIBBKBAA	MIC3-3D-1X100GE-CXP
FPC 3	REV 35	750-028467		MPC-3D-16XGE-SFPP
FPC 4	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 5	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 7	REV 09	750-037355	PROTOXCLEI	MPC4E-2CGE-8XGE
FPC 8	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 9	REV 05	750-044444	COUIBBGBAA	MX-MPC2E-3D-P
MIC 0	REV 28	750-028387	COUIA16BAA	MIC-3D-4XGE-XFP
FPC 10	REV 21.0.11	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 11	REV 17	750-037355	IPU3A4DHAA	MPC4E-3D-2CGE-8XGE
Fan Tray 0	REV 08	740-031521		FFANTRAY-MX960-HC-S
Fan Tray 1	REV 08	740-031521		FFANTRAY-MX960-HC-S

show chassis hardware (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

user@host> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN123F6D9AFA	MX960
Midplane	REV 04	750-047849	ACRC8764	Enhanced MX960 Backplane
FPM Board	REV 03	710-014974	CACS4395	Front Panel Display
PDM	Rev 03	740-013110	QCS1809500Z	Power Distribution Module
PEM 0	Rev 08	740-029344	QCS1817V0LK	DC 4.1kW Power Entry
Module				
PEM 1	Rev 08	740-029344	QCS1814V01F	DC 4.1kW Power Entry
Module				
PEM 2	Rev 08	740-029344	QCS1810V1EW	DC 4.1kW Power Entry
Module				
PEM 3	Rev 08	740-029344	QCS1810V1K5	DC 4.1kW Power Entry
Module				
Routing Engine 0	REV 11	740-031116	9013103483	RE-S-1800x4
Routing Engine 1	REV 10	740-031116	9009198513	RE-S-1800x4
CB 0	REV 23	750-031391	CADW3218	Enhanced MX SCB
CB 1	REV 14	750-031391	ABBK5220	Enhanced MX SCB
FPC 1	REV 14	750-045372	CADK0464	MPCE Type 3 3D
CPU	REV 10	711-035209	CADM9839	HMPC PMB 2G
MIC 0	REV 19	750-033199	CAAE5870	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	UTH0H0W	CFP-100G-LR4
FPC 2	REV 14	750-045372	CADN3262	MPCE Type 3 3D
CPU	REV 10	711-035209	CADN8129	HMPC PMB 2G
FPC 3	REV 14	750-045372	CADH0146	MPCE Type 3 3D
CPU	REV 10	711-035209	CADT2458	HMPC PMB 2G
MIC 0	REV 03	750-057666	CADP1386	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	SMD5136.1	OTN-100G-LH
FPC 4	REV 18	750-045372	CAEV5668	MPCE Type 3 3D
CPU	REV 10	711-035209	CAET7827	HMPC PMB 2G
FPC 7	REV 14	750-045372	CADJ1947	MPCE Type 3 3D
CPU	REV 10	711-035209	CADJ1561	HMPC PMB 2G
MIC 0	REV 05	750-057666	CAEB5763	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	1DJBZ052002	OTN-100G-LH

FPC 8	REV 14	750-045372	CADK0485	MPCE Type 3 3D
CPU	REV 10	711-035209	CADM9828	HMPCE PMB 2G
MIC 0	REV 03	750-057666	CADP1390	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
FPC 9	REV 14	750-045372	CADJ1936	MPCE Type 3 3D
CPU	REV 10	711-035209	CADJ1566	HMPCE PMB 2G
MIC 0	REV 14	750-057666	CAFF7544	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	1DJBZ05100K	OTN-100G-LH
FPC 10	REV 14	750-054901	CADJ3846	MPC3E NG HQoS
CPU	REV 11	711-045719	CADN5471	RMPC PMB
MIC 0	REV 05	750-057666	CAEB5760	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	SMD5091.1	CFP-Loopback
Fan Tray 0	REV 08	740-031521	ACDB4083	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACDB3995	Enhanced Fan Tray

show chassis hardware clei-models(MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	750-047849	CMMJA10BRA	CHAS-BP3-MX960-S
FPM Board	REV 03	710-014974		CRAFT-MX960-S
PEM 0	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 1	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 2	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 3	Rev 08	740-029344		PWR-MX960-4100-DC-S
Routing Engine 0	REV 11	740-031116	COUCASYBAB	RE-S-1800X4-16G-S
Routing Engine 1	REV 10	740-031116	COUCASYBAA	RE-S-1800X4-16G-S
CB 0	REV 23	750-031391	COUCATXBAA	SCBE-MX-S
CB 1	REV 14	750-031391	COUCARCBAA	SCBE-MX-S
FPC 1	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 19	750-033199	COUIBA8BAA	MIC3-3D-1X100GE-CFP
FPC 2	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
FPC 3	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 03	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 4	REV 18	750-045372	COUIBBNBAC	MX-MPC3E-3D
FPC 7	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 05	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 8	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 03	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 9	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 14	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 10	REV 14	750-054901	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 05	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
Fan Tray 0	REV 08	740-031521		FFANTRAY-MX960-HC-S
Fan Tray 1	REV 08	740-031521		FFANTRAY-MX960-HC-S

show chassis hardware (MX10008 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			DE487	JNP10008 [MX10008]
Midplane	REV 27	750-054097	ACPD4307	Midplane 8
Routing Engine 0		BUILTIN	BUILTIN	RE X10 LT
Routing Engine 1		BUILTIN	BUILTIN	RE X10
CB 0	REV 02	750-079563	CAFF4580	Control Board
CB 1	REV 04	750-079563	CAGL8034	Control Board

..				
...				
..				
4				
FPC 3	REV 04	750-084779	CAKR7019	JNP10K-LC2101
CPU	REV 05	750-073391	CAKJ2854	LC 2101 PMB
PIC 0		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-058734	1ACQ104300K	QSFP-100GBASE-SR4
PIC 1		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-061405	1ACQ12110AN	QSFP-100GBASE-SR4
PIC 2		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-046565	QG1105B2	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-045627	QH08036X	40GBASE eSR4
PIC 4		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-067443	XWRORY7	QSFP+-40G-SR4
Xcvr 1	REV 01	740-067443	XWRORYH	QSFP+-40G-SR4
Xcvr 2	REV 01	740-067443	XWRORYP	QSFP+-40G-SR4
Xcvr 3	REV 01	740-067443	XWS028S	QSFP+-40G-SR4
PIC 5		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 3	REV 01	740-058734	1ACQ113406C	QSFP-100GBASE-SR4
FPD Board	REV 07	711-054687	ACPC7142	Front Panel Display
PEM 0	REV 02	740-049388	1EDL62102N9	Power Supply AC
PEM 1	REV 02	740-049388	1EDL60300KX	Power Supply AC
PEM 2	REV 02	740-049388	1EDL60300DL	Power Supply AC
PEM 3	REV 02	740-049388	1EDL61701BT	Power Supply AC
PEM 4	REV 02	740-049388	1EDL62102P7	Power Supply AC
PEM 5	REV 02	740-049388	1EDL62102PP	Power Supply AC
FTC 0	REV 14	750-050108	ACPE4038	Fan Controller 8
FTC 1	REV 14	750-050108	ACPE4032	Fan Controller 8
Fan Tray 0	REV 09	760-054372	ACPD6799	Fan Tray 8
Fan Tray 1	REV 09	760-054372	ACNZ3584	Fan Tray 8
SFB 0	REV 24	750-050058	ACPD4587	Switch Fabric (SIB) 8
SFB 1	REV 24	750-050058	ACNZ0635	Switch Fabric (SIB) 8
SFB 2	REV 24	750-050058	ACPD4908	Switch Fabric (SIB) 8
SFB 3	REV 24	750-050058	ACNZ0617	Switch Fabric (SIB) 8
SFB 4	REV 24	750-050058	ACNZ0527	Switch Fabric (SIB) 8
SFB 5	REV 23	750-050058	ACNX6980	Switch Fabric (SIB) 8

show chassis hardware clei-models (MX10008 Router)

user@host> show chassis hardware clei-models				
Hardware inventory:				
Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 27	750-054097	CMMUM00ARA	QFX10008-CHAS
CB 0	REV 02	750-079563		
CB 1	REV 04	750-079563		
FPC 0	REV 12	750-073174	PROTOXCLEI	PROTO-ASSEMBLY
FPC 2	REV 03	750-073174	PROTOXCLEI	PROTO-ASSEMBLY
FPC 3	REV 04	750-084779	PROTOXCLEI	PROTO-ASSEMBLY
FPD Board	REV 07	711-054687		
PEM 0	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
PEM 1	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
PEM 2	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
PEM 3	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
PEM 4	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
PEM 5	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
Fan Tray 0	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN

Fan Tray 1	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN
SFB 0	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SFB 1	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SFB 2	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SFB 3	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SFB 4	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SFB 5	REV 23	750-050058	CMUCAH0CAA	QFX10008-SF

show chassis hardware detail(MX10008 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
Midplane            REV 27    750-054097   ACPD4307       Midplane 8
Routing Engine 0
  vtbd0 17408 MB
  vtbd1 57344 MB
  vtbd2 12288 MB
  ada0 128 MB QEMU
  usb0 (addr 0.1) XHCI root HUB 0 QM00002
                                     0x8086       uhub0
Routing Engine 1
  vtbd0 17408 MB
  vtbd1 57344 MB
  vtbd2 12288 MB
  ada0 128 MB QEMU
  usb0 (addr 0.1) XHCI root HUB 0 QM00002
                                     0x8086       uhub0
CB 0                 REV 02    750-079563   CAFF4580       Control Board
CB 1                 REV 04    750-079563   CAGL8034       Control Board
FPC 0                REV 12    750-073174   CAJK0253       JNP10K-LC2102
CPU                  REV 04    750-073391   CAKJ0761       LC 2101 PMB
PIC 0
  Xcvr 0             REV 01    740-054053   QF4807XH       QSFP+-4X10G-SR
  Xcvr 1             REV 01    740-046565   QF121734       QSFP+-40G-SR4
  Xcvr 3             REV 01    740-067443   XWS027R        QSFP+-40G-SR4
PIC 1
  Xcvr 0             REV 01    740-045627   QH080366       40GBASE eSR4
  Xcvr 1             REV 01    740-054053   XYJ0A4P        QSFP+-4X10G-SR
PIC 2
  Xcvr 0             REV 01    740-058734   1ACQ113404E    QSFP-100GBASE-SR4
PIC 3
  Xcvr 0             REV 01    740-058734   1ACQ1041018    QSFP-100GBASE-SR4
  Xcvr 1             REV 01    740-067443   XWS08JK        QSFP+-40G-SR4
  Xcvr 2             REV 01    740-032986   QF340C63       QSFP+-40G-SR4
  Xcvr 3             REV 01    740-067443   XWS08JL        QSFP+-40G-SR4
PIC 4
  Xcvr 0             NON-JNPR   37700171YY0083 QSFP-100GBASE-LR4
PIC 5
  Xcvr 0             REV 01    740-032986   QE201294       QSFP+-40G-SR4
  Xcvr 1             REV 01    740-046565   QH0603VK       QSFP+-40G-SR4
  Xcvr 2             REV 01    740-046565   QD510321       QSFP+-40G-SR4
  Xcvr 3             REV 01    740-054053   QF3208KP       QSFP+-4X10G-SR
FPC 2                REV 03    750-073174   CAJB6004       JNP10K-LC2102
CPU                  REV 01    750-073391   CAHM7956       LC 2101 PMB
PIC 0
  Xcvr 0             REV 01    740-061405   1ACQ12110JK    QSFP-100GBASE-SR4
PIC 1
  Xcvr 0             REV 01    740-046565   XYH0P6F        QSFP+-40G-SR4
PIC 2
  Xcvr 0             REV 01    740-067442   XX401TT        QSFP+-40G-SR4
  Xcvr 1             REV 01    740-067443   XV3002D        QSFP+-40G-SR4

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Xcvr 2	REV 01	740-067442	XX401SL	QSFP+-40G-SR4
Xcvr 3	REV 01	740-067443	XV30A78	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	4xQSFP28 MACSEC
Xcvr 0	REV 01	740-067442	XX401T2	QSFP+-40G-SR4
Xcvr 1	REV 01	740-067442	XX401SZ	QSFP+-40G-SR4
PIC 4		BUILTIN	BUILTIN	4xQSFP28 MACSEC
Xcvr 0	REV 01	740-061405	1ACQ12110JS	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-061405	1ACQ12110JP	QSFP-100GBASE-SR4
Xcvr 2	REV 01	740-061405	1ACQ12110JQ	QSFP-100GBASE-SR4
Xcvr 3	REV 01	740-061405	1ACQ12110JR	QSFP-100GBASE-SR4
PIC 5		BUILTIN	BUILTIN	4xQSFP28 MACSEC
Xcvr 0	REV 01	740-061405	1ACQ121109P	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-061405	1ACQ12110JC	QSFP-100GBASE-SR4
FPC 3	REV 04	750-084779	CAKR7019	JNP10K-LC2101
CPU	REV 05	750-073391	CAKJ2854	LC 2101 PMB
PIC 0		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-058734	1ACQ104300K	QSFP-100GBASE-SR4
PIC 1		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-061405	1ACQ12110AN	QSFP-100GBASE-SR4
PIC 2		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-046565	QG1105B2	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-045627	QH08036X	40GBASE eSR4
PIC 4		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-067443	XWRORY7	QSFP+-40G-SR4
Xcvr 1	REV 01	740-067443	XWRORYH	QSFP+-40G-SR4
Xcvr 2	REV 01	740-067443	XWRORYP	QSFP+-40G-SR4
Xcvr 3	REV 01	740-067443	XWS028S	QSFP+-40G-SR4
PIC 5		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 3	REV 01	740-058734	1ACQ113406C	QSFP-100GBASE-SR4
FPD Board	REV 07	711-054687	ACPC7142	Front Panel Display
PEM 0	REV 02	740-049388	1EDL62102N9	Power Supply AC
PEM 1	REV 02	740-049388	1EDL60300KX	Power Supply AC
PEM 2	REV 02	740-049388	1EDL60300DL	Power Supply AC
PEM 3	REV 02	740-049388	1EDL61701BT	Power Supply AC
PEM 4	REV 02	740-049388	1EDL62102P7	Power Supply AC
PEM 5	REV 02	740-049388	1EDL62102PP	Power Supply AC
FTC 0	REV 14	750-050108	ACPE4038	Fan Controller 8
FTC 1	REV 14	750-050108	ACPE4032	Fan Controller 8
Fan Tray 0	REV 09	760-054372	ACPD6799	Fan Tray 8
Fan Tray 1	REV 09	760-054372	ACNZ3584	Fan Tray 8
SFB 0	REV 24	750-050058	ACPD4587	Switch Fabric (SIB) 8
SFB 1	REV 24	750-050058	ACNZ0635	Switch Fabric (SIB) 8
SFB 2	REV 24	750-050058	ACPD4908	Switch Fabric (SIB) 8
SFB 3	REV 24	750-050058	ACNZ0617	Switch Fabric (SIB) 8
SFB 4	REV 24	750-050058	ACNZ0527	Switch Fabric (SIB) 8
SFB 5	REV 23	750-050058	ACNX6980	Switch Fabric (SIB) 8

show chassis hardware extensive(MX10008 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          DE487
Assembly ID:  0x0566          Assembly Version: 01.27
Date:         08-08-2016      Assembly Flags:  0x00
CLEI Code:    CMMUM00ARA
ID: JNP10008
FRU Model Number: QFX10008-CHAS
Board Information Record:

```

```

Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 66 01 1b 00 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 00 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 44 45 34 38 37 00 00 00 00 00 00 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Midplane REV 27 750-054097 ACPD4307 Midplane 8
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-054097 S/N: ACPD4307
Assembly ID: 0x0be3 Assembly Version: 01.27
Date: 08-08-2016 Assembly Flags: 0x00
Version: REV 27 CLEI Code: CMMUM00ARA
ID: Midplane 8 FRU Model Number: QFX10008-CHAS
Board Information Record:
Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e3 01 1b 52 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 33 30 37 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Routing Engine 0 BUILTIN BUILTIN RE X10 LT
vtbd0 17408 MB Virtio Block Disk
vtbd1 57344 MB Virtio Block Disk
vtbd2 12288 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) XHCI root HUB 0 0x8086 uhub0
Routing Engine 1 BUILTIN BUILTIN RE X10
vtbd0 17408 MB Virtio Block Disk
vtbd1 57344 MB Virtio Block Disk
vtbd2 12288 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) XHCI root HUB 0 0x8086 uhub0
CB 0 REV 02 750-079563 CAFF4580 Control Board
Jedec Code: 0x7fb0 EEPROM Version: 0x01
P/N: 750-079563 S/N: CAFF4580
Assembly ID: 0x0ca3 Assembly Version: 01.02
Date: 06-06-2016 Assembly Flags: 0x00
Version: REV 02
ID: Control Board
Board Information Record:
Address 0x00: ad 01 00 40 4c 16 fc 91 7c 85 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 fe 0c a3 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 39 35 36 33 00 00
Address 0x20: 53 2f 4e 20 43 41 46 46 34 35 38 30 00 06 06 07
Address 0x30: e0 fe ff ff ad 01 00 40 4c 16 fc 91 7c 85 ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CB 1 REV 04 750-079563 CAGL8034 Control Board
Jedec Code: 0x7fb0 EEPROM Version: 0x01
P/N: 750-079563 S/N: CAGL8034

```

```

Assembly ID: 0x0ca3      Assembly Version: 01.04
Date:          06-28-2018    Assembly Flags: 0x00
Version:       REV 04
ID: Control Board
Board Information Record:
  Address 0x00: ad 01 00 40 4c 16 fc 91 7c c5 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 fe 0c a3 01 04 52 45 56 20 30 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 37 39 35 36 33 00 00
  Address 0x20: 53 2f 4e 20 43 41 47 4c 38 30 33 34 00 1c 06 07
  Address 0x30: e2 fc ff ff ad 01 00 40 4c 16 fc 91 7c c5 ff ff
  Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPC 0          REV 12    750-073174    CAJK0253          JNP10K-LC2102
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:          750-073174    S/N:            CAJK0253
Assembly ID:   0x0ca5      Assembly Version: 01.12
Date:          09-28-2017    Assembly Flags: 0x00
Version:       REV 12      CLEI Code:       PROTOXCLEI
ID: JNP10K-LC2102          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 0c a5 01 0c 52 45 56 20 31 32 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 37 33 31 37 34 00 00
  Address 0x20: 53 2f 4e 20 43 41 4a 4b 30 32 35 33 00 1c 09 07
  Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 04    750-073391    CAKJ0761          LC 2101 PMB
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:          750-073391    S/N:            CAKJ0761
Assembly ID:   0x0cda      Assembly Version: 01.04
Date:          01-22-2018    Assembly Flags: 0x00
Version:       REV 04
ID: LC 2101 PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0c da 01 04 52 45 56 20 30 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 37 33 33 39 31 00 00
  Address 0x20: 53 2f 4e 20 43 41 4b 4a 30 37 36 31 00 16 01 07
  Address 0x30: e2 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN          4xQSFP28 MACSEC
Jedec Code:    0x0000      EEPROM Version:    0x00
P/N:          BUILTIN      S/N:            BUILTIN
Assembly ID:   0x0af1      Assembly Version: 00.00
Date:          00-00-0000    Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0a f1 00 00 00 00 00 00 00 00 00

```



```

Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 00 d1 f1 00 00 00 00 0a f1 00 00
  Xcvr 0      REV 01  740-054053  QF4807XH      QSFP+-4X10G-SR
  Xcvr 1      REV 01  740-046565  QF121734     QSFP+-40G-SR4
  Xcvr 3      REV 01  740-067443  XWS027R      QSFP+-40G-SR4
PIC 1        BUILTIN  BUILTIN  4xQSFP28 MACSEC
Jedec Code:  0x0000      EEPROM Version: 0x00
P/N:         BUILTIN    S/N:         BUILTIN
Assembly ID: 0x0af1      Assembly Version: 00.00
Date:        00-00-0000  Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 80 b1 f3 00 00 00 00 0a f1 00 00
  Xcvr 0      REV 01  740-045627  QH080366     40GBASE eSR4
  Xcvr 1      REV 01  740-054053  XYJ0A4P      QSFP+-4X10G-SR
PIC 2        BUILTIN  BUILTIN  4xQSFP28 MACSEC
Jedec Code:  0x0000      EEPROM Version: 0x00
P/N:         BUILTIN    S/N:         BUILTIN
Assembly ID: 0x0af1      Assembly Version: 00.00
Date:        00-00-0000  Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 80 73 e8 00 00 00 00 00 00 00 00
  Xcvr 0      REV 01  740-058734  1ACQ113404E  QSFP-100GBASE-SR4
PIC 3        BUILTIN  BUILTIN  4xQSFP28 MACSEC
Jedec Code:  0x0000      EEPROM Version: 0x00
P/N:         BUILTIN    S/N:         BUILTIN
Assembly ID: 0x0af1      Assembly Version: 00.00
Date:        00-00-0000  Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

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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 83 80 51 ea 00 00 00 00 0a f1 00 00
Xcvr 0      REV 01 740-058734 1ACQ1041018 QSFP-100GBASE-SR4
Xcvr 1      REV 01 740-067443 XWS08JK QSF++-40G-SR4
Xcvr 2      REV 01 740-032986 QF340C63 QSF++-40G-SR4
Xcvr 3      REV 01 740-067443 XWS08JL QSF++-40G-SR4
PIC 4      BUILTIN BUILTIN 4xQSFP28 MACSEC
Jedec Code: 0x0000 EEPROM Version: 0x00
P/N:      BUILTIN S/N:      BUILTIN
Assembly ID: 0x0af1 Assembly Version: 00.00
Date:      00-00-0000 Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 80 31 ec 00 00 00 00 0a f1 00 00
Xcvr 0      NON-JNPR 37700171YY0083 QSFP-100GBASE-LR4
PIC 5      BUILTIN BUILTIN 4xQSFP28 MACSEC
Jedec Code: 0x0000 EEPROM Version: 0x00
P/N:      BUILTIN S/N:      BUILTIN
Assembly ID: 0x0af1 Assembly Version: 00.00
Date:      00-00-0000 Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 80 11 ee 00 00 00 00 0a f1 00 00
Xcvr 0      REV 01 740-032986 QE201294 QSF++-40G-SR4
Xcvr 1      REV 01 740-046565 QH0603VK QSF++-40G-SR4
Xcvr 2      REV 01 740-046565 QD510321 QSF++-40G-SR4
Xcvr 3      REV 01 740-054053 QF3208KP QSF++-4X10G-SR
FPC 2      REV 03 750-073174 CAJB6004 JNP10K-LC2102
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N:      750-073174 S/N:      CAJB6004
Assembly ID: 0x0ca5 Assembly Version: 01.03
Date:      06-20-2017 Assembly Flags: 0x00
Version:    REV 03 CLEI Code:  PROTOXCLEI
ID: JNP10K-LC2102 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 0c a5 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 33 31 37 34 00 00
Address 0x20: 53 2f 4e 20 43 41 4a 42 36 30 30 34 00 14 06 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50

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Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 01    750-073391    CAHM7956          LC 2101 PMB
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-073391      S/N:          CAHM7956
Assembly ID: 0x0cda          Assembly Version: 01.01
Date:        05-08-2017      Assembly Flags: 0x00
Version:     REV 01
ID: LC 2101 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 0c da 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 33 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 48 4d 37 39 35 36 00 08 05 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN          4xQSFP28 MACSEC
Jedec Code:  0x0000          EEPROM Version:  0x00
P/N:         BUILTIN        S/N:          BUILTIN
Assembly ID: 0x0af1          Assembly Version: 00.00
Date:        00-00-0000      Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 00 d1 f1 00 00 00 00 0a f1 00 00
Xcvr 0        REV 01    740-061405    1ACQ12110JK      QSFP-100GBASE-SR4
PIC 1          BUILTIN      BUILTIN          4xQSFP28 MACSEC
Jedec Code:  0x0000          EEPROM Version:  0x00
P/N:         BUILTIN        S/N:          BUILTIN
Assembly ID: 0x0af1          Assembly Version: 00.00
Date:        00-00-0000      Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 80 b1 f3 00 00 00 00 0a f1 00 00
Xcvr 0        REV 01    740-046565    XYH0P6F          QSFP+-40G-SR4
PIC 2          BUILTIN      BUILTIN          4xQSFP28 MACSEC
Jedec Code:  0x0000          EEPROM Version:  0x00
P/N:         BUILTIN        S/N:          BUILTIN
Assembly ID: 0x0af1          Assembly Version: 00.00

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Date:          00-00-0000          Assembly Flags:    0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 83 80 73 e8 00 00 00 00 00 00 00 00
    Xcvr 0      REV 01    740-067442    XX401TT      QSFP+-40G-SR4
    Xcvr 1      REV 01    740-067443    XV3002D      QSFP+-40G-SR4
    Xcvr 2      REV 01    740-067442    XX401SL      QSFP+-40G-SR4
    Xcvr 3      REV 01    740-067443    XV30A78      QSFP+-40G-SR4
  PIC 3        BUILTIN    BUILTIN      4xQSFP28 MACSEC
Jedec Code:    0x0000          EEPROM Version:    0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:   0x0af1          Assembly Version: 00.00
Date:          00-00-0000          Assembly Flags:    0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 83 80 51 ea 00 00 00 00 0a f1 00 00
    Xcvr 0      REV 01    740-067442    XX401T2      QSFP+-40G-SR4
    Xcvr 1      REV 01    740-067442    XX401SZ      QSFP+-40G-SR4
  PIC 4        BUILTIN    BUILTIN      4xQSFP28 MACSEC
Jedec Code:    0x0000          EEPROM Version:    0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:   0x0af1          Assembly Version: 00.00
Date:          00-00-0000          Assembly Flags:    0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 83 80 31 ec 00 00 00 00 0a f1 00 00
    Xcvr 0      REV 01    740-061405    1ACQ12110JS   QSFP-100GBASE-SR4
    Xcvr 1      REV 01    740-061405    1ACQ12110JP   QSFP-100GBASE-SR4
    Xcvr 2      REV 01    740-061405    1ACQ12110JQ   QSFP-100GBASE-SR4
    Xcvr 3      REV 01    740-061405    1ACQ121109R   QSFP-100GBASE-SR4
  PIC 5        BUILTIN    BUILTIN      4xQSFP28 MACSEC
Jedec Code:    0x0000          EEPROM Version:    0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:   0x0af1          Assembly Version: 00.00

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Date:          00-00-0000      Assembly Flags:    0x00
ID: 4x QSFP28 10/40/100GE MACSec PIC
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 f1 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 83 80 11 ee 00 00 00 00 0a f1 00 00
  Xcvr 0      REV 01    740-061405    1ACQ121109P    QSFP-100GBASE-SR4
  Xcvr 1      REV 01    740-061405    1ACQ12110JC    QSFP-100GBASE-SR4
FPC 3        REV 04    750-084779    CAKR7019      JNP10K-LC2101
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        750-084779  S/N:        CAKR7019
Assembly ID: 0x0cff     Assembly Version: 01.04
Date:       03-11-2018  Assembly Flags: 0x00
Version:    REV 04     CLEI Code:   PROTOXCLEI
ID: JNP10K-LC2101      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 0c ff 01 04 52 45 56 20 30 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 38 34 37 37 39 00 00
  Address 0x20: 53 2f 4e 20 43 41 4b 52 37 30 31 39 00 0b 03 07
  Address 0x30: e2 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 ff
  Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff ff
  CPU        REV 05    750-073391    CAKJ2854      LC 2101 PMB
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N:        750-073391  S/N:        CAKJ2854
Assembly ID: 0x0cda     Assembly Version: 01.05
Date:       03-12-2018  Assembly Flags: 0x00
Version:    REV 05
ID: LC 2101 PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0c da 01 05 52 45 56 20 30 35 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 37 33 33 39 31 00 00
  Address 0x20: 53 2f 4e 20 43 41 4b 4a 32 38 35 34 00 0c 03 07
  Address 0x30: e2 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 ff
  Address 0x50: ff 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 ff
  Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
  PIC 0      BUILTIN    BUILTIN      4xQSFP28 SYNC
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:        BUILTIN     S/N:        BUILTIN
Assembly ID: 0x0af3     Assembly Version: 00.00
Date:       00-00-0000  Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE SYNC PIC
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 f3 00 00 00 00 00 00 00 00 00 00

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Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 83 00 b1 f3 00 00 00 00 0a f3 00 00
  Xcvr 0      REV 01    740-058734    1ACQ104300K    QSFP-100GBASE-SR4
PIC 1          BUILTIN    BUILTIN          4xQSFP28 SYNCE
Jedec Code:   0x0000          EEPROM Version:   0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:  0x0af3          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: 4x QSFP28 10/40/100GE SYNCE PIC
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 f3 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Xcvr 0      REV 01    740-061405    1ACQ12110AN    QSFP-100GBASE-SR4
PIC 2          BUILTIN    BUILTIN          4xQSFP28 SYNCE
Jedec Code:   0x0000          EEPROM Version:   0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:  0x0af3          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: 4x QSFP28 10/40/100GE SYNCE PIC
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 f3 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 83 80 b1 8a b5 cf 0b 5f 08 00 73 6d
  Xcvr 0      REV 01    740-046565    QG1105B2      QSFP+-40G-SR4
PIC 3          BUILTIN    BUILTIN          4xQSFP28 SYNCE
Jedec Code:   0x0000          EEPROM Version:   0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:  0x0af3          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: 4x QSFP28 10/40/100GE SYNCE PIC
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 f3 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 83 80 11 94 b5 cf 0b 5f 0c 00 73 6d

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Xcvr 0      REV 01  740-045627  QH08036X      40GBASE eSR4
PIC 4      BUILTIN  BUILTIN      4xQSFP28 SYNCe
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:      BUILTIN      S/N:      BUILTIN
Assembly ID: 0x0af3      Assembly Version: 00.00
Date:      00-00-0000      Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE SYNCe PIC
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 f3 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 80 71 9d b5 cf 0b 5f 10 00 73 6d
Xcvr 0      REV 01  740-067443  XWRORY7      QSFP+-40G-SR4
Xcvr 1      REV 01  740-067443  XWRORYH      QSFP+-40G-SR4
Xcvr 2      REV 01  740-067443  XWRORYP      QSFP+-40G-SR4
Xcvr 3      REV 01  740-067443  XWS028S      QSFP+-40G-SR4
PIC 5      BUILTIN  BUILTIN      4xQSFP28 SYNCe
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:      BUILTIN      S/N:      BUILTIN
Assembly ID: 0x0af3      Assembly Version: 00.00
Date:      00-00-0000      Assembly Flags: 0x00
ID: 4x QSFP28 10/40/100GE SYNCe PIC
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 f3 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 83 80 d1 a6 b5 cf 0b 5f 14 00 73 6d
Xcvr 3      REV 01  740-058734  1ACQ113406C  QSFP-100GBASE-SR4
FPD Board  REV 07  711-054687  ACPC7142      Front Panel Display
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N:      711-054687      S/N:      ACPC7142
Assembly ID: 0x0bf2      Assembly Version: 01.07
Date:      07-22-2016      Assembly Flags: 0x00
Version:      REV 07
ID: Front Panel Display
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 f2 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 34 36 38 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 43 37 31 34 32 00 16 07 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PEM 0      REV 02  740-049388  1EDL62102N9  Power Supply AC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:      740-049388      S/N:      1EDL62102N9

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```

Assembly ID: 0x0483      Assembly Version: 01.02
Date:          05-25-2016    Assembly Flags: 0x00
Version:       REV 02        CLEI Code:      CMUPADNBAA
ID: Power Supply AC        FRU Model Number: QFX10000-PWR-AC
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
  Address 0x20: 31 45 44 4c 36 32 31 30 32 4e 39 00 00 19 05 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
  Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
  Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
PEM 1          REV 02    740-049388    1EDL60300KX    Power Supply AC
Jedec Code:    0x00b0      EEPROM Version: 0x02
P/N:          740-049388    S/N:          1EDL60300KX
Assembly ID:   0x0483      Assembly Version: 01.02
Date:          01-20-2016    Assembly Flags: 0x00
Version:       REV 02        CLEI Code:      CMUPADNBAA
ID: Power Supply AC        FRU Model Number: QFX10000-PWR-AC
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 00 b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
  Address 0x20: 31 45 44 4c 36 30 33 30 30 4b 58 00 00 14 01 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
  Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
  Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
PEM 2          REV 02    740-049388    1EDL60300DL    Power Supply AC
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          740-049388    S/N:          1EDL60300DL
Assembly ID:   0x0483      Assembly Version: 01.02
Date:          01-20-2016    Assembly Flags: 0x00
Version:       REV 02        CLEI Code:      CMUPADNBAA
ID: Power Supply AC        FRU Model Number: QFX10000-PWR-AC
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
  Address 0x20: 31 45 44 4c 36 30 33 30 30 44 4c 00 00 14 01 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
  Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
  Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
PEM 3          REV 02    740-049388    1EDL61701BT    Power Supply AC
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          740-049388    S/N:          1EDL61701BT
Assembly ID:   0x0483      Assembly Version: 01.02
Date:          05-01-2016    Assembly Flags: 0x00
Version:       REV 02        CLEI Code:      CMUPADNBAA
ID: Power Supply AC        FRU Model Number: QFX10000-PWR-AC
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

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```

Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 31 37 30 31 42 54 00 00 01 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
PEM 4          REV 02    740-049388    1EDL62102P7    Power Supply AC
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-049388      S/N:            1EDL62102P7
Assembly ID:   0x0483          Assembly Version: 01.02
Date:          05-25-2016      Assembly Flags:  0x00
Version:       REV 02          CLEI Code:       CMUPADNBAA
ID: Power Supply AC          FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 37 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
PEM 5          REV 02    740-049388    1EDL62102PP    Power Supply AC
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-049388      S/N:            1EDL62102PP
Assembly ID:   0x0483          Assembly Version: 01.02
Date:          05-25-2016      Assembly Flags:  0x00
Version:       REV 02          CLEI Code:       CMUPADNBAA
ID: Power Supply AC          FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 50 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
FTC 0          REV 14    750-050108    ACPE4038      Fan Controller 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050108      S/N:            ACPE4038
Assembly ID:   0x0bee          Assembly Version: 01.14
Date:          09-27-2016      Assembly Flags:  0x00
Version:       REV 14          CLEI Code:       CMUCAHZCAA
ID: Fan Controller 8          FRU Model Number: QFX10008-FAN-CTRL
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ee 01 0e 52 45 56 20 31 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 31 30 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 45 34 30 33 38 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 5a 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 2d 43 54 52 4c
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff

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Address 0x70: ff ff ff 98 ff ff ff ff ff ff ff ff ff ff ff
FTC 1          REV 14    750-050108    ACPE4032          Fan Controller 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050108      S/N:           ACPE4032
Assembly ID:   0x0bee          Assembly Version: 01.14
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 14          CLEI Code:     CMUCAHZCAA
ID: Fan Controller 8          FRU Model Number: QFX10008-FAN-CTRL
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ee 01 0e 52 45 56 20 31 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 31 30 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 45 34 30 33 32 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 5a 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 2d 43 54 52 4c
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 98 ff ff ff ff ff ff ff ff ff ff ff ff

Fan Tray 0      REV 09    760-054372    ACPD6799          Fan Tray 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           760-054372      S/N:           ACPD6799
Assembly ID:   0x0bf0          Assembly Version: 01.09
Date:          09-28-2016      Assembly Flags: 0x00
Version:       REV 09          CLEI Code:     CMUCAHYCAA
ID: Fan Tray 8          FRU Model Number: QFX10008-FAN
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 36 37 39 39 00 1c 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff

Fan Tray 1      REV 09    760-054372    ACNZ3584          Fan Tray 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           760-054372      S/N:           ACNZ3584
Assembly ID:   0x0bf0          Assembly Version: 01.09
Date:          08-30-2016      Assembly Flags: 0x00
Version:       REV 09          CLEI Code:     CMUCAHYCAA
ID: Fan Tray 8          FRU Model Number: QFX10008-FAN
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 33 35 38 34 00 1e 08 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff

SFB 0          REV 24    750-050058    ACPD4587          Switch Fabric (SIB) 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:           ACPD4587
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-19-2016      Assembly Flags: 0x00
Version:       REV 24          CLEI Code:     CMUCAHOC AA

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```

ID: Switch Fabric (SIB) 8          FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 44 34 35 38 37 00 13 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SFB 1          REV 24    750-050058    ACNZ0635          Switch Fabric (SIB) 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:           ACNZ0635
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-06-2016      Assembly Flags: 0x00
Version:       REV 24          CLEI Code:     CMUCAH0CAA
ID: Switch Fabric (SIB) 8      FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 33 35 00 06 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SFB 2          REV 24    750-050058    ACPD4908          Switch Fabric (SIB) 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:           ACPD4908
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          07-12-2016      Assembly Flags: 0x00
Version:       REV 24          CLEI Code:     CMUCAH0CAA
ID: Switch Fabric (SIB) 8      FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 44 34 39 30 38 00 0c 07 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SFB 3          REV 24    750-050058    ACNZ0617          Switch Fabric (SIB) 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:           ACNZ0617
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-07-2016      Assembly Flags: 0x00
Version:       REV 24          CLEI Code:     CMUCAH0CAA
ID: Switch Fabric (SIB) 8      FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 31 37 00 07 06 07

```

```

Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00
SFB 4          REV 24    750-050058    ACNZ0527          Switch Fabric (SIB) 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACNZ0527
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-06-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAHOCAA
ID: Switch Fabric (SIB) 8      FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 35 32 37 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SFB 5          REV 23    750-050058    ACNX6980          Switch Fabric (SIB) 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACNX6980
Assembly ID:   0x0bec          Assembly Version: 01.23
Date:          05-16-2016      Assembly Flags:   0x00
Version:       REV 23          CLEI Code:        CMUCAHOCAA
ID: Switch Fabric (SIB) 8      FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 17 52 45 56 20 32 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 58 36 39 38 30 00 10 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff
Address 0x70: ff ff ff ce 00 00 00 00 00 00 00 00 00 00 00 00

```

show chassis hardware models(MX10008 Router)

```

user@host> show chassis hardware models

```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 27	750-054097	ACPD4307	QFX10008-CHAS
CB 0	REV 02	750-079563	CAFF4580	
CB 1	REV 04	750-079563	CAGL8034	
FPC 0	REV 12	750-073174	CAJK0253	PROTO-ASSEMBLY
FPC 2	REV 03	750-073174	CAJB6004	PROTO-ASSEMBLY
FPC 3	REV 04	750-084779	CAKR7019	PROTO-ASSEMBLY
FPD Board	REV 07	711-054687	ACPC7142	
PEM 0	REV 02	740-049388	1EDL62102N9	QFX10000-PWR-AC
PEM 1	REV 02	740-049388	1EDL60300KX	QFX10000-PWR-AC
PEM 2	REV 02	740-049388	1EDL60300DL	QFX10000-PWR-AC
PEM 3	REV 02	740-049388	1EDL61701BT	QFX10000-PWR-AC
PEM 4	REV 02	740-049388	1EDL62102P7	QFX10000-PWR-AC
PEM 5	REV 02	740-049388	1EDL62102PP	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	ACPE4038	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	ACPE4032	QFX10008-FAN-CTRL

Fan Tray 0	REV 09	760-054372	ACPD6799	QFX10008-FAN
Fan Tray 1	REV 09	760-054372	ACNZ3584	QFX10008-FAN
SFB 0	REV 24	750-050058	ACPD4587	QFX10008-SF
SFB 1	REV 24	750-050058	ACNZ0635	QFX10008-SF
SFB 2	REV 24	750-050058	ACPD4908	QFX10008-SF
SFB 3	REV 24	750-050058	ACNZ0617	QFX10008-SF
SFB 4	REV 24	750-050058	ACNZ0527	QFX10008-SF
SFB 5	REV 23	750-050058	ACNX6980	QFX10008-SF

show chassis hardware (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN123AC42AJC	PTX3000
Midplane	REV 22	750-044645	ACLP6640	Backplane
FPM	REV 07	760-044663	ACMX2146	Front Panel Display
PSM 1	REV 02	740-044980	1EDD3080169	DC 12V Power Supply
PSM 2	REV 06	740-044981	1EDK5040563	AC 12V Power Supply
PSM 3	REV 06	740-044981	1EDK5040313	AC 12V Power Supply
PSM 4	REV 04	740-044980	1EDJ3330088	DC 12V Power Supply
Routing Engine 0	REV 12	740-026942	P737A-006029	RE-DUO-2600
CB 0	REV 18	750-044656	ACMZ3179	Control Board
FPC 2	REV 06	750-057064	ACAM6098	FPC3-SFF-PTX-1X
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0	REV 17	750-059747	ACNW3510	5X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	1DJBZ040003	OTN-100G-LH
Xcvr 2	REV 01	740-062357	1DJBZ044004	OTN-100G-LH
Xcvr 3	REV 01	740-062357	1DJBZ03500P	OTN-100G-LH
Xcvr 4	REV 01	740-062357	1DJBZ03700C	OTN-100G-LH
FPC 4	REV 12	750-057064	ACAM7153	FPC3-SFF-PTX-1X
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0	REV 17	750-059747	ACNW3511	5X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-061663	47	OTN-100G-LH
Xcvr 1	REV 01	740-061663	39	OTN-100G-LH
Xcvr 2	REV 01	740-062357	1DJBZ044002	OTN-100G-LH
Xcvr 3	REV 01	740-062357	1DJBZ03700G	OTN-100G-LH
Xcvr 4	REV 01	740-062357	1DJBZ041001	OTN-100G-LH
FPC 8	REV 11	750-057064	ACAM6808	FPC3-SFF-PTX-1X
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0	REV 17	750-059747	ACNW3508	5X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-061663	194	OTN-100G-LH
Xcvr 1	REV 01	740-061663	168	OTN-100G-LH
Xcvr 2	REV 01	740-061663	52	OTN-100G-LH
Xcvr 3	REV 01	740-061663	85	OTN-100G-LH
Xcvr 4	REV 01	740-061663	218	OTN-100G-LH
SIB 0	REV 03	750-057067	ACAM8513	SIB3-SFF-PTX
SIB 1	REV 01	750-057067	ACAM5918	SIB3-SFF-PTX
SIB 2	REV 01	711-057066	ACAM4325	SIB3-SFF-PTX
SIB 3	REV 01	711-057066	ACAM4328	SIB3-SFF-PTX
SIB 4	REV 01	711-057066	ACAM4349	SIB3-SFF-PTX
SIB 5	REV 01	711-057066	ACAM4323	SIB3-SFF-PTX
SIB 6	REV 01	711-057066	ACAM4344	SIB3-SFF-PTX
SIB 7	REV 01	750-057067	ACAM4346	SIB3-SFF-PTX
SIB 8	REV 01	750-057067	ACAM5911	SIB3-SFF-PTX
Fan Tray 0	REV 13	760-044659	ACMP6395	Fan Tray (Exhaust)
Fan Tray 1	REV 13	760-044659	ACMZ6957	Fan Tray (Exhaust)

show chassis hardware clei-models (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item                Version  Part number  CLEI code      FRU model number
Midplane            REV 22   750-044645   IPMVN10FRA     CHAS-MP-PTX3000-S
FPM                 REV 07   760-044663   IPUCBE5CAA     FPD-SFF-PTX-S
PSM 1               REV 02   740-044980   PROTOPWRDC     PSM-SFF-PTX-DC-2200-S
PSM 2               REV 06   740-044981   IPUPAK0KAB     PSM-SFF-PTX-AC-S
PSM 3               REV 06   740-044981   IPUPAK0KAB     PSM-SFF-PTX-AC-S
PSM 4               REV 04   740-044980   IPUPAK1KAA     PSM-SFF-PTX-DC-S
Routing Engine 0    REV 12   740-026942                     RE-DUO-C2600-16G-S
CB 0                REV 18   750-044656   IPUCBE6CAB     CB-SFF-PTX-S
FPC 2               REV 06   750-057064   PROTOXCLEI     PROTO-ASSEMBLY
PIC 0               REV 17   750-059747   IPU3BC5HAA     PTX-5-100G-WDM
FPC 4               REV 12   750-057064                     PTX-5-100G-WDM
PIC 0               REV 17   750-059747   IPU3BC5HAA     PTX-5-100G-WDM
FPC 8               REV 11   750-057064                     PTX-5-100G-WDM
PIC 0               REV 17   750-059747   IPU3BC5HAA     PTX-5-100G-WDM
SIB 0               REV 03   750-057067   PROTOXCLEI     PROTO-ASSEMBLY
SIB 1               REV 01   750-057067   PROTOXCLEI     PROTO-ASSEMBLY
SIB 2               REV 01   711-057066   PROTOXCLEI     PROTO-ASSEMBLY
SIB 3               REV 01   711-057066   PROTOXCLEI     PROTO-ASSEMBLY
SIB 4               REV 01   711-057066   PROTOXCLEI     PROTO-ASSEMBLY
SIB 5               REV 01   711-057066   PROTOXCLEI     PROTO-ASSEMBLY
SIB 6               REV 01   711-057066   PROTOXCLEI     PROTO-ASSEMBLY
SIB 7               REV 01   750-057067   PROTOXCLEI     PROTO-ASSEMBLY
SIB 8               REV 01   750-057067   PROTOXCLEI     PROTO-ASSEMBLY
Fan Tray 0          REV 13   760-044659   IPUCBE8CAA     FAN-SFF-PTX-S
Fan Tray 1          REV 13   760-044659   IPUCBE8CAA     FAN-SFF-PTX-S

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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   ACAJ1388       Power Midplane
FPM Board           REV 06   711-032349   ZX8744         Front Panel Display
PSM 4               REV 0C   740-033727   VK00254        DC 52V Power Supply
Module
PSM 5               REV 0B   740-033727   VG00015        DC 52V Power Supply
Module
PSM 6               REV 0B   740-033727   VH00097        DC 52V Power Supply
Module
PSM 7               REV 0C   740-033727   VJ00151        DC 52V Power Supply
Module
PSM 8               REV 0C   740-033727   VJ00149        DC 52V Power Supply
Module
PDM 0               REV 0B   740-038109   WA00008        DC Power Dist Module
PDM 1               REV 0B   740-038109   WA00014        DC Power Dist Module
Routing Engine 0    REV 02   740-041821   9009094134     RE-S-1800x4
Routing Engine 1    REV 02   740-041821   9009094141     RE-S-1800x4
CB 0                REV 08   750-040257   CAAB3491       Control Board
CB 1                REV 08   750-040257   CAAB3489       Control Board
SPMB 0              REV 02   711-041855   CAAA6135       PMB Board
SPMB 1              REV 02   711-041855   CAAA6137       PMB Board
SFB 0               REV 06   711-032385   ZV1828        Switch Fabric Board

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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	AJC0JML	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ403PC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJ10N25	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJ40JF4	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJ40JSJ	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJ403V7	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJ40JN3	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AJ40JSU	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	19T511100468	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	19T511101363	SFP+-10G-SR
FPC 8	REV 22	750-031089	ZT9746	MPC Type 2 3D
CPU	REV 06	711-030884	ZS1271	MPC PMB 2G
MIC 0	REV 26	750-028392	ABBS1150	3D 20x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031851	PLG023C	SFP-SX
Xcvr 1	REV 01	740-031851	PLG09C6	SFP-SX

Xcvr 2	REV 02	740-011613	AM0950SF9L7	SFP-SX
Xcvr 3	REV 02	740-011613	AM1001SFN1H	SFP-SX
Xcvr 4	REV 02	740-011613	AM1001SFM9D	SFP-SX
Xcvr 5	REV 02	740-011613	AM1001SFLTJ	SFP-SX
Xcvr 6	REV 01	740-031851	AC1108S03L9	SFP-SX
Xcvr 7	REV 01	740-031851	AC1102S00NC	SFP-SX
Xcvr 8	REV 01	740-031851	AC1102S00MX	SFP-SX
Xcvr 9	REV 01	740-031851	AC1102S0085	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031851	AC1102S00KU	SFP-SX
Xcvr 1	REV 01	740-031851	AC1102S00NG	SFP-SX
Xcvr 2	REV 01	740-031851	AC1102S00K3	SFP-SX
Xcvr 3	REV 01	740-031851	AC1102S008R	SFP-SX
Xcvr 4	REV 01	740-031851	AM1107SUFVJ	SFP-SX
Xcvr 5	REV 01	740-031851	AC1108S03LG	SFP-SX
MIC 1	REV 26	750-028387	ABBR9582	3D 4x 10GE XFP
PIC 2		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T10A91703	XFP-10G-SR
Xcvr 1		NON-JNPR	T09L42604	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	2x 10GE XFP
FPC 9	REV 11	750-036284	ZL3591	MPC 3D 16x 10GE EM
CPU	REV 10	711-029089	ZL0513	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101825	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101821	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101682	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ13R6	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101828	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101716	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101732	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALP0TR1	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101741	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101829	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101669	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14E3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101826	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101817	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101735	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ159A	SFP+-10G-SR
ADC 0	REV 05	750-043596	CAAC2073	Adapter Card
ADC 1	REV 01	750-043596	ZV4117	Adapter Card
ADC 8	REV 01	750-043596	ZV4107	Adapter Card
ADC 9	REV 02	750-043596	ZW1555	Adapter Card
Fan Tray 0	REV 2A	760-046960	ACAY0015	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0019	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0020	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0021	172mm FanTray - 6 Fans

show chassis hardware detail (MX2010 Router)

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Hardware inventory:
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Item	Version	Part number	Serial number	Description
Chassis			JN11E233DAFK	MX2010
Midplane	REV 26	750-044636	ABAB9357	Lower Backplane
Midplane 1	REV 01	711-044557	ABAB8643	Upper Backplane
PMP	REV 04	711-032426	ACAJ1677	Power Midplane
FPM Board	REV 08	760-044634	ABBV9726	Front Panel Display

PSM 0 Module	REV 01	740-045050	1E02224000P	DC 52V Power Supply
PSM 1 Module	REV 01	740-045050	1E02224000M	DC 52V Power Supply
PSM 2 Module	REV 01	740-045050	1E022240010	DC 52V Power Supply
PSM 3 Module	REV 01	740-045050	1E02224000G	DC 52V Power Supply
PSM 4 Module	REV 01	740-045050	1E022240013	DC 52V Power Supply
PSM 5 Module	REV 01	740-045050	1E022240007	DC 52V Power Supply
PSM 6 Module	REV 01	740-045050	1E02224001C	DC 52V Power Supply
PSM 7 Module	REV 01	740-045050	1E02224001D	DC 52V Power Supply
PSM 8 Module	REV 01	740-045050	1E02224001B	DC 52V Power Supply
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	03DZ06A01018	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	973152A00025	SFP+-10G-SR
FPC 3	REV 33	750-028467	CAAF5400	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAH7626	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00066	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00021	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00062	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00027	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00065	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00069	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00026	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00003	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00035	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00004	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00049	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00055	SFP+-10G-SR

PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00010	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	973152A00001	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	973152A00073	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	973152A00012	SFP+-10G-SR
FPC 4	REV 21	750-033205	ZG5028	MPC Type 3
CPU	REV 05	711-035209	YX3911	HMPC PMB 2G
MIC 0	REV 03	750-036233	ZL2036	2X40GE QSFP
PIC 0		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB220708	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB220735	QSFP+-40G-SR4
MIC 1	REV 03	750-036233	ZL2028	2X40GE QSFP
PIC 2		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB220727	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB220715	QSFP+-40G-SR4
FPC 5	REV 11	750-037358	CAAE2196	MPC Type 4-1
CPU	REV 08	711-035209	CAAD9074	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA062S	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AMA062P	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AMA052R	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA0632	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00564	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A00229	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00363	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00278	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA04CC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AD0927A001W	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AMA04N2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA062U	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00491	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	183363A01511	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00565	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00405	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA07QX	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AMA06MS	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00318	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	193363A00402	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00174	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A00388	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00377	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00234	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA062T	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A00550	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00364	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA0630	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	193363A00509	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	193363A00459	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	113363A00191	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00352	SFP+-10G-SR
FPC 6	REV 33	750-028467	CAAF5552	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAH7601	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AD0927A0036	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AD0927A003M	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AD0927A003G	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AD0927A0031	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+

Xcvr 0	REV 01	740-031980	193363A00331	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A00325	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00417	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A02509	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	T09K75140	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11A04356	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01952	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01914	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	T09K75157	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	T09K75194	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01926	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01936	SFP+-10G-SR
FPC 7	REV 16	750-037358	CAAL1012	MPC Type 4-1
CPU	REV 08	711-035209	CAAJ3851	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	AMA04NK	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11F00260	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11E02192	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA04CP	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJ40JJK	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11F00238	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B10M00275	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	193363A00211	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	B11D05577	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11G00586	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AMA08B7	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AMA04Q0	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11D05840	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11E00467	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11E00029	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	19T511101712	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-031980	193363A00568	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10M00166	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B10M00212	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11D05823	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	03DZ06A01005	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	03DZ06A01003	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	03DZ06A01009	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	03DZ06A01004	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
Xcvr 0	REV 01	740-021308	03DZ06A01017	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	03DZ06A01016	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	03DZ06A01024	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	03DZ06A01008	SFP+-10G-SR
Xcvr 4	REV 01	740-030658	AD0946A02UH	SFP+-10G-USR
Xcvr 5	REV 01	740-021308	T09J67913	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AD0837ES09G	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	03DZ06A01015	SFP+-10G-SR
FPC 8	REV 03	750-045372	CAAD3111	MPC Type 3
CPU	REV 08	711-035209	CAAD8033	HMPC PMB 2G
MIC 0	REV 03	750-036233	ZL2032	2X40GE QSFP
PIC 0		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB230273	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB230254	QSFP+-40G-SR4
MIC 1	REV 03	750-036233	ZL2021	2X40GE QSFP
PIC 2		BUILTIN	BUILTIN	2X40GE QSFP
Xcvr 0	REV 01	740-032986	QB390962	QSFP+-40G-SR4

Xcvr 1	REV 01	740-032986	QB390960	QSFP+-40G-SR4
FPC 9	REV 09	750-037355	CAAF1531	MPC Type 4-2
CPU	REV 08	711-035209	CAAB9927	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	193363A00525	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	193363A00504	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	193363A00368	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJ40JSS	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	123363A00042	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10M00023	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJ802EM	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11E02348	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
ADC 0	REV 13	750-043596	ABBX5532	Adapter Card
ADC 1	REV 13	750-043596	ABBX5550	Adapter Card
ADC 2	REV 13	750-043596	ABBX5571	Adapter Card
ADC 3	REV 13	750-043596	ABBX5568	Adapter Card
ADC 4	REV 13	750-043596	ABBX5556	Adapter Card
ADC 5	REV 13	750-043596	ABBX5553	Adapter Card
ADC 6	REV 13	750-043596	ABBX5541	Adapter Card
ADC 7	REV 13	750-043596	ABBX5578	Adapter Card
ADC 8	REV 13	750-043596	ABBX5560	Adapter Card
ADC 9	REV 07	750-043596	ABBV7188	Adapter Card
Fan Tray 0	REV 03	760-046960	ACAY0127	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0068	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0072	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0070	172mm FanTray - 6 Fans

show chassis hardware extensive (MX2010 Router)

```

user@host > show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               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:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 45 32 33 33 44 41 46 4b 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 26   750-044636  ABAB9357      Lower Backplane
Jedec Code:   0x7fb0                  EEPROM Version: 0x02
P/N:         750-044636              S/N:          ABAB9357
Assembly ID:  0x0b66                  Assembly Version: 01.26
Date:         08-28-2012              Assembly Flags:  0x00
Version:      REV 26                  CLEI Code:     PROTOXCLEI
ID: Lower Backplane                  FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 08 00 2c 21 72 70 a0 00 ff ff ff ff ff ff

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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:              ABAB8643
Assembly ID:   0x0b65      Assembly Version:  01.01
Date:         07-27-2012    Assembly Flags:    0x00
Version:      REV 01
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 65 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 38 36 34 33 00 1b 07 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

PMP            REV 04    711-032426    ACAJ1677      Power Midplane
Jedec Code:    0x7fb0      EEPROM Version:    0x01
P/N:          711-032426    S/N:              ACAJ1677
Assembly ID:   0x045d      Assembly Version:  01.04
Date:         07-20-2012    Assembly Flags:    0x00
Version:      REV 04
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

FPM Board      REV 08    760-044634    ABBV9726      Front Panel Display
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:          760-044634    S/N:              ABBV9726
Assembly ID:   0x0b64      Assembly Version:  01.08
Date:         09-10-2012    Assembly Flags:    0x00
Version:      REV 08      CLEI Code:        IPMYA4EJRA
ID: Front Panel Display    FRU Model Number:  MX2010-CRAFT-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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 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

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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
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 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 ff
Address 0x40: ff ff ff ff 01 58 58 58 58 58 58 58 58 58 58 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 48 43 2d 44 43 2d
Address 0x60: 53 2d 41 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1          REV 01   740-045050   1E02224000M   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-045050      S/N:           1E02224000M
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          12-06-2012      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     XXXXXXXXXX
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-HC-DC-S-A
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 30 35 30 00 00
Address 0x20: 31 45 30 32 32 32 34 30 30 30 4d 00 00 06 0c 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 58 58 58 58 58 58 58 58 58 58 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 48 43 2d 44 43 2d
Address 0x60: 53 2d 41 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4a 00 00 00 00 00 00 00 00 00 00 00 00
...
PDM 0          REV 01   740-045234   1E262250067   DC Power Dist Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-045234      S/N:           1E262250067
Assembly ID:   0x047b          Assembly Version: 01.01
Date:          06-28-2012      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAJSKAA
ID: DC Power Dist Module      FRU Model Number: MX2000-PDM-DC-S-A
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 7b 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 32 33 34 00 00
Address 0x20: 31 45 32 36 32 32 35 30 30 36 37 00 00 1c 06 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4a 53 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 44 4d 2d 44 43 2d 53 2d 41
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 89 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 02   740-041821   9009099704   RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version: 0x02

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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: 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

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Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
...
SPMB 0          REV 02   711-041855   ABBV3825          PMB Board
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:          711-041855      S/N:            ABBV3825
Assembly ID:   0x0b29          Assembly Version: 01.02
Date:         08-14-2012      Assembly Flags:  0x00
Version:      REV 02
ID: PMB Board
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
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
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
...
SFB 0          REV 05   711-044466   ABBX5682          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          711-044466      S/N:            ABBX5682
Assembly ID:   0x0b25          Assembly Version: 01.05
Date:         09-07-2012      Assembly Flags:  0x00
Version:      REV 05          CLEI Code:        PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 25 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 34 36 36 00 00
Address 0x20: 53 2f 4e 20 41 42 42 58 35 36 38 32 00 07 09 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 01 00 00 00 00 00 00 48 00
...
FPC 0          REV 09   750-037355   CAAF0924          MPC Type 4-2
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-037355      S/N:            CAAF0924
Assembly ID:   0x0b4e          Assembly Version: 01.09
Date:         05-21-2012      Assembly Flags:  0x00
Version:      REV 09          CLEI Code:        PROTOXCLEI
ID: MPC Type 4-2            FRU Model Number: MPC4E-2CGE-8XGE
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 4e 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 33 35 35 00 00
Address 0x20: 53 2f 4e 20 43 41 41 46 30 39 32 34 00 15 05 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 4d
Address 0x50: 50 43 34 45 2d 32 43 47 45 2d 38 58 47 45 00 00
Address 0x60: 00 00 00 00 00 00 30 39 00 ff ff ff ff ff ff
Address 0x70: ff ff ff c6 ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 08   711-035209   CAAB9842          HMPC PMB 2G
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:          711-035209      S/N:            CAAB9842

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Assembly ID: 0x0b04          Assembly Version: 01.08
Date: 05-17-2012           Assembly Flags: 0x00
Version: REV 08
ID: HMPC PMB 2G
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 04 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 35 32 30 39 00 00
Address 0x20: 53 2f 4e 20 43 41 41 42 39 38 34 32 00 11 05 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      4x10GE SFPP
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N: BUILTIN              S/N: BUILTIN
Assembly ID: 0x0a53          Assembly Version: 00.00
Date: 00-00-0000           Assembly Flags: 0x00
ID: 4x10GE SFPP
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 53 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 4d 58 43 00
Address 0x20: 42 55 49 4c 54 49 4e 00 4d 58 43 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ae 64 00 00 00 00 0a 52 00 00
Xcvr 0      REV 01      740-021308      19T511101656      SFP+-10G-SR
Xcvr 1      REV 01      740-031980      AMA04RU          SFP+-10G-SR
Xcvr 2      REV 01      740-031980      193363A00558     SFP+-10G-SR
Xcvr 3      REV 01      740-031980      B10M00202        SFP+-10G-SR
...
ADC 0      REV 13      750-043596      ABBX5532          Adapter Card
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-043596            S/N: ABBX5532
Assembly ID: 0x0b3d          Assembly Version: 01.13
Date: 09-12-2012           Assembly Flags: 0x00
Version: REV 13             CLEI Code: IPUCBA8CAA
ID: Adapter Card           FRU Model Number: MX2000-LC-ADAPTER
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
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
Address 0x70: ff ff ff 3a 00 00 00 00 00 00 00 00 00 00 00 00
...

```

show chassis hardware models (MX2010 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
FPM Board	REV 06	711-032349	ZX8744	711-032349
PSM 4	REV 0C	740-033727	VK00254	000000000000000000000000
PSM 5	REV 0B	740-033727	VG00015	000000000000000000000000
PSM 6	REV 0B	740-033727	VH00097	000000000000000000000000
PSM 7	REV 0C	740-033727	VJ00151	000000000000000000000000
PSM 8	REV 0C	740-033727	VJ00149	000000000000000000000000
PDM 0	REV 0B	740-038109	WA00008	
PDM 1	REV 0B	740-038109	WA00014	
Routing Engine 0	REV 02	740-041821	9009094134	RE-S-1800X4-16G-S
Routing Engine 1	REV 02	740-041821	9009094141	RE-S-1800X4-16G-S
CB 0	REV 08	750-040257	CAAB3491	750-040257
CB 1	REV 08	750-040257	CAAB3489	750-040257
SFB 0	REV 06	711-032385	ZV1828	711-032385
SFB 1	REV 07	711-032385	ZZ2568	711-032385
SFB 2	REV 07	711-032385	ZZ2563	711-032385
SFB 3	REV 07	711-032385	ZZ2564	711-032385
SFB 4	REV 07	711-032385	ZZ2580	711-032385
SFB 5	REV 07	711-032385	ZZ2579	711-0323856
SFB 6	REV 07	711-032385	CAAB4882	711-044170
SFB 7	REV 07	711-032385	CAAB4898	711-044170
FPC 0	REV 33	750-028467	CAAB1919	MPC-3D-16XGE-SFPP
FPC 1	REV 21	750-033205	ZG5027	MX-MPC3-3D
MIC 0	REV 03	750-033307	ZV6299	MIC3-3D-10XGE-SFPP
MIC 1	REV 03	750-033307	ZV6268	MIC3-3D-10XGE-SFPP
FPC 8	REV 22	750-031089	ZT9746	MX-MPC2-3D
MIC 0	REV 26	750-028392	ABBS1150	MIC-3D-20GE-SFP
MIC 1	REV 26	750-028387	ABBR9582	MIC-3D-4XGE-XFP
FPC 9	REV 11	750-036284	ZL3591	MPCE-3D-16XGE-SFPP
ADC 0	REV 05	750-043596	CAAC2073	750-043596
ADC 1	REV 01	750-043596	ZV4117	750-043596
ADC 8	REV 01	750-043596	ZV4107	750-043596
ADC 9	REV 02	750-043596	ZW1555	750-043596
Fan Tray 0	REV 2A	760-046960	ACAY0015	
Fan Tray 1	REV 2A	760-046960	ACAY0019	
Fan Tray 2	REV 2A	760-046960	ACAY0020	
Fan Tray 3	REV 2A	760-046960	ACAY0021	

show chassis hardware clei-models (MX2010 Routers)

user@host > show chassis hardware clei-models

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
FPM Board	REV 06	711-032349	PROTOXCLEI	711-032349
PSM 4	REV 0C	740-033727	0000000000	000000000000000000000000
PSM 5	REV 0B	740-033727	0000000000	000000000000000000000000
PSM 6	REV 0B	740-033727	0000000000	000000000000000000000000
PSM 7	REV 0C	740-033727	0000000000	000000000000000000000000
PSM 8	REV 0C	740-033727	0000000000	000000000000000000000000
PDM 0	REV 0B	740-038109		
PDM 1	REV 0B	740-038109		
Routing Engine 0	REV 02	740-041821		RE-S-1800X4-16G-S
Routing Engine 1	REV 02	740-041821		RE-S-1800X4-16G-S
CB 0	REV 08	750-040257	PROTOXCLEI	750-040257
CB 1	REV 08	750-040257	PROTOXCLEI	750-040257
SFB 0	REV 06	711-032385	PROTOXCLEI	711-032385
SFB 1	REV 07	711-032385	PROTOXCLEI	711-032385
SFB 2	REV 07	711-032385	PROTOXCLEI	711-032385
SFB 3	REV 07	711-032385	PROTOXCLEI	711-032385
SFB 4	REV 07	711-032385	PROTOXCLEI	711-032385

SFB 5	REV 07	711-032385	PROTOXCLEI	711-0323856
SFB 6	REV 07	711-032385	PROTOXCLEI	711-044170
SFB 7	REV 07	711-032385	PROTOXCLEI	711-044170
FPC 0	REV 33	750-028467		MPC-3D-16XGE-SFPP
FPC 1	REV 21	750-033205		MX-MPC3-3D
MIC 0	REV 03	750-033307	PROTOXCLEI	MIC3-3D-10XGE-SFPP
MIC 1	REV 03	750-033307	PROTOXCLEI	MIC3-3D-10XGE-SFPP
FPC 8	REV 22	750-031089	COUIBAYBAA	MX-MPC2-3D
MIC 0	REV 26	750-028392	COUIA15BAA	MIC-3D-20GE-SFP
MIC 1	REV 26	750-028387	COUIA16BAA	MIC-3D-4XGE-XFP
FPC 9	REV 11	750-036284	CMUIACGBAA	MPCE-3D-16XGE-SFPP
ADC 0	REV 05	750-043596	PROTOXCLEI	750-043596
ADC 1	REV 01	750-043596	PROTOXCLEI	750-043596
ADC 8	REV 01	750-043596	PROTOXCLEI	750-043596
ADC 9	REV 02	750-043596	PROTOXCLEI	750-043596
Fan Tray 0	REV 2A	760-046960		
Fan Tray 1	REV 2A	760-046960		
Fan Tray 2	REV 2A	760-046960		
Fan Tray 3	REV 2A	760-046960		

show chassis hardware (MX2010 Routers with MPC6E and OTN MIC)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN11C9AFEAFK	MX2010
Midplane	REV 35	750-044636	ABAB9188	Lower Backplane
Midplane 1	REV 02	711-044557	ABAB8729	Upper Backplane
PMP	REV 04	711-032426	ACAJ2432	Power Midplane
FPM Board	REV 09	760-044634	ABCA4314	Front Panel Display
PSM 0	REV 01	740-050037	1EDB321015C	DC 52V Power Supply
Module				
PSM 1	REV 01	740-050037	1EDB321015J	DC 52V Power Supply
Module				
PSM 2	REV 01	740-050037	1EDB32000K8	DC 52V Power Supply
Module				
PSM 3	REV 01	740-050037	1EDB32101JW	DC 52V Power Supply
Module				
PSM 4	REV 01	740-050037	1EDB321015G	DC 52V Power Supply
Module				
PSM 5	REV 01	740-050037	1EDB32101HH	DC 52V Power Supply
Module				
PSM 6	REV 01	740-050037	1EDB32101HD	DC 52V Power Supply
Module				
PSM 7	REV 01	740-050037	1EDB321015F	DC 52V Power Supply
Module				
PSM 8	REV 01	740-050037	1EDB321015B	DC 52V Power Supply
Module				
PDM 0	REV 03	740-045234	1EFA3220433	DC Power Dist Module
PDM 1	REV 03	740-045234	1EFA3220425	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009115685	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009099711	RE-S-1800x4
CB 0	REV 23	750-040257	CABE8395	Control Board
CB 1	REV 12	750-040257	CAAD9499	Control Board
SPMB 0	REV 02	711-041855	ABCG8426	PMB Board
SPMB 1	REV 02	711-041855	ABBS1481	PMB Board
SFB 0	REV 06	711-044466	ABCD5013	Switch Fabric Board
SFB 1	REV 06	711-044466	ABCD5160	Switch Fabric Board
SFB 2	REV 06	711-044466	ABCD5175	Switch Fabric Board
SFB 3	REV 06	711-044466	ABCD4938	Switch Fabric Board
SFB 4	REV 06	711-044466	ABCD4944	Switch Fabric Board

SFB 5	REV 06	711-044466	ABCD4968	Switch Fabric Board
SFB 6	REV 06	711-044466	ABCD5267	Switch Fabric Board
SFB 7	REV 06	711-044466	ABCD4997	Switch Fabric Board
FPC 0	REV 59	750-044130	ABCT7676	MPC6E 3D
CPU	REV 10	711-045719	ABCK8527	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7810	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7811	MPC6E XL
FPC 2	REV 27	750-033205	ZL6014	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9068	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9214	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XC49FC030	CFP2-100G-SR10
MIC 1	REV 18	750-033199	CAAC3231	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 3	REV 59	750-044130	ABCT7682	MPC6E 3D
CPU	REV 10	711-045719	ABCK8531	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7818	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7819	MPC6E XL
FPC 4	REV 33	750-044130	ABBY9278	MPC6E 3D
CPU	REV 09	711-045719	ABBY8677	RMPD PMB
XLM 0	REV 06.2.00	711-046638	ABBY8844	MPC6E XL
XLM 1	REV 06.2.00	711-046638	ABBY8830	MPC6E XL
FPC 5	REV 59	750-044130	ABCT7675	MPC6E 3D
CPU	REV 10	711-045719	ABCK8526	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7808	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7809	MPC6E XL
FPC 6	REV 30	750-028467	ZM4986	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6541	AMPD PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43GAC	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	ALM0A6D	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AQFORB3	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	153363A00333	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AN10KYE	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	APK04YM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AQFOH44	SFP+-10G-SR
FPC 8	REV 38	750-031090	CABF7313	MPC Type 2 3D EQ
CPU	REV 08	711-030884	CABE6727	MPC PMB 2G
MIC 0	REV 18	750-028380	YK8253	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 03	740-014289	AD1148M00TP	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
QXM 0	REV 06	711-028408	CABC5614	MPC QXM
QXM 1	REV 06	711-028408	CABC5550	MPC QXM
FPC 9	REV 39	750-044130	ABCK1652	MPC6E 3D
CPU	REV 09	711-045719	ABCK1655	RMPD PMB
MIC 0	REV 09	750-049457	ABCP1230	2X100GE CFP2 OTN
PIC 0		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0		NON-JNPR	37300222WP0002	CFP2-100G-LR4-D
Xcvr 1		NON-JNPR	FD46F001Y	CFP2-100G-SR10
MIC 1	REV 07	750-049457	ABCV6662	2X100GE CFP2 OTN
PIC 1		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQD0014	CFP2-100G-LR4-D
Xcvr 1		NON-JNPR	J13J68335	CFP2-100G-LR4-D
XLM 0	REV 07.2.00	711-046638	ABCK5491	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5475	MPC6E XL
ADC 1	REV 17	750-043596	ABCG9023	Adapter Card
ADC 2	REV 01	750-043596	ZV4079	Adapter Card

ADC 6	REV 17	750-043596	ABCG8866	Adapter Card
ADC 8	REV 17	750-043596	ABCA8993	Adapter Card
Fan Tray 0	REV 06	760-046960	ACAY0354	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0831	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0892	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0839	172mm FanTray - 6 Fans

show chassis hardware detail (MX2010 Routers with MPC6E and OTN MIC)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 35    750-044636   ABAB9188      Lower Backplane
Midplane 1    REV 02    711-044557   ABAB8729      Upper Backplane
PMP            REV 04    711-032426   ACAJ2432      Power Midplane
FPM Board      REV 09    760-044634   ABCA4314      Front Panel Display
PSM 0          REV 01    740-050037   1EDB321015C   DC 52V Power Supply
Module
PSM 1          REV 01    740-050037   1EDB321015J   DC 52V Power Supply
Module
PSM 2          REV 01    740-050037   1EDB32000K8   DC 52V Power Supply
Module
PSM 3          REV 01    740-050037   1EDB32101JW   DC 52V Power Supply
Module
PSM 4          REV 01    740-050037   1EDB321015G   DC 52V Power Supply
Module
PSM 5          REV 01    740-050037   1EDB32101HH   DC 52V Power Supply
Module
PSM 6          REV 01    740-050037   1EDB32101HD   DC 52V Power Supply
Module
PSM 7          REV 01    740-050037   1EDB321015F   DC 52V Power Supply
Module
PSM 8          REV 01    740-050037   1EDB321015B   DC 52V Power Supply
Module
PDM 0          REV 03    740-045234   1EFA3220433   DC Power Dist Module
PDM 1          REV 03    740-045234   1EFA3220425   DC Power Dist Module
Routing Engine 0
  ad0  3998 MB  Virtium - TuffDrive VCF P1T0200274310822 191 Compact Flash
  ad1  30533 MB UGB94BPH32H0S1-KCI 11000043190 Disk 1
  usb0 (addr 1) EHCI root hub 0 Intel uhub0
  usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
  DIMM 0        VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
  DIMM 1        VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
  DIMM 2        VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
  DIMM 3        VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
Routing Engine 1
  ad0  3998 MB  Virtium - TuffDrive VCF P1T0200262860208 30 Compact Flash
  ad1  30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000146 Disk 1
CB 0          REV 23    750-040257   CABE8395      Control Board
CB 1          REV 12    750-040257   CAAD9499      Control Board
SPMB 0        REV 02    711-041855   ABCG8426      PMB Board
SPMB 1        REV 02    711-041855   ABBS1481      PMB Board
SFB 0         REV 06    711-044466   ABCD5013      Switch Fabric Board
SFB 1         REV 06    711-044466   ABCD5160      Switch Fabric Board
SFB 2         REV 06    711-044466   ABCD5175      Switch Fabric Board
SFB 3         REV 06    711-044466   ABCD4938      Switch Fabric Board
SFB 4         REV 06    711-044466   ABCD4944      Switch Fabric Board
SFB 5         REV 06    711-044466   ABCD4968      Switch Fabric Board
SFB 6         REV 06    711-044466   ABCD5267      Switch Fabric Board
SFB 7         REV 06    711-044466   ABCD4997      Switch Fabric Board

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FPC 0	REV 59	750-044130	ABCT7676	MPC6E 3D
CPU	REV 10	711-045719	ABCK8527	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7810	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7811	MPC6E XL
FPC 2	REV 27	750-033205	ZL6014	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9068	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9214	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvt 0	REV 01	740-046563	XC49FC030	CFP2-100G-SR10
MIC 1	REV 18	750-033199	CAAC3231	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 3	REV 59	750-044130	ABCT7682	MPC6E 3D
CPU	REV 10	711-045719	ABCK8531	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7818	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7819	MPC6E XL
FPC 4	REV 33	750-044130	ABBY9278	MPC6E 3D
CPU	REV 09	711-045719	ABBY8677	RMPD PMB
XLM 0	REV 06.2.00	711-046638	ABBY8844	MPC6E XL
XLM 1	REV 06.2.00	711-046638	ABBY8830	MPC6E XL
FPC 5	REV 59	750-044130	ABCT7675	MPC6E 3D
CPU	REV 10	711-045719	ABCK8526	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7808	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7809	MPC6E XL
FPC 6	REV 30	750-028467	ZM4986	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6541	AMPD PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvt 0	REV 01	740-021308	AQ43GAC	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvt 0	REV 01	740-031980	ALM0A6D	SFP+-10G-SR
Xcvt 1	REV 01	740-031980	AQFORB3	SFP+-10G-SR
Xcvt 2	REV 01	740-031980	153363A00333	SFP+-10G-SR
Xcvt 3	REV 01	740-021308	AN10KYE	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvt 0	REV 01	740-021308	APK04YM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvt 0	REV 01	740-031980	AQFOH44	SFP+-10G-SR
FPC 8	REV 38	750-031090	CABF7313	MPC Type 2 3D EQ
CPU	REV 08	711-030884	CABE6727	MPC PMB 2G
MIC 0	REV 18	750-028380	YK8253	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvt 0	REV 03	740-014289	AD1148M00TP	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
QXM 0	REV 06	711-028408	CABC5614	MPC QXM
QXM 1	REV 06	711-028408	CABC5550	MPC QXM
FPC 9	REV 39	750-044130	ABCK1652	MPC6E 3D
CPU	REV 09	711-045719	ABCK1655	RMPD PMB
MIC 0	REV 09	750-049457	ABCP1230	2X100GE CFP2 OTN
PIC 0		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvt 0		NON-JNPR	37300222WP0002	CFP2-100G-LR4-D
Xcvt 1		NON-JNPR	FD46F001Y	CFP2-100G-SR10
MIC 1	REV 07	750-049457	ABCV6662	2X100GE CFP2 OTN
PIC 1		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvt 0		NON-JNPR	UQD0014	CFP2-100G-LR4-D
Xcvt 1		NON-JNPR	J13J68335	CFP2-100G-LR4-D
XLM 0	REV 07.2.00	711-046638	ABCK5491	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5475	MPC6E XL
ADC 1	REV 17	750-043596	ABCG9023	Adapter Card
ADC 2	REV 01	750-043596	ZV4079	Adapter Card
ADC 6	REV 17	750-043596	ABCG8866	Adapter Card
ADC 8	REV 17	750-043596	ABCA8993	Adapter Card
Fan Tray 0	REV 06	760-046960	ACAY0354	172mm FanTray - 6 Fans

Fan Tray 1	REV 06	760-046960	ACAY0831	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0892	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0839	172mm FanTray - 6 Fans

show chassis hardware extensive (MX2010 Routers with MPC6E and OTN MIC)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis
Jedec Code:       0x7fb0                EEPROM Version: 0x02
S/N:              JN11C9AFEAFK
Assembly ID:      0x0557                Assembly Version: 00.00
Date:             00-00-0000            Assembly Flags:  0x00
ID: MX2010
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 43 39 41 46 45 41 46 4b 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane          REV 35    750-044636  ABAB9188      Lower Backplane
Jedec Code:       0x7fb0                EEPROM Version: 0x02
P/N:              750-044636            S/N:           ABAB9188
Assembly ID:      0x0b66                Assembly Version: 01.35
Date:             06-21-2013            Assembly Flags:  0x00
Version:          REV 35                CLEI Code:     IPMU810ARA
ID: Lower Backplane                      FRU Model Number: CHAS-BP-MX2010-S
Board Information Record:
Address 0x00: ad 01 08 00 3c 8a b0 38 68 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 31 38 38 00 15 06 07
Address 0x30: dd ff ff ff ad 01 08 00 3c 8a b0 38 68 00 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 38 31 30 41 52 41 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 31 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 30 36 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f8 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1        REV 02    711-044557  ABAB8729      Upper Backplane
Jedec Code:       0x7fb0                EEPROM Version: 0x01
P/N:              711-044557            S/N:           ABAB8729
Assembly ID:      0x0b65                Assembly Version: 01.02
Date:             03-21-2013            Assembly Flags:  0x00
Version:          REV 02
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 65 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 38 37 32 39 00 15 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff

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Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP REV 04 711-032426 ACAJ2432 Power Midplane
Jedec Code: 0x7fb0 EEPROM Version: 0x01
P/N: 711-032426 S/N: ACAJ2432
Assembly ID: 0x045d Assembly Version: 01.04
Date: 03-28-2013 Assembly Flags: 0x00
Version: REV 04
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 34 33 32 00 1c 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board REV 09 760-044634 ABCA4314 Front Panel Display
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 760-044634 S/N: ABCA4314
Assembly ID: 0x0b64 Assembly Version: 01.09
Date: 03-28-2013 Assembly Flags: 0x00
Version: REV 09 CLEI Code: IPMYA4EJRA
ID: Front Panel Display FRU Model Number: MX2010-CRAFT-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 64 01 09 52 45 56 20 30 39 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 43 41 34 33 31 34 00 1c 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 59 41 34 45 4a 52 41 4d
Address 0x50: 58 32 30 31 30 2d 43 52 41 46 54 2d 53 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0 REV 01 740-050037 1EDB321015C DC 52V Power Supply
Module
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-050037 S/N: 1EDB321015C
Assembly ID: 0x0478 Assembly Version: 01.01
Date: 05-28-2013 Assembly Flags: 0x00
Version: REV 01 CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 43 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1 REV 01 740-050037 1EDB321015J DC 52V Power Supply
Module
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-050037 S/N: 1EDB321015J
Assembly ID: 0x0478 Assembly Version: 01.01

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Date:          05-28-2013      Assembly Flags:  0x00
Version:       REV 01         CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 4a 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 2          REV 01    740-050037    1EDB32000K8    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          740-050037   S/N:            1EDB32000K8
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         05-23-2013   Assembly Flags:  0x00
Version:       REV 01      CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 30 30 30 4b 38 00 00 17 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 01    740-050037    1EDB32101JW    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          740-050037   S/N:            1EDB32101JW
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         05-30-2013   Assembly Flags:  0x00
Version:       REV 01      CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 4a 57 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 01    740-050037    1EDB321015G    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          740-050037   S/N:            1EDB321015G
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         05-28-2013   Assembly Flags:  0x00
Version:       REV 01      CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:

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Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 47 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 01  740-050037  1EDB32101HH      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB32101HH
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-30-2013      Assembly Flags:  0x00
Version:       REV 01          CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 48 48 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 01  740-050037  1EDB32101HD      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB32101HD
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-30-2013      Assembly Flags:  0x00
Version:       REV 01          CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 48 44 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 01  740-050037  1EDB321015F      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB321015F
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-28-2013      Assembly Flags:  0x00
Version:       REV 01          CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00

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Address 0x20: 31 45 44 42 33 32 31 30 31 35 46 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00
PSM 8          REV 01   740-050037   1EDB321015B   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:               1EDB321015B
Assembly ID:   0x0478          Assembly Version:   01.01
Date:          05-28-2013      Assembly Flags:     0x00
Version:       REV 01          CLEI Code:          IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 42 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PDM 0          REV 03   740-045234   1EFA3220433   DC Power Dist Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-045234      S/N:               1EFA3220433
Assembly ID:   0x047b          Assembly Version:   01.03
Date:          05-30-2013      Assembly Flags:     0x00
Version:       REV 03          CLEI Code:          IPUPAJSKAA
ID: DC Power Dist Module      FRU Model Number: MX2000-PDM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 7b 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 32 33 34 00 00
Address 0x20: 31 45 46 41 33 32 32 30 34 33 33 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4a 53 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 44 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 33 ff ff ff ff ff ff
Address 0x70: ff ff ff 1d 00 00 00 00 00 00 00 00 00 00 00 00
PDM 1          REV 03   740-045234   1EFA3220425   DC Power Dist Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-045234      S/N:               1EFA3220425
Assembly ID:   0x047b          Assembly Version:   01.03
Date:          05-30-2013      Assembly Flags:     0x00
Version:       REV 03          CLEI Code:          IPUPAJSKAA
ID: DC Power Dist Module      FRU Model Number: MX2000-PDM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
..

```

show chassis hardware (MX2020 Router)

```

user@host > show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
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	CAAA6141	PMB Board
SFB 0	REV 03	711-044466	ABBV6789	Switch Fabric Board
SFB 1	REV 05	711-044466	ABBX5666	Switch Fabric Board
SFB 2	REV 05	711-044466	ABBX5678	Switch Fabric Board
SFB 3	REV 05	711-044466	ABBX5687	Switch Fabric Board
SFB 4	REV 05	711-044466	ABBX5609	Switch Fabric Board
SFB 5	REV 05	711-044466	ABBX5675	Switch Fabric Board
SFB 6	REV 03	711-044466	ABBV6805	Switch Fabric Board
SFB 7	REV 05	711-044466	ABBX5701	Switch Fabric Board
FPC 0	REV 30	750-028467	ABBN0284	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0507	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00990	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E04357	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01327	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04375	SFP+-10G-USR

PIC 1			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02760	SFP+-10G-USR	
Xcvr 1	REV 01	740-030658	B11E02904	SFP+-10G-USR	
Xcvr 2	REV 01	740-030658	B11E03963	SFP+-10G-USR	
Xcvr 3	REV 01	740-030658	B11E00756	SFP+-10G-USR	
PIC 2			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04418	SFP+-10G-USR	
Xcvr 1	REV 01	740-030658	B11E01077	SFP+-10G-USR	
Xcvr 2	REV 01	740-030658	B11E01128	SFP+-10G-USR	
Xcvr 3	REV 01	740-030658	B11F01253	SFP+-10G-USR	
PIC 3			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E01140	SFP+-10G-USR	
Xcvr 1	REV 01	740-030658	B11F01626	SFP+-10G-USR	
Xcvr 2	REV 01	740-030658	B11E01075	SFP+-10G-USR	
Xcvr 3	REV 01	740-030658	B11E01177	SFP+-10G-USR	
FPC 1	REV 30	750-028467	ABBN0208	MPC 3D 16x 10GE	
CPU	REV 10	711-029089	ABBJ1084	AMPC PMB	
PIC 0			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04745	SFP+-10G-USR	
Xcvr 1	REV 01	740-030658	B11F01570	SFP+-10G-USR	
Xcvr 2	REV 01	740-030658	B11E04388	SFP+-10G-USR	
Xcvr 3	REV 01	740-030658	B11F01439	SFP+-10G-USR	
PIC 1			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04739	SFP+-10G-USR	
Xcvr 1	REV 01	740-030658	B11F01869	SFP+-10G-USR	
Xcvr 2	REV 01	740-030658	B11F01675	SFP+-10G-USR	
Xcvr 3	REV 01	740-030658	B11F01901	SFP+-10G-USR	
PIC 2			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01346	SFP+-10G-USR	
Xcvr 1	REV 01	740-030658	B11F01288	SFP+-10G-USR	
Xcvr 2	REV 01	740-030658	B11F01824	SFP+-10G-USR	
Xcvr 3	REV 01	740-030658	B11E04312	SFP+-10G-USR	
PIC 3			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02811	SFP+-10G-USR	
Xcvr 1	REV 01	740-030658	B11E03847	SFP+-10G-USR	
Xcvr 2	REV 01	740-030658	B11F01495	SFP+-10G-USR	
Xcvr 3	REV 01	740-030658	B11F01265	SFP+-10G-USR	
FPC 2	REV 30	750-028467	ZM5111	MPC 3D 16x 10GE	
CPU	REV 10	711-029089	ZP6607	AMPC PMB	
PIC 0			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LJA	SFP+-10G-SR	
Xcvr 1	REV 01	740-031980	AK80MFZ	SFP+-10G-SR	
Xcvr 2	REV 01	740-031980	AK80NKL	SFP+-10G-SR	
Xcvr 3	REV 01	740-031980	AK80KF4	SFP+-10G-SR	
PIC 1			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FBJ	SFP+-10G-SR	
Xcvr 1	REV 01	740-031980	AK80MM2	SFP+-10G-SR	
Xcvr 2	REV 01	740-031980	AK80LJV	SFP+-10G-SR	
Xcvr 3	REV 01	740-031980	AK80NXV	SFP+-10G-SR	
PIC 2			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1H	SFP+-10G-SR	
Xcvr 1	REV 01	740-031980	AK80NLS	SFP+-10G-SR	
Xcvr 2	REV 01	740-031980	AK80FL5	SFP+-10G-SR	
Xcvr 3	REV 01	740-031980	AK80NL9	SFP+-10G-SR	
PIC 3			BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG2	SFP+-10G-SR	
Xcvr 1	REV 01	740-031980	AK80KDU	SFP+-10G-SR	
Xcvr 2	REV 01	740-031980	AK80MG1	SFP+-10G-SR	
Xcvr 3	REV 01	740-031980	AK80MM0	SFP+-10G-SR	
FPC 3	REV 30	750-028467	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	ABBJ1082	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00523	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01848	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01865	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00540	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00422	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00428	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K00423	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K01855	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K01847	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K00526	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K00529	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00525	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K00425	SFP+-10G-SR

Xcvr 1	REV 01	740-031980	B11K00530	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01851	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11K00528	SFP+-10G-SR
FPC 6	REV 32	750-028467	ABBN6832	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6534	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MB4	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FQ6	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N1F	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLQ	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80KDR	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FGJ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N5G	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KD8	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LET	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80N1X	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NRF	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL2	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N3D	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MRB	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LEQ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LER	SFP+-10G-SR
FPC 7	REV 32	750-028467	ABBN6811	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7288	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NK8	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80LJG	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LBU	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N21	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEU	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLM	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NL6	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LES	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEN	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80ME0	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LMG	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80MM1	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MG7	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80KF9	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NRQ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLE	SFP+-10G-SR
FPC 8	REV 23	750-028467	YN2977	MPC 3D 16x 10GE
CPU	REV 10	711-029089	YP1856	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00875	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00851	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00772	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00882	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00735	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00169	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00726	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00077	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00168	SFP+-10G-SR

Xcvr 1	REV 01	740-031980	183363A00676	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00732	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00091	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00642	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00871	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00853	SFP+-10G-SR
FPC 9	REV 32	750-028467	ABBN6798	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6556	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	9ZDZ06A00055	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00239	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AD0915E003K	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AD0915E003A	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MRC	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NL5	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKN	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N3U	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1T	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ808DJ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NG4	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80FND	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FKQ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLT	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKR	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LKM	SFP+-10G-SR
FPC 10	REV 32	750-028467	ABBN6813	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6542	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NA3	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLF	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80MRH	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KE4	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00030	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80L9H	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80ME8	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLR	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG1	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MCA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LFC	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LEM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N9X	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80LAC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LF2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N8T	SFP+-10G-SR
FPC 11	REV 30	750-028467	ABBN0281	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0526	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01326	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E03973	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00950	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00674	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00775	SFP+-10G-USR

Xcvr 1	REV 01	740-030658	B11E04461	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01074	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02821	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04501	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00757	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01623	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01022	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04359	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02751	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E02736	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01178	SFP+-10G-USR
FPC 12	REV 32	750-028467	ABBN6796	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7259	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K01856	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01853	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01863	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02863	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02668	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02881	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01671	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02627	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02692	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02730	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03081	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02736	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02568	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02747	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02579	SFP+-10G-SR
FPC 13	REV 30	750-028467	ABBN0270	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABB10966	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	ABBN6515	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	CAA6141	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	ABBN4592	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	ABBN6515	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LZM	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MCC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KCM	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KE0	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021310	C10F99155	SFP+-10G-LRM
Xcvr 1	REV 01	740-021310	C10F99049	SFP+-10G-LRM
Xcvr 2	REV 01	740-021310	C10F99128	SFP+-10G-LRM
Xcvr 3	REV 01	740-021310	C10F99169	SFP+-10G-LRM
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LF3	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02597	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A03060	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03057	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEX	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80FEU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FNM	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AJQ0Q5G	SFP+-10G-SR
FPC 12	REV 30	750-028467	ZM5111	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6607	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+

Xcvr 0	REV 01	740-031980	AK80LJA	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MFZ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKL	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KF4	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FBJ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MM2	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LJV	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NXV	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1H	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLS	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FL5	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL9	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG2	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80KDU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80MG1	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80MM0	SFP+-10G-SR
FPC 13	REV 30	750-028467	ABBN0208	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABB11084	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04745	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01570	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E04388	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01439	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04739	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01869	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01675	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01901	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01346	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11F01288	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01824	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E04312	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E02811	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E03847	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01495	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11F01265	SFP+-10G-USR
FPC 14	REV 23	750-028467	YN2977	MPC 3D 16x 10GE
CPU	REV 10	711-029089	YP1856	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00875	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00851	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00772	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00882	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00735	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00169	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00726	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00077	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00168	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00676	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	183363A00732	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00091	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	183363A00725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00642	SFP+-10G-SR

Xcvr 2	REV 01	740-031980	183363A00871	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	183363A00853	SFP+-10G-SR
FPC 15	REV 32	750-028467	ABBN6798	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6556	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	9ZDZ06A00055	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	183363A00239	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AD0915E003K	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AD0915E003A	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80MRC	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NL5	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKN	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N3U	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N1T	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ808DJ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NG4	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80FND	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80FKQ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLT	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NKR	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LKM	SFP+-10G-SR
FPC 16	REV 30	750-028467	ABBN0270	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBJ0966	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NL1	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NXW	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KD2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80FMD	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NKQ	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MGH	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80N38	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NL7	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80M5J	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NKD	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80KCY	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LHK	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LEL	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MBE	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80NLG	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LFH	SFP+-10G-SR
FPC 17	REV 32	750-028467	ABBN6796	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN7259	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11K01856	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11K01853	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11K01863	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02863	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02668	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02881	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A01671	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02627	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02725	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02692	SFP+-10G-SR

Xcvr 2	REV 01	740-031980	163363A02730	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A03081	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	163363A02736	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	163363A02568	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	163363A02747	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	163363A02579	SFP+-10G-SR
FPC 18	REV 30	750-028467	ABBN0281	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBN0526	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11F01326	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E03973	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E00950	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E00674	SFP+-10G-USR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E00775	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E04461	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E01074	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E02821	SFP+-10G-USR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04501	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E00757	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11F01623	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01022	SFP+-10G-USR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-030658	B11E04359	SFP+-10G-USR
Xcvr 1	REV 01	740-030658	B11E02751	SFP+-10G-USR
Xcvr 2	REV 01	740-030658	B11E02736	SFP+-10G-USR
Xcvr 3	REV 01	740-030658	B11E01178	SFP+-10G-USR
FPC 19	REV 32	750-028467	ABBN6813	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBK6542	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NA3	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80NLF	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80MRH	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80KE4	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	973152A00030	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80L9H	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80ME8	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80NLR	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80NG1	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80MCA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LFC	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80LEM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80N9X	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AK80LAC	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80LF2	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AK80N8T	SFP+-10G-SR
ADC 0	REV 13	750-043596	ABBX5561	Adapter Card
ADC 1	REV 13	750-043596	ABBX5546	Adapter Card
ADC 2	REV 13	750-043596	ABBX5535	Adapter Card
ADC 3	REV 13	750-043596	ABBX5552	Adapter Card
ADC 4	REV 13	750-043596	ABBX5581	Adapter Card
ADC 5	REV 13	750-043596	ABBX5545	Adapter Card
ADC 6	REV 13	750-043596	ABBX5554	Adapter Card
ADC 7	REV 07	750-043596	ABBV7194	Adapter Card
ADC 8	REV 07	750-043596	ABBV7251	Adapter Card
ADC 9	REV 07	750-043596	ABBV7202	Adapter Card

ADC 10	REV 13	750-043596	ABBX5579	Adapter Card
ADC 11	REV 13	750-043596	ABBX5548	Adapter Card
ADC 12	REV 13	750-043596	ABBX5575	Adapter Card
ADC 13	REV 13	750-043596	ABBX5539	Adapter Card
ADC 14	REV 13	750-043596	ABBX5555	Adapter Card
ADC 15	REV 13	750-043596	ABBX5557	Adapter Card
ADC 16	REV 13	750-043596	ABBX5536	Adapter Card
ADC 17	REV 13	750-043596	ABBX5559	Adapter Card
ADC 18	REV 13	750-043596	ABBX5537	Adapter Card
ADC 19	REV 11	750-043596	ABBW5685	Adapter Card
Fan Tray 0	REV 04	760-046960	ACAY0090	172mm FanTray - 6 Fans
Fan Tray 1	REV 04	760-046960	ACAY0088	172mm FanTray - 6 Fans
Fan Tray 2	REV 04	760-046960	ACAY0089	172mm FanTray - 6 Fans
Fan Tray 3	REV 04	760-046960	ACAY0108	172mm FanTray - 6 Fans

show chassis hardware models (MX2020 Router)

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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:

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Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 27	750-040240	PROTOXCLEI	750-040240
FPM Board	REV 06	760-040242	PROTOXCLEI	760-040242
PSM 0	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 1	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 2	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 3	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 4	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 5	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 6	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 7	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 8	REV 01	740-045050	IPUPAJMKAA	MX2000-PSM-HC-DC-S-A
PSM 9	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 10	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 11	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 12	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 13	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PSM 15	REV 03	740-045050	IPUPAJMKAA	MX2000-PSM-DC-S-A
PDM 0	REV 01	740-045234		
PDM 1	REV 01	740-045234		
PDM 2	REV 01	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S-A
Routing Engine 0	REV 02	740-041821		RE-S-1800X4-16G-S
Routing Engine 1	REV 02	740-041821		RE-S-1800X4-16G-S
CB 0	REV 08	750-040257	PROTOXCLEI	750-040257

CB 1	REV 04	750-040257	PROTOXCLEI	750-040257
SFB 0	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 1	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 2	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 4	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 5	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 7	REV 05	711-044466	IPUCBA6CAA	MX2000-SFB-S
FPC 0	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 1	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 2	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 3	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 4	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 5	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 6	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 7	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 8	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 9	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 10	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 11	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 12	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 13	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 14	REV 23	750-028467		MPC-3D-16XGE-SFPP
FPC 15	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 16	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 17	REV 32	750-028467		MPC-3D-16XGE-SFPP
FPC 18	REV 30	750-028467		MPC-3D-16XGE-SFPP
FPC 19	REV 32	750-028467		MPC-3D-16XGE-SFPP
ADC 0	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 1	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 2	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 3	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 4	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 5	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 6	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 7	REV 07	750-043596	PROTOXCLEI	MX2000-LC-ADAPTER
ADC 8	REV 07	750-043596	PROTOXCLEI	MX2000-LC-ADAPTER
ADC 9	REV 07	750-043596	PROTOXCLEI	MX2000-LC-ADAPTER
ADC 10	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 12	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 13	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 14	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 15	REV 13	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 16	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 17	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 18	REV 13	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
ADC 19	REV 11	750-043596	PROTOXCLEI	PROTO-ASSEMBLY
Fan Tray 0	REV 04	760-046960		
Fan Tray 1	REV 04	760-046960		
Fan Tray 2	REV 04	760-046960		
Fan Tray 3	REV 04	760-046960		

show chassis hardware (MX2020 Router with MPC5EQ and MPC6E)

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Hardware inventory:
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Item	Version	Part number	Serial number	Description
Chassis			JN120BADBAFJ	MX2020
Midplane	REV 51	750-040240	ABAB9243	Lower Backplane
Midplane 1	REV 04	711-032386	ABAB9399	Upper Backplane
PMP 1	REV 05	711-032428	ACAJ2541	Upper Power Midplane
PMP 0	REV 04	711-032426	ACAJ2194	Lower Power Midplane

FPM Board	REV 13	760-040242	ABCA8835	Front Panel Display
PSM 0 Module	REV 01	740-050037	1EDB32403L5	DC 52V Power Supply
PSM 1 Module	REV 01	740-050037	1EDB32403L3	DC 52V Power Supply
PSM 2 Module	REV 01	740-050037	1EDB32403KM	DC 52V Power Supply
PSM 3 Module	REV 01	740-050037	1EDB3130079	DC 52V Power Supply
PSM 4 Module	REV 01	740-050037	1EDB3130077	DC 52V Power Supply
PSM 5 Module	REV 01	740-050037	1EDB3130020	DC 52V Power Supply
PSM 6 Module	REV 01	740-050037	1EDB313009S	DC 52V Power Supply
PSM 7 Module	REV 01	740-050037	1EDB313008E	DC 52V Power Supply
PSM 8 Module	REV 01	740-050037	1EDB3130063	DC 52V Power Supply
PSM 12 Module	REV 01	740-050037	1EDB3130026	DC 52V Power Supply
PSM 13 Module	REV 01	740-050037	1EDB3130074	DC 52V Power Supply
PSM 14 Module	REV 01	740-050037	1EDB313009D	DC 52V Power Supply
PSM 15 Module	REV 01	740-050037	1EDB3130024	DC 52V Power Supply
PSM 16 Module	REV 01	740-050037	1EDB3130054	DC 52V Power Supply
PSM 17 Module	REV 01	740-050037	1EDB3130080	DC 52V Power Supply
PDM 0	REV 03	740-045234	1EGA3170144	DC Power Dist Module
PDM 1	REV 03	740-045234	1EGA3170158	DC Power Dist Module
PDM 2	REV 03	740-045234	1EGA3170182	DC Power Dist Module
PDM 3	REV 03	740-045234	1EGA3170207	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009112112	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009112087	RE-S-1800x4
CB 0	REV 23	750-040257	CABA2295	Control Board
CB 1	REV 23	750-040257	CABE8379	Control Board
SPMB 0	REV 02	711-041855	ABCE8851	PMB Board
SPMB 1	REV 02	711-041855	ABCE8839	PMB Board
SFB 0	REV 06	711-044466	ABCD5001	Switch Fabric Board
SFB 1	REV 06	711-044466	ABCD5034	Switch Fabric Board
SFB 2	REV 06	711-044466	ABCH3899	Switch Fabric Board
SFB 3	REV 06	711-044466	ABCD5020	Switch Fabric Board
SFB 4	REV 06	711-044466	ABCD4975	Switch Fabric Board
SFB 5	REV 06	711-044466	ABCH3881	Switch Fabric Board
SFB 6	REV 06	711-044466	ABCD5026	Switch Fabric Board
SFB 7	REV 06	711-044466	ABCD5032	Switch Fabric Board
FPC 0	REV 39	750-045715	CACD1902	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACB1933	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	B11F00361	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	19T511101854	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	19T511100377	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	ANT0878	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	19T511100398	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ4363J	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	19T511101377	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	ANT072M	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AG90C7N	SFP+-10G-SR

Xcvr 10	REV 01	740-031980	AM30M09	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B10E01016	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	B10L04151	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	19T511101379	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5036J	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AG90C4M	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	19T511101104	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ502ZM	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AN10KY2	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ43G41	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ41F04	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AMS16N3	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AMH04Y3	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	ANA093E	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 09	750-049136	CABN0410	MPC5E 24XGE OTN Mezz
FPC 1	REV 11	750-045372	CABK8112	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ6621	HMPC PMB 2G
MIC 0	REV 07	750-033307	CAAZ2897	10X10GE SFPP
PIC 0		BUILTIN	BUILTIN	10X10GE SFPP
Xcvr 0	REV 01	740-021308	AQ501VK	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501YC	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HJF	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43H8D	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	19T511100370	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	153363A00763	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	APH2LXB	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AMCOLVV	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B11F00230	SFP+-10G-SR
MIC 1	REV 14	750-033196	CAAP1390	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-032166	XB11F000M	CFP2-100G-SR10
FPC 2	REV 17	750-037355	CAAS5826	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAR3986	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	T09F43722	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	ALP0KXF	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502FG	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502T7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00571	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	AJ71KEH	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11E01355	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11F00249	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
FPC 3	REV 05	750-044444	CAAY9920	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3639	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1083	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	CC07BK05B	XFP-10G-SR
Xcvr 1	REV 01	740-011571	C728XJ00U	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T12L92339	XFP-10G-SR
QXM 0	REV 06	711-028408	CAAW4915	MPC QXM
QXM 1	REV 06	711-028408	CAAW4894	MPC QXM
FPC 4	REV 18	750-046005	CACH5661	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACF2880	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN

PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03Y	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-049775	J13K72997	CFP2-100G-LR4-D
FPC 5	REV 35	750-028467	CAAR2623	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAR0491	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ5027T	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502J0	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5027S	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ501Y7	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ501YB	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ503EB	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HJH	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43J0Y	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ50352	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501X6	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502NV	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502ZJ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ502H4	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43HJK	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJ30CU7	SFP+-10G-SR
FPC 9	REV 30	750-044130	ABCF5773	MPC6E 3D
CPU	REV 09	711-045719	ABCF1270	RMPC PMB
MIC 0	REV 05	750-049457	ABCD7829	2X100GE CFP2 OTN
PIC 0		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000K	CFP2-100G-SR10
Xcvr 1	REV 01	740-048813	XD32FE017	CFP2-100G-LR-D
MIC 1	REV 07	750-049457	ABCK2812	2X100GE CFP2 OTN
PIC 1		BUILTIN	BUILTIN	2X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE018	CFP2-100G-SR10
Xcvr 1		NON-JNPR	FE13F000E	CFP2-100G-LR4-D
XLM 0	REV 05.2.00	711-046638	ABCF5915	MPC6E XL
XLM 1	REV 05.2.00	711-046638	ABCF5916	MPC6E XL
FPC 10	REV 36	750-044130	ABCS8602	MPC6E 3D
CPU	REV 09	711-045719	ABCS8779	RMPC PMB
MIC 0	REV 06	750-049979	ABCK2656	24X10GE SFPP OTN
PIC 0		BUILTIN	BUILTIN	24X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQ43J08	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQE1Y2E	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQE1UW4	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQE1MQF	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQGOMN1	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQE1L9M	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQGOMPD	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQE1Y2B	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQGOLT5	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQD2ET4	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQGOMPC	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQGOM63	SFP+-10G-SR
Xcvr 12	REV 01	740-021308	AQGOLT1	SFP+-10G-SR
Xcvr 13	REV 01	740-021308	AQGOM4L	SFP+-10G-SR
Xcvr 14	REV 01	740-021308	AQGOLS7	SFP+-10G-SR
Xcvr 15	REV 01	740-021308	AQE1MQB	SFP+-10G-SR
Xcvr 16	REV 01	740-021308	AQGOLZP	SFP+-10G-SR
Xcvr 17	REV 01	740-021308	AQE1LU9	SFP+-10G-SR
Xcvr 18	REV 01	740-021308	AQGOMRZ	SFP+-10G-SR

Xcvr 19	REV 01	740-021308	AQE1MQ9	SFP+-10G-SR
Xcvr 20	REV 01	740-021308	AQG0LRX	SFP+-10G-SR
Xcvr 21	REV 01	740-021308	AQE1UWD	SFP+-10G-SR
Xcvr 22	REV 01	740-021308	AQG0LT4	SFP+-10G-SR
Xcvr 23	REV 01	740-021308	AQE1MQL	SFP+-10G-SR
MIC 1	REV 12	750-050008	ABCK5372	4X100GE CXP
PIC 1		BUILTIN	BUILTIN	4X100GE CXP
Xcvr 3	REV 01	740-046563	XD16FC02Z	CFP2-100G-SR10
XLM 0	REV 07.2.00	711-046638	ABCK3481	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK4725	MPC6E XL
FPC 17	REV 28	750-044130	ABBZ3873	MPC6E 3D
CPU	REV 08	711-045719	ABBZ3770	RMPD PMB
MIC 0	REV 11	750-046535	ABCC7731	24X10GE SFPP
PIC 0		BUILTIN	BUILTIN	24X10GE SFPP
Xcvr 1	REV 01	740-021308	APK0543	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B10G01119	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502SX	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQ43H84	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ501TB	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ502JZ	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ502SC	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ502JW	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQ502RM	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AHK013B	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQGOMRT	SFP+-10G-SR
Xcvr 13	REV 01	740-031980	AMC0JTC	SFP+-10G-SR
Xcvr 14	REV 01	740-021308	ANA0MQ0	SFP+-10G-SR
Xcvr 15	REV 01	740-021308	AQ502GS	SFP+-10G-SR
Xcvr 16	REV 01	740-021308	AQGOM0J	SFP+-10G-SR
Xcvr 17	REV 01	740-021308	AQGOMUR	SFP+-10G-SR
Xcvr 18	REV 01	740-021308	AQGOMRR	SFP+-10G-SR
Xcvr 19	REV 01	740-021308	AQGOM0F	SFP+-10G-SR
Xcvr 20	REV 01	740-021308	AQ50312	SFP+-10G-SR
Xcvr 21	REV 01	740-021308	AQ5032U	SFP+-10G-SR
Xcvr 22	REV 01	740-021308	APE17B5	SFP+-10G-SR
Xcvr 23	REV 01	740-021309	91D104A00011	SFP+-10G-LR
MIC 1	REV 03	750-050008	ABCC4522	4X100GE CXP
PIC 1		BUILTIN	BUILTIN	4X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC02U	CFP2-100G-SR10
Xcvr 1	REV 01	740-046563	XC42FC03K	CFP2-100G-SR10
Xcvr 2	REV 01	740-046563	XC42FC01Z	CFP2-100G-SR10
Xcvr 3	REV 01	740-046563	XC42FC02U	CFP2-100G-SR10
XLM 0	REV 04.2.00	711-046638	ABBZ3779	MPC6E XL
XLM 1	REV 04.2.00	711-046638	ABBZ3780	MPC6E XL
FPC 18	REV 39	750-045715	CACD1910	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1817	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130194	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130193	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130196	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130191	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130198	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130192	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0411	MPC5E 24XGE OTN Mezz
FPC 19	REV 39	750-045715	CACD1908	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1820	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA0EXJ	SFP+-10G-SR

Xcvr 1	REV 01	740-021308	AQGOM6D	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOLW7	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQA0JKB	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQGOMTM	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQA07NE	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQGOM41	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQGOMU7	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQGOMUG	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQGOMMX	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQGOM5K	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQGOLVZ	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130242	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130245	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130613	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0418	MPC5E 24XGE OTN Mezz
ADC 0	REV 17	750-043596	ABCD5378	Adapter Card
ADC 1	REV 17	750-043596	ABCD5465	Adapter Card
ADC 2	REV 17	750-043596	ABCD5431	Adapter Card
ADC 3	REV 17	750-043596	ABCD5356	Adapter Card
ADC 4	REV 02	750-043596	ZW1545	Adapter Card
ADC 5	REV 17	750-043596	ABCD5517	Adapter Card
ADC 18	REV 17	750-043596	ABCD5535	Adapter Card
ADC 19	REV 01	750-043596	ZV4127	Adapter Card
Fan Tray 0	REV 06	760-046960	ACAY0791	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0788	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0755	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0441	172mm FanTray - 6 Fans

show chassis hardware detail (MX2020 Router with MPC5EQ and MPC6E)

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Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			JN120BADBAFJ	MX2020
Midplane	REV 51	750-040240	ABAB9243	Lower Backplane
Midplane 1	REV 04	711-032386	ABAB9399	Upper Backplane
PMP 1	REV 05	711-032428	ACAJ2541	Upper Power Midplane
PMP 0	REV 04	711-032426	ACAJ2194	Lower Power Midplane
FPM Board	REV 13	760-040242	ABCA8835	Front Panel Display
PSM 0	REV 01	740-050037	1EDB32403L5	DC 52V Power Supply
Module				
PSM 1	REV 01	740-050037	1EDB32403L3	DC 52V Power Supply
Module				
PSM 2	REV 01	740-050037	1EDB32403KM	DC 52V Power Supply
Module				
PSM 3	REV 01	740-050037	1EDB3130079	DC 52V Power Supply
Module				
PSM 4	REV 01	740-050037	1EDB3130077	DC 52V Power Supply
Module				
PSM 5	REV 01	740-050037	1EDB3130020	DC 52V Power Supply
Module				
PSM 6	REV 01	740-050037	1EDB313009S	DC 52V Power Supply
Module				
PSM 7	REV 01	740-050037	1EDB313008E	DC 52V Power Supply
Module				
PSM 8	REV 01	740-050037	1EDB3130063	DC 52V Power Supply
Module				
PSM 12	REV 01	740-050037	1EDB3130026	DC 52V Power Supply

Module				
PSM 13	REV 01	740-050037	1EDB3130074	DC 52V Power Supply
Module				
PSM 14	REV 01	740-050037	1EDB313009D	DC 52V Power Supply
Module				
PSM 15	REV 01	740-050037	1EDB3130024	DC 52V Power Supply
Module				
PSM 16	REV 01	740-050037	1EDB3130054	DC 52V Power Supply
Module				
PSM 17	REV 01	740-050037	1EDB3130080	DC 52V Power Supply
Module				
PDM 0	REV 03	740-045234	1EGA3170144	DC Power Dist Module
PDM 1	REV 03	740-045234	1EGA3170158	DC Power Dist Module
PDM 2	REV 03	740-045234	1EGA3170182	DC Power Dist Module
PDM 3	REV 03	740-045234	1EGA3170207	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009112112	RE-S-1800x4
ad0	3998 MB	Virtium - TuffDrive	VCF P1T0200274310822	113 Compact Flash
ad1	30533 MB	UGB94BPH32H0S1-KCI	11000031656	Disk 1
usb0 (addr 1)		EHCI root hub 0	Intel	uhub0
usb0 (addr 2)		product 0x0020 32	vendor 0x8087	uhub1
DIMM 0		SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54		MFR ID-ce80
DIMM 1		SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54		MFR ID-ce80
DIMM 2		SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54		MFR ID-ce80
DIMM 3		SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54		MFR ID-ce80
Routing Engine 1	REV 02	740-041821	9009112087	RE-S-1800x4
ad0	3998 MB	Virtium - TuffDrive	VCF P1T0200274310822	366 Compact Flash
ad1	30533 MB	UGB94BPH32H0S1-KCI	11000039979	Disk 1
CB 0	REV 23	750-040257	CABA2295	Control Board
CB 1	REV 23	750-040257	CABE8379	Control Board
SPMB 0				
SPMB 1				
FPC 0	REV 39	750-045715	CACD1902	MPC5E 3D Q 24XGE+6XLGE
CPU				
FPC 1	REV 11	750-045372	CABK8112	MPCE Type 3 3D
CPU				
FPC 2	REV 17	750-037355	CAAS5826	MPC4E 3D 2CGE+8XGE
CPU				
FPC 3	REV 05	750-044444	CAAY9920	MPCE Type 2 3D P
CPU				
FPC 4	REV 18	750-046005	CACH5661	MPC5E 3D Q 2CGE+4XGE
CPU				
FPC 5	REV 35	750-028467	CAAR2623	MPC 3D 16x 10GE
CPU				
FPC 9	REV 30	750-044130	ABCF5773	MPC6E 3D
CPU				
FPC 10	REV 36	750-044130	ABCS8602	MPC6E 3D
CPU				
FPC 17	REV 28	750-044130	ABBZ3873	MPC6E 3D
CPU				
FPC 18	REV 39	750-045715	CACD1910	MPC5E 3D Q 24XGE+6XLGE
CPU				
FPC 19	REV 39	750-045715	CACD1908	MPC5E 3D Q 24XGE+6XLGE
CPU				
Fan Tray 0	REV 06	760-046960	ACAY0791	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0788	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0755	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0441	172mm FanTray - 6 Fans

show chassis hardware extensive (MX2020 Router with MPC5EQ and MPC6E)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN120BADBAFJ	MX2020
Jedec Code:	0x7fb0	EEPROM Version:	0x02	
		S/N:	JN120BADBAFJ	
Assembly ID:	0x0557	Assembly Version:	00.00	
Date:	00-00-0000	Assembly Flags:	0x00	
ID:	MX2020			
Board Information Record:				
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				
I2C Hex Data:				
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00				
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				
Address 0x20: 4a 4e 31 32 30 42 41 44 42 41 46 4a 00 00 00 00				
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00				
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				
Midplane	REV 51	750-040240	ABAB9243	Lower Backplane
Jedec Code:	0x7fb0	EEPROM Version:	0x02	
P/N:	750-040240	S/N:	ABAB9243	
Assembly ID:	0x0b22	Assembly Version:	01.51	
Date:	05-30-2013	Assembly Flags:	0x00	
Version:	REV 51	CLEI Code:	IPMU710ARA	
ID:	Lower Backplane	FRU Model Number:	CHAS-BP-MX2020-S	
Board Information Record:				
Address 0x00: ad 01 10 00 4c 96 14 72 30 08 ff ff ff ff ff ff				
I2C Hex Data:				
Address 0x00: 7f b0 02 ff 0b 22 01 33 52 45 56 20 35 31 00 00				
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 30 32 34 30 00 00				
Address 0x20: 53 2f 4e 20 41 42 41 42 39 32 34 33 00 1e 05 07				
Address 0x30: dd ff ff ff ad 01 10 00 4c 96 14 72 30 08 ff ff				
Address 0x40: ff ff ff ff 01 49 50 4d 55 37 31 30 41 52 41 43				
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 32 30 2d 53 00				
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff				
Address 0x70: ff ff ff d3 ff ff ff ff ff ff ff ff ff ff ff ff				
Midplane 1	REV 04	711-032386	ABAB9399	Upper Backplane
Jedec Code:	0x7fb0	EEPROM Version:	0x01	
P/N:	711-032386	S/N:	ABAB9399	
Assembly ID:	0x0b23	Assembly Version:	01.04	
Date:	10-22-2012	Assembly Flags:	0x00	
Version:	REV 04			
ID:	Upper Backplane			
Board Information Record:				
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff				
I2C Hex Data:				
Address 0x00: 7f b0 01 fe 0b 23 01 04 52 45 56 20 30 34 00 00				
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 33 38 36 00 00				
Address 0x20: 53 2f 4e 20 41 42 41 42 39 33 39 39 00 16 0a 07				
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff				
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff				
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff				
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff				
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff				
PMP 1	REV 05	711-032428	ACAJ2541	Upper Power Midplane
Jedec Code:	0x7fb0	EEPROM Version:	0x01	
P/N:	711-032428	S/N:	ACAJ2541	
Assembly ID:	0x045c	Assembly Version:	01.05	
Date:	04-26-2013	Assembly Flags:	0x00	
Version:	REV 05			

```

ID: Upper Power Midplane
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 04 5c 01 05 52 45 56 20 30 35 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 41 4a 32 35 34 31 00 1a 04 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  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
PMP 0          REV 04    711-032426    ACAJ2194          Lower Power Midplane
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:           711-032426      S/N:             ACAJ2194
Assembly ID:   0x045d          Assembly Version: 01.04
Date:          01-29-2013      Assembly Flags:   0x00
Version:       REV 04
ID: Lower Power Midplane
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
  Address 0x20: 53 2f 4e 20 41 43 41 4a 32 31 39 34 00 1d 01 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board      REV 13    760-040242    ABCA8835          Front Panel Display
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           760-040242      S/N:             ABCA8835
Assembly ID:   0x0b24          Assembly Version: 01.13
Date:          04-13-2013      Assembly Flags:   0x00
Version:       REV 13          CLEI Code:        IPMYAE5JRA
ID: Front Panel Display      FRU Model Number: MX2020-CRAFT-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 24 01 0d 52 45 56 20 31 33 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 34 30 32 34 32 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 41 38 38 33 35 00 0d 04 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 4d 59 41 45 35 4a 52 41 4d
  Address 0x50: 58 32 30 32 30 2d 43 52 41 46 54 2d 53 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 95 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0          REV 01    740-050037    1EDB32403L5      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:             1EDB32403L5
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          06-21-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00

```



```

Address 0x20: 31 45 44 42 33 32 34 30 33 4c 35 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1          REV 01   740-050037   1EDB32403L3       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB32403L3
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          06-21-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 34 30 33 4c 33 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 2          REV 01   740-050037   1EDB32403KM       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB32403KM
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          06-21-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 34 30 33 4b 4d 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 01   740-050037   1EDB3130079       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB3130079
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-16-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 39 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00

```

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Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 01   740-050037   1EDB3130077       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB3130077
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 37 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 01   740-050037   1EDB3130020       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB3130020
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-16-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 32 30 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 01   740-050037   1EDB313009S       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB313009S
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 39 53 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 01   740-050037   1EDB313008E       DC 52V Power Supply
Module

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-050037        S/N: 1EDB313008E
Assembly ID: 0x0478     Assembly Version: 01.01
Date: 05-17-2013       Assembly Flags: 0x00
Version: REV 01         CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 31 33 30 30 38 45 00 00 11 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 8      REV 01 740-050037 1EDB3130063 DC 52V Power Supply
Module
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-050037        S/N: 1EDB3130063
Assembly ID: 0x0478     Assembly Version: 01.01
Date: 05-17-2013       Assembly Flags: 0x00
Version: REV 01         CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 31 33 30 30 36 33 00 00 11 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 12     REV 01 740-050037 1EDB3130026 DC 52V Power Supply
Module
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-050037        S/N: 1EDB3130026
Assembly ID: 0x0478     Assembly Version: 01.01
Date: 05-16-2013       Assembly Flags: 0x00
Version: REV 01         CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 31 33 30 30 32 36 00 00 10 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 13     REV 01 740-050037 1EDB3130074 DC 52V Power Supply
Module
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-050037        S/N: 1EDB3130074
Assembly ID: 0x0478     Assembly Version: 01.01
Date: 05-17-2013       Assembly Flags: 0x00

```

```

Version:      REV 01          CLEI Code:      IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 31 33 30 30 37 34 00 00 11 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 14          REV 01    740-050037    1EDB313009D    DC 52V Power Supply
Module
  Jedec Code: 0x7fb0          EEPROM Version: 0x02
  P/N: 740-050037          S/N: 1EDB313009D
  Assembly ID: 0x0478        Assembly Version: 01.01
  Date: 05-17-2013          Assembly Flags: 0x00
  Version: REV 01          CLEI Code: IPUPAKRKAA
  ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
  Board Information Record:
    Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  I2C Hex Data:
    Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
    Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
    Address 0x20: 31 45 44 42 33 31 33 30 30 39 44 00 00 11 05 07
    Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
    Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
    Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
    Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
    Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 15          REV 01    740-050037    1EDB3130024    DC 52V Power Supply
Module
  Jedec Code: 0x7fb0          EEPROM Version: 0x02
  P/N: 740-050037          S/N: 1EDB3130024
  Assembly ID: 0x0478        Assembly Version: 01.01
  Date: 05-16-2013          Assembly Flags: 0x00
  Version: REV 01          CLEI Code: IPUPAKRKAA
  ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
  Board Information Record:
    Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  I2C Hex Data:
    Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
...

```

show chassis hardware models (MX2020 Routers with MPC5EQ and MPC6E)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 51   750-040240   ABAB9243      CHAS-BP-MX2020-S
FPM Board     REV 13   760-040242   ABCA8835      MX2020-CRAFT-S
PSM 0         REV 01   740-050037   1EDB32403L5   MX2000-PSM-DC-S
PSM 1         REV 01   740-050037   1EDB32403L3   MX2000-PSM-DC-S
PSM 2         REV 01   740-050037   1EDB32403KM   MX2000-PSM-DC-S
PSM 3         REV 01   740-050037   1EDB3130079   MX2000-PSM-DC-S
PSM 4         REV 01   740-050037   1EDB3130077   MX2000-PSM-DC-S
PSM 5         REV 01   740-050037   1EDB3130020   MX2000-PSM-DC-S
PSM 6         REV 01   740-050037   1EDB313009S   MX2000-PSM-DC-S
PSM 7         REV 01   740-050037   1EDB313008E   MX2000-PSM-DC-S

```

PSM 8	REV 01	740-050037	1EDB3130063	MX2000-PSM-DC-S
PSM 12	REV 01	740-050037	1EDB3130026	MX2000-PSM-DC-S
PSM 13	REV 01	740-050037	1EDB3130074	MX2000-PSM-DC-S
PSM 14	REV 01	740-050037	1EDB313009D	MX2000-PSM-DC-S
PSM 15	REV 01	740-050037	1EDB3130024	MX2000-PSM-DC-S
PSM 16	REV 01	740-050037	1EDB3130054	MX2000-PSM-DC-S
PSM 17	REV 01	740-050037	1EDB3130080	MX2000-PSM-DC-S
PDM 0	REV 03	740-045234	1EGA3170144	MX2000-PDM-DC-S
PDM 1	REV 03	740-045234	1EGA3170158	MX2000-PDM-DC-S
PDM 2	REV 03	740-045234	1EGA3170182	MX2000-PDM-DC-S
PDM 3	REV 03	740-045234	1EGA3170207	MX2000-PDM-DC-S
Routing Engine 0	REV 02	740-041821	9009112112	RE-MX2000-1800X4-S
Routing Engine 1	REV 02	740-041821	9009112087	RE-MX2000-1800X4-S
CB 0	REV 23	750-040257	CABA2295	RE-MX2000-1800X4-S
CB 1	REV 23	750-040257	CABE8379	RE-MX2000-1800X4-S
SFB 0	REV 06	711-044466	ABCD5001	MX2000-SFB-S
SFB 1	REV 06	711-044466	ABCD5034	MX2000-SFB-S
SFB 2	REV 06	711-044466	ABCH3899	MX2000-SFB-S
SFB 3	REV 06	711-044466	ABCD5020	MX2000-SFB-S
SFB 4	REV 06	711-044466	ABCD4975	MX2000-SFB-S
SFB 5	REV 06	711-044466	ABCH3881	MX2000-SFB-S
SFB 6	REV 06	711-044466	ABCD5026	MX2000-SFB-S
SFB 7	REV 06	711-044466	ABCD5032	MX2000-SFB-S
FPC 0	REV 39	750-045715	CACD1902	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	CABK8112	MX-MPC3E-3D
FPC 2	REV 17	750-037355	CAAS5826	MPC4E-3D-2CGE-8XGE
FPC 3	REV 05	750-044444	CAAY9920	MX-MPC2E-3D-P
FPC 4	REV 18	750-046005	CACH5661	PROTO-ASSEMBLY
FPC 5	REV 35	750-028467	CAAR2623	MPC-3D-16XGE-SFPP
FPC 9	REV 30	750-044130	ABCF5773	PROTO-ASSEMBLY
FPC 10	REV 36	750-044130	ABCS8602	PROTO-ASSEMBLY
FPC 17	REV 28	750-044130	ABBZ3873	PROTO-ASSEMBLY
FPC 18	REV 39	750-045715	CACD1910	PROTO-ASSEMBLY
FPC 19	REV 39	750-045715	CACD1908	PROTO-ASSEMBLY
ADC 0	REV 17	750-043596	ABCD5378	MX2000-LC-ADAPTER
ADC 1	REV 17	750-043596	ABCD5465	MX2000-LC-ADAPTER
ADC 2	REV 17	750-043596	ABCD5431	MX2000-LC-ADAPTER
ADC 3	REV 17	750-043596	ABCD5356	MX2000-LC-ADAPTER
ADC 4	REV 02	750-043596	ZW1545	750-043596
ADC 5	REV 17	750-043596	ABCD5517	MX2000-LC-ADAPTER
ADC 18	REV 17	750-043596	ABCD5535	MX2000-LC-ADAPTER
ADC 19	REV 01	750-043596	ZV4127	750-043596
Fan Tray 0	REV 06	760-046960	ACAY0791	MX2000-FANTRAY-S
Fan Tray 1	REV 06	760-046960	ACAY0788	MX2000-FANTRAY-S
Fan Tray 2	REV 06	760-046960	ACAY0755	MX2000-FANTRAY-S
Fan Tray 3	REV 06	760-046960	ACAY0441	MX2000-FANTRAY-S

show chassis hardware clei-models (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 51   750-040240  IPMU710ARA CHAS-BP-MX2020-S
FPM Board     REV 13   760-040242  IPMYAE5JRA MX2020-CRAFT-S
PSM 0         REV 01   740-050037  IPUPAKRKAA MX2000-PSM-DC-S
PSM 1         REV 01   740-050037  IPUPAKRKAA MX2000-PSM-DC-S
PSM 2         REV 01   740-050037  IPUPAKRKAA MX2000-PSM-DC-S
PSM 3         REV 01   740-050037  IPUPAKRKAA MX2000-PSM-DC-S
PSM 4         REV 01   740-050037  IPUPAKRKAA MX2000-PSM-DC-S
PSM 5         REV 01   740-050037  IPUPAKRKAA MX2000-PSM-DC-S
PSM 6         REV 01   740-050037  IPUPAKRKAA MX2000-PSM-DC-S

```

PSM 7	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 8	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 12	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 13	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 14	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 15	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 16	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 17	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PDM 0	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 1	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 2	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 3	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
CB 0	REV 23	750-040257	IPUCBA7CTA	RE-MX2000-1800X4-S
CB 1	REV 23	750-040257	IPUCBA7CTA	RE-MX2000-1800X4-S
SFB 0	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 1	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 2	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 3	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 4	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 5	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 6	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 7	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
FPC 0	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	COUIBBNBAA	MX-MPC3E-3D
FPC 2	REV 17	750-037355	IPU3A4DHAA	MPC4E-3D-2CGE-8XGE
FPC 3	REV 05	750-044444	COUIBBGBAA	MX-MPC2E-3D-P
MIC 0	REV 28	750-028387	COUIA16BAA	MIC-3D-4XGE-XFP
FPC 4	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 5	REV 35	750-028467		MPC-3D-16XGE-SFPP
FPC 9	REV 30	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 05	750-049457	PROTOXCLEI	PROTO-ASSEMBLY
FPC 10	REV 36	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 06	750-049979	PROTOXCLEI	PROTO-ASSEMBLY
MIC 1	REV 12	750-050008	PROTOXCLEI	PROTO-ASSEMBLY
FPC 17	REV 28	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 1	REV 03	750-050008	PROTOXCLEI	PROTO-ASSEMBLY
FPC 18	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 19	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
ADC 0	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 1	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 2	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 3	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 4	REV 02	750-043596	PROTOXCLEI	750-043596
ADC 5	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 18	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 19	REV 01	750-043596	PROTOXCLEI	750-043596
Fan Tray 0	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 1	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 2	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 3	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S

show chassis hardware (MX Series routers with ATM MIC)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN115736EAF	MX240
Midplane	REV 07	760-021404	ABAA5038	MX240 Backplane
FPM Board	REV 03	760-021392	ABBA2758	Front Panel Display
PEM 0	Rev 01	740-022697	QCS0937C07K	PS 1.2-1.7kW; 100-240V

```

AC in
PEM 1          Rev 01  740-022697  QCS0939C04X  PS 1.2-1.7kW; 100-240V
AC in
PEM 2          Rev 01  740-022697  QCS0937C06B  PS 1.2-1.7kW; 100-240V
AC in
PEM 3          Rev 01  740-022697  QCS0937C07U  PS 1.2-1.7kW; 100-240V
AC in
Routing Engine 0 REV 12  740-013063  9009042291  RE-S-2000
Routing Engine 1 REV 12  740-013063  9009042266  RE-S-2000
CB 0           REV 06  710-021523  ABBC1435    MX SCB
CB 1           REV 06  710-021523  ABBC1497    MX SCB
FPC 2          REV 14  750-031088  YH8446      MPC Type 2 3D Q
CPU            REV 06  711-030884  YH9612      MPC PMB 2G
MIC 0
MIC 1          REV 10  750-036132  ZP7062      2x0C12/8x0C3 CC-CE
PIC 2          BUILTIN  BUILTIN     2x0C12/8x0C3 CC-CE

Xcvr 0          NON-JNPR  23393-00492  UNKNOWN
Xcvr 1          NON-JNPR  23393-00500  UNKNOWN
Xcvr 2          NON-JNPR  23393-00912  UNKNOWN
Xcvr 3          REV 01  740-015638  22216-00575  Load SFP
Xcvr 4          REV 01  740-015638  24145-00110  Load SFP
Xcvr 5          REV 01  740-015638  24145-00016  Load SFP
Xcvr 6          REV 01  740-015638  24145-00175  Load SFP
Xcvr 7          NON-JNPR  23393-00627  UNKNOWN
QXM 0          REV 05  711-028408  YF4681      MPC QXM
QXM 1          REV 05  711-028408  YF4817      MPC QXM
Fan Tray 0      REV 01  710-021113  XL3645      MX240 Fan Tray

```

show chassis hardware (MX240, MX480, MX960 routers with Application Services Modular Line Card)

```

user@host>show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11D969BAFA  MX960
Midplane      REV 03  710-013698  ACAA2362      MX960 Backplane
FPM Board     REV 03  710-014974  ZR0639        Front Panel Display
PDM           Rev 03  740-013110  QCS152250SX   Power Distribution Module
PEM 0         Rev 10  740-013683  QCS1512718W   DC Power Entry Module
PEM 1         Rev 10  740-013683  QCS1512702Y   DC Power Entry Module
Routing Engine 0 REV 15  740-013063  9012024667    RE-S-2000
Routing Engine 1 REV 15  740-013063  9012024649    RE-S-2000
CB 0          REV 14  750-031391  ZJ7749        Enhanced MX SCB
CB 1          REV 14  750-031391  ZJ7750        Enhanced MX SCB
CB 2          REV 14  750-031391  ZY9233        Enhanced MX SCB
FPC 0         REV 17  750-031089  YR7434        MPC Type 2 3D
CPU
FPC 1         REV 11  750-037207  ZW9727        AS-MCC
CPU           REV 04  711-038173  ZW4817        AS-MCC-PMB
MIC 0         REV 01  750-037214  ZH3764        AS-MSC
PIC 0         BUILTIN  BUILTIN      AS-MSC
MIC 1         REV 01  711-028408  JZ9200        AS-MXC
PIC 2         BUILTIN  BUILTIN      AS-MXC
FPC 4         REV 30  750-028467  ABBN0232      MPC 3D 16x 10GE
CPU
FPC 5         REV 04  750-037207  ZK9074        AS-MCC
CPU
Fan Tray 0    REV 05  740-014971  VT5683        Fan Tray
Fan Tray 1    REV 05  740-014971  VT5684        Fan Tray

```

show chassis hardware extensive (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

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

```
ID: AS-MCC                                FRU Model Number: 750-037207
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 37 01 0b 52 45 56 20 31 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 30 37 00 00
Address 0x20: 53 2f 4e 20 5a 57 39 37 32 37 00 00 00 11 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 35 30 2d 30 33 37 32 30 37 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 31 31 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 5e ff ff ff ff ff ff ff ff ff ff ff ff
CPU                                REV 04    711-038173    ZW4817    AS-MCC-PMB
Jedec Code: 0x7fb0                EEPROM Version: 0x02
P/N: 711-038173                  S/N: ZW4817
Assembly ID: 0x0b38              Assembly Version: 01.04
Date: 12-30-2011                 Assembly Flags: 0x00
Version: REV 04
ID: AS-MCC-PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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 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-MSC
Jedec Code: 0x7fb0                EEPROM Version: 0x02
P/N: 750-037214                  S/N: ZH3764
Assembly ID: 0x0a44              Assembly Version: 01.01
Date: 07-04-2011                 Assembly Flags: 0x00
Version: REV 01
ID: AS-MSC
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 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-MSC
FPC 4                                REV 30    750-028467    ABBN0232    MPC 3D 16x 10GE
Jedec Code: 0x7fb0                EEPROM Version: 0x01
```

show chassis hardware (MX480 Router with MPC4E)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10FF57BAFB	MX480

Midplane	REV 05	750-047849	Good	MX480 Midplane
FPM Board	REV 02	710-017254	KG2066	Front Panel Display
PEM 0	Rev 03	740-017330	QCS081590BJ	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 03	740-017330	QCS0815908Z	PS 1.2-1.7kW; 100-240V
AC in				
PEM 2	Rev 03	740-029970	QCS1001U001	PS 1.4-2.52kW; 90-264V
AC in				
Routing Engine 0	REV 05	740-031116	9009089502	RE-S-1800x4
Routing Engine 1	REV 05	740-031116	9009089624	RE-S-1800x4
CB 0	REV 02	750-031391	YE8506	Enhanced MX SCB
CB 1	REV 14	750-031391	ZK8265	Enhanced MX SCB
FPC 2	REV 05	750-037358	ZT0638	MPC4E 3D 32XGE
CPU	REV 07	711-035209	ZK3187	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
FPC 3	REV 06	750-037355	CAAB1144	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAB1278	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	B11E01439	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11D05809	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	D5418	UNKNOWN
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00362	CFP-100G-SR10
FPC 4	REV 12.3.10	750-033205	YR9445	MPCE Type 3 3D
CPU				
Fan Tray				Enhanced Left Fan Tray

show chassis hardware (MX2020 Router with MPC4E)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11E188CAFJ	MX2020
Midplane	REV 04	711-032387	ABAC7474	Lower Backplane
Midplane 1	REV 04	711-032386	ABAC7408	Upper Backplane
PMP 1	REV 03	711-032428	ACAJ1137	Upper Power Midplane
PMP 0	REV 03	711-032426	ACAJ1016	Lower Power Midplane
FPM Board	REV 06	760-040242	ABBT8832	Front Panel Display
PSM 3	REV 0C	740-033727	VK00255	DC 52V Power Supply
Module				
PSM 4	REV 0C	740-033727	VJ00148	DC 52V Power Supply
Module				
PSM 5	REV 0C	740-033727	VK00207	DC 52V Power Supply
Module				
PSM 6	REV 0C	740-033727	VK00319	DC 52V Power Supply
Module				
PSM 7	REV 0C	740-033727	VK00264	DC 52V Power Supply
Module				
PSM 8	REV 0B	740-033727	VG00025	DC 52V Power Supply
Module				
PSM 13	REV 0C	740-033727	VK00274	DC 52V Power Supply
Module				
PSM 14	REV 0C	740-033727	VJ00167	DC 52V Power Supply
Module				
PSM 15	REV 0C	740-033727	VK00299	DC 52V Power Supply
Module				

PSM 16 Module	REV 0C	740-033727	VK00213	DC 52V Power Supply
PSM 17 Module	REV 0C	740-033727	VK00253	DC 52V Power Supply
PDM 0	REV 0B	740-038109	VJ00040	DC Power Dist Module
PDM 2	REV 0B	740-038109	VJ00025	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009089735	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009089731	RE-S-1800x4
CB 0	REV 04	750-040257	ZT2846	Control Board
CB 1	REV 04	750-040257	ZT2877	Control Board
SPMB 0	REV 01	711-041855	ZS2282	PMB Board
SPMB 1	REV 01	711-041855	ZS2261	PMB Board
SFB 0	REV 07	711-032385	ZZ2582	Switch Fabric Board
SFB 1	REV 04	711-032385	ZV4229	Switch Fabric Board
SFB 2	REV 07	711-032385	CAAB4902	Switch Fabric Board
SFB 3	REV 07	711-032385	CAAB4891	Switch Fabric Board
SFB 4	REV 07	711-032385	CAAB4883	Switch Fabric Board
SFB 5	REV 07	711-032385	CAAB4889	Switch Fabric Board
SFB 6	REV 06	711-032385	ZV1818	Switch Fabric Board
SFB 7	REV 07	711-032385	CAAB4897	Switch Fabric Board
FPC 0	REV 34	750-031090	ZT9799	MPC Type 2 3D EQ
CPU	REV 06	711-030884	ZS1122	MPC PMB 2G
MIC 0	REV 11	750-033535	CAAD7674	MIC-3D-10C192-XFP
PIC 0		BUILTIN	BUILTIN	MIC-3D-10C192-XFP
Xcvr 0	REV 01	740-014279	753019A00404	XFP-OC192-SR
MIC 1	REV 14	750-031967	ZM6103	MIC-3D-80C30C12-40C48
PIC 2		BUILTIN	BUILTIN	MIC-3D-80C30C12-40C48
Xcvr 0	REV 01	740-011615	PEF1AZP	SFP-IR
Xcvr 1	REV 01	740-011615	PEF1AZN	SFP-IR
Xcvr 2	REV 01	740-021308	ANA0N8S	SFP+-10G-SR
QXM 0	REV 06	711-028408	ZT9339	MPC QXM
QXM 1	REV 06	711-028408	ZT9237	MPC QXM
FPC 9	REV 34	750-031090	ZT9770	MPC Type 2 3D EQ
CPU	REV 06	711-030884	ZS1302	MPC PMB 2G
MIC 0	REV 24	750-028387	YJ3950	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T09M52516	XFP-10G-SR
Xcvr 1		NON-JNPR	CA49BK095	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 02	740-014289	C834XU01T	XFP-10G-SR
Xcvr 1		NON-JNPR	T09M52515	XFP-10G-SR
MIC 1	REV 11	750-033535	CAAD7681	MIC-3D-10C192-XFP
PIC 2		BUILTIN	BUILTIN	MIC-3D-10C192-XFP
Xcvr 0	REV 01	740-014279	KBQ02BE	XFP-OC192-SR
QXM 0	REV 06	711-028408	ZT9151	MPC QXM
QXM 1	REV 06	711-028408	ZT9116	MPC QXM
FPC 10	REV 27	750-033205	ZL6215	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9038	HMPD PMB 2G
MIC 0	REV 18	750-028380	YG6885	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	C706XU0AG	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	T08L84366	XFP-10G-SR
FPC 14	REV 09	750-037355	CAAF1534	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAB9879	HMPD PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	21T511100436	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AHPOGPM	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	123363A00032	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	19T511100477	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP

Xcvr 0		NON-JNPR	X12J00260	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	21T511104086	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	21T511104627	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	21T511104644	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
FPC 19	REV 32	750-028467	ZR2008	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZT6933	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	19T511100291	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AMH02VE	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	23T511102128	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AMS15PP	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	123363A00716	SFP+-10G-SR
ADC 0	REV 05	750-043596	CAAC2072	Adapter Card
ADC 9	REV 01	750-043596	ZV4111	Adapter Card
ADC 10	REV 05	750-043596	CAAC2058	Adapter Card
ADC 14	REV 02	750-043596	ZW1561	Adapter Card
ADC 19	REV 01	750-043596	ZV4127	Adapter Card
Fan Tray 0	REV 03	760-046960	ACAY0124	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0022	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0023	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0025	172mm FanTray - 6 Fans

show chassis hardware (MX5, MX10, MX40, MX80, MX240, MX480, and MX960 Routers with Enhanced 20-Port Gigabit Ethernet MIC)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			F3434	MX80-P
Midplane	REV 01	711-044315	ZK2681	MX80-P
PEM 0	Rev 04	740-028288	VE05267	AC Power Entry Module
PEM 1	Rev 04	740-028288	VE05270	AC Power Entry Module
Routing Engine		BUILTIN	BUILTIN	Routing Engine
TFEB 0		BUILTIN	BUILTIN	Forwarding Engine
Processor				
QXM 0	REV 05	711-028408	ZK0952	MPC QXM
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 02	750-049846	CAAV2153	3D 20x 1GE(LAN)-E,SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) -E SFP
Xcvr 0	REV 01	740-011613	AM0816S9B81	SFP-SX
Xcvr 1	REV 02	740-011613	AM0925SBLK7	SFP-SX
Xcvr 2	REV 01	740-011613	UAQ0005	SFP-SX
Xcvr 3	REV 01	740-011613	UAQ000C	SFP-SX
Xcvr 4	REV 01	740-011613	P9F195E	SFP-SX
Xcvr 5	REV 01	740-011613	UAQ0003	SFP-SX
Xcvr 6	REV 01	740-031851	AM1041SU1LD	SFP-SX
Xcvr 8	REV 02	740-013111	B101501	SFP-T
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) -E SFP
Xcvr 0	REV 01	740-011613	PFM1ML7	SFP-SX
Xcvr 4	REV 01	740-011613	PE729P6	SFP-SX
Xcvr 6	REV 02	740-011613	AM1014SGC84	SFP-SX
Xcvr 9	REV 01	740-011613	AM0812S8UK3	SFP-SX
MIC 1	REV 26	750-028392	ZY0187	3D 20x 1GE(LAN) SFP

PIC 2			BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011613	P9F1AN9		SFP-SX
Xcvr 5	REV 02	740-011613	AM1003SFUF4		SFP-SX
Xcvr 9	REV 01	740-031851	AM1041SU1LM		SFP-SX
PIC 3			BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 4	REV 01	740-011613	PAJ4MYT		SFP-SX
Xcvr 7	+	NON-JNPR	XG32A024		SFP-SX
Xcvr 8		NON-JNPR	PFR0V6J		SFP-SX
Xcvr 9	REV 01	740-031851	AM1041SU02U		SFP-SX
Fan Tray					

show chassis hardware models (MX5, MX10, MX40, MX80, MX240, MX480, and MX960 Routers with Enhanced 20-Port Gigabit Ethernet MIC)

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

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
PEM 0	Rev 04	740-028288	VE05267	PWR-MX80-AC-S
PEM 1	Rev 04	740-028288	VE05270	PWR-MX80-AC-S
Routing Engine		BUILTIN	BUILTIN	
TFEB 0		BUILTIN	BUILTIN	
FPC 0		BUILTIN	BUILTIN	
FPC 1		BUILTIN	BUILTIN	
MIC 0	REV 02	750-049846	CAAV2153	MIC-3D-20GE-SFP-E
MIC 1	REV 26	750-028392	ZY0187	MIC-3D-20GE-SFP
Fan Tray				FANTRAY-MX80-S

show chassis hardware (MX2008 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1259E1CAFL	MX2008
Midplane	REV 47	750-044636	ABAD1739	Lower Backplane
PMP	REV 01	711-051406	ACVD0738	Power Midplane
FPM Board	REV 02	760-068193	ABDG7408	Front Panel Display
PSM 1	REV 06	740-050037	1EDB61200R8	DC 52V Power Supply
Module				
PSM 2	REV 06	740-050037	1EDB61200WA	DC 52V Power Supply
Module				
PSM 3	REV 06	740-050037	1EDB61200NY	DC 52V Power Supply
Module				
PSM 4	REV 06	740-050037	1EDB61200N2	DC 52V Power Supply
Module				
PSM 5	REV 06	740-050037	1EDB61200RN	DC 52V Power Supply
Module				
PSM 6	REV 06	740-050037	1EDB61200RF	DC 52V Power Supply
Module				
PSM 7	REV 06	740-050037	1EDB61200R7	DC 52V Power Supply
Module				
PDM 0	REV 01	740-060189	1EFF5250143	DC PDM Optimized
PDM 1	REV 01	740-060189	1EFF5250074	DC PDM Optimized
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x8
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x8
CB 0	REV 01	750-067373	ABDJ0047	Control Board
CB 1	REV 03	750-067373	ABDH3016	Control Board
SFB 0	REV 08	750-067371	ABDK7180	Switch Fabric Board
SFB 1	REV 08	750-067371	ABDK7024	Switch Fabric Board
SFB 2	REV 08	750-067371	ABDK7188	Switch Fabric Board
SFB 3	REV 08	750-067371	ABDK7143	Switch Fabric Board

SFB 4	REV 08	750-067371	ABDK7030	Switch Fabric Board
SFB 5	REV 08	750-067371	ABDK7146	Switch Fabric Board
SFB 6	REV 08	750-067371	ABDK7203	Switch Fabric Board
SFB 7	REV 08	750-067371	ABDK7238	Switch Fabric Board
FPC 0	REV 36	750-044130	ABCS8607	MPC6E 3D
CPU	REV 09	711-045719	ABCS8776	RMPD PMB
MIC 0	REV 21	750-050008	ABCT5920	4X100GE CXP
PIC 0		BUILTIN	BUILTIN	4X100GE CXP
XLM 0	REV 07.2.00	711-046638	ABCK3488	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5482	MPC6E XL
FPC 1	REV 22	750-063414	CAFJ3026	MPC9E 3D
CPU	REV 16	750-057177	CAFF9332	SMPC PMB
FPC 7	REV 08	750-038492	ZX4080	MPCE Type 2 3D EQ
CPU	REV 03	711-038484	ZX3665	MPCE PMB 2G
MIC 0	REV 05	750-037128	ZR4031	1xCOC12/4xCOC3 CH-CE
PIC 0		BUILTIN	BUILTIN	1xCOC12/4xCOC3 CH-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3
PIC 2		BUILTIN	BUILTIN	MIC-3D-8DS3-E3
QXM 0	REV 06	711-028408	ZW8299	MPC QXM
QXM 1	REV 06	711-028408	ZY0609	MPC QXM
ADC 7	REV 17	750-043596	ABCA0990	Adapter Card
Fan Tray 0	REV 01	760-052467	ACAY6190	172mm FanTray - 6 Fans
Fan Tray 1	REV 01	760-052467	ACAY6414	172mm FanTray - 6 Fans

show chassis hardware detail (MX2008 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1259E1CAFL	MX2008
Midplane	REV 47	750-044636	ABAD1739	Lower Backplane
PMP	REV 01	711-051406	ACVD0738	Power Midplane
FPM Board	REV 02	760-068193	ABDG7408	Front Panel Display
PSM 1	REV 06	740-050037	1EDB61200R8	DC 52V Power Supply
Module				
PSM 2	REV 06	740-050037	1EDB61200WA	DC 52V Power Supply
Module				
PSM 3	REV 06	740-050037	1EDB61200NY	DC 52V Power Supply
Module				
PSM 4	REV 06	740-050037	1EDB61200N2	DC 52V Power Supply
Module				
PSM 5	REV 06	740-050037	1EDB61200RN	DC 52V Power Supply
Module				
PSM 6	REV 06	740-050037	1EDB61200RF	DC 52V Power Supply
Module				
PSM 7	REV 06	740-050037	1EDB61200R7	DC 52V Power Supply
Module				
PDM 0	REV 01	740-060189	1EFF5250143	DC PDM Optimized
PDM 1	REV 01	740-060189	1EFF5250074	DC PDM Optimized
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x8
vtbd0 15361 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 511 MB	QEMU HARDDISK		QM00002	Emulated IDE Disk
usb0 (addr 1)	XHCI root HUB 0		0x8086	uhub0
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x8
vtbd0 15361 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 511 MB	QEMU HARDDISK		QM00002	Emulated IDE Disk
usb0 (addr 1)	XHCI root HUB 0		0x8086	uhub0
CB 0	REV 01	750-067373	ABD30047	Control Board
CB 1	REV 03	750-067373	ABDH3016	Control Board

SFB 0	REV 08	750-067371	ABDK7180	Switch Fabric Board
SFB 1	REV 08	750-067371	ABDK7024	Switch Fabric Board
SFB 2	REV 08	750-067371	ABDK7188	Switch Fabric Board
SFB 3	REV 08	750-067371	ABDK7143	Switch Fabric Board
SFB 4	REV 08	750-067371	ABDK7030	Switch Fabric Board
SFB 5	REV 08	750-067371	ABDK7146	Switch Fabric Board
SFB 6	REV 08	750-067371	ABDK7203	Switch Fabric Board
SFB 7	REV 08	750-067371	ABDK7238	Switch Fabric Board
FPC 0	REV 36	750-044130	ABCS8607	MPC6E 3D
CPU	REV 09	711-045719	ABCS8776	RMPD PMB
MIC 0	REV 21	750-050008	ABCT5920	4X100GE CXP
PIC 0		BUILTIN	BUILTIN	4X100GE CXP
XLM 0	REV 07.2.00	711-046638	ABCK3488	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5482	MPC6E XL
FPC 1	REV 22	750-063414	CAFJ3026	MPC9E 3D
CPU	REV 16	750-057177	CAFF9332	SMPC PMB
FPC 7	REV 08	750-038492	ZX4080	MPCE Type 2 3D EQ
CPU	REV 03	711-038484	ZX3665	MPCE PMB 2G
MIC 0	REV 05	750-037128	ZR4031	1xCOC12/4xCOC3 CH-CE
PIC 0		BUILTIN	BUILTIN	1xCOC12/4xCOC3 CH-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3
PIC 2		BUILTIN	BUILTIN	MIC-3D-8DS3-E3
QXM 0	REV 06	711-028408	ZW8299	MPC QXM
QXM 1	REV 06	711-028408	ZY0609	MPC QXM
ADC 7	REV 17	750-043596	ABCA0990	Adapter Card
Fan Tray 0	REV 01	760-052467	ACAY6190	172mm FanTray - 6 Fans
Fan Tray 1	REV 01	760-052467	ACAY6414	172mm FanTray - 6 Fans

show chassis hardware extensive (MX2008 Router)

```

user@host>show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN1259E1CAFL
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2008
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 32 35 39 45 31 43 41 46 4c 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane
REV 47      750-044636  ABAD1739      Lower Backplane
Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         750-044636      S/N:          ABAD1739
Assembly ID:  0x0b66          Assembly Version: 01.47
Date:         06-08-2016      Assembly Flags: 0x00
Version:      REV 47          CLEI Code:    IPMU810ARB
ID: Lower Backplane          FRU Model Number: CHAS-BP-MX2010-S
Board Information Record:
Address 0x00: ad 01 08 00 f4 cc 55 3e 35 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 2f 52 45 56 20 34 37 00 00

```

```

Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 44 31 37 33 39 00 08 06 07
Address 0x30: e0 ff ff ff ad 01 08 00 f4 cc 55 3e 35 00 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 38 31 30 41 52 42 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 31 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 42 43 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 18 ff ff ff ff ff ff ff ff ff ff ff ff
PMP REV 01 711-051406 ACVD0738 Power Midplane
Jedec Code: 0x7fb0 EEPROM Version: 0x01
P/N: 711-051406 S/N: ACVD0738
Assembly ID: 0x045d Assembly Version: 01.01
Date: 06-06-2016 Assembly Flags: 0x00
Version: REV 01
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 31 34 30 36 00 00
Address 0x20: 53 2f 4e 20 41 43 56 44 30 37 33 38 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board REV 02 760-068193 ABDG7408 Front Panel Display
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 760-068193 S/N: ABDG7408
Assembly ID: 0x0cac Assembly Version: 01.02
Date: 06-06-2016 Assembly Flags: 0x00
Version: REV 02 CLEI Code: PROTOXCLEI
ID: Front Panel Display FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c ac 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 36 38 31 39 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 47 37 34 30 38 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 1 REV 06 740-050037 1EDB61200R8 DC 52V Power Supply
Module
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-050037 S/N: 1EDB61200R8
Assembly ID: 0x0478 Assembly Version: 01.06
Date: 03-16-2016 Assembly Flags: 0x00
Version: REV 06 CLEI Code: IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 38 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff

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Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 2          REV 06   740-050037   1EDB61200WA   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200WA
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 57 41 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 06   740-050037   1EDB61200NY   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200NY
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 4e 59 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 06   740-050037   1EDB61200N2   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200N2
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 4e 32 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 06   740-050037   1EDB61200RN   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02

```



```

P/N:          740-050037      S/N:          1EDB61200RN
Assembly ID:  0x0478          Assembly Version: 01.06
Date:         03-16-2016      Assembly Flags:  0x00
Version:      REV 06          CLEI Code:       IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 52 4e 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
  Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 06      740-050037      1EDB61200RF      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:          1EDB61200RF
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016      Assembly Flags:  0x00
Version:      REV 06          CLEI Code:       IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 52 4e 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
  Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 06      740-050037      1EDB61200R7      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:          1EDB61200R7
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016      Assembly Flags:  0x00
Version:      REV 06          CLEI Code:       IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 52 37 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
  Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00
PDM 0          REV 01      740-060189      1EFF5250143      DC PDM Optimized
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-060189      S/N:          1EFF5250143
Assembly ID:   0x0495          Assembly Version: 01.01
Date:         07-21-2015      Assembly Flags:  0x00
Version:      REV 01          CLEI Code:       IPUPAN1KAA
ID: DC PDM Optimized          FRU Model Number:  MX2K-PDM-OP-DC-S

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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 95 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 36 30 31 38 39 00 00
  Address 0x20: 31 45 46 46 35 32 35 30 31 34 33 00 00 15 07 07
  Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4e 31 4b 41 41 4d
  Address 0x50: 58 32 4b 2d 50 44 4d 2d 4f 50 2d 44 43 2d 53 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 84 00 00 00 00 00 00 00 00 00 00 00 00
PDM 1          REV 01    740-060189    1EFF5250074    DC PDM Optimized
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-060189      S/N:          1EFF5250074
Assembly ID:   0x0495          Assembly Version: 01.01
Date:         07-21-2015      Assembly Flags: 0x00
Version:      REV 01          CLEI Code:     IPUPANIKAA
ID: DC PDM Optimized          FRU Model Number:  MX2K-PDM-OP-DC-S

Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 95 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 36 30 31 38 39 00 00
  Address 0x20: 31 45 46 46 35 32 35 30 30 37 34 00 00 15 07 07
  Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4e 31 4b 41 41 4d
  Address 0x50: 58 32 4b 2d 50 44 4d 2d 4f 50 2d 44 43 2d 53 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 84 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code:    0x0000          EEPROM Version:    0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:   0x0c10          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags: 0x00
ID: RE-S-2X00x8

Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00 00
  Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtbd0 15361 MB          Virtio Block Disk
vtbd1 15360 MB          Virtio Block Disk
ada0    511 MB    QEMU HARDDISK          QM00002          Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0          0x8086          uhub0
Routing Engine 1          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code:    0x0000          EEPROM Version:    0x00
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:   0x0c10          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags: 0x00
ID: RE-S-2X00x8

Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00 00

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Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtbd0 15361 MB                               Virtio Block Disk
vtbd1 15360 MB                               Virtio Block Disk
ada0 511 MB QEMU HARDDISK QM00002 Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0 0x8086 uhub0
CB 0 REV 01 750-067373 ABDJ0047 Control Board
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-067373 S/N: ABDJ0047
Assembly ID: 0x0c96 Assembly Version: 01.01
Date: 06-21-2016 Assembly Flags: 0x00
Version: REV 01 CLEI Code: PROTOXCLEI
ID: Control Board FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 20 28 8a 1c 6d c4 7e ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 96 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4a 30 30 34 37 00 15 06 07
Address 0x30: e0 ff ff ff ad 01 00 20 28 8a 1c 6d c4 7e ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
CB 1 REV 03 750-067373 ABDH3016 Control Board
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-067373 S/N: ABDH3016
Assembly ID: 0x0c96 Assembly Version: 01.03
Date: 05-07-2016 Assembly Flags: 0x00
Version: REV 03 CLEI Code: PROTOXCLEI
ID: Control Board FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 20 f4 cc 55 35 71 a0 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 96 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 48 33 30 31 36 00 07 05 07
Address 0x30: e0 ff ff ff ad 01 00 20 f4 cc 55 35 71 a0 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
SFB 0 REV 08 750-067371 ABDK7180 Switch Fabric Board
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-067371 S/N: ABDK7180
Assembly ID: 0x0c97 Assembly Version: 01.08
Date: 09-27-2016 Assembly Flags: 0x00
Version: REV 08 CLEI Code: PROTOXCLEI
ID: Switch Fabric Board FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 38 30 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50

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Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 00 48 00
SFB 1          REV 08   750-067371   ABDK7024   Switch Fabric Board
Jedec Code:    0x7fb0   EEPROM Version: 0x02
P/N:          750-067371 S/N:          ABDK7024
Assembly ID:   0x0c97   Assembly Version: 01.08
Date:          09-27-2016 Assembly Flags: 0x00
Version:       REV 08   CLEI Code:       PROTOXCLEI
ID: Switch Fabric Board FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 30 32 34 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 01 00 48 00
SFB 2          REV 08   750-067371   ABDK7188   Switch Fabric Board
Jedec Code:    0x7fb0   EEPROM Version: 0x02
P/N:          750-067371 S/N:          ABDK7188
Assembly ID:   0x0c97   Assembly Version: 01.08
Date:          09-28-2016 Assembly Flags: 0x00
Version:       REV 08   CLEI Code:       PROTOXCLEI
ID: Switch Fabric Board FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 38 38 00 1c 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 02 00 48 00
SFB 3          REV 08   750-067371   ABDK7143   Switch Fabric Board
Jedec Code:    0x7fb0   EEPROM Version: 0x02
P/N:          750-067371 S/N:          ABDK7143
Assembly ID:   0x0c97   Assembly Version: 01.08
Date:          09-27-2016 Assembly Flags: 0x00
Version:       REV 08   CLEI Code:       PROTOXCLEI
ID: Switch Fabric Board FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 33 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 03 00 48 00
SFB 4          REV 08   750-067371   ABDK7030   Switch Fabric Board
Jedec Code:    0x7fb0   EEPROM Version: 0x02
P/N:          750-067371 S/N:          ABDK7030
Assembly ID:   0x0c97   Assembly Version: 01.08

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Date:          09-24-2016      Assembly Flags:    0x00
Version:       REV 08         CLEI Code:       PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 30 33 30 00 18 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 04 00 48 00
SFB 5          REV 08      750-067371  ABDK7146      Switch Fabric Board
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-067371   S/N:          ABDK7146
Assembly ID:   0x0c97      Assembly Version: 01.08
Date:         09-27-2016   Assembly Flags: 0x00
Version:      REV 08      CLEI Code:    PROTOXCLEI
ID: Switch Fabric Board    FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 36 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 05 00 48 00
SFB 6          REV 08      750-067371  ABDK7203      Switch Fabric Board
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-067371   S/N:          ABDK7203
Assembly ID:   0x0c97      Assembly Version: 01.08
Date:         09-28-2016   Assembly Flags: 0x00
Version:      REV 08      CLEI Code:    PROTOXCLEI
ID: Switch Fabric Board    FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 32 30 33 00 1c 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 06 00 48 00
SFB 7          REV 08      750-067371  ABDK7238      Switch Fabric Board
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-067371   S/N:          ABDK7238
Assembly ID:   0x0c97      Assembly Version: 01.08
Date:         09-27-2016   Assembly Flags: 0x00
Version:      REV 08      CLEI Code:    PROTOXCLEI
ID: Switch Fabric Board    FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00

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Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 32 33 38 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 07 00 48 00
FPC 0          REV 36    750-044130    ABCS8607          MPC6E 3D
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-044130      S/N:           ABCS8607
Assembly ID:   0x0b86          Assembly Version: 01.36
Date:          10-29-2013      Assembly Flags: 0x00
Version:       REV 36          CLEI Code:     PROTOXCLEI
ID: MPC6E 3D          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 86 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 31 33 30 00 00
Address 0x20: 53 2f 4e 20 41 42 43 53 38 36 30 37 00 1d 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 09    711-045719    ABCS8776          RMPC PMB
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           711-045719      S/N:           ABCS8776
Assembly ID:   0x0b85          Assembly Version: 01.09
Date:          10-24-2013      Assembly Flags: 0x00
Version:       REV 09
ID: RMPC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 85 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 35 37 31 39 00 00
Address 0x20: 53 2f 4e 20 41 42 43 53 38 37 37 36 00 18 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 16 47 1f b0 00 00 00 00
MIC 0          REV 21    750-050008    ABCT5920          4X100GE CXP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050008      S/N:           ABCT5920
Assembly ID:   0x0a83          Assembly Version: 01.21
Date:          09-29-2014      Assembly Flags: 0x00
Version:       REV 21          CLEI Code:     IP9IATYDAA
ID: 4X100GE CXP          FRU Model Number: MIC6-100G-CXP
Board Information Record:
Address 0x00: 12 01 07 02 03 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 83 01 15 52 45 56 20 32 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 30 38 00 00
Address 0x20: 53 2f 4e 20 41 42 43 54 35 39 32 30 00 1d 09 07
Address 0x30: de ff ff ff 12 01 07 02 03 ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 39 49 41 54 59 44 41 41 4d
Address 0x50: 49 43 36 2d 31 30 30 47 2d 43 58 50 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff
Address 0x70: ff ff ff 74 00 00 00 10 09 73 3c c0 02 70 3c

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PIC 0                                BUILTIN    BUILTIN    4X100GE CXP
XLM 0                                REV 07.2.00 711-046638 ABCK3488    MPC6E XL
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
P/N: 711-046638                      S/N: ABCK3488
Assembly ID: 0x0b88                   Assembly Version: 01.07
Date: 11-11-2013                      Assembly Flags: 0x00
Version: REV 07.2.00
ID: MPC6E XL
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 88 01 07 52 45 56 20 30 37 2e 32
Address 0x10: 2e 30 30 00 37 31 31 2d 30 34 36 36 33 38 00 00
Address 0x20: 53 2f 4e 20 41 42 43 4b 33 34 38 38 00 0b 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
XLM 1                                REV 07.2.00 711-046638 ABCK5482    MPC6E XL
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
P/N: 711-046638                      S/N: ABCK5482
Assembly ID: 0x0b88                   Assembly Version: 01.07
Date: 10-21-2013                      Assembly Flags: 0x00
Version: REV 07.2.00
ID: MPC6E XL
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 88 01 07 52 45 56 20 30 37 2e 32
Address 0x10: 2e 30 30 00 37 31 31 2d 30 34 36 36 33 38 00 00
Address 0x20: 53 2f 4e 20 41 42 43 4b 35 34 38 32 00 15 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
FPC 1                                REV 22    750-063414    CAFJ3026    MPC9E 3D
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
P/N: 750-063414                      S/N: CAFJ3026
Assembly ID: 0x0c43                   Assembly Version: 01.22
Date: 03-28-2016                      Assembly Flags: 0x00
Version: REV 22                      CLEI Code: IPUCBMUCAA
ID: MPC9E 3D                        FRU Model Number: MX2K-MPC9E
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0c 43 01 16 52 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 33 34 31 34 00 00
Address 0x20: 53 2f 4e 20 43 41 46 4a 33 30 32 36 00 1c 03 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 4d 55 43 41 41 4d
Address 0x50: 58 32 4b 2d 4d 50 43 39 45 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff ff
CPU                                REV 16    750-057177    CAFF9332    SMPK PMB
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 750-057177                      S/N: CAFF9332
Assembly ID: 0x0c22                   Assembly Version: 01.16
Date: 03-20-2016                      Assembly Flags: 0x00
Version: REV 16

```

```

ID: SMPC PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0c 22 01 10 52 45 56 20 31 36 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 37 31 37 37 00 00
  Address 0x20: 53 2f 4e 20 43 41 46 46 39 33 33 32 00 14 03 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 00 00 00 00 38 f9 0d e0 4f d1 4b 08
FPC 7          REV 08    750-038492    ZX4080          MPCE Type 2 3D EQ
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-038492      S/N:             ZX4080
Assembly ID:   0x0b35          Assembly Version: 01.08
Date:          02-03-2012      Assembly Flags:   0x00
Version:       REV 08          CLEI Code:        COUIBA5BAA
ID: MPCE Type 2 3D EQ          FRU Model Number: MX-MPC2E-3D-EQ
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 35 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 33 38 34 39 32 00 00
  Address 0x20: 53 2f 4e 20 5a 58 34 30 38 30 00 00 00 03 02 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4f 55 49 42 41 35 42 41 41 4d
  Address 0x50: 58 2d 4d 50 43 32 45 2d 33 44 2d 45 51 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 74 ff ff ff ff ff ff ff ff ff ff
CPU          REV 03    711-038484    ZX3665          MPCE PMB 2G
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:           711-038484      S/N:             ZX3665
Assembly ID:   0x0b36          Assembly Version: 01.03
Date:          02-01-2012      Assembly Flags:   0x00
Version:       REV 03
ID: MPCE PMB 2G
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0b 36 01 03 52 45 56 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 33 38 34 38 34 00 00
  Address 0x20: 53 2f 4e 20 5a 58 33 36 36 35 00 00 00 01 02 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 00 00 00 02 00 00 0c 00 42 5f c0 a4
MIC 0          REV 05    750-037128    ZR4031          1xCOC12/4xCOC3 CH-CE
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-037128      S/N:             ZR4031
Assembly ID:   0x0a1b          Assembly Version: 01.05
Date:          12-04-2011      Assembly Flags:   0x00
Version:       REV 05          CLEI Code:        PROTOXCLEI
ID: 1xCOC12/4xCOC3 CH-CE      FRU Model Number: MIC-3D-4CHOC3-10C12-CE
Board Information Record:
  Address 0x00: 12 01 05 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0a 1b 01 05 52 45 56 20 30 35 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 31 32 38 00 00
  Address 0x20: 53 2f 4e 20 5a 52 34 30 33 31 00 00 00 04 0c 07

```



```

Address 0x30: db ff ff ff 12 01 05 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 4d
Address 0x50: 49 43 2d 33 44 2d 34 43 48 4f 43 33 2d 31 4f 43
Address 0x60: 31 32 2d 43 45 00 30 32 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 98 c0 02 61 bc 7f b0 02 ff 0a 11 01 17
PIC 0                                BUILTIN      BUILTIN      1xCOC12/4xCOC3 CH-CE
MIC 1                                REV 23      750-032479    CADE8614      MIC-3D-8DS3-E3
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
P/N: 750-032479                      S/N: CADE8614
Assembly ID: 0x0a11                   Assembly Version: 01.23
Date: 07-24-2014                      Assembly Flags: 0x00
Version: REV 23                       CLEI Code: COUIA8DBAA
ID: MIC-3D-8DS3-E3                   FRU Model Number: MIC-3D-8DS3-E3
Board Information Record:
Address 0x00: 56 01 ff ff 03 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 11 01 17 52 45 56 20 32 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 32 34 37 39 00 00
Address 0x20: 53 2f 4e 20 43 41 44 45 38 36 31 34 00 18 07 07
Address 0x30: de ff ff ff 56 01 ff ff 03 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 41 38 44 42 41 41 4d
Address 0x50: 49 43 2d 33 44 2d 38 44 53 33 2d 45 33 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 7b c0 03 e5 7c 4f 8a 9e 10 00 00 00 02
PIC 2                                BUILTIN      BUILTIN      MIC-3D-8DS3-E3
QXM 0                                REV 06      711-028408    ZW8299      MPC QXM
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 711-028408                      S/N: ZW8299
Assembly ID: 0x097a                   Assembly Version: 02.06
Date: 01-19-2012                      Assembly Flags: 0x00
Version: REV 06
ID: MPC QXM
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00
Address 0x20: 53 2f 4e 20 5a 57 38 32 39 39 00 00 00 13 01 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
QXM 1                                REV 06      711-028408    ZY0609      MPC QXM
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 711-028408                      S/N: ZY0609
Assembly ID: 0x097a                   Assembly Version: 02.06
Date: 01-19-2012                      Assembly Flags: 0x00
Version: REV 06
ID: MPC QXM
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00
Address 0x20: 53 2f 4e 20 5a 59 30 36 30 39 00 00 00 13 01 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

```

```

ADC 7          REV 17    750-043596    ABCA0990          Adapter Card
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-043596      S/N:             ABCA0990
Assembly ID:   0x0b3d          Assembly Version: 01.17
Date:          03-07-2013      Assembly Flags:   0x00
Version:       REV 17          CLEI Code:        IPUCBA8CAA
ID: Adapter Card              FRU Model Number: MX2000-LC-ADAPTER
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 3d 01 11 52 45 56 20 31 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 33 35 39 36 00 00
Address 0x20: 53 2f 4e 20 41 42 43 41 30 39 39 30 00 07 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 41 38 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 4c 43 2d 41 44 41 50 54 45 52
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 3a 00 00 00 00 00 00 00 00 00 00 00 00

Fan Tray 0      REV 01    760-052467    ACAY6190          172mm FanTray - 6 Fans
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           760-052467      S/N:             ACAY6190
Assembly ID:   0x0b96          Assembly Version: 02.10
Date:          09-18-2015      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUCBENCAA
ID: 172mm FanTray - 6 Fans    FRU Model Number: MX2000-FANTRAY-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 96 02 0a 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 32 34 36 37 00 00
Address 0x20: 53 2f 4e 20 41 43 41 59 36 31 39 30 00 12 09 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 45 4e 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 46 41 4e 54 52 41 59 2d 53 00
Address 0x60: 00 00 00 00 00 00 31 ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 1a ff ff ff ff ff ff ff ff ff ff ff ff

Fan Tray 1      REV 01    760-052467    ACAY6414          172mm FanTray - 6 Fans
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           760-052467      S/N:             ACAY6414
Assembly ID:   0x0b96          Assembly Version: 02.10
Date:          10-28-2015      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUCBENCAA
ID: 172mm FanTray - 6 Fans    FRU Model Number: MX2000-FANTRAY-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 96 02 0a 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 32 34 36 37 00 00
Address 0x20: 53 2f 4e 20 41 43 41 59 36 34 31 34 00 1c 0a 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 45 4e 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 46 41 4e 54 52 41 59 2d 53 00
Address 0x60: 00 00 00 00 00 00 31 ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 1a ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware models (MX2008 Router)

```

user@host>show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 47   750-044636   ABAD1739      CHAS-BP-MX2010-S

```

PMP	REV 01	711-051406	ACVD0738	
FPM Board	REV 02	760-068193	ABDG7408	PROTO-ASSEMBLY
PSM 1	REV 06	740-050037	1EDB61200R8	MX2000-PSM-DC-S
PSM 2	REV 06	740-050037	1EDB61200WA	MX2000-PSM-DC-S
PSM 3	REV 06	740-050037	1EDB61200NY	MX2000-PSM-DC-S
PSM 4	REV 06	740-050037	1EDB61200N2	MX2000-PSM-DC-S
PSM 5	REV 06	740-050037	1EDB61200RN	MX2000-PSM-DC-S
PSM 6	REV 06	740-050037	1EDB61200RF	MX2000-PSM-DC-S
PSM 7	REV 06	740-050037	1EDB61200R7	MX2000-PSM-DC-S
PDM 0	REV 01	740-060189	1EFF5250143	MX2K-PDM-OP-DC-S
PDM 1	REV 01	740-060189	1EFF5250074	MX2K-PDM-OP-DC-S
CB 0	REV 01	750-067373	ABDJ0047	PROTO-ASSEMBLY
CB 1	REV 03	750-067373	ABDH3016	PROTO-ASSEMBLY
SFB 0	REV 08	750-067371	ABDK7180	PROTO-ASSEMBLY
SFB 1	REV 08	750-067371	ABDK7024	PROTO-ASSEMBLY
SFB 2	REV 08	750-067371	ABDK7188	PROTO-ASSEMBLY
SFB 3	REV 08	750-067371	ABDK7143	PROTO-ASSEMBLY
SFB 4	REV 08	750-067371	ABDK7030	PROTO-ASSEMBLY
SFB 5	REV 08	750-067371	ABDK7146	PROTO-ASSEMBLY
SFB 6	REV 08	750-067371	ABDK7203	PROTO-ASSEMBLY
SFB 7	REV 08	750-067371	ABDK7238	PROTO-ASSEMBLY
FPC 0	REV 36	750-044130	ABCS8607	PROTO-ASSEMBLY
MIC 0	REV 21	750-050008	ABCT5920	MIC6-100G-CXP
FPC 1	REV 22	750-063414	CAFJ3026	MX2K-MPC9E
FPC 7	REV 08	750-038492	ZX4080	MX-MPC2E-3D-EQ
MIC 0	REV 05	750-037128	ZR4031	MIC-3D-4CHOC3-10C12-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3
ADC 7	REV 17	750-043596	ABCA0990	MX2000-LC-ADAPTER
Fan Tray 0	REV 01	760-052467	ACAY6190	MX2000-FANTRAY-S
Fan Tray 1	REV 01	760-052467	ACAY6414	MX2000-FANTRAY-S

show chassis hardware clei-models (MX2008 Router)

```
user@host>show chassis hardware clei-models
```

Hardware inventory:				
Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 47	750-044636	IPMU810ARB	CHAS-BP-MX2010-S
PMP	REV 01	711-051406		
FPM Board	REV 02	760-068193	PROTOXCLEI	PROTO-ASSEMBLY
PSM 1	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 2	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 3	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 4	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 5	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 6	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PSM 7	REV 06	740-050037	IPUPAPDKAA	MX2000-PSM-DC-S
PDM 0	REV 01	740-060189	IPUPAN1KAA	MX2K-PDM-OP-DC-S
PDM 1	REV 01	740-060189	IPUPAN1KAA	MX2K-PDM-OP-DC-S
CB 0	REV 01	750-067373	PROTOXCLEI	PROTO-ASSEMBLY
CB 1	REV 03	750-067373	PROTOXCLEI	PROTO-ASSEMBLY
SFB 0	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 1	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 2	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 3	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 4	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 5	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 6	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
SFB 7	REV 08	750-067371	PROTOXCLEI	PROTO-ASSEMBLY
FPC 0	REV 36	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 21	750-050008	IP9IATYDAA	MIC6-100G-CXP
FPC 1	REV 22	750-063414	IPUCBMUCAA	MX2K-MPC9E

FPC 7	REV 08	750-038492	COUIBA5BAA	MX-MPC2E-3D-EQ
MIC 0	REV 05	750-037128	PROTOXCLEI	MIC-3D-4CHOC3-10C12-CE
MIC 1	REV 23	750-032479	COUIA8DBAA	MIC-3D-8DS3-E3
ADC 7	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
Fan Tray 0	REV 01	760-052467	IPUCBENCAA	MX2000-FANTRAY-S
Fan Tray 1	REV 01	760-052467	IPUCBENCAA	MX2000-FANTRAY-S

show chassis hardware (MX10003 Router)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			BLANK	JNP10003 [MX10003]
Midplane	REV 01	750-066883	CAGM0759	Midplane 2
Routing Engine 0		BUILTIN	BUILTIN	Routing Engine
Routing Engine 1		BUILTIN	BUILTIN	Routing Engine
CB 0	REV 07	750-067071	CAGX4354	SPM
Mezz	REV 10	711-066896	CAHS7200	SPM Mezz Board
CB 1	REV 07	750-067071	CAGX4363	SPM
Mezz	REV 10	711-066896	CAHS7193	SPM Mezz Board
FPC 0	REV 05	750-066879	CAGV0273	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0				
PIC 1				
FPC 1	REV 05	750-066879	CAGV0278	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
PIC 1				
PEM 0	REV 01	740-066937	1HS16320003	JNP-PWR1600-AC
PEM 1	REV 01	740-066937	1HS16320002	JNP-PWR1600-AC
Fan Tray 0	REV 02	760-069329	CAGS7731	JNP FAN 3RU
Fan Tray 1	REV 02	760-069329	CAGS7776	JNP FAN 3RU
Fan Tray 2	REV 02	760-069329	CAGS7659	JNP FAN 3RU
Fan Tray 3	REV 02	760-069329	CAGS7669	JNP FAN 3RU

show chassis hardware (MX204 Router)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			BB768	JNP204 [MX204]
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 11	750-069579	CAJD3113	JNP204 [MX204]
FPC 0		BUILTIN	BUILTIN	MPC
PIC 0		BUILTIN	BUILTIN	4XQSFP28 PIC
Xcvr 0	REV 01	740-061405	1ACQ110409R	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-054053	QF027546	QSFP+-4X10G-SR
Xcvr 2	REV 01	740-058732	1AMQA142092	QSFP-100GBASE-LR4
Xcvr 3	REV 01	740-058732	1AMQA14203J	QSFP-100GBASE-LR4
PIC 1		BUILTIN	BUILTIN	8XSFP PIC
PEM 1	REV 04	740-043886	1GA46361256	JPSU-650W-DC-AFO
Fan Tray 0				Fan Tray, Front to Back
Airflow - AFO				
Fan Tray 1				Fan Tray, Front to Back
Airflow - AFO				
Fan Tray 2				Fan Tray, Front to Back
Airflow - AFO				

show chassis hardware (vMX running in lite mode)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VM54599D128A  VMX
Midplane
Routing Engine 0
CB 0
CB 1
FPC 0
  CPU          Rev. 1.0 RIOT-LITE  BUILTIN
  MIC 0
  PIC 0          BUILTIN  BUILTIN
Virtual
Virtual

```

show chassis hardware (vMX running in performance mode)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VM54599D128A  VMX
Midplane
Routing Engine 0
CB 0
CB 1
FPC 0
  CPU          Rev. 1.0 RIOT-PERF  BUILTIN
  MIC 0
  PIC 0          BUILTIN  BUILTIN
Virtual
Virtual

```

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
CB 0          REV 13   710-002728  BC1577         unknown
T Series
Control Board
CB 1          REV 13   710-002728  BC1595         T Series
Control Board
FPC 1         REV 09   710-007531  HS1572         FPC Type 2
  CPU          REV 15   710-001726  HR8763         FPC CPU
  PIC 0        REV 01   750-010618  CB5579         4x G/E SFP,
1000 BASE
  SFP 0        REV 01   740-007326  P5809Z1        SFP-SX
  SFP 1        REV 01   740-007326  P4Q10XU        SFP-SX
  SFP 2        NON-JNPR RA45020031     SFP-SX
  SFP 3        NON-JNPR RA45020032     SFP-SX
  PIC 1        REV 01   750-010618  CD9587         4x G/E SFP,
1000 BASE
  SFP 0        NON-JNPR P5A08QZ        SFP-T
  SFP 1        REV 01   740-007326  P4Q133K        SFP-SX

```

SFP 2	REV 01	740-007326	P5809YY	SFP-SX
SFP 3	REV 01	740-007327	4C81704	SFP-LX
MMB 1	REV 03	710-005555	HR9401	MMB-288mbit
PPB 0	REV 04	710-003758	HR2886	PPB Type 2
FPC 2	REV 07	710-005860	HP2392	FPC Type 1
CPU	REV 14	710-001726	HP7797	FPC CPU
PIC 0	REV 02	750-007643	HM0853	1x G/E QPP,
1000 BASE				
SFP 0	REV 01	740-007326	P11E9JJ	SFP-SX
MMB 1	REV 02	710-005555	HN2379	MMB-288mbit
PPB 0	REV 04	710-003758	HP8092	PPB Type 2
FPC 3	REV 07	710-005860	HP2393	FPC Type 1
CPU	REV 14	710-001726	HP0968	FPC CPU
PIC 0	REV 01	750-010240	CB5363	1x G/E SFP,
1000 BASE				
SFP 0	REV 01	740-007326	P4R0PNH	SFP-SX
PIC 1	REV 03	750-003034	HD2832	4x OC-3 SONET,
SMIR				
MMB 1	REV 02	710-005555	HN6307	MMB-288mbit
PPB 0	REV 04	710-003758	HP5051	PPB Type 2
FPC 4	REV 01	710-010845	JD3872	FPC Type 4
CPU	REV 02	710-011481	JB6042	FPC CPU
5	REV 01	710-005802	BC1566	FPC Type 2
CPU	REV 09	710-001726	AY4922	FPC CPU
PIC 0	REV 02	750-008155	BE2114	2x G/E QPP,
1000 BASE				
SFP 0	REV 01	740-007326	P4R0PMQ	SFP-SX
SFP 1	REV 01	740-007326	P4R0PN9	SFP-SX
PIC 1	REV 01	750-008155	BE2116	2x G/E QPP,
1000 BASE				
SFP 0	REV 01	740-007326	P4R0PNZ	SFP-SX
SFP 1		NON-JNPR	2908	SFP-T
MMB 1	REV 01	710-005555	AZ2246	MMB-288mbit
PPB 0	REV 03	710-003758	AY4839	PPB Type 2
FPC 7	REV 01	710-005803	AZ2123	FPC Type 3
...				

show chassis hardware (T640 Router)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			19182	T640
Midplane	REV 04	710-002726	AX5608	T640 Backplane
FPM GBUS	REV 02	710-002901	HE3064	T640 FPM Board
FPM Display	REV 02	710-002897	HE7864	FPM Display
CIP	REV 05	710-002895	HA5024	T Series CIP
PEM 0	Rev 02	740-029522	VH26235	AC PEM 10kW US
PEM 1	Rev 02	740-029522	VH26230	AC PEM 10kW US
SCG 0	REV 03	710-003423	HA4508	T640 Sonet Clock Gen.
Routing Engine 0	REV 02	740-005022	210865700483	RE-3.0 (RE-600)
CB 0	REV 01	710-002728	HD3044	T Series Control Board
FPC 2	REV 04	710-001721	HD5572	FPC Type 3
CPU	REV 06	710-001726	HA4712	FPC CPU
PIC 1	REV 03	750-009567	HV2331	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-009898	USC202R103	XENPAK-SR
PIC 2	REV 03	750-009567	HV2332	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-011268	USC202R112	XENPAK-ZR
PIC 3	REV 03	750-009567	HX4416	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-012056	434TC004	XENPAK-CX4
PIC 4	REV 03	750-009567	HX4420	1x 10GE(LAN),XENPAK

SFP 0	REV 01	740-012058	434TC124	XENPAK-LX4
FPC 5	REV 01	710-013553	JE4839	E2-FPC Type 1
CPU	REV 01	710-013569	JW9163	FPC CPU
PIC 0	REV 01	750-009567	HX4419	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-009898	USC202RT05	XENPAK-LR
PIC 1	REV 03	750-009567	HN7426	1x 10GE(LAN),XENPAK
SFP 0	REV 01	740-009550	03L90051	XENPAK-ER
PIC 2	REV 03	750-009467	HT7423	1x 10GE(LAN),XENPAK
SFP 0		NON-JNPR		UNKNOWN
PIC 3	REV 04	750-005100	AY4850	1x 10GE(LAN),DWDM
FPC 4	REV 01	710-010845	JD3872	FPC Type 4
CPU	REV 02	710-011481	JB6042	FPC CPU
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

show chassis hardware models (T640 Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	710-002726		CHAS-BP-T640-S
FPM Display	REV 02	710-002897		CRAFT-T640-S
CIP	REV 05	710-002895		CIP-L-T640-S
PEM 0	Rev 01	740-002595		PWR-T-DC-S
SCG 0	REV 04	710-003423		SCG-T-S
SCG 1	REV 04	710-003423		SCG-T-S
Routing Engine 0	REV 01	740-005022		RE-600-2048-S
Routing Engine 1	REV 07	740-005022		RE-600-2048-S
CB 0	REV 06	710-002726		CHAS-BP-T640-S
CB 1	REV 06	710-002728		CB-L-T-S
FPC 5	REV 05	710-007527		T640-FPC2
PIC 0	REV 05	750-002510		PB-2GE-SX
PIC 1	REV 05	750-001901		PB-40C12-SON-SMIR
FPC 6	REV 03	710-001721		T640-FPC3
PIC 1	REV 01	750-009553		PC-40C48-SON-SFP
SIB 4	REV 02	750-005486		SIB-I-T640-S
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T-S
Fan Tray 2				FAN-REAR-TX-T640-S

show chassis hardware extensive (T640 Router)

```
user@host> show chassis hardware extensive
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis				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 00 00 00 00				
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00				

```

Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 04    710-002726    AX5633
Jedec Code:   0x7fb0      EEPROM Version:    0x01
P/N:          710-002726.  S/N:              AX5633.
Assembly ID:  0x0127      Assembly Version:  01.04
Date:         06-27-2001   Assembly Flags:    0x00
Version:      REV 04.....
ID: Gibson Backplane
Board Information Record:
Address 0x00: ad 01 08 00 00 90 69 0e f8 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 01 27 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 30 32 37 32 36 00 00
Address 0x20: 53 2f 4e 20 41 58 35 36 33 33 00 00 00 1b 06 07
Address 0x30: d1 ff ff ff ad 01 08 00 00 90 69 0e f8 00 ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM GBUS      REV 02    710-002901    HE3245
...
FPM Display   REV 02    710-002897    HA4873
...
CIP           REV 05    710-002895    HA4729
...
PEM 1         RevX02    740-002595    MD21815          Power Entry Module
...
SCG 0         REV 04    710-003423    HF6023
...
SCG 1         REV 04    710-003423    HF6061
...
Routing Engine 0 REV 01    740-005022    210865700292     RE-3.0
...
CB 0          REV 06    710-002728    HE3614
...
FPC 1         REV 01    710-002385    HE3009           FPC Type 1
...
              REV 06    710-001726    HC0010

```

show chassis hardware (T4000 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              REV 01    710-027486    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	AJJ01PC	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3838	Type-0 LMB
LMB 1	REV 03	711-035774	EF3821	Type-1 LMB
LMB 2	REV 04	711-034381	EF3834	Type-0 LMB
SPMB 0	REV 05	710-023321	ED1990	LCC Switch CPU
SPMB 1	REV 05	710-023321	EA2768	LCC Switch CPU
SIB 0	REV 02	711-036340	EF8802	SIB-HC-3D
SIB 1	REV 07	711-036340	EG2286	SIB-HC-3D
SIB 2	REV 07	711-036340	EG2252	SIB-HC-3D
SIB 3	REV 02	711-036340	EF1358	SIB-HC-3D
SIB 4	REV 02	711-036340	EF8806	SIB-HC-3D
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
-- Rev 2				
Fan Tray 2				Rear Fan Tray -- Rev 3

show chassis hardware (T4000 Router with 16-GB Line Card Chassis (LCC) Routing Engine)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN11BDF2CAHA	T1600
Midplane	REV 01	710-027486	ACAJ0774	T640 Backplane
FPM GBUS	REV 13	710-002901	BBAL6812	T640 FPM Board
FPM Display	REV 04	710-021387	BBAP2679	T1600 FPM Display
CIP	REV 06	710-002895	BBAP4758	T-series CIP
PEM 0	Rev 03	740-026384	XF86421	Power Entry Module 3x80
PEM 1	Rev 03	740-026384	XF86429	Power Entry Module 3x80
SCG 0	REV 18	710-003423	BBAP1896	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAN8659	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-042243	737F-002238	RE-DUO-1800-16G
Routing Engine 1	REV 01	740-042243	737F-002403	RE-DUO-1800-16G
CB 1	REV 11	710-022597	EK4526	LCC Control Board
CB 1	REV 11	710-022597	EK4527	LCC Control Board
FPC 0	REV 05	710-033871	EK5644	FPC Type 4-ES
CPU	REV 11	710-016744	EK3428	ST-PMB2
PIC 0	REV 20	750-017405	EJ3041	4x 10GE (LAN/WAN) XFP
PIC 1	REV 17	750-026962	EH7536	10x10GE(LAN/WAN) SFPP
MMB 0	REV 07	710-025563	EK6039	ST-MMB2
MMB 1	REV 07	710-025563	EK6086	ST-MMB2
FPC 1	REV 05	710-033871	EK6583	FPC Type 4-ES
CPU	REV 11	710-016744	EK3401	ST-PMB2
PIC 0	REV 17	750-026962	EJ8948	10x10GE(LAN/WAN) SFPP
MMB 0	REV 07	710-025563	EK6202	ST-MMB2
MMB 1	REV 07	710-025563	EK6112	ST-MMB2

SPMB 1	REV 05	710-023321	EK4900	LCC Switch CPU
SIB 0	REV 11	710-013074	EK5958	SIB-I8-SF
SIB 1	REV 11	710-013074	EK4606	SIB-I8-SF
SIB 2	REV 11	710-013074	EK5971	SIB-I8-SF
SIB 3	REV 11	710-013074	EK4609	SIB-I8-SF
SIB 4	REV 11	710-013074	EK4602	SIB-I8-SF
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 2

show chassis hardware (T4000 Router with LSR FPC)

```
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1173A24AHA	T4000
FPC 3	REV	750-048373	AN7797	FPC Type 5-LSR
CPU	REV 10	711-030686	AN6649	SNG PMB
PIC 0	REV 07	750-034624	EF6830	12x10GE (LAN/WAN) SFPP

show chassis hardware clei-models (T4000 Router)

```
user@host> show chassis hardware clei-models
Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-027486	IPMJ700DRD	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387		CRAFT-T1600-S
CIP	REV 06	710-002895		CIP-L-T640-S
PEM 0	REV 01	740-036442	IPUPAG6KAA	PWR-T-6-60-DC
SCG 0	REV 18	710-003423		SCG-T-S
SCG 1	REV 18	710-003423		SCG-T-S
Routing Engine 0	REV 05	740-026941		RE-DUO-C1800-8G-S
Routing Engine 1	REV 06	740-026941		RE-DUO-C1800-8G-S
CB 0	REV 09	710-022597		CB-LCC-S
CB 1	REV 09	710-022597		CB-LCC-S
FPC 3				
PIC 0	REV 08	750-035293	XXXXXXXXBB	PF-1CGE-CFP
PIC 1	REV 10	750-034624	XXXXXXXXCC	PF-12XGE-SFPP
FPC 5	REV 03	710-033871	IPUCAMBCD	T1600-FPC4-ES
PIC 1	REV 03	750-034781	IPUIBKLMMA	PD-1CE-CFP-FPC4
FPC 6				
PIC 0	REV 10	750-034624	XXXXXXXXCC	PF-12XGE-SFPP
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T4000-S
Fan Tray 2				FANTRAY-TXP-R-S

show chassis hardware detail (T4000 Router)

```
user@host> show chassis hardware detail
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1172F25AHA	T4000
Midplane	REV 01	710-027486	RC8355	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAE0927	T640 FPM Board
FPM Display	REV 01	710-021387	EF6764	T1600 FPM Display
CIP	REV 06	710-002895	BBAD9210	T-series CIP
PEM 0	REV 01	740-036442	VA00016	Power Entry Module 6x60
SCG 0	REV 18	710-003423	BBAD7248	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAE3874	T640 Sonet Clock Gen.
Routing Engine 0	REV 05	740-026941	P737F-002248	RE-DUO-1800

ad0	3823 MB	SMART CF	2009121602A661576157	Compact Flash
ad1	59690 MB	STEC MACH-8 SSD	STM000103FDB	Disk 1
Routing Engine 1	REV 06	740-026941	P737F-002653	RE-DUO-1800
ad0	3823 MB	SMART CF	201011150153F52CF52C	Compact Flash
ad1	62720 MB	SMART Lite SATA Drive	2010110900150A880A88	Disk 1
CB 0	REV 09	710-022597	ED0295	LCC Control Board
CB 1	REV 09	710-022597	EA6050	LCC Control Board
FPC 0	REV 26	750-032819	EK1173	FPC Type 5-3D
CPU	REV 12	711-030686	EJ8584	SNG PMB
PIC 0	REV 07	750-034624	EF6837	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	123363A01145	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	123363A01147	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01P3	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B10M03256	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJJ01M2	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	123363A01137	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJJ01PN	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AJJ01NW	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	123363A01139	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJJ01KE	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	123363A01336	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B10M01325	SFP+-10G-SR
PIC 1	REV 07	750-034624	EF6800	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	AJJ01SA	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJJ01QZ	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJH0217	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJJ01TE	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	AJJ01KV	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJJ01MU	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJJ01R0	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	AJJ01TC	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AJJ0364	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJD0GV3	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B10M03343	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AJJ01QJ	SFP+-10G-SR
LMB 0	REV 05	711-034381	EJ8490	Type-0 LMB
LMB 1	REV 04	711-035774	EJ8517	Type-1 LMB
LMB 2	REV 05	711-034381	EJ8489	Type-0 LMB
FPC 3	REV 07	750-032819	EG3637	FPC Type 5-3D
CPU	REV 09	711-030686	EG0150	SNG PMB
PIC 0	REV 08	750-035293	EF3657	1x100GE
Xcvr 0	REV 01	740-032210	C22CQNJ	CFP-100G-LR4
PIC 1	REV 10	750-034624	BBAN4098	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	B11J04902	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11J04891	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01MX	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11J04183	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11J04894	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J04184	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11J04897	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11J04899	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AJJ01TV	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	B11J04057	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJJ01M4	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B11J04905	SFP+-10G-SR
LMB 0	REV 04	711-034381	EG1524	Type-0 LMB
LMB 1	REV 03	711-035774	EG0345	Type-1 LMB
LMB 2	REV 04	711-034381	EG1522	Type-0 LMB
FPC 5	REV 03	710-033871	BBAJ0768	FPC Type 4-ES
CPU	REV 11	710-016744	BBAH9342	ST-PMB2
PIC 0	REV 09	750-029262	EE6789	100GE

PIC 1	REV 03	750-034781	EE6655	100GE CFP
Xcvr 0	REV 01	740-032210	J11A22334	CFP-100G-LR4
BRIDGE 0	REV 03	711-029995	EE6572	100GE Bridge Board
MMB 0	REV 07	710-025563	BBAJ4657	ST-MMB2
MMB 1	REV 07	710-025563	BBAJ3073	ST-MMB2
FPC 6	REV 05	750-010153	EF4936	FPC Type 5-3D
CPU	REV 06	711-030686	EF4189	SNG PMB
PIC 0	REV 10	750-034624	BBAN4109	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	B11J04895	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11J04898	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11J04021	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B11J04903	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B11J04311	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J04059	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11J04016	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11J04017	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B11J04887	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	B11J04297	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B11J04893	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	B11J04022	SFP+-10G-SR
PIC 1	REV 02	750-034624	EE3711	12x10GE (LAN/WAN) SFPP
Xcvr 0	REV 01	740-031980	AJH033X	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJJ01N0	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AJJ01SV	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	AJJ032L	SFP+-10G-SR
Xcvr 4	REV 01	740-031980	B10M01593	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	AJD0FF1	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	AJJ01NU	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	123363A01305	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B10M00361	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJJ01M7	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJJ032X	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AJJ01PG	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3838	Type-0 LMB
LMB 1	REV 03	711-035774	EF3821	Type-1 LMB
LMB 2	REV 04	711-034381	EF3834	Type-0 LMB
SPMB 0	REV 05	710-023321	ED1990	LCC Switch CPU
SPMB 1	REV 05	710-023321	EA2768	LCC Switch CPU
SIB 0	REV 02	711-036340	EF8802	SIB-HC-3D
SIB 1	REV 07	711-036340	EG2286	SIB-HC-3D
SIB 2	REV 07	711-036340	EG2252	SIB-HC-3D
SIB 3	REV 02	711-036340	EF1358	SIB-HC-3D
SIB 4	REV 02	711-036340	EF8806	SIB-HC-3D
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
-- Rev 2				
Fan Tray 2				Rear Fan Tray -- Rev 3

show chassis hardware models (T4000 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 01	710-027486	RC8355	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387	EF6764	CRAFT-T1600-S
CIP	REV 06	710-002895	BBAD9210	CIP-L-T640-S
PEM 0	REV 01	740-036442	VA00016	PWR-T-6-60-DC
SCG 0	REV 18	710-003423	BBAD7248	SCG-T-S
SCG 1	REV 18	710-003423	BBAE3874	SCG-T-S
Routing Engine 0	REV 05	740-026941	P737F-002248	RE-DUO-C1800-8G-S

Routing Engine 1	REV 06	740-026941	P737F-002653	RE-DUO-C1800-8G-S
CB 0	REV 09	710-022597	ED0295	CB-LCC-S
CB 1	REV 09	710-022597	EA6050	CB-LCC-S
FPC 3				
PIC 0	REV 08	750-035293	EF3657	PF-1CGE-CFP
PIC 1	REV 10	750-034624	BBAN4098	PF-12XGE-SFPP
FPC 5	REV 03	710-033871	BBAJ0768	T1600-FPC4-ES
PIC 1	REV 03	750-034781	EE6655	PD-1CE-CFP-FPC4
FPC 6				
PIC 0	REV 10	750-034624	BBAN4109	PF-12XGE-SFPP
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T4000-S
Fan Tray 2				FAN-REAR-TXP-LCC

show chassis hardware lcc (TX Matrix Router)

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user@host> show chassis hardware lcc 0
lcc0-re0:
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			65751	T640
Midplane	REV 03	710-005608	RA1408	T640 Backplane
FPM GBUS	REV 09	710-002901	RA2784	T640 FPM Board
FPM Display	REV 05	710-002897	RA2825	FPM Display
CIP	REV 06	710-002895	HT0684	T Series CIP
PEM 0	Rev 11	740-002595	PM18483	Power Entry Module
PEM 1	Rev 11	740-002595	qb13984	Power Entry Module
SCG 0	REV 11	710-003423	HT0022	T640 Sonet Clock Gen.
Routing Engine 0	REV 13	740-005022	210865700363	RE-3.0 (RE-600)
CB 0	REV 03	710-007655	HW1195	Control Board (CB-T)
FPC 1	REV 05	710-007527	HM3245	FPC Type 2
CPU	REV 14	710-001726	HM1084	FPC CPU
PIC 0	REV 02	750-007218	AZ1112	2x OC-12 ATM2 IQ, SMIR
PIC 1	REV 02	750-007745	HG3462	4x OC-3 SONET, SMIR
PIC 2	REV 14	750-001901	BA5390	4x OC-12 SONET, SMIR
PIC 3	REV 09	750-008155	HS3012	2x G/E IQ, 1000 BASE
SFP 0		NON-JNPR	P1186TY	SFP-S
SFP 1	REV 01	740-007326	P11WLTF	SFP-SX
MMB 1	REV 02	710-005555	HL7514	MMB-288mbit
PPB 0	REV 04	710-003758	HM4405	PPB Type 2
PPB 1	REV 04	710-003758	AV1960	PPB Type 2
FPC 2	REV 08	710-010154	HZ3578	E-FPC Type 3
CPU	REV 05	710-010169	HZ3219	FPC CPU-Enhanced
PIC 0	REV 02	750-009567	HX2882	1x 10GE(LAN), XENPAK
SFP 0	REV 01	740-009898	USC202U709	XENPAK-LR
PIC 1	REV 03	750-003336	HJ9954	4x OC-48 SONET, SMSR
PIC 2	REV 01	750-004535	HC0235	1x OC-192 SM SR1
PIC 3	REV 07	750-007141	HX1699	10x 1GE(LAN), 1000 BASE
SFP 0	REV 01	740-007326	2441042	SFP-SX
SFP 1	REV 01	740-007326	2441027	SFP-SX
MMB 0	REV 03	710-010171	HV2365	MMB-5M3-288mbit
MMB 1	REV 03	710-010171	HZ3888	MMB-5M3-288mbit
SPMB 0	REV 09	710-003229	HW5245	T Series Switch CPU
SIB 3	REV 07	710-005781	HR5927	SIB-L8-F16
B Board	REV 06	710-005782	HR5971	SIB-L8-F16 (B)
SIB 4	REV 07	710-005781	HR5903	SIB-L8-F16
B Board	REV 06	710-005782	HZ5275	SIB-L8-F16 (B)

show chassis hardware scc (TX Matrix Router)

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user@host> show chassis hardware scc
scc-re0:
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Hardware inventory:
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Item	Version	Part number	Serial number	Description
Chassis				TX Matrix
Midplane	REV 04	710-004396	RB0014	SCC Midplane
FPM GBUS	REV 04	710-004617	HW9141	SCC FPM Board
FPM Display	REV 04	710-004619	HS5950	SCC FPM
CIP 0	REV 01	710-010218	HV9151	SCC CIP
CIP 1	REV 01	710-010218	HV9152	SCC CIP
PEM 1	Rev 11	740-002595	QB13977	Power Entry Module
Routing Engine 0	REV 05	740-008883	P11123900153	RE-4.0 (RE-1600)
CB 0	REV 01	710-011709	HR5964	Control Board (CB-TX)
SPMB 0	REV 09	710-003229	HW5293	T Series Switch CPU
SIB 3				
SIB 4	REV 01	710-005839	HW1177	SIB-S8-F16
B Board	REV 01	710-005840	HW1202	SIB-S8-F16 (B)

show chassis hardware (T1600 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			B2703	T1600
Midplane	REV 03	710-005608	RC4137	T640 Backplane
FPM GBUS	REV 10	710-002901	DT7062	T640 FPM Board
FPM Display	REV 05	710-002897	DS3067	FPM Display
CIP	REV 06	710-002895	DT3386	T-series CIP
PEM 0	Rev 07	740-017906	UA26344	Power Entry Module 3x80
PEM 1	Rev 18	740-002595	UF38441	Power Entry Module
SCG 0	REV 15	710-003423	DV0941	T640 Sonet Clock Gen.
Routing Engine 0	REV 08	740-014082	9009014502	RE-A-2000
Routing Engine 1	REV 07	740-014082	9009009591	RE-A-2000
CB 0	REV 05	710-007655	JA9360	Control Board (CB-T)
CB 1	REV 03	710-017707	DT3251	Control Board (CB-T)
FPC 0	REV 07	710-013558	DR4253	E2-FPC Type 2
CPU	REV 05	710-013563	DS3902	FPC CPU-Enhanced
PIC 0	REV 01	750-010618	CB5446	4x G/E SFP, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F11CW	SFP-SX
Xcvr 1	REV 01	740-011613	P9F15C2	SFP-SX
Xcvr 2	REV 01	740-011782	PB94K0L	SFP-SX
PIC 1	REV 06	750-001900	HB6399	1x OC-48 SONET, SMSR
PIC 2	REV 14	750-001901	AP1092	4x OC-12 SONET, SMIR
PIC 3	REV 07	750-001900	AR8275	1x OC-48 SONET, SMSR
MMB 1	REV 07	710-010171	DS1524	MMB-5M3-288mbit
FPC 1	REV 06	710-013553	DL9067	E2-FPC Type 1
CPU	REV 04	710-013563	DM1685	FPC CPU-Enhanced
PIC 0	REV 08	750-001072	AB1688	1x G/E, 1000 BASE-SX
PIC 1	REV 10	750-012266	JX5519	4x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011613	AM0812S8UK6	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8UK1	SFP-SX
Xcvr 3	REV 01	740-011782	P8N1YHG	SFP-SX
PIC 2	REV 22	750-005634	DP0083	1x CHOC12 IQ SONET, SMIR
MMB 1	REV 07	710-008923	DN1862	MMB 3M 288-bit
FPC 2	REV 01	710-005548	HJ9899	FPC Type 3
CPU	REV 06	710-001726	HC0586	FPC CPU

PIC 0	REV 16	750-007141	NC9660	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011613	AM0812S8XAR	SFP-SX
Xcvr 1	REV 01	740-011782	P920E7B	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8XAU	SFP-SX
Xcvr 4	REV 01	740-011613	AM0812S8XAK	SFP-SX
Xcvr 5	REV 01	740-011613	AM0812S8XAA	SFP-SX
Xcvr 6	REV 01	740-011613	PAJ4NKY	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8UJW	SFP-SX
Xcvr 8	REV 01	740-011782	PB81X89	SFP-SX
Xcvr 9	REV 01	740-011613	AM0812S8UJX	SFP-SX
PIC 1	REV 06	750-015217	DK3280	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8POA3T	SFP-SX
Xcvr 1	REV 01	740-013111	5090002	SFP-T
Xcvr 2	REV 01	740-011613	AM0814S93BQ	SFP-SX
Xcvr 4		NON-JNPR	PDEOFAN	SFP-SX
Xcvr 5	REV 01	740-011782	P8Q20XY	SFP-SX
Xcvr 6	REV 01	740-011613	AM0812S8UJV	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8UP7	SFP-SX
PIC 2	REV 05	750-004695	HT4383	1x Tunnel
PIC 3	REV 17	750-009553	RL0204	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	PDS3T23	SFP-SR
Xcvr 1	REV 01	740-011785	P6Q0F3E	SFP-SR
MMB 0	REV 03	710-004047	HD5843	MMB-288mbit
MMB 1	REV 03	710-004047	HE3208	MMB-288mbit
PPB 0	REV 02	710-002845	HA4524	PPB Type 3
PPB 1	REV 02	710-002845	HA4766	PPB Type 3
FPC 3	REV 01	710-010154	HR0863	E-FPC Type 3
CPU	REV 01	710-010169	HN3422	FPC CPU-Enhanced
PIC 0	REV 07	750-012793	WF5096	1x 10GE(LAN/WAN) IQ2
Xcvr 0		NON-JNPR	M64294TP	XFP-10G-LR
PIC 1	REV 25	750-007141	DV2127	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011613	PFA6LTJ	SFP-SX
Xcvr 1	REV 01	740-011782	P9POXV4	SFP-SX
Xcvr 2	REV 01	740-011782	P9M0TNX	SFP-SX
Xcvr 4	REV 01	740-011782	P9B0TTP	SFP-SX
Xcvr 5		NON-JNPR	PBS4LED	SFP-SX
PIC 2	REV 17	750-009553	RL0212	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	PDS3T8G	SFP-SR
PIC 3	REV 32	750-003700	DL1279	1x OC-192 12xMM VSR
MMB 0	REV 01	710-010171	HR0821	MMB-288mbit
MMB 1	REV 01	710-010171	HR0818	MMB-288mbit
FPC 4	REV 16	710-013037	EB4919	FPC Type 4-ES
CPU	REV 09	710-016744	BBAA4382	ST-PMB2
PIC 0	REV 03	711-029996	EB1569	100GE
PIC 1	REV 05	711-029999	EB9983	100GE CFP
Xcvr 0	REV 0	740-032210	J10G80746	CFP-100G-LR4
BRIDGE 0	REV 02	711-029995	EB2235	100GE Bridge Board
MMB 0	REV 04	710-025563	BBAA7112	ST-MMB2
MMB 1	REV 04	710-025563	BBAA7149	ST-MMB2
FPC 5	REV 02	710-013037	DE3407	FPC Type 4-ES
CPU	REV 04	710-016744	DA2124	ST-PMB2
PIC 0	REV 16	750-012518	DF2554	4x OC-192 SONET XFP
Xcvr 0	REV 01	740-014279	AA0745N1FX8	XFP-OC192-SR
Xcvr 1	REV 01	740-014279	AA0748N1HN5	XFP-OC192-SR
Xcvr 2	REV 01	740-014279	AA0748N1HT6	XFP-OC192-SR
Xcvr 3	REV 01	740-014279	AA0744N1EC9	XFP-OC192-SR
PIC 1	REV 01	750-010850	JA0329	1x OC-768 SONET SR
MMB 0	REV 04	710-016036	DE9577	ST-MMB2
MMB 1	REV 04	710-016036	DK4060	ST-MMB2

FPC 6	REV 14	710-013037	DV1431	FPC Type 4-ES
CPU	REV 09	710-016744	DT9020	ST-PMB2
PIC 0	REV 11	750-017405	DM6261	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 01	740-014289	C701XU05Q	XFP-10G-SR
Xcvr 1	REV 01	740-014279	AA0748N1HPT	XFP-10G-LR
Xcvr 2	REV 01	740-014289	T08E19189	XFP-10G-SR
Xcvr 3	REV 01	740-014289	C715XU058	XFP-10G-SR
PIC 1	REV 13	750-017405	DP8772	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 02	740-011571	C850XJ037	XFP-10G-SR
Xcvr 1	REV 02	740-014289	C839XU0L9	XFP-10G-SR
Xcvr 2	REV 02	740-014289	C834XU05A	XFP-10G-SR
Xcvr 3	REV 02	740-014289	C810XU0CE	XFP-10G-SR
MMB 0	REV 01	710-025563	DT8454	ST-MMB2
MMB 1	REV 01	710-025563	DT8366	ST-MMB2
FPC 7	REV 09	710-007529	HZ7624	FPC Type 3
CPU	REV 15	710-001726	HZ1413	FPC CPU
PIC 0	REV 10	750-012793	DM5627	1x 10GE(LAN/WAN) IQ2
Xcvr 0	REV 02	740-011571	C831XJ062	XFP-10G-SR
PIC 1	REV 01	750-015217	JT6762	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8Q25JU	SFP-SX
Xcvr 1	REV 01	740-011782	P9B0U0K	SFP-SX
PIC 2	REV 01	750-015217	JS4268	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	AM0812S8XBZ	SFP-SX
Xcvr 1	REV 01	740-011613	AM0812S8XAP	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8XBY	SFP-SX
Xcvr 3	REV 01	740-011613	AM0812S8XBX	SFP-SX
Xcvr 4	REV 01	740-011613	P9F1652	SFP-SX
Xcvr 5	REV 01	740-011782	P8Q21YC	SFP-SX
Xcvr 6	REV 01	740-011782	P8Q27HQ	SFP-SX
Xcvr 7	REV 01	740-011613	P8E2SSU	SFP-SX
PIC 3	REV 15	750-009450	NB6790	1x OC-192 SM SR2
MMB 0	REV 03	710-005555	HZ3450	MMB-288mbit
MMB 1	REV 03	710-005555	HZ3415	MMB-288mbit
PPB 0	REV 04	710-002845	HP0887	PPB Type 3
PPB 1	REV 04	710-002845	HW5255	PPB Type 3
SPMB 0	REV 10	710-003229	HX3699	T-series Switch CPU
SPMB 1	REV 12	710-003229	DT3091	T-series Switch CPU
SIB 0	REV 07	710-013074	DS4747	SIB-I8-SF
SIB 1	REV 07	710-013074	DS4942	SIB-I8-SF
SIB 2	REV 07	710-013074	DS4965	SIB-I8-SF
SIB 3	REV 07	710-013074	DS4990	SIB-I8-SF
SIB 4	REV 07	710-013074	DS4944	SIB-I8-SF
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 2

show chassis hardware (TX Matrix Plus Router)

```
user@host> show chassis hardware
sfc0-re0:
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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN113186EAHB	TXP
Midplane	REV 05	710-022574	TS3822	SFC Midplane
FPM Display	REV 03	710-024027	DW4701	TXP FPM Display
CIP 0	REV 05	710-023792	DW7998	TXP CIP
CIP 1	REV 05	710-023792	DW7999	TXP CIP
PEM 0	Rev 04	740-027463	UM26367	Power Entry Module
PEM 1	Rev 04	740-027463	UM26346	Power Entry Module
Routing Engine 0	REV 06	740-026942	737A-1081	RE-DUO-2600

Routing Engine 1	REV 06	740-026942	737A-1043	RE-DUO-2600
CB 0	REV 05	710-022606	DW4435	SFC Control Board
CB 1	REV 09	710-022606	DW6100	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 04	750-024564	DW5764	F13 SIB
B Board	REV 03	710-023431	DW9053	F13 SIB Mezz
SIB F13 3	REV 04	750-024564	DW5785	F13 SIB
B Board	REV 03	710-023431	DW9030	F13 SIB Mezz
SIB F13 6				
SIB F13 8	REV 04	750-024564	DW5752	F13 SIB
B Board	REV 03	710-023431	DW9051	F13 SIB Mezz
SIB F13 11	REV 04	750-024564	DW5782	F13 SIB
B Board	REV 03	710-023431	DW9058	F13 SIB Mezz
SIB F13 12	REV 03	750-024564	DT9466	F13 SIB
B Board	REV 02	710-023431	DT6556	F13 SIB Mezz
SIB F2S 0/0	REV 05	710-022603	DW7898	F2S SIB
B Board	REV 05	710-023787	DW7625	F2S SIB Mezz
SIB F2S 0/2	REV 05	710-022603	DW7811	F2S SIB
B Board	REV 05	710-023787	DW7550	F2S SIB Mezz
SIB F2S 0/4	REV 04	710-022603	DW4873	F2S SIB
B Board	REV 05	710-023787	DW8509	F2S SIB Mezz
SIB F2S 0/6	REV 04	710-022603	DW4867	F2S SIB
B Board	REV 05	710-023787	DW8472	F2S SIB Mezz
SIB F2S 1/0	REV 04	710-022603	DW4871	F2S SIB
B Board	REV 05	710-023787	DW8497	F2S SIB Mezz
SIB F2S 1/2	REV 05	710-022603	DW7868	F2S SIB
B Board	REV 05	710-023787	DW7551	F2S SIB Mezz
SIB F2S 1/4	REV 04	710-022603	DW4854	F2S SIB
B Board	REV 05	710-023787	DW8496	F2S SIB Mezz
SIB F2S 1/6	REV 05	710-022603	DW7889	F2S SIB
B Board	REV 05	710-023787	DW7496	F2S SIB Mezz
SIB F2S 2/0	REV 04	710-022603	DW4852	F2S SIB
B Board	REV 05	710-023787	DW8498	F2S SIB Mezz
SIB F2S 2/2	REV 04	710-022603	DW4845	F2S SIB
B Board	REV 05	710-023787	DW8457	F2S SIB Mezz
SIB F2S 2/4	REV 05	710-022603	DW7802	F2S SIB
B Board	REV 05	710-023787	DW7562	F2S SIB Mezz
SIB F2S 2/6	REV 04	710-022603	DW4822	F2S SIB
B Board	REV 05	710-023787	DW8467	F2S SIB Mezz
SIB F2S 3/0	REV 05	710-022603	DW7815	F2S SIB
B Board	REV 05	710-023787	DW7518	F2S SIB Mezz
SIB F2S 3/2	REV 03	710-022603	DV0068	F2S SIB
B Board	REV 03	710-023787	DT9974	F2S SIB Mezz
SIB F2S 3/4	REV 05	710-022603	DW7874	F2S SIB
B Board	REV 05	710-023787	DW7601	F2S SIB Mezz
SIB F2S 3/6	REV 03	710-022603	DV0033	F2S SIB
B Board	REV 03	710-023787	DT9969	F2S SIB Mezz
SIB F2S 4/0	REV 03	710-022603	DV0043	F2S SIB
B Board	REV 03	710-023787	DT9948	F2S SIB Mezz
SIB F2S 4/2	REV 05	710-022603	DW5446	F2S SIB
B Board	REV 05	710-023787	DW7611	F2S SIB Mezz
SIB F2S 4/4	REV 04	710-022603	DW4826	F2S SIB
B Board	REV 05	710-023787	DW8458	F2S SIB Mezz
SIB F2S 4/6	REV 03	710-022603	DV0026	F2S SIB
B Board	REV 03	710-023787	DT9963	F2S SIB Mezz
Fan Tray 0	REV 02	760-024497	DR8290	Front Fan Tray
Fan Tray 1	REV 02	760-024497	DR8293	Front Fan Tray
Fan Tray 2	REV 05	760-024502	DR8280	Rear Fan Tray
Fan Tray 3				
Fan Tray 4	REV 05	760-024502	DR8276	Rear Fan Tray

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Fan Tray 5      REV 02  760-024502  DP5643      Rear Fan Tray

lcc0-re0:
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Hardware inventory:
Item            Version  Part number  Serial number  Description
Chassis                               JN11036F8AHA  T1600
Midplane        REV 03  710-017247  RC3799         T-series Backplane
FPM GBUS        REV 10  710-002901  DP7009         T640 FPM Board
FPM Display     REV 01  710-021387  DN7026         T1600 FPM Display
CIP             REV 06  710-002895  DP6024         T-series CIP
PEM 1          Rev 02  740-023211  WA50019        Power Entry Module 4x60A
SCG 0          REV 15  710-003423  DR6757         T640 Sonet Clock Gen.
SCG 1          REV 15  710-003423  DS2225         T640 Sonet Clock Gen.
Routing Engine 0 REV 01  740-026941  737F-1040      RE-DUO-1800
Routing Engine 1 REV 01  740-026941  737F-1016      RE-DUO-1800
CB 0           REV 06  710-022597  DX4011         LCC Control Board
CB 1           REV 06  710-022597  DX4017         LCC Control Board
FPC 1          REV 07  710-013035  DN5847         FPC Type 3-ES
  CPU          REV 08  710-016744  DP2570         ST-PMB2
  PIC 0        REV 05  750-015217  DB0418         8x 1GE(TYPE3), IQ2
    Xcvr 0     REV 01  740-011782  P8Q27ZG        SFP-SX
    Xcvr 1                     NON-JNPR        PDA1U0D        SFP-SX
    Xcvr 2     REV 01  740-011613  P9F1ALW        SFP-SX
    Xcvr 3     REV 01  740-011782  PBA403V        SFP-SX
    Xcvr 4                     NON-JNPR        PDE09DP        SFP-SX
    Xcvr 5     REV 01  740-011782  PCH2P4K        SFP-SX
    Xcvr 6     REV 01  740-011782  PB94K0F        SFP-SX
    Xcvr 7     REV 01  740-011782  PBA2R2A        SFP-SX
  PIC 1        REV 03  750-004424  HJ4020         1x 10GE(LAN),DWDM
  PIC 2        REV 01  750-003336  HG6073         4x OC-48 SONET, SMSR
  MMB 0        REV 04  710-016036  DP3401         ST-MMB2
FPC 3          REV 12  710-013037  DR1169         FPC Type 4-ES
  CPU          REV 08  710-016744  DP9429         ST-PMB2
  PIC 0        REV 02  750-010850  JA0332         1x OC-768 SONET SR
  MMB 0        REV 04  710-016036  DR0628         ST-MMB2
  MMB 1        REV 04  710-016036  DR0592         ST-MMB2
FPC 4          REV 05  710-021534  DR7350         FPC Type 1-ES
  CPU          REV 08  710-016744  DP8096         ST-PMB2
  PIC 0        REV 04  750-014627  DP9171         4x OC-3 1x OC-12 SFP
    Xcvr 0     REV 02  740-011615  PDE2RVR        SFP-SR
  PIC 1        REV 22  750-005634  DS5815         1x CHOC12 IQ SONET, SMIR

  PIC 2        REV 09  750-002911  CF4539         4x F/E, 100 BASE-TX
  PIC 3        REV 08  750-021652  DR2827         1x CHOC12 IQE SONET
    Xcvr 0                     NON-JNPR        8              UNKNOWN
  MMB 0        REV 04  710-016036  DR0809         ST-MMB2
FPC 5          REV 07  710-007529  HS5608         FPC Type 3
  CPU          REV 15  710-001726  HX4351         FPC CPU
  PIC 0        REV 14  750-009567  WJ8961         1x 10GE(LAN),XENPAK
    Xcvr 0     REV 01  740-013170  J05K05961      XENPAK-LR
  PIC 1        REV 16  750-007141  JJ8146         10x 1GE(LAN), 1000 BASE

    Xcvr 1     REV 01  740-011613  P9F117T        SFP-SX
    Xcvr 2     REV 01  740-011782  PBA2VCL        SFP-SX
    Xcvr 3     REV 01  740-011782  PB83DRB        SFP-SX
    Xcvr 4     REV 01  740-011613  AM0812S8UP8    SFP-SX
  PIC 2        REV 12  750-009567  WF3566         1x 10GE(LAN),XENPAK
    Xcvr 0     REV 02  740-013170  T07C94489      XENPAK-LR
  MMB 0        REV 03  710-005555  HZ1907         MMB-288mbit
  MMB 1        REV 03  710-005555  HW5283         MMB-288mbit

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PPB 0	REV 04	710-002845	HZ7717	PPB Type 3
PPB 1	REV 04	710-002845	HS0110	PPB Type 3
FPC 6	REV 07	710-013035	DP7486	FPC Type 3-ES
CPU	REV 08	710-016744	DP2545	ST-PMB2
PIC 0	REV 09	750-009567	NE6323	1x 10GE(LAN), XENPAK
Xcvr 0	REV 02	740-013170	T09C71959	XENPAK-LR
PIC 1	REV 06	750-015217	DN4775	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P7E0T6M	SFP-SX
Xcvr 1	REV 01	740-011613	AM0812S8XAY	SFP-SX
Xcvr 2	REV 01	740-011782	P7E0T6J	SFP-SX
Xcvr 3	REV 01	740-011782	PCH2P7D	SFP-SX
Xcvr 4	REV 01	740-011782	P9B0QYT	SFP-SX
Xcvr 5	REV 01	740-011613	AM0812S8WQJ	SFP-SX
Xcvr 6	REV 02	740-013111	9301220	SFP-T
Xcvr 7	REV 01	740-011782	P9B0TZ5	SFP-SX
PIC 2	REV 06	750-015217	DM6747	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	PAP0ZB2	SFP-SX
Xcvr 1	REV 01	740-013111	70191002	SFP-T
Xcvr 6	REV 01	740-011782	PBA29H8	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8WQG	SFP-SX
MMB 0	REV 04	710-016036	DP3238	ST-MMB2
FPC 7	REV 03	710-021540	DV3154	FPC Type 2-ES
CPU	REV 09	710-016744	DT9053	ST-PMB2
PIC 0	REV 13	750-001901	HB4225	4x OC-12 SONET, SMIR
PIC 1	REV 05	750-001900	AD3644	1x OC-48 SONET, SMSR
PIC 2	REV 10	750-008155	HV0335	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011782	PCH2UKF	SFP-SX
Xcvr 1	REV 01	740-011782	PCH2V19	SFP-SX
PIC 3	REV 03	750-014638	JS9493	1x OC-48-12-3 SFP
Xcvr 0	REV 01	740-011785	P6Q0ENK	SFP-SR
MMB 0	REV 05	710-016036	DP3323	ST-MMB2
SPMB 0	REV 04	710-023321	DX3004	LCC Switch CPU
SPMB 1	REV 04	710-023321	DX3009	LCC Switch CPU
SIB 0	REV 07	710-022594	DW4195	LCC SIB
B Board	REV 07	710-023185	DW3930	LCC SIB Mezz
SIB 1	REV 07	710-022594	DW4179	LCC SIB
B Board	REV 07	710-023185	DW3919	LCC SIB Mezz
SIB 2				
SIB 3	REV 06	710-022594	DT8251	LCC SIB
B Board	REV 06	710-023185	DT5792	LCC SIB Mezz
SIB 4	REV 08	710-022594	DW8014	LCC SIB
B Board	REV 07	710-023185	DW3917	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 3

lcc1-re0:

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	P4T0WLR	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	PCH2POU	SFP-SX
PIC 1	REV 16	750-009450	CV2565	1x OC-192 SM SR2
PIC 2	REV 05	750-004424	HH3057	1x 10GE(LAN), 10GBASE-LR
PIC 3	REV 12	750-013423	DP0403	MultiServices 500
MMB 0	REV 04	710-016036	DK1988	ST-MMB2
FPC 5	REV 07	710-013560	DR0004	E2-FPC Type 3
CPU	REV 05	710-013563	DR0089	FPC CPU-Enhanced
PIC 0	REV 11	750-012793	DR6107	1x 10GE(LAN/WAN) IQ2
Xcvr 0	REV 01	740-014289	C743XU074	XFP-10G-SR
PIC 1	REV 01	750-004695	HD5980	1x Tunnel
PIC 2	REV 32	750-003700	DL3770	1x OC-192 12xMM VSR
PIC 3	REV 12	750-009553	WB8901	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	P9D1GTQ	SFP-SR

Xcvr 1	REV 01	740-011785	PDSOMMB	SFP-SR
Xcvr 3	REV 01	740-011785	PDE1KXP	SFP-SR
MMB 0	REV 07	710-010171	DP7374	MMB-5M3-288mbit
MMB 1	REV 07	710-010171	DP7404	MMB-5M3-288mbit
FPC 6	REV 07	710-013035	DM0994	FPC Type 3-ES
CPU	REV 07	710-016744	DM3651	ST-PMB2
PIC 0	REV 07	750-015217	DN4743	8x 1GE(TYPE3), IQ2
Xcvr 3	REV 01	740-011613	AM0812S8XB0	SFP-SX
Xcvr 4	REV 01	740-011782	PB829RB	SFP-SX
Xcvr 5	REV 01	740-011782	P8J1SYX	SFP-SX
PIC 1	REV 03	750-003336	HJ9954	4x OC-48 SONET, SMSR
PIC 3	REV 02	750-012793	JM7665	1x 10GE(LAN/WAN) IQ2
MMB 0	REV 04	710-016036	DN6913	ST-MMB2
FPC 7	REV 08	710-010845	JM3958	FPC Type 4
CPU	REV 04	710-011481	JK3669	FPC CPU-Enhanced
PIC 0	REV 11	750-017405	DP8837	4x 10GE (LAN/WAN) XFP
Xcvr 1	REV 01	740-014279	753019A00277	XFP-10G-LR
Xcvr 2	REV 02	740-011571	C850XJ00P	XFP-10G-SR
Xcvr 3	REV 01	740-014279	AA0813N1RTG	XFP-10G-LR
MMB 0	REV 04	710-010842	JN1971	ST-MMB
SPMB 0	REV 04	710-023321	DW3629	LCC Switch CPU
SPMB 1	REV 04	710-023321	DW3621	LCC Switch CPU
SIB 0	REV 07	710-022594	DW4200	LCC SIB
B Board	REV 07	710-023185	DW3932	LCC SIB Mezz
SIB 1	REV 07	710-022594	DW4193	LCC SIB
B Board	REV 07	710-023185	DW3904	LCC SIB Mezz
SIB 2				
SIB 3	REV 07	710-022594	DW4210	LCC SIB
B Board	REV 06	710-023185	DT5780	LCC SIB Mezz
SIB 4	REV 08	710-022594	DW8019	LCC SIB
B Board	REV 06	710-023185	DT5795	LCC SIB Mezz
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 3

show chassis hardware sfc (TX Matrix Plus Router)

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user@host> show chassis hardware sfc 0
sfc0-re0:
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Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			JN112F007AHB	TXP
Midplane	REV 05	710-022574	TS4027	SFC Midplane
FPM Display	REV 03	710-024027	DX0282	TXP FPM Display
CIP 0	REV 04	710-023792	DW4889	TXP CIP
CIP 1	REV 04	710-023792	DW4887	TXP CIP
PEM 0	Rev 07	740-027463	UM26368	Power Entry Module
Routing Engine 0	REV 01	740-026942	737A-1064	SFC RE
Routing Engine 1	REV 01	740-026942	737A-1082	SFC RE
CB 0	REV 09	710-022606	DW6099	SFC Control Board
CB 1	REV 09	710-022606	DW6096	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 04	710-022600	DX0841	F13 SIB
B Board	REV 03	710-023431	DX0966	F13 SIB Mezz
SIB F13 1	REV 04	750-024564	DW5776	F13 SIB
B Board	REV 03	710-023431	DW9028	F13 SIB
SIB F13 3	REV 04	750-024564	DW5762	F13 SIB
B Board	REV 03	710-023431	DW9059	F13 SIB
SIB F13 4	REV 04	750-024564	DW5797	F13 SIB

B Board	REV 03	710-023431	DW9041	F13 SIB
SIB F13 6	REV 04	750-024564	DW5770	F13 SIB
B Board	REV 03	710-023431	DW9079	F13 SIB Mezz
SIB F13 7	REV 04	750-024564	DW5758	F13 SIB
B Board	REV 03	710-023431	DW9047	F13 SIB
SIB F13 8	REV 04	750-024564	DW5761	F13 SIB
B Board	REV 03	710-023431	DW9043	F13 SIB Mezz
SIB F13 9	REV 04	750-024564	DW5754	F13 SIB
B Board	REV 03	710-023431	DW9078	F13 SIB Mezz
SIB F13 11	REV 04	710-022600	DX0826	F13 SIB
B Board	REV 03	710-023431	DX0967	F13 SIB Mezz
SIB F13 12	REV 04	750-024564	DW5794	F13 SIB
B Board	REV 03	710-023431	DW9044	F13 SIB Mezz
SIB F2S 0/0	REV 05	710-022603	DW7897	F2S SIB
B Board	REV 05	710-023787	DW7657	NEO PMB
SIB F2S 0/2	REV 05	710-022603	DW7833	F2S SIB
B Board	REV 05	710-023787	DW7526	NEO PMB
SIB F2S 0/4	REV 05	710-022603	DW7875	F2S SIB
B Board	REV 05	710-023787	DW7588	NEO PMB
SIB F2S 0/6	REV 05	710-022603	DW7860	F2S SIB
B Board	REV 05	710-023787	DW7589	NEO PMB
SIB F2S 1/0	REV 04	710-022603	DW4820	F2S SIB
B Board	REV 05	710-023787	DW8510	NEO PMB
SIB F2S 1/2	REV 05	710-022603	DW7849	F2S SIB
B Board	REV 05	710-023787	DW7525	NEO PMB
SIB F2S 1/4	REV 05	710-022603	DW7927	F2S SIB
B Board	REV 05	710-023787	DW7556	F2S SIB Mezz
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
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN112F007AHB
Assembly ID:  0x052c          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: TXP
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 2c 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 32 46 30 30 37 41 48 42 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 05    710-022574    TS4027          SFC Midplane
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:          710-022574      S/N:           TS4027
Assembly ID:  0x0962          Assembly Version: 01.05
Date:         03-23-2009      Assembly Flags:  0x00
Version:      REV 05
ID: SFC Midplane
Board Information Record:
Address 0x00: ad 01 ff ff 00 1d b5 14 00 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 62 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 32 32 35 37 34 00 00
Address 0x20: 53 2f 4e 20 54 53 34 30 32 37 00 00 00 17 03 07
Address 0x30: d9 ff ff ff ad 01 ff ff 00 1d b5 14 00 00 ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Display   REV 03    710-024027    DX0282          TXP FPM Display
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:          710-024027      S/N:           DX0282
Assembly ID:  0x096c          Assembly Version: 01.03
Date:         02-10-2009      Assembly Flags:  0x00
Version:      REV 03
ID: TXP FPM Display          FRU Model Number: CRAFT-TXP
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 6c 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 32 34 30 32 37 00 00
Address 0x20: 53 2f 4e 20 44 58 30 32 38 32 00 00 00 0a 02 07
Address 0x30: d9 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
Address 0x50: 52 41 46 54 2d 54 58 50 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 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
CIP 0         REV 04    710-023792    DW4889          TXP CIP

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Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N: 710-023792        S/N: DW4889
Assembly ID: 0x0969     Assembly Version: 01.04
Date: 01-26-2009       Assembly Flags: 0x00
Version: REV 04
ID: TXP CIP            FRU Model Number: CIP-TXP
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware clei-models (TX Matrix Plus Router)

```

user@host> show chassis hardware clei-models
sfc0-re0:

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Hardware inventory:
```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 05	710-022574		CHAS-BP-TXP-S
FPM Display	REV 03	710-024027		CRAFT-TXP-S
CIP 0	REV 05	710-023792		CIP-TXP-S
CIP 1	REV 05	710-023792		CIP-TXP-S
PEM 0	Rev 04	740-027463	IPUPAFGKTA	PWR-TXP-7-60-DC
PEM 1	Rev 04	740-027463	IPUPAFGKTA	PWR-TXP-7-60-DC
Routing Engine 0	REV 06	740-026942		RE-DUO-C2600-16G-S
Routing Engine 1	REV 06	740-026942		RE-DUO-C2600-16G-S
CB 0	REV 05	710-022606		CB-TXP-S
CB 1	REV 09	710-022606		CB-TXP-S
SIB F13 0	REV 04	750-024564		SIB-TXP-F13
SIB F13 3	REV 04	750-024564		SIB-TXP-F13
SIB F13 8	REV 04	750-024564		SIB-TXP-F13
SIB F13 11	REV 04	750-024564		SIB-TXP-F13
SIB F13 12	REV 03	750-024564		SIB-TXP-F13
SIB F2S 0/0	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 0/2	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 0/4	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 0/6	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 1/0	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 1/2	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 1/4	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 1/6	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 2/0	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 2/2	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 2/4	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 2/6	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 3/0	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 3/2	REV 03	710-022603		SIB-TXP-F2S-S
SIB F2S 3/4	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 3/6	REV 03	710-022603		SIB-TXP-F2S-S
SIB F2S 4/0	REV 03	710-022603		SIB-TXP-F2S-S
SIB F2S 4/2	REV 05	710-022603		SIB-TXP-F2S-S
SIB F2S 4/4	REV 04	710-022603		SIB-TXP-F2S-S
SIB F2S 4/6	REV 03	710-022603		SIB-TXP-F2S-S
Fan Tray 0	REV 02	760-024497		FANTRAY-TXP-H-S
Fan Tray 1	REV 02	760-024497		FANTRAY-TXP-H-S
Fan Tray 2	REV 05	760-024502		FANTRAY-TXP-V-S
Fan Tray 3				
Fan Tray 4	REV 05	760-024502		FANTRAY-TXP-V-S
Fan Tray 5	REV 02	760-024502		FANTRAY-TXP-V-S

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lcc0-re0:

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Hardware inventory:
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Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 03	710-017247	IPUPAC8KTA	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		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	IPUPAC8KTA	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		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:
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN111B023AHB	TXP
Midplane	REV 01	710-022574	TR7990	SFC Midplane
FPM Display	REV 03	710-024027	DW4699	TXP FPM Display
CIP 0	REV 01	710-023792	DR1437	TXP CIP
CIP 1	REV 02	710-023792	DS4564	TXP CIP
PEM 0	Rev 07	740-027463	UM26360	Power Entry Module
Routing Engine 0	REV 01	740-026942	737A-1024	SFC RE
ad0	3887 MB	SMART CF	200811050193CEB1CEB1	Compact Flash
ad1	30533 MB	SAMSUNG MCBQE32G8MPP-0V	SY814A0762	Disk 1
Routing Engine 1	REV 01	740-026942	737A-1024	SFC RE
ad0	3887 MB	SMART CF	20081105004C19A019A0	Compact Flash
ad1	30533 MB	SAMSUNG MCBQE32G8MPP-0V	SY814A0794	Disk 1
CB 0	REV 03	710-022606	DR7134	SFC Control Board
CB 1	REV 01	710-022606	DP8890	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 03	750-024564	DT9478	F13 SIB
B Board	REV 02	710-023431	DT6554	F13 SIB
SIB F13 1	REV 03	750-024564	DT9454	F13 SIB
B Board	REV 02	710-023431	DT6551	F13 SIB
SIB F2S 0/0	REV 02	710-022603	DT2838	F2S SIB
B Board	REV 02	710-023787	DT1725	NEO PMB
SIB F2S 0/2	REV 02	710-022603	DT2824	F2S SIB
B Board	REV 02	710-023787	DT1706	NEO PMB

SIB F2S 0/4	REV 02	710-022603	DT2822	F2S SIB
B Board	REV 02	710-023787	DT1696	NEO PMB
SIB F2S 0/6	REV 02	710-022603	DT2823	F2S SIB
B Board	REV 02	710-023787	DT1717	NEO PMB
SIB F2S 1/0	REV 03	710-022603	DV0059	F2S SIB
B Board	REV 03	710-023787	DT9942	NEO PMB
SIB F2S 1/2	REV 02	710-022603	DT2826	F2S SIB
B Board	REV 02	710-023787	DT1713	NEO PMB
SIB F2S 1/4	REV 03	710-022603	DV0092	F2S SIB
B Board	REV 03	710-023787	DV0000	NEO PMB
SIB F2S 1/6	REV 03	710-022603	DV0079	F2S SIB
B Board	REV 03	710-023787	DT9972	NEO PMB
SIB F2S 2/0	REV 03	710-022603	DV0100	F2S SIB
B Board	REV 03	710-023787	DT9925	NEO PMB
SIB F2S 2/2	REV 03	710-022603	DV0050	F2S SIB
B Board	REV 03	710-023787	DV0005	NEO PMB
SIB F2S 2/4	REV 03	710-022603	DV0097	F2S SIB
B Board	REV 03	710-023787	DT9936	NEO PMB
Fan Tray 0	REV 02	760-024497	DR8286	Front Fan Tray
Fan Tray 1	REV 06	760-024497	DV9624	Front Fan Tray
Fan Tray 2	REV 02	760-024502	DR8259	Rear Fan Tray
Fan Tray 3	REV 02	760-024502	DR8270	Rear Fan Tray
Fan Tray 4	REV 02	760-024502	DR8284	Rear Fan Tray
Fan Tray 5	REV 06	760-024502	DV7813	Rear Fan Tray

1cc0-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
Fan Tray 2				Rear Fan Tray

show chassis hardware models (TX Matrix Plus Router)

```
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	yyyyyyyyyyyyyyyyyyyyyyyyyy
Routing Engine 0	REV 01	740-026942	737A-1064	RE-TXP-SFC-DUO-2600-16G
Routing Engine 1	REV 01	740-026942	737A-1082	RE-TXP-SFC-DUO-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

1cc0-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

1cc1-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

1cc2-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

lcc3-re0:

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 04	710-017247	RC5319	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387	DS6402	CRAFT-T1600-S
CIP	REV 06	710-002895	DR9973	CIP-L-T640-S
PEM 0	Rev 07	740-017906	UC26496	PWR-T1600-3-80-DC-S
PEM 1	Rev 07	740-017906	UC26599	PWR-T1600-3-80-DC-S
SCG 0	REV 15	710-003423	DP5831	SCG-T-S
CB 0	REV 06	710-022597	DW8533	CB-LCC
CB 1	REV 06	710-022597	DW8538	CB-LCC
FPC 0	REV 14	710-013037	DS5345	T1600-FPC4-ES
PIC 0	REV 13	750-017405	DS7641	PD-4XGE-XFP
PIC 1	REV 13	750-017405	DS5479	PD-4XGE-XFP
FPC 1	REV 14	710-013037	DS7338	T1600-FPC4-ES
PIC 0	REV 13	750-017405	DS7631	PD-4XGE-XFP
PIC 1	REV 13	750-017405	DS7632	PD-4XGE-XFP
FPC 2	REV 14	710-013037	DS9962	T1600-FPC4-ES
PIC 0	REV 13	750-017405	DS7581	PD-4XGE-XFP
PIC 1	REV 13	750-017405	DS7627	PD-4XGE-XFP
FPC 4	REV 10	710-010845	JZ6573	T640-FPC4-ES
PIC 0	REV 14	750-012518	JT5124	PD-40C192-SON-XFP
FPC 5	REV 14	710-013037	DT0016	T1600-FPC4-ES
PIC 0	REV 14	750-012518	JY9918	PD-40C192-SON-XFP
FPC 7	REV 07	710-013035	DM0967	T1600-FPC3-ES
PIC 0	REV 16	750-007141	JJ8059	PC-10GE-SFP
PIC 1	REV 13	750-004695	DM5712	PC-TUNNEL
SIB 0	REV 07	710-022594	DW4174	SIB-TXP-T1600-S
SIB 1	REV 07	710-022594	DW4207	SIB-TXP-T1600-S
SIB 2	REV 06	710-022594	DT8231	SIB-TXP-T1600-S

SIB 3	REV 07	710-022594	DW4175	SIB-TXP-T1600-S
SIB 4	REV 07	710-022594	DW4209	SIB-TXP-T1600-S
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T-S
Fan Tray 2				FANTRAY-TXP-R-S

show chassis hardware (TX Matrix Plus Router with 3D SIBs)

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user@host> show chassis hardware
sfc0-re0:
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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11CAAA4AHB	TXP
Midplane	REV 05	710-022574	ABAC4696	SFC Midplane
FPM Display	REV 09	710-024027	EH3138	TXP FPM Display
CIP 0	REV 12	710-023792	EF6349	TXP CIP
CIP 1	REV 12	710-023792	EG5294	TXP CIP
PEM 0	Rev 06	740-027463	XH04595	Power Entry Module
PEM 1	Rev 06	740-027463	XH04592	Power Entry Module
Routing Engine 0	REV 07	740-026942	P737A-002541	RE-DUO-2600
Routing Engine 1	REV 07	740-026942	P737A-002602	RE-DUO-2600
CB 0	REV 15	710-022606	EH4376	SFC Control Board
CB 1	REV 15	710-022606	EH4379	SFC Control Board
SPMB 0		BUILTIN		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			JN11B23FEAHA	T1600
Midplane	REV 01	710-027486	RC9787	T-series Backplane
FPM GBUS	REV 13	710-002901	BBAG5132	T640 FPM Board
FPM Display	REV 04	710-021387	BBAL9612	T1600 FPM Display
CIP	REV 06	710-002895	BBAN0605	T-series CIP
PEM 0	REV 05	740-036442	1G022060143	Power Entry Module 6x60
PEM 1	REV 05	740-036442	1G022060011	Power Entry Module 6x60
SCG 0	REV 18	710-003423	BBAL7318	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAL7255	T640 Sonet Clock Gen.
Routing Engine 0	REV 07	740-026941	P737F-002933	RE-DUO-1800
Routing Engine 1	REV 06	740-026941	P737F-002749	RE-DUO-1800
CB 0	REV 11	710-022597	EH3611	LCC Control Board
CB 1	REV 11	710-022597	EH4798	LCC Control Board
FPC 5	REV 17	710-013037	BBAC5333	FPC Type 4-ES
CPU	REV 10	710-016744	BBAB7619	ST-PMB2
PIC 0	REV 18	750-017405	BBAE3420	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 03	740-014289	T10C90659	XFP-10G-SR
MMB 0	REV 05	710-025563	BBAB9538	ST-MMB2
MMB 1	REV 05	710-025563	BBAB9502	ST-MMB2

FPC 7	REV 01	750-045173	BBAV0032	FPC Type 5-3D
CPU				
SPMB 0	REV 05	710-023321	EG9434	LCC Switch CPU
SPMB 1	REV 05	710-023321	EH3878	LCC Switch CPU
SIB 0	REV 01	750-041657	EH7997	LCC SIB 3D
B Board	REV 01	711-042424	EH7674	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB014	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB05A	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB052	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB01B	CXP Module
SIB 1	REV 01	750-041657	EH8023	LCC SIB 3D
B Board	REV 01	711-042424	EH7659	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB48FB05J	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB01E	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB01J	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB02S	CXP Module
SIB 2	REV 03	750-041657	EJ6554	LCC SIB 3D
B Board	REV 02	711-042424	EJ5756	LCC SIB 3D Mezz
Xcvr 0	REV 01	740-047547	XB34FB01Z	CXP Module
Xcvr 2	REV 01	740-047547	XB34FB013	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB04Z	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB05N	CXP Module
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 4

lcc2-re0:

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
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 Plus Router with 3D SIBs)

```
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 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
Routing Engine 0	REV 07	740-026942		RE-DUO-C2600-16G-S
Routing Engine 1	REV 07	740-026942		RE-DUO-C2600-16G-S
CB 0	REV 13	710-022606		CB-TXP-S
CB 1	REV 14	710-022606		CB-TXP-S
SIB F13 0	REV 10	750-035002	PROTOXCLEI	SIB-TXP-3D-F13-S
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 1	REV 10	750-035002	PROTOXCLEI	SIB-TXP-3D-F13-S
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		

Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-048813		
Xcvr 10	REV 01	740-048813		
Xcvr 12	REV 01	740-048813		
Xcvr 14	REV 01	740-048813		
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 6	REV 16	750-035002	PROTOXCLEI	SIB-TXP-3D-F13
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 7	REV 10	750-035002	PROTOXCLEI	SIB-TXP-3D-F13-S
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 9	REV 16	750-035002	PROTOXCLEI	SIB-TXP-3D-F13
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D

Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 11	REV 10	750-035002	PROTOXCLEI	750-035002
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-048813		
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F13 12	REV 16	750-035002	PROTOXCLEI	SIB-TXP-3D-F13
Xcvr 0	REV 01	740-047547		CXP-TXP-3D
Xcvr 1	REV 01	740-047547		CXP-TXP-3D
Xcvr 2	REV 01	740-047547		CXP-TXP-3D
Xcvr 3	REV 01	740-047547		CXP-TXP-3D
Xcvr 4	REV 01	740-047547		CXP-TXP-3D
Xcvr 5	REV 01	740-047547		CXP-TXP-3D
Xcvr 6	REV 01	740-047547		CXP-TXP-3D
Xcvr 7	REV 01	740-047547		CXP-TXP-3D
Xcvr 8	REV 01	740-047547		CXP-TXP-3D
Xcvr 10	REV 01	740-047547		CXP-TXP-3D
Xcvr 12	REV 01	740-047547		CXP-TXP-3D
Xcvr 14	REV 01	740-047547		CXP-TXP-3D
SIB F2S 0/0	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/2	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/4	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 0/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/0	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/2	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/4	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 1/6	REV 08	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/0	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/2	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/4	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 2/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/0	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/2	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/4	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 3/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/0	REV 07	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/2	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/4	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
SIB F2S 4/6	REV 06	750-034978	PROTOXCLEI	SIB-TXP-3D-F2S
Fan Tray 0	REV 10	760-024497		FANTRAY-TXP-H-S
Fan Tray 1	REV 10	760-024497		FANTRAY-TXP-H-S
Fan Tray 2	REV 10	760-024502		FANTRAY-TXP-V-S
Fan Tray 3	REV 10	760-024502		FANTRAY-TXP-V-S
Fan Tray 4	REV 10	760-024502		FANTRAY-TXP-V-S
Fan Tray 5	REV 10	760-024502		FANTRAY-TXP-V-S

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1cc0-re0:
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Hardware inventory:
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Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-027486	IPMJ700DRD	CHAS-BP-T1600-S
FPM Display	REV 04	710-021387		CRAFT-T1600-S
CIP	REV 06	710-002895		CIP-L-T640-S
PEM 0	REV 05	740-036442	IPUPAG6KAA	PWR-T-6-60-DC-S
PEM 1	REV 05	740-036442	IPUPAG6KAA	PWR-T-6-60-DC-S
SCG 0	REV 18	710-003423		SCG-T-S
SCG 1	REV 18	710-003423		SCG-T-S
Routing Engine 0	REV 10	740-026941		RE-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 0	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
FPC 3	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 13	750-033423	XXXXXXXXDD	PF-12-24XGE-SFPP
FPC 4	REV 02	750-045173	IP9IAL4DAC	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
FPC 5	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
FPC 6	REV 01	750-045173	IP9IAL4DAB	T4000-FPC5-3D
PIC 0	REV 17	750-034624	IP9IAL2DAA	PF-12XGE-SFPP
PIC 1	REV 10	750-035293	IP9IAL3DAA	PF-1CGE-CFP
SIB 0	REV 06	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
SIB 1	REV 06	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
SIB 2	REV 06	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		
Xcvr 3	REV 01	740-048813		
Xcvr 4	REV 01	740-048813		
Xcvr 5	REV 01	740-048813		
Xcvr 6	REV 01	740-048813		
Xcvr 7	REV 01	740-048813		
SIB 3	REV 07	750-041657	PROTOXCLEI	SIB-TXP-3D-LCC
Xcvr 0	REV 01	740-048813		
Xcvr 1	REV 01	740-048813		
Xcvr 2	REV 01	740-048813		

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Xcvr 3      REV 01  740-048813
Xcvr 4      REV 01  740-048813
Xcvr 5      REV 01  740-048813
Xcvr 6      REV 01  740-048813
Xcvr 7      REV 01  740-048813
SIB 4       REV 06  750-041657  PROTOXCLEI  SIB-TXP-3D-LCC
Xcvr 0      REV 01  740-048813
Xcvr 1      REV 01  740-048813
Xcvr 2      REV 01  740-048813
Xcvr 3      REV 01  740-048813
Xcvr 4      REV 01  740-048813
Xcvr 5      REV 01  740-048813
Xcvr 6      REV 01  740-048813
Xcvr 7      REV 01  740-048813
Fan Tray 0  FANTRAY-T-S
Fan Tray 1  FANTRAY-T-S
Fan Tray 2  FANTRAY-TXP3D-LCC-R-S
[Output Truncated]

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show chassis hardware detail (TX Matrix Plus Router with 3D SIBs)

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user@host> show chassis hardware detail
sfc0-re0:
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Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              JN11CAAA4AHB
Midplane             REV 05  710-022574  ABAC4696       SFC Midplane
FPM Display          REV 09  710-024027  EH3138         TXP FPM Display
CIP 0                REV 12  710-023792  EF6349         TXP CIP
CIP 1                REV 12  710-023792  EG5294         TXP CIP
PEM 0                Rev 06  740-027463  XH04595        Power Entry Module
PEM 1                Rev 06  740-027463  XH04592        Power Entry Module
Routing Engine 0     REV 07  740-026942  P737A-002541   RE-DUO-2600
  ad0  3823 MB  SMART CF      2011030400062C132C13 Compact Flash
  ad1  62720 MB SMART Lite SATA Drive 201105100009A452A452 Disk 1
Routing Engine 1     REV 07  740-026942  P737A-002602   RE-DUO-2600
  ad0  3823 MB  SMART CF      20110508085EE471E471 Compact Flash
  ad1  62720 MB SMART Lite SATA Drive 201110210089DF39DF39 Disk 1
CB 0                 REV 15  710-022606  EH4376         SFC Control Board
CB 1                 REV 15  710-022606  EH4379         SFC Control Board
SPMB 0               BUILTIN
SPMB 1               BUILTIN
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

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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

1cc0-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

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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

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show chassis hardware lcc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis hardware lcc 0
lcc0-re0:
-----
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              REV 01  710-027486  JN11B23FEAHA  T1600
Midplane            REV 03  710-002901  RC9787        T-series Backplane
FPM GBUS            REV 11  710-021387  BBAL9612      T640 FPM Board
FPM Display          REV 04  710-002895  BBAN0605      T1600 FPM Display
CIP                  REV 06  740-036442  1G022060143  T-series CIP
PEM 0                REV 05  740-036442  1G022060011  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

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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)

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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

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Xcvr 14	REV 01	740-047547	XB34FB023	CXP Module
SIB F13 3	REV 01	710-035001	EJ2612	F13 SIB 3D
B Board	REV 01	711-035082	EJ3815	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2678	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB04C	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB00Z	CXP Module
Xcvr 4	REV 01	740-047547	XB47FB036	CXP Module
Xcvr 6	REV 01	740-047547	XB47FB029	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02N	CXP Module
Xcvr 10	REV 01	740-047547	XB42FB0CS	CXP Module
Xcvr 12	REV 01	740-047547	XB47FB01X	CXP Module
Xcvr 14	REV 01	740-047547	XB48FB02F	CXP Module
SIB F13 6	REV 05	750-035002	EK2675	F13 SIB 3D
B Board	REV 03	711-035082	EK2612	F13 SIB 3D Mezz
P Board	REV 04	711-043544	EK1179	F13 SIB 3D Power
Xcvr 0	REV 01	740-047547	XB48FB01T	CXP Module
Xcvr 2	REV 01	740-047547	XB48FB02M	CXP Module
Xcvr 4	REV 01	740-047547	XB48FB031	CXP Module
Xcvr 6	REV 01	740-047547	XB48FB04P	CXP Module
Xcvr 8	REV 01	740-047547	XB48FB02T	CXP Module
Xcvr 10	REV 01	740-047547	XB34FB01V	CXP Module
Xcvr 12	REV 01	740-047547	XB48FB02C	CXP Module
Xcvr 14		NON-JNPR		No Module
SIB F13 12	REV 01	710-035001	EJ2631	F13 SIB 3D
B Board	REV 01	711-035082	EJ3808	F13 SIB 3D Mezz
P Board	REV 01	711-043544	EJ2676	F13 SIB 3D Power
SIB F2S 0/0	REV 01	711-034977	EH9829	F2S SIB 3D
B Board	REV 01	711-034979	EH9927	F2S SIB 3D Mezz
SIB F2S 0/2	REV 01	711-034977	EH9791	F2S SIB 3D
B Board	REV 01	711-034979	EH9852	F2S SIB 3D Mezz
SIB F2S 0/4	REV 01	711-034977	EH9803	F2S SIB 3D
B Board	REV 01	711-034979	EH9915	F2S SIB 3D Mezz
SIB F2S 0/6	REV 01	711-034977	EH9763	F2S SIB 3D
B Board	REV 01	711-034979	EH9880	F2S SIB 3D Mezz
SIB F2S 1/0	REV 01	711-034977	EH9757	F2S SIB 3D
B Board	REV 01	711-034979	EH9889	F2S SIB 3D Mezz
SIB F2S 1/2	REV 01	711-034977	EH9815	F2S SIB 3D
B Board	REV 01	711-034979	EH9890	F2S SIB 3D Mezz
SIB F2S 1/4	REV 08	750-034978	EN1954	F2S SIB 3D
B Board	REV 02	711-034979	EN1436	F2S SIB 3D Mezz
SIB F2S 1/6	REV 01	711-034977	EJ7054	F2S SIB 3D
B Board	REV 01	711-034979	EJ8238	F2S SIB 3D Mezz
SIB F2S 2/0	REV 01	711-034977	EH9830	F2S SIB 3D
B Board	REV 01	711-034979	EH9844	F2S SIB 3D Mezz
SIB F2S 2/2	REV 01	711-034977	EH9818	F2S SIB 3D
B Board	REV 01	711-034979	EH9888	F2S SIB 3D Mezz
SIB F2S 2/4	REV 01	711-034977	EH9795	F2S SIB 3D
B Board	REV 01	711-034979	EH9869	F2S SIB 3D Mezz
SIB F2S 2/6	REV 01	711-034977	EJ7026	F2S SIB 3D
B Board	REV 01	711-034979	EJ8273	F2S SIB 3D Mezz
SIB F2S 3/0	REV 01	711-034977	EH9811	F2S SIB 3D
B Board	REV 01	711-034979	EH9892	F2S SIB 3D Mezz
SIB F2S 3/2	REV 01	711-034977	EH9812	F2S SIB 3D
B Board	REV 01	711-034979	EH9877	F2S SIB 3D Mezz
SIB F2S 3/4	REV 08	750-034978	EN1947	F2S SIB 3D
B Board	REV 02	711-034979	EN1471	F2S SIB 3D Mezz
Fan Tray 0	REV 10	760-024497	EH3313	Front Fan Tray
Fan Tray 1	REV 10	760-024497	EH3290	Front Fan Tray
Fan Tray 2	REV 10	760-024502	EH3292	Rear Fan Tray
Fan Tray 3	REV 10	760-024502	EH3287	Rear Fan Tray

Fan Tray 4	REV 10	760-024502	EH3286	Rear Fan Tray
Fan Tray 5	REV 10	760-024502	EH3285	Rear Fan Tray

show chassis hardware (16-Port 10-Gigabit Ethernet MPC with SFP+ Optics [MX Series Routers])

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN112D865AFA	MX960
Midplane	REV 03	710-013698	TS3339	MX960 Backplane
FPM Board	REV 03	710-014974	WW6267	Front Panel Display
PDM	Rev 03	740-013110	QCS12485026	Power Distribution
Module				
PEM 0	Rev 04	740-013682	QCS12434086	PS 1.7kW; 200-240VAC
in				
PEM 1	Rev 04	740-013682	QCS1243408Z	PS 1.7kW; 200-240VAC
in				
PEM 2	Rev 04	740-013682	QCS1243407X	PS 1.7kW; 200-240VAC
in				
Routing Engine 0	REV 07	740-015113	9009009677	RE-S-1300
Routing Engine 1	REV 07	740-015113	9009011510	RE-S-1300
CB 0	REV 03	710-021523	XF0394	MX SCB
CB 1	REV 03	710-021523	XF0550	MX SCB
CB 2	REV 03	710-021523	XD7455	MX SCB
FPC 4	REV 02	750-028467	JR6127	MPC M 16x 10GE
CPU	REV 02	711-029089	JX0129	AS PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Fan Tray 0	REV 05	740-014971	TP9990	Fan Tray
Fan Tray 1	REV 05	740-014971	VS1709	Fan Tray

show chassis hardware (MPC3E [MX Series Routers])

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1101AFEAFB	MX480
Midplane	REV 05	710-017414	TR4444	MX480 Midplane
FPM Board	REV 02	710-017254	KG6056	Front Panel Display
PEM 0	Rev 03	740-017330	QCS082090FC	PS 1.2-1.7kW; 100-240V
PEM 1	Rev 03	740-017330	QCS082090FD	PS 1.2-1.7kW; 100-240V
Routing Engine 0	REV 07	740-013063	9009004124	RE-S-2000
Routing Engine 1	REV 07	740-013063	9009005569	RE-S-2000
CB 0	REV 07	710-021523	XZ3587	MX SCB
CB 1	REV 03	710-021523	KH8306	MX SCB
FPC 1	REV 04.1.07	750-033205	P1240	MPC Type 3
CPU	REV 01	711-035209	YL0504	HMPC PMB 2G
MIC 1	REV 10	750-033199	YX4495	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	C22CQNE	CFP-100G-LR4
FPC 2	REV 26	750-016670	KH0045	DPCE 40x 1GE R EQ
CPU	REV 07	710-013713	KF5448	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PF21JHU	SFP-SX

PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 9	REV 01	740-011613	AM0813S8ZL6	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 02	740-011613	PGL2KYF	SFP-SX
Xcvr 2	REV 01	740-011613	AM0806S8N4P	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 5	REV 01	740-011613	AM0815S967N	SFP-SX
Xcvr 7	REV 01	740-011613	AM0806S8N1X	SFP-SX
Xcvr 8	REV 01	740-011613	AM0815S967J	SFP-SX
Xcvr 9	REV 01	740-011613	AM0815S967M	SFP-SX
FPC 3	REV 12.2.09	750-033205	YR9443	MPC Type 3
CPU	REV 03	711-035209	YL6931	HMPC PMB 2G
MIC 0	REV 05	750-033199	YR3269	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	ULH0KG3	CFP-100G-LR4
MIC 1	REV 02	750-033199	YG3245	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-032210	ULH0KGF	CFP-100G-LR4
FPC 4	REV 12.3.09	750-033205	YR9437	MPC Type 3
CPU	REV 03	711-035209	YT5857	HMPC PMB 2G
MIC 0	REV 05	750-033199	YR3295	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12000187	CFP-100G-SR10
MIC 1	REV 10	750-033199	YX4518	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00008	CFP-100G-SR10
FPC 5	REV 06	750-024884	JW9769	MPC Type 2 3D EQ
CPU	REV 02	711-028401	JR6158	MPC PMB 2G Proto
MIC 0	REV 05	750-028387	JR6197	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M71112	XFP-10G-SR
Xcvr 1	REV 02	740-014289	T08L85610	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
MIC 1	REV 22	750-028392	YM0053	3D 20x 1GE(LAN) SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011613	AM0703S005B	SFP-SX
Xcvr 1	REV 01	740-011613	E07L01352	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 5	REV 01	740-013111	6500217	SFP-T
Xcvr 9	REV 02	740-013111	8499527	SFP-T
Fan Tray				Left Fan Tray

The PIC number for MIC 1 always starts from 2 (even if the first MIC is a 1X100GE CFP or a legacy MIC).

show chassis hardware (QFX3500 Switches)

```
user@switch> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis				QFX3500
Routing Engine 0		BUILTIN	BUILTIN	QFX Routing Engine
FPC 0	REV 04	750-044071	BBAR3902	QFX3500-48S4Q-AFI
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	48x 10G-SFP+
PIC 1		BUILTIN	BUILTIN	15x 10G-SFP+
MGMT BRD	REV 02	750-044063	BBAR0398	QFX3500-MGMT-SFP-AFO
Xcvr 0	REV 01	740-011614	AC0946S0BD1	SFP-LX10
Xcvr 1	REV 02	740-013111	A281922	SFP-T

Power Supply 0	Rev 04	740-032091	UI00677	JPSU-650W-AC-AFI
Power Supply 1	REV 00	740-041741	VJ00162	JPSU-650W-AC-AFO
Fan Tray 0				QFX Fan Tray, Back to
Front Airlfow				
Fan Tray 1				QFX Fan Tray, Back to
Front Airlfow				
Fan Tray 2				QFX Fan Tray, Back to
Front Airlfow				

show chassis hardware detail (QFX3500 Switches)

```
user@switch> show chassis hardware detail
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN000TEST5	QFX3500
Routing Engine 0		BUILTIN	BUILTIN	QFX Routing Engine
FPC 0	REV 05	750-036931	EE0823	QFX3500-48S4Q-AFI

CPU				
PIC 0		BUILTIN	BUILTIN	FPC CPU
		BUILTIN	BUILTIN	48x 10G-SFP+
Xcvr 0	REV 01	740-030589	S99E270079	SFP+-10G-LPBK
Xcvr 1	REV 01	740-030589	S9AK450099	SFP+-10G-LPBK
Xcvr 2	REV 01	740-030589	S99E270078	SFP+-10G-LPBK
Xcvr 3	REV 01	740-030589	S9AK450098	SFP+-10G-LPBK
Xcvr 4	REV 01	740-030589	S99E270075	SFP+-10G-LPBK
Xcvr 5	REV 01	740-030589	S9AK450093	SFP+-10G-LPBK
Xcvr 6	REV 01	740-030589	S9AK450097	SFP+-10G-LPBK
Xcvr 7	REV 01	740-030589	S9AK450095	SFP+-10G-LPBK
Xcvr 8	REV 01	740-030589	S99E270072	SFP+-10G-LPBK
Xcvr 9	REV 01	740-030589	S99E270073	SFP+-10G-LPBK
Xcvr 10	REV 01	740-030589	S99E270080	SFP+-10G-LPBK
Xcvr 11	REV 01	740-030589	S9AK450169	SFP+-10G-LPBK
Xcvr 12	REV 01	740-030589	S99E270076	SFP+-10G-LPBK
Xcvr 13	REV 01	740-030589	S9AK450167	SFP+-10G-LPBK
Xcvr 14	REV 01	740-030589	S9AK450170	SFP+-10G-LPBK
Xcvr 15	REV 01	740-030589	S9AK450166	SFP+-10G-LPBK
Xcvr 16	REV 01	740-030589	S9AK450092	SFP+-10G-LPBK
Xcvr 17	REV 01	740-030589	S9AK450163	SFP+-10G-LPBK
Xcvr 18	REV 01	740-030589	S9AK450094	SFP+-10G-LPBK
Xcvr 19	REV 01	740-030589	S9AK450100	SFP+-10G-LPBK
Xcvr 20	REV 01	740-030589	S9AK450168	SFP+-10G-LPBK
Xcvr 21	REV 01	740-030589	S9AK450165	SFP+-10G-LPBK
Xcvr 22	REV 01	740-030589	S9AK450073	SFP+-10G-LPBK
Xcvr 23	REV 01	740-030589	S9AK450164	SFP+-10G-LPBK
Xcvr 24	REV 01	740-030589	S9AK450074	SFP+-10G-LPBK
Xcvr 25	REV 01	740-030589	SA62270195	SFP+-10G-LPBK
Xcvr 26	REV 01	740-030589	S9AK450078	SFP+-10G-LPBK
Xcvr 27	REV 01	740-030589	S9AK450024	SFP+-10G-LPBK
Xcvr 28	REV 01	740-030589	S9AK450027	SFP+-10G-LPBK
Xcvr 29	REV 01	740-030589	S9AK450080	SFP+-10G-LPBK
Xcvr 30	REV 01	740-030589	S9AK450030	SFP+-10G-LPBK
Xcvr 31	REV 01	740-030589	S9AK450025	SFP+-10G-LPBK
Xcvr 32	REV 01	740-030589	S9AK450023	SFP+-10G-LPBK
Xcvr 33	REV 01	740-030589	S9AK450075	SFP+-10G-LPBK
Xcvr 34	REV 01	740-030589	S9AK450161	SFP+-10G-LPBK
Xcvr 35	REV 01	740-030589	S9AK450071	SFP+-10G-LPBK
Xcvr 36	REV 01	740-030589	S9AK450072	SFP+-10G-LPBK
Xcvr 37	REV 01	740-030589	S9AK450022	SFP+-10G-LPBK
Xcvr 38	REV 01	740-030589	S9AK450021	SFP+-10G-LPBK
Xcvr 39	REV 01	740-030589	S9AK450175	SFP+-10G-LPBK

Xcvr 40	REV 01	740-030589	S9AK450162	SFP+-10G-LPBK
Xcvr 41	REV 01	740-030589	S99E270074	SFP+-10G-LPBK
Xcvr 42	REV 01	740-030589	S9AK450174	SFP+-10G-LPBK
Xcvr 43	REV 01	740-030589	S9AK450077	SFP+-10G-LPBK
Xcvr 44	REV 01	740-030589	S9AK450076	SFP+-10G-LPBK
Xcvr 45	REV 01	740-030589	S9AK450026	SFP+-10G-LPBK
Xcvr 46	REV 01	740-030589	S9AK450079	SFP+-10G-LPBK
Xcvr 47	REV 01	740-030589	S9AK450029	SFP+-10G-LPBK
PIC 1		BUILTIN	BUILTIN	15x 10G-SFP+
Xcvr 1	REV 01	740-032986	QA170087	QSFP+-40G-SR4
Xcvr 4	REV 01	740-032986	QA360442	QSFP+-40G-SR4
Xcvr 8	REV 01	740-032986	QA170091	QSFP+-40G-SR4
Xcvr 12	REV 01	740-032986	QA170042	QSFP+-40G-SR4
MGMT BRD	REV 08	750-036946	EE0731	QFX3500-MB
Power Supply 0	Rev 04	740-032091	UI00690	QFX PS 650W AC
Power Supply 1	Rev 04	740-032091	UI00679	QFX PS 650W AC
Fan Tray 0				QFX Fan Tray
Fan Tray 1				QFX Fan Tray

show chassis hardware models (QFX3500 Switches)

```

user@switch> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Routing Engine 0      BUILTIN    BUILTIN
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      BUILTIN
FPC 0          REV 02    711-032234
Power Supply 0  PSMI 2C  11-d65800

```

show chassis hardware clei-models (QFX5100 Switches)

```

user@switch> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Routing Engine 0      BUILTIN    CMMNV10BRA
FPC 0          REV 01    611-053010  CMMNV10BRA
PIC 0          BUILTIN    CMMNV10BRA
Power Supply 0  REV 03    740-053352  MUPABHBAA      JPSU-850W-AC-AFO
Power Supply 1  REV 03    740-053352  MUPABHBAA      JPSU-850W-AC-AFO
Fan Tray 0
Fan Tray 1
Fan Tray 2          QFX5100-96S-FANAFO
QFX5100-96S-FANAFO
QFX5100-96S-FANAFO

```

show chassis hardware (QFX10002 Switches)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0      BUILTIN    BUILTIN        RE-QFX10002-36Q

```


FPC 0	REV 26	750-059497	ACNL1387	QFX10002-36Q
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	36X40G
Xcvr 0	REV 01	740-038623	MOC15476230389	QSFP+-40G-CU1M
Xcvr 1	REV 01	740-038623	MOC15476230438	QSFP+-40G-CU1M
Xcvr 2	REV 01	740-038623	MOC15446231917	QSFP+-40G-CU1M
Xcvr 3	REV 01	740-038623	MOC15446232043	QSFP+-40G-CU1M
Xcvr 4	REV	740-038624	APF15470032AVB	QSFP+-40G-CU3M
Xcvr 5	REV	740-038624	APF15470032H15	QSFP+-40G-CU3M
Xcvr 6	REV	740-038624	APF15470032A9J	QSFP+-40G-CU3M
Xcvr 7	REV	740-038624	APF15470032AG7	QSFP+-40G-CU3M
Xcvr 8	REV	740-038624	APF15470032ALD	QSFP+-40G-CU3M
Xcvr 9	REV 01	740-053203	APF15470071V43	QSFP+-40G-ACU7M
Xcvr 10	REV 01	740-053203	APF15470071V15	QSFP+-40G-ACU7M
Xcvr 11	REV 01	740-053203	APF15470071V12	QSFP+-40G-ACU7M
Xcvr 13	REV	740-038624	APF15470032H1N	QSFP+-40G-CU3M
Xcvr 18	REV 01	740-053203	APF154800738HW	QSFP+-40G-ACU7M
Xcvr 19	REV 01	740-038153	MOC12161530041	QSFP+-40G-CU3M
Xcvr 20	REV 01	740-038153	APF15500034A29	QSFP+-40G-CU3M
Xcvr 30	REV 01	740-038623	MOC15476230444	QSFP+-40G-CU1M
Xcvr 31	REV 01	740-032986	QC330038	QSFP+-40G-SR4
Xcvr 32	REV 01	740-032986	QC290540	QSFP+-40G-SR4
Mezz	REV 02	711-059316	ACNG9344	QFX10002 36X40G Mezz
Power Supply 0	REV 03	740-054405	1EDN5389293	AC AFO 1600W PSU
Power Supply 1	REV 03	740-054405	1EDN5346300	AC AFO 1600W PSU
Fan Tray 0				QFX10002 Fan Tray 0,
Front to Back Airflow - AFO				
Fan Tray 1				QFX10002 Fan Tray 1,
Front to Back Airflow - AFO				
Fan Tray 2				QFX10002 Fan Tray 2,
Front to Back Airflow - AFO				

show chassis hardware detail (QFX10002 Switches)

```

user@switch> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0      BUILTIN    BUILTIN      RE-QFX10002-72Q
ada0  8193 MB  QEMU          QM00001      Virtio Block Disk
ada1  4096 MB  QEMU          QM00002      Virtio Block Disk
ada2  512 MB   QEMU          QM00003      Virtio Block Disk
ada3  1024 MB  QEMU          QM00004      Virtio Block Disk
usb0 (addr 0.1) UHCI root HUB 0 Intel        uhub0
usb0 (addr 1.1) EHCI root HUB 0 Intel        uhub1
usb0 (addr 1.2) product 0x0020 32 vendor 0x8087 uhub2
usb0 (addr 1.3) Ultra Fit 21891 SanDisk      umass0
FPC 0          REV 05    750-055415  ACAM4724      QFX10002-72Q
CPU           BUILTIN    BUILTIN      FPC CPU

```

show chassis hardware (QFX10008 and QFX10016 Switches)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 28    750-054097  ACPG3671      QFX10008 Midplane
Routing Engine 0      BUILTIN    BUILTIN      Routing Engine

```

Routing Engine 1		BUILTIN	BUILTIN	Routing Engine
CB 0	REV 03	750-068820	ACPA3224	Control Board
CB 1	REV 03	750-068820	ACPM9059	Control Board
FPC 0	REV 33	750-051354	ACNP4522	ULC-36Q-12Q28
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	36X40G
Xcvr 0	REV 01	740-038623	MOC16016230802	QSFP+-40G-CU1M
Xcvr 1	REV 01	740-038623	MOC16016230802	QSFP+-40G-CU1M
Xcvr 2	REV 01	740-038623	MOC16016231080	QSFP+-40G-CU1M
Xcvr 3	REV 01	740-038623	MOC16016231080	QSFP+-40G-CU1M
Xcvr 4	REV	740-038624	APF16220038H15	QSFP+-40G-CU3M
Xcvr 5	REV	740-038624	APF16220038H5M	QSFP+-40G-CU3M
Xcvr 6	REV	740-038624	APF160600308W8	QSFP+-40G-CU3M
Xcvr 8	REV	740-038624	APF16210038FFL	QSFP+-40G-CU3M
Xcvr 9	REV	740-038624	APF16210038F6F	QSFP+-40G-CU3M
Xcvr 10	REV	740-038624	APF1605003032B	QSFP+-40G-CU3M
Xcvr 11	REV	740-038624	APF16070030CDB	QSFP+-40G-CU3M
Xcvr 13	REV	740-038624	APF16210038FEW	QSFP+-40G-CU3M
Xcvr 15	REV 01	740-052307	APF16100071C1L	QSFP+-40G-ACU7M
Xcvr 16	REV	740-038625	APF1623005048E	QSFP+-40G-CU5M
Xcvr 17	REV	740-038625	APF16230050471	QSFP+-40G-CU5M
Xcvr 18	REV	740-038625	APF1623005044D	QSFP+-40G-CU5M
Xcvr 19	REV 01	740-052307	APF16100071C30	QSFP+-40G-ACU7M
Xcvr 20	REV	740-038625	APF16290055004	QSFP+-40G-CU5M
Xcvr 21	REV 01	740-038153	APF1622003970G	QSFP+-40G-CU3M
Xcvr 22	REV	740-038624	APF16190036R90	QSFP+-40G-CU3M
Xcvr 23	REV	740-038624	APF16050030374	QSFP+-40G-CU3M
Xcvr 24	REV 01	740-038153	APF162400318HC	QSFP+-40G-CU3M
Xcvr 30	REV	740-038624	APF1606003097A	QSFP+-40G-CU3M
Xcvr 31	REV 01	740-052307	APF160500702R9	QSFP+-40G-ACU7M
Xcvr 32	REV	740-038624	APF16220038GVR	QSFP+-40G-CU3M
FPD Board	REV 07	711-054687	ACPC7158	QFX10000 FPD
Power Supply 0	REV 02	740-049388	1EDL63104D6	QFX10000 AC
Power Supply 1	REV 02	740-049388	1EDL62503XC	QFX10000 AC
Power Supply 2	REV 02	740-049388	1EDL62503XS	QFX10000 AC
Power Supply 3	REV 02	740-049388	1EDL62503T8	QFX10000 AC
Power Supply 4	REV 02	740-049388	1EDL62503TR	QFX10000 AC
Power Supply 5	REV 02	740-049388	1EDL62503T5	QFX10000 AC
FTC 0	REV 15	750-050108	ACPF4227	QFX10000 FTC
FTC 1	REV 15	750-050108	ACPF4228	QFX10000 FTC
Fan Tray 0	REV 09	760-054372	ACNV5506	QFX10008 FHB
Fan Tray 1	REV 09	760-054372	ACNV5365	QFX10008 FHB
SIB 0	REV 27	750-050058	ACPM4212	QFX10008 SIB
SIB 1	REV 27	750-050058	ACPM4253	QFX10008 SIB
SIB 2	REV 27	750-050058	ACPM4174	QFX10008 SIB
SIB 3	REV 27	750-050058	ACPM4191	QFX10008 SIB
SIB 4	REV 27	750-050058	ACPM4216	QFX10008 SIB
SIB 5	REV 27	750-050058	ACPM4286	QFX10008 SIB

show chassis hardware detail (QFX10008 and QFX10016 Switches)

```

user@switch> show chassis hardware details
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               12345         QFX10008
Midplane      REV 01   750-054097  ACAM1754      QFX10008 Midplane
Routing Engine 0
ada0  8193 MB  QEMU          QM00001      Virtio Block Disk
ada1  4096 MB  QEMU          QM00002      Virtio Block Disk
ada2   512 MB  QEMU          QM00003      Virtio Block Disk
ada3  1024 MB  QEMU          QM00004      Virtio Block Disk

```

```

usb0 (addr 1) UHCI root HUB 0      Intel      uhub0
usb0 (addr 1) EHCI root HUB 0      Intel      uhub1
usb0 (addr 2) product 0x0020 32    vendor 0x8087 uhub2
Routing Engine 1      BUILTIN      BUILTIN      Routing Engine
ada0  8193 MB QEMU          QM00001      Virtio Block Disk
ada1  4096 MB QEMU          QM00002      Virtio Block Disk
ada2  512 MB  QEMU          QM00003      Virtio Block Disk
ada3  1024 MB QEMU          QM00004      Virtio Block Disk
usb0 (addr 0.1) UHCI root HUB 0    Intel      uhub0
usb0 (addr 1.1) EHCI root HUB 0    Intel      uhub1
usb0 (addr 1.2) product 0x0020 32  vendor 0x8087 uhub2
CB 0      REV 16  750-052688  ACAM7936      Control Board
CB 1      REV 18  750-052688  ACAM7708      Control Board
FPC 0      REV 26  750-051351  ACPJ1372      ULC-60S-6Q Main Board
CPU              BUILTIN      BUILTIN      FPC CPU

```

show chassis hardware interconnect-device (QFabric Systems)

```

user@switch> show chassis hardware interconnect-device interconnect1
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              REV 07                BH0208188289  QFX_olive
Midplane            REV 07  750-021261    BH0208188289  QFX Midplane
CB 0                 REV 07  750-021261    BH0208188289  QFXIC08-CB4S

```

show chassis hardware node-device (QFabric Systems)

```

user@switch> show chassis hardware node-device node1
Routing Engine 0  BUILTIN      BUILTIN      QFX Routing Engine
node1            REV 05  711-032234    ED3694        QFX3500-48S4Q-AFI

CPU              BUILTIN      BUILTIN      FPC CPU
PIC 0            BUILTIN      BUILTIN      48x 10G-SFP+
Xcvr 8           REV 01  740-030658    AD0946A028B   SFP+-10G-USR
...

```

show chassis hardware (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              REV 03  711-031896    JN11D1FD7AJA  PTX5000
Midplane            REV 08  760-030647    EG1679        Midplane-8S
FPM                  REV 05  740-032019    ZE00006       Front Panel Display
PDU 0               Rev 05  740-032022    ZJ00018       DC Power Dist Unit
PSM 0               Rev 05  740-032022    ZC00052       DC 12V Power Supply
PSM 1               Rev 04  740-032022    ZD00051       DC 12V Power Supply
PSM 2               Rev 05  740-032022    ZJ00060       DC 12V Power Supply
PSM 3               Rev 04  750-030653    EG3703        Clock Generator
CCG 0               REV 04  750-030653    EG3698        Clock Generator
Routing Engine 0    REV 05  740-026942    P737A-002231  RE-DUO-2600
Routing Engine 1    REV 06  740-026942    P737A-002438  RE-DUO-2600
CB 0                 REV 08  750-030625    EG5519        Control Board
CB 1                 REV 08  750-030625    EG5516        Control Board
FPC 0               REV 18  750-036844    EJ3080        FPC
CPU                 REV 12  711-030686    EJ3260        SNG PMB
FPC 2               REV 13  750-036844    EG5065        FPC
CPU                 REV 09  711-030686    EG4082        SNG PMB

```

PIC 0	REV 14	750-031913	EG5127	24x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	143363A00240	SFP+-10G-SR
Xcvr 1	REV 01	740-031981	UK90PZ1	SFP+-10G-LR
Xcvr 2	REV 01	740-031980	AD1141A04XH	SFP+-10G-SR
Xcvr 3	REV 01	740-031981	UK90Q46	SFP+-10G-LR
Xcvr 4	REV 01	740-031980	AD1141A04X4	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	B11H02560	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11C01589	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AD1141A04XF	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	123363A01094	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AK80LKF	SFP+-10G-SR
Xcvr 12	REV 01	740-031980	183363A01528	SFP+-10G-SR
Xcvr 14	REV 01	740-031980	193363A01079	SFP+-10G-SR
Xcvr 15	REV 01	740-031980	AK80MC8	SFP+-10G-SR
Xcvr 16	REV 01	740-031980	AJC0BHC	SFP+-10G-SR
Xcvr 19	REV 01	740-021309	J08D26856	SFP+-10G-LR
Xcvr 21	REV 01	740-031980	AK80KCT	SFP+-10G-SR
Xcvr 22	REV 01	740-031981	UK90PZL	SFP+-10G-LR
Xcvr 23	REV 01	740-031980	AK80N1V	SFP+-10G-SR
FPC 3	REV 13	750-036844	EG5074	FPC
CPU	REV 09	711-030686	EG4064	SNG PMB
PIC 1	REV 10	750-031903	EG0325	SNG Load
FPC 5	REV 06	750-036844	EH3198	FPC
CPU				
PIC 0	REV 14	750-031913	EG5134	24x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LBH	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11B03724	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FMH	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J00818	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00743	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11B06125	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B11H02529	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AK80LFB	SFP+-10G-SR
Xcvr 12	REV 01	740-031980	193363A01061	SFP+-10G-SR
Xcvr 15	REV 01	740-031980	B11J00687	SFP+-10G-SR
Xcvr 16	REV 01	740-031980	193363A00738	SFP+-10G-SR
Xcvr 18	REV 01	740-031980	AK80MQX	SFP+-10G-SR
Xcvr 19	REV 01	740-021309	J08C17257	SFP+-10G-LR
Xcvr 22	REV 01	740-031980	B11J00730	SFP+-10G-SR
Xcvr 23	REV 01	740-031980	AK80KEE	SFP+-10G-SR
PIC 1	REV 08	750-036710	EG3105	2x 40GE CFP
Xcvr 0	REV 01	740-034554	B260HLT	CFP-40G-LR4
Xcvr 1	REV 01	740-034554	B11C02847	CFP-40G-LR4
FPC 6	REV 18	750-036844	EJ4391	FPC
CPU	REV 12	711-030686	EJ3257	SNG PMB
FPC 7	REV 18	750-036844	EJ4382	FPC
CPU	REV 12	711-030686	EJ3238	SNG PMB
SPMB 0	REV 10	711-030686	EG5418	SNG PMB
SPMB 1	REV 09	711-030686	EG5373	SNG PMB
SIB 0	REV 07	750-030631	EG4858	SIB-I-8S
SIB 1	REV 07	750-030631	EG4872	SIB-I-8S
SIB 2	REV 07	750-030631	EG4866	SIB-I-8S
SIB 3	REV 07	750-030631	EG6011	SIB-I-8S
SIB 4	REV 07	750-030631	EG4907	SIB-I-8S
SIB 5	REV 07	750-030631	EG4879	SIB-I-8S
SIB 6	REV 07	750-030631	EG4864	SIB-I-8S
SIB 7	REV 07	750-030631	EG4899	SIB-I-8S
SIB 8	REV 07	750-030631	EG4880	SIB-I-8S
Fan Tray 0	REV 04	760-032784	EG1496	Vertical Fan Tray
Fan Tray 1	REV 04	760-030642	EG1335	Horizontal Fan Tray
Fan Tray 2	REV 02	760-030642	ED4952	Horizontal Fan Tray

show chassis hardware (PTX5000 Packet Transport Router with AC PSM and PDU)

```

user@host> show chassis hardware
Hardware inventory:

```

Item	Version	Part number	Serial number	Description
Chassis			JN12223A6AJA	PTX5000
Midplane	REV 16	750-035893	ACRA1350	Midplane-8S
FPM	REV 12	760-030647	BBBD5625	Front Panel Display
PDU 0	Rev 01	740-048338	1GB83360005	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360074	High Capacity AC PSM
PSM 1	Rev 01	740-048334	1GB43360001	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360104	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360042	High Capacity AC PSM
PSM 4	Rev 01	740-048334	1GB43360068	High Capacity AC PSM
PSM 5	Rev 01	740-048334	1GB43360080	High Capacity AC PSM
PSM 6	Rev 01	740-048334	1GB43360046	High Capacity AC PSM
PSM 7	Rev 01	740-048334	1GB43360100	High Capacity AC PSM
PDU 1	Rev 01	740-048338	1GB83360006	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360069	High Capacity AC PSM
PSM 1	Rev 01	740-048334	1GB43360099	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360050	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360095	High Capacity AC PSM
PSM 4	Rev 01	740-048334	1GB43360101	High Capacity AC PSM
PSM 5	Rev 01	740-048334	1GB43360075	High Capacity AC PSM
PSM 6	Rev 01	740-048334	1GB43360047	High Capacity AC PSM
PSM 7	Rev 01	740-048334	1GB43360019	High Capacity AC PSM
CCG 0	REV 09	750-030653	BBAZ5345	Clock Generator
...				

show chassis hardware (PTX5000 Packet Transport Router with FPC2-PTX-PIA)

```

user@host> show chassis hardware
Hardware inventory:

```

Item	Version	Part number	Serial number	Description
Chassis			JN1204FC0AJA	PTX5000
Midplane	REV 11	750-035893	ACAB8038	Midplane-8S
FPM	REV 12	760-030647	BBBD5619	Front Panel
Display				
PDU 0	Rev 04	740-048336	1GB93470043	High Capacity DC PDU
PSM 0	Rev 04	740-046988	1GB63500184	High Capacity DC PSM
PSM 2	Rev 04	740-046988	1GB63500169	High Capacity DC PSM
PSM 4	Rev 04	740-046988	1GB63500306	High Capacity DC PSM
PSM 6	Rev 04	740-046988	1GB63500074	High Capacity DC PSM
PDU 1	Rev 04	740-048336	1GB93470045	High Capacity DC PDU
PSM 1	Rev 04	740-046988	1GB63500193	High Capacity DC PSM
PSM 3	Rev 04	740-046988	1GB63500143	High Capacity DC PSM
PSM 5	Rev 04	740-046988	1GB63500146	High Capacity DC PSM
PSM 7	Rev 04	740-046988	1GB63500192	High Capacity DC PSM
CCG 0	REV 09	750-030653	BBBC1909	Clock Generator
CCG 1	REV 09	750-030653	BBBD2970	Clock Generator
...				

show chassis hardware clei-models (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:

```

Item	Version	Part number	CLEI code	FRU model number
FPM	REV 08	760-030647	PROTOXCLEI	CRAFT-PTX5000-S

PDU 0	Rev 05	740-032019	IPUPAHLKAA	PWR-SAN-PDU-DC
PSM 0	Rev 05	740-032022	IPUPAHNKAA	PSM-PTX-DC-120-S
PSM 1	Rev 04	740-032022	032022XXXX	PWR-SAN-12-DC
PSM 2	Rev 04	740-032022	032022XXXX	PWR-SAN-12-DC
PSM 3	Rev 05	740-032022	IPUPAHNKAA	PSM-PTX-DC-120-S
CCG 0	REV 04	750-030653	PROTOXCLEI	CCG-PTX-S
CCG 1	REV 04	750-030653	PROTOXCLEI	CCG-PTX-S
Routing Engine 0	REV 05	740-026942		RE-DUO-C2600-16G-S
Routing Engine 1	REV 06	740-026942		RE-DUO-C2600-16G-S
CB 0	REV 08	750-030625	PROTOXCLEI	CB-PTX-S
CB 1	REV 08	750-030625	PROTOXCLEI	CB-PTX-S
FPC 0	REV 18	750-036844	PROTOXCLEI	FPC-PTX-P1-A
FPC 2	REV 13	750-036844	PROTOXCLEI	FPC-PTX-P1-A
PIC 0	REV 14	750-031913	PROTOXCLEI	P1-PTX-24-10GE-SFPP
FPC 3	REV 13	750-036844	PROTOXCLEI	FPC-PTX-P1-A
FPC 5				
PIC 0	REV 14	750-031913	PROTOXCLEI	P1-PTX-24-10GE-SFPP
FPC 6	REV 18	750-036844	PROTOXCLEI	FPC-PTX-P1-A
FPC 7	REV 18	750-036844	PROTOXCLEI	FPC-PTX-P1-A
SIB 0	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 1	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 2	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 3	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 4	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 5	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 6	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 7	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
SIB 8	REV 07	750-030631	PROTOXCLEI	SIB-I-PTX5008
Fan Tray 1	REV 04	760-030642	PROTOXCLEI	FAN-PTX-H-S

show chassis hardware clei-models (PTX5000 Packet Transport Router with AC PSM and PDU)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 16   750-035893  IPMUN00ARA CHAS-MP-PTX5000-S
FPM           REV 12   760-030647  IPUCA7SCAA CRAFT-PTX5000-S
PDU 0         Rev 01   740-048338  PROTOACPDU PDU2-PTX-AC-W
  PSM 0       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 1       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 2       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 3       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 4       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 5       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 6       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 7       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
PDU 1         Rev 01   740-048338  PROTOACPDU PDU2-PTX-AC-W
  PSM 0       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 1       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 2       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 3       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 4       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 5       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 6       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
  PSM 7       Rev 01   740-048334  PROTOACPSM PSM2-PTX-AC
CCG 0         REV 09   750-030653  IPUCA7DCAA CCG-PTX-S
...

```

show chassis hardware clei-models (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 11   750-035893  IPMUN00ARA CHAS-MP-PTX5000-S
FPM           REV 12   760-030647  IPUCA7SCAA CRAFT-PTX5000-S
PDU 0         Rev 04   740-048336  IPUPAL7KAA PDU2-PTX-DC-S
  PSM 0       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
  PSM 2       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
  PSM 4       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
  PSM 6       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
PDU 1         Rev 04   740-048336  IPUPAL7KAA PDU2-PTX-DC-S
  PSM 1       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
  PSM 3       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
  PSM 5       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
  PSM 7       Rev 04   740-046988  IPUPAL8KAA PSM2-PTX-DC-S
CCG 0         REV 09   750-030653  IPUCA7DCAA CCG-PTX-S
CCG 1         REV 09   750-030653  IPUCA7DCAA CCG-PTX-S
...

```

show chassis hardware detail (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1D1FD7AJA    PTX5000
Midplane      REV 03   711-031896  ABAC5589       Midplane-8S
FPM           REV 08   760-030647  EG1679         Front Panel Display
PDU 0         Rev 05   740-032019  ZE00006        DC Power Dist Unit
  PSM 0       Rev 05   740-032022  ZJ00018        DC 12V Power Supply
  PSM 1       Rev 04   740-032022  ZC00052        DC 12V Power Supply
  PSM 2       Rev 04   740-032022  ZD00051        DC 12V Power Supply
  PSM 3       Rev 05   740-032022  ZJ00060        DC 12V Power Supply
CCG 0         REV 04   750-030653  EG3703         Clock Generator
CCG 1         REV 04   750-030653  EG3698         Clock Generator
Routing Engine 0 REV 05   740-026942  P737A-002231   RE-DUO-2600
  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

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Xcvr 14	REV 01	740-031980	193363A01079	SFP+-10G-SR
Xcvr 15	REV 01	740-031980	AK80MC8	SFP+-10G-SR
Xcvr 16	REV 01	740-031980	AJC0BHC	SFP+-10G-SR
Xcvr 19	REV 01	740-021309	J08D26856	SFP+-10G-LR
Xcvr 21	REV 01	740-031980	AK80KCT	SFP+-10G-SR
Xcvr 22	REV 01	740-031981	UK90PZL	SFP+-10G-LR
Xcvr 23	REV 01	740-031980	AK80N1V	SFP+-10G-SR
FPC 3	REV 13	750-036844	EG5074	FPC
CPU	REV 09	711-030686	EG4064	SNG PMB
PIC 1	REV 10	750-031903	EG0325	SNG Load
FPC 5	REV 06	750-036844	EH3198	FPC
CPU				
PIC 0	REV 14	750-031913	EG5134	24x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	AK80LBH	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11B03724	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AK80FMH	SFP+-10G-SR
Xcvr 5	REV 01	740-031980	B11J00818	SFP+-10G-SR
Xcvr 6	REV 01	740-031980	193363A00743	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	B11B06125	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	B11H02529	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AK80LFB	SFP+-10G-SR
Xcvr 12	REV 01	740-031980	193363A01061	SFP+-10G-SR
Xcvr 15	REV 01	740-031980	B11J00687	SFP+-10G-SR
Xcvr 16	REV 01	740-031980	193363A00738	SFP+-10G-SR
Xcvr 18	REV 01	740-031980	AK80MQX	SFP+-10G-SR
Xcvr 19	REV 01	740-021309	J08C17257	SFP+-10G-LR
Xcvr 22	REV 01	740-031980	B11J00730	SFP+-10G-SR
Xcvr 23	REV 01	740-031980	AK80KEE	SFP+-10G-SR
PIC 1	REV 08	750-036710	EG3105	2x 40GE CFP
Xcvr 0	REV 01	740-034554	B260HLT	CFP-40G-LR4
Xcvr 1	REV 01	740-034554	B11C02847	CFP-40G-LR4
FPC 6	REV 18	750-036844	EJ4391	FPC
CPU	REV 12	711-030686	EJ3257	SNG PMB
FPC 7	REV 18	750-036844	EJ4382	FPC
CPU	REV 12	711-030686	EJ3238	SNG PMB
SPMB 0	REV 10	711-030686	EG5418	SNG PMB
SPMB 1	REV 09	711-030686	EG5373	SNG PMB
SIB 0	REV 07	750-030631	EG4858	SIB-I-8S
SIB 1	REV 07	750-030631	EG4872	SIB-I-8S
SIB 2	REV 07	750-030631	EG4866	SIB-I-8S
SIB 3	REV 07	750-030631	EG6011	SIB-I-8S
SIB 4	REV 07	750-030631	EG4907	SIB-I-8S
SIB 5	REV 07	750-030631	EG4879	SIB-I-8S
SIB 6	REV 07	750-030631	EG4864	SIB-I-8S
SIB 7	REV 07	750-030631	EG4899	SIB-I-8S
SIB 8	REV 07	750-030631	EG4880	SIB-I-8S
Fan Tray 0	REV 04	760-032784	EG1496	Vertical Fan Tray
Fan Tray 1	REV 04	760-030642	EG1335	Horizontal Fan Tray
Fan Tray 2	REV 02	760-030642	ED4952	Horizontal Fan Tray

show chassis hardware detail (PTX5000 Packet Transport Router with AC PSM and PDU)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			JN12223A6AJA	PTX5000
Midplane	REV 16	750-035893	ACRA1350	Midplane-8S
FPM	REV 12	760-030647	BBBD5625	Front Panel Display
PDU 0	Rev 01	740-048338	1GB83360005	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360074	High Capacity AC PSM

PSM 1	Rev 01	740-048334	1GB43360001	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360104	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360042	High Capacity AC PSM
PSM 4	Rev 01	740-048334	1GB43360068	High Capacity AC PSM
PSM 5	Rev 01	740-048334	1GB43360080	High Capacity AC PSM
PSM 6	Rev 01	740-048334	1GB43360046	High Capacity AC PSM
PSM 7	Rev 01	740-048334	1GB43360100	High Capacity AC PSM
PDU 1	Rev 01	740-048338	1GB83360006	High Capacity AC WYE PDU
PSM 0	Rev 01	740-048334	1GB43360069	High Capacity AC PSM
PSM 1	Rev 01	740-048334	1GB43360099	High Capacity AC PSM
PSM 2	Rev 01	740-048334	1GB43360050	High Capacity AC PSM
PSM 3	Rev 01	740-048334	1GB43360095	High Capacity AC PSM
PSM 4	Rev 01	740-048334	1GB43360101	High Capacity AC PSM
PSM 5	Rev 01	740-048334	1GB43360075	High Capacity AC PSM
PSM 6	Rev 01	740-048334	1GB43360047	High Capacity AC PSM
PSM 7	Rev 01	740-048334	1GB43360019	High Capacity AC PSM
CCG 0	REV 09	750-030653	BBAZ5345	Clock Generator

show chassis hardware detail (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1204FC0AJA   PTX5000
Midplane      REV 11   750-035893   ACAB8038       Midplane-8S
FPM           REV 12   760-030647   BBBD5619       Front Panel
Display
PDU 0         Rev 04   740-048336   1GB93470043    High Capacity DC PDU
  PSM 0       Rev 04   740-046988   1GB63500184    High Capacity DC PSM
  PSM 2       Rev 04   740-046988   1GB63500169    High Capacity DC PSM
  PSM 4       Rev 04   740-046988   1GB63500306    High Capacity DC PSM
  PSM 6       Rev 04   740-046988   1GB63500074    High Capacity DC PSM
PDU 1         Rev 04   740-048336   1GB93470045    High Capacity DC PDU
  PSM 1       Rev 04   740-046988   1GB63500193    High Capacity DC PSM
  PSM 3       Rev 04   740-046988   1GB63500143    High Capacity DC PSM
  PSM 5       Rev 04   740-046988   1GB63500146    High Capacity DC PSM
  PSM 7       Rev 04   740-046988   1GB63500192    High Capacity DC PSM
CCG 0         REV 09   750-030653   BBBC1909       Clock Generator
CCG 1         REV 09   750-030653   BBBD2970       Clock Generator
...

```

show chassis hardware models (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
FPM           REV 08   760-030647   EG1679         CRAFT-PTX5000-S
PDU 0         Rev 05   740-032019   ZE00006        PWR-SAN-PDU-DC
  PSM 0       Rev 05   740-032022   ZJ00018        PSM-PTX-DC-120-S
  PSM 1       Rev 04   740-032022   ZC00052        PWR-SAN-12-DC
  PSM 2       Rev 04   740-032022   ZD00051        PWR-SAN-12-DC
  PSM 3       Rev 05   740-032022   ZJ00060        PSM-PTX-DC-120-S
CCG 0         REV 04   750-030653   EG3703         CCG-PTX-S
CCG 1         REV 04   750-030653   EG3698         CCG-PTX-S
Routing Engine 0 REV 05   740-026942   P737A-002231   RE-DUO-C2600-16G-S
Routing Engine 1 REV 06   740-026942   P737A-002438   RE-DUO-C2600-16G-S
CB 0          REV 08   750-030625   EG5519         CB-PTX-S
CB 1          REV 08   750-030625   EG5516         CB-PTX-S
FPC 0         REV 18   750-036844   EJ3080         FPC-PTX-P1-A

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FPC 2	REV 13	750-036844	EG5065	FPC-PTX-P1-A
PIC 0	REV 14	750-031913	EG5127	P1-PTX-24-10GE-SFPP
FPC 3	REV 13	750-036844	EG5074	FPC-PTX-P1-A
FPC 5				
PIC 0	REV 14	750-031913	EG5134	P1-PTX-24-10GE-SFPP
FPC 6	REV 18	750-036844	EJ4391	FPC-PTX-P1-A
FPC 7	REV 18	750-036844	EJ4382	FPC-PTX-P1-A
SIB 0	REV 07	750-030631	EG4858	SIB-I-PTX5008
SIB 1	REV 07	750-030631	EG4872	SIB-I-PTX5008
SIB 2	REV 07	750-030631	EG4866	SIB-I-PTX5008
SIB 3	REV 07	750-030631	EG6011	SIB-I-PTX5008
SIB 4	REV 07	750-030631	EG4907	SIB-I-PTX5008
SIB 5	REV 07	750-030631	EG4879	SIB-I-PTX5008
SIB 6	REV 07	750-030631	EG4864	SIB-I-PTX5008
SIB 7	REV 07	750-030631	EG4899	SIB-I-PTX5008
SIB 8	REV 07	750-030631	EG4880	SIB-I-PTX5008
Fan Tray 1	REV 04	760-030642	EG1335	FAN-PTX-H-S

show chassis hardware models (PTX5000 Packet Transport Router with AC PSM and PDU)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 16   750-035893  ACRA1350      CHAS-MP-PTX5000-S
FPM           REV 12   760-030647  BBBD5625      CRAFT-PTX5000-S
PDU 0         Rev 01   740-048338  1GB83360005   PDU2-PTX-AC-W
  PSM 0        Rev 01   740-048334  1GB43360074   PSM2-PTX-AC
  PSM 1        Rev 01   740-048334  1GB43360001   PSM2-PTX-AC
  PSM 2        Rev 01   740-048334  1GB43360104   PSM2-PTX-AC
  PSM 3        Rev 01   740-048334  1GB43360042   PSM2-PTX-AC
  PSM 4        Rev 01   740-048334  1GB43360068   PSM2-PTX-AC
  PSM 5        Rev 01   740-048334  1GB43360080   PSM2-PTX-AC
  PSM 6        Rev 01   740-048334  1GB43360046   PSM2-PTX-AC
  PSM 7        Rev 01   740-048334  1GB43360100   PSM2-PTX-AC
PDU 1         Rev 01   740-048338  1GB83360006   PDU2-PTX-AC-W
  PSM 0        Rev 01   740-048334  1GB43360069   PSM2-PTX-AC
  PSM 1        Rev 01   740-048334  1GB43360099   PSM2-PTX-AC
  PSM 2        Rev 01   740-048334  1GB43360050   PSM2-PTX-AC
  PSM 3        Rev 01   740-048334  1GB43360095   PSM2-PTX-AC
  PSM 4        Rev 01   740-048334  1GB43360101   PSM2-PTX-AC
  PSM 5        Rev 01   740-048334  1GB43360075   PSM2-PTX-AC
  PSM 6        Rev 01   740-048334  1GB43360047   PSM2-PTX-AC
  PSM 7        Rev 01   740-048334  1GB43360019   PSM2-PTX-AC
CCG 0         REV 09   750-030653  BBAZ5345      CCG-PTX-S
...

```

show chassis hardware models (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 11   750-035893  ACAB8038      CHAS-MP-PTX5000-S
FPM           REV 12   760-030647  BBBD5619      CRAFT-PTX5000-S
PDU 0         Rev 04   740-048336  1GB93470043   PDU2-PTX-DC-S
  PSM 0        Rev 04   740-046988  1GB63500184   PSM2-PTX-DC-S
  PSM 2        Rev 04   740-046988  1GB63500169   PSM2-PTX-DC-S
  PSM 4        Rev 04   740-046988  1GB63500306   PSM2-PTX-DC-S
  PSM 6        Rev 04   740-046988  1GB63500074   PSM2-PTX-DC-S
PDU 1         Rev 04   740-048336  1GB93470045   PDU2-PTX-DC-S
  PSM 1        Rev 04   740-046988  1GB63500193   PSM2-PTX-DC-S

```

```

PSM 3          Rev 04  740-046988  1GB63500143  PSM2-PTX-DC-S
PSM 5          Rev 04  740-046988  1GB63500146  PSM2-PTX-DC-S
PSM 7          Rev 04  740-046988  1GB63500192  PSM2-PTX-DC-S
CCG 0          REV 09  750-030653  BBBC1909     CCG-PTX-S
CCG 1          REV 09  750-030653  BBBD2970     CCG-PTX-S
...

```

show chassis hardware extensive (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item              Version  Part number  Serial number  Description
.....
PDU 0             Rev 04   740-032019   UE0003         DC Power Dist Unit
Jedec Code:      0x7fb0                EEPROM Version: 0x02
P/N:             740-032019              S/N:           UE0003
Assembly ID:     0x043d                Assembly Version: 04.00
Date:           11-29-2010             Assembly Flags: 0x00
Version:        Rev 04                 CLEI Code:     032022XXXX
ID: DC Power Dist Unit                FRU Model Number: PWR-SAN-PDU-DC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 3d 04 00 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 32 30 31 39 00 00
Address 0x20: 53 2f 4e 20 55 45 30 30 30 33 00 00 00 1d 0b 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 30 33 32 30 32 32 58 58 58 58 50
Address 0x50: 57 52 2d 53 41 4e 2d 50 44 55 2d 44 43 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 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:           YG00065
Assembly ID:     0x0440                Assembly Version: 04.00
Date:           07-30-2010             Assembly Flags: 0x00
Version:        Rev 04                 CLEI Code:     032022XXXX
ID: DC 12V Power Supply Module          FRU Model Number: PWR-SAN-12-DC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 40 04 00 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 32 30 32 32 00 00
Address 0x20: 53 2f 4e 20 59 47 30 30 30 36 35 00 00 1e 07 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 30 33 32 30 32 32 58 58 58 58 50
Address 0x50: 57 52 2d 53 41 4e 2d 31 32 2d 44 43 20 20 20 20
Address 0x60: 20 20 20 20 20 20 01 00 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 0c ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware extensive (PTX1000 Packet Transport Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item              Version  Part number  Serial number  Description
.....
Chassis                                     UNDEFINED    PTX1000
Pseudo CB 0
Routing Engine 0
FPC 0          REV 06  750-053330  ACAM4850      RE-PTX1000
                                           PTX1000-FPC-P2-BUILTIN

```

CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 288X10GE/72X40GE/24X100GE
Xcvr 2	REV 01	740-046565	QE240845	QSFP+-40G-SR4
Xcvr 3	REV 01	740-046565	QE240962	QSFP+-40G-SR4
Xcvr 5	REV 01	740-032986	ES400LZ	QSFP+-40G-SR4
Xcvr 12	REV 01	740-054053	QE419452	QSFP+-4X10G-SR
Xcvr 18	REV 01	740-054053	QE419481	QSFP+-4X10G-SR
Xcvr 30	REV 01	740-046565	QE440485	QSFP+-40G-SR4
Xcvr 48	REV 01	740-032986	ES400K3	QSFP+-40G-SR4
Xcvr 68	REV 01	740-046565	QF2805J3	QSFP+-40G-SR4
Mezz	REV 05	711-053333	ACAM4282	Mezzanine Board
Power Supply 2	REV 01	740-054405	1EDN4470131	AC AFO 1600W PSU
Power Supply 3	REV 01	740-054405	1EDN4470112	AC AFO 1600W PSU
Fan Tray 0				PTX1000 Fan Tray 0, Front
to Back Airflow - AFO				
Fan Tray 1				PTX1000 Fan Tray 1, Front
to Back Airflow - AFO				
Fan Tray 2				PTX1000 Fan Tray 2, Front
to Back Airflow - AFO				

show chassis hardware extensive (PTX5000 with Control Board 2)

```

user@host> show chassis hardware grep CB
CB 0          REV 06  750-055537  ACLZ9541      Control Board 2
CB 1          REV 06  750-055537  ACLY5329      Control Board 2

```

show chassis hardware (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               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 with Media Services Blade [MSB])

```

user@switch> show chassis hardware extensive
FPC 1          REV 11  750-037207  ZW9726          AS-MCC
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           750-037207      S/N:           ZW9726
Assembly ID:   0x0b37          Assembly Version: 01.11
Date:          02-17-2012      Assembly Flags: 0x00
Version:       REV 11          CLEI Code:     PROTOXCLEI
ID: AS-MCC          FRU Model Number: 750-037207
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
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
Address 0x70: ff ff ff 5e ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 04    711-038173    ZW4819          AS-MCC-PMB
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         711-038173      S/N:          ZW4819
Assembly ID: 0x0b38          Assembly Version: 01.04
Date:        12-30-2011      Assembly Flags: 0x00
Version:     REV 04
ID: AS-MCC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
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
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-MS
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-037214      S/N:          ZW3574
Assembly ID: 0x0a44          Assembly Version: 01.06
Date:        02-19-2012      Assembly Flags: 0x00
Version:     REV 06          CLEI Code:      PROTOXCLEI
ID: AS-MS      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
Address 0x70: ff ff ff 60 c0 03 e5 f4 00 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN          AS-MS
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 ff ff ff
Address 0x30: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

```

Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff c0 02 e6 6c 7f b0 02 ff 0a 44 01 06
PIC 2                BUILTIN        BUILTIN        AS-MXC

```

show chassis hardware (ACX5048 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               VF3714170810  ACX5048
Pseudo CB 0
Routing Engine 0
FPC 0             REV 05      650-056267    VF3714170810  ACX5048
CPU               BUILTIN      BUILTIN        FPC CPU
PIC 0             BUILTIN      BUILTIN        48x10G-6x40G
  Xcvr 0          REV 02      740-011613    NR2051S        SFP-SX
  Xcvr 33         REV 01      740-030589    SE5N290041     SFP+-10G-LPBK
  Xcvr 35         REV 01      740-030589    SE5N290926     SFP+-10G-LPBK
  Xcvr 37         REV 01      740-030589    SE5N290049     SFP+-10G-LPBK
  Xcvr 39         REV 01      740-030589    SE5N290046     SFP+-10G-LPBK
  Xcvr 48         NON-JNPR     409310098     UNKNOWN        UNKNOWN
Power Supply 1    REV 03      740-041741    1GA24081097    JPSU-650W-AC-AFO
Fan Tray 0
  to Back Airflow - AFO          ACX5K Fan Tray 0, Front
Fan Tray 1
  to Back Airflow - AFO          ACX5K Fan Tray 1, Front
Fan Tray 2
  to Back Airflow - AFO          ACX5K Fan Tray 2, Front
Fan Tray 3
  to Back Airflow - AFO          ACX5K Fan Tray 3, Front
Fan Tray 4
  to Back Airflow - AFO          ACX5K Fan Tray 4, Front

```

show chassis hardware detail (ACX5048 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               VF3714170810  ACX5048
Pseudo CB 0
Routing Engine 0
  ad0             509 MB    QEMU HARDDISK  QM00001        Hard Disk
  ad1             4095 MB   QEMU HARDDISK  QM00002        Hard Disk
  ad2             511 MB    QEMU HARDDISK  QM00003        Hard Disk
  ad3             1023 MB   QEMU HARDDISK  QM00004        Hard Disk
  usb0 (addr 1)    product 0x0000 0  vendor 0x0000  uhub1
  usb0 (addr 2)    product 0x0020 32  vendor 0x8087  uhub2
FPC 0             REV 05      650-056267    VF3714170810  ACX5048
CPU               BUILTIN      BUILTIN        FPC CPU
PIC 0             BUILTIN      BUILTIN        48x10G-6x40G
  Xcvr 0          REV 02      740-011613    NR2051S        SFP-SX
  Xcvr 33         REV 01      740-030589    SE5N290041     SFP+-10G-LPBK
  Xcvr 35         REV 01      740-030589    SE5N290926     SFP+-10G-LPBK
  Xcvr 37         REV 01      740-030589    SE5N290049     SFP+-10G-LPBK
  Xcvr 39         REV 01      740-030589    SE5N290046     SFP+-10G-LPBK
  Xcvr 48         NON-JNPR     409310098     UNKNOWN        UNKNOWN
Power Supply 1    REV 03      740-041741    1GA24081097    JPSU-650W-AC-AFO
Fan Tray 0
  to Back Airflow - AFO          ACX5K Fan Tray 0, Front

```

```

Fan Tray 1                               ACX5K Fan Tray 1, Front
  to Back Airflow - AFO
Fan Tray 2                               ACX5K Fan Tray 2, Front
  to Back Airflow - AFO
Fan Tray 3                               ACX5K Fan Tray 3, Front
  to Back Airflow - AFO
Fan Tray 4                               ACX5K Fan Tray 4, Front
  to Back Airflow - AFO

```

show chassis hardware clei-models (ACX5048 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Routing Engine 0          BUILTIN    CMMRG00BRA  ACX5048
FPC 0          REV 05    650-056267  CMMRG00BRA  ACX5048
  PIC 0          BUILTIN    CMMRG00BRA  ACX5048
Power Supply 1  REV 03    740-041741  CMUPABHBAA  JPSU-650W-AC-AFO
Fan Tray 0          ACX5K-FAN
Fan Tray 1          ACX5K-FAN
Fan Tray 2          ACX5K-FAN
Fan Tray 3          ACX5K-FAN
Fan Tray 4          ACX5K-FAN

```

show chassis hardware models (ACX5048 Router)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Routing Engine 0          BUILTIN    BUILTIN        ACX5048
FPC 0          REV 05    650-056267  VF3714170810  ACX5048
  PIC 0          BUILTIN    BUILTIN        ACX5048
Power Supply 1  REV 03    740-041741  1GA24081097  JPSU-650W-AC-AFO
Fan Tray 0          ACX5K-FAN
Fan Tray 1          ACX5K-FAN
Fan Tray 2          ACX5K-FAN
Fan Tray 3          ACX5K-FAN
Fan Tray 4          ACX5K-FAN

```

show chassis hardware (ACX5096 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VB3714510139  ACX5096
Pseudo CB 0
Routing Engine 0          BUILTIN    BUILTIN        ACX5K Routing Engine
FPC 0          REV 09    650-053391  VB3714510139  ACX5096
  CPU          BUILTIN    BUILTIN        FPC CPU
  PIC 0          BUILTIN    BUILTIN        96x10G-8x40G
    Xcvr 0      REV 01    740-021308  ARS186H        SFP+-10G-SR
    Xcvr 2      REV 01    740-031851  AM1045SUA1G    SFP-SX
    Xcvr 10     REV 02    740-011613  NS11KRP        SFP-SX
    Xcvr 14     REV 01    740-031980  AMC0LKL        SFP+-10G-SR
    Xcvr 20     REV 01    740-021308  ARS18A2        SFP+-10G-SR
    Xcvr 30     REV 02    740-011613  PJ21954        SFP-SX
    Xcvr 35     REV 01    740-031851  PN344LV        SFP-SX
    Xcvr 40     REV 01    740-031851  PLG028R        SFP-SX
    Xcvr 41     REV 01    740-021308  L12D01919      SFP+-10G-SR
    Xcvr 46     REV 01    740-011613  PD91F10        SFP-SX

```

Xcvr 64	REV 01	740-031980	AMSOYSS	SFP+-10G-SR
Xcvr 96	REV 01	740-032986	QE481421	QSFP+-40G-SR4
Xcvr 99	REV 01	740-032986	QE494942	QSFP+-40G-SR4
Xcvr 100	REV 01	740-032986	QE494756	QSFP+-40G-SR4
Power Supply 0	REV 01	740-053352	1GD14220106	JPSU-850W-AC-AFO
Power Supply 1	REV 01	740-053352	1GD14220102	JPSU-850W-AC-AFO
Fan Tray 0				ACX5K Fan Tray 0, Front
to Back Airflow - AFO				
Fan Tray 1				ACX5K Fan Tray 1, Front
to Back Airflow - AFO				
Fan Tray 2				ACX5K Fan Tray 2, Front
to Back Airflow - AFO				

show chassis hardware detail (ACX5096 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VB3714510139  ACX5096
Pseudo CB 0
Routing Engine 0      BUILTIN      BUILTIN        ACX5K Routing Engine
  ad0      509 MB  QEMU HARDDISK  QM00001        Hard Disk
  ad1     4095 MB  QEMU HARDDISK  QM00002        Hard Disk
  ad2      511 MB  QEMU HARDDISK  QM00003        Hard Disk
  ad3     1023 MB  QEMU HARDDISK  QM00004        Hard Disk
  usb0 (addr 1) product 0x0000 0  vendor 0x0000  uhub1
  usb0 (addr 2) product 0x0020 32  vendor 0x8087  uhub2
FPC 0              REV 09      650-053391  VB3714510139  ACX5096
CPU                BUILTIN      BUILTIN        FPC CPU
PIC 0              BUILTIN      BUILTIN        96x10G-8x40G
  Xcvr 0          REV 01      740-021308  ARS186H        SFP+-10G-SR
  Xcvr 10         REV 02      740-011613  NS11KRP        SFP-SX
  Xcvr 14         REV 01      740-031980  AMCOLKL        SFP+-10G-SR
  Xcvr 20         REV 01      740-021308  ARS18A2        SFP+-10G-SR
  Xcvr 30         REV 02      740-011613  PJ21954        SFP-SX
  Xcvr 41         REV 01      740-021308  L12D01919      SFP+-10G-SR
  Xcvr 46         REV 01      740-011613  PD91F10        SFP-SX
  Xcvr 64         REV 01      740-031980  AMSOYSS        SFP+-10G-SR
  Xcvr 78         REV 01      740-031851  AM1045SUA1G    SFP-SX
  Xcvr 96         REV 01      740-032986  QE481421       QSFP+-40G-SR4
  Xcvr 99         REV 01      740-032986  QE494942       QSFP+-40G-SR4
  Xcvr 100        REV 01      740-032986  QE494756       QSFP+-40G-SR4
Power Supply 0      REV 01      740-053352  1GD14220106    JPSU-850W-AC-AFO
Power Supply 1      REV 01      740-053352  1GD14220102    JPSU-850W-AC-AFO
Fan Tray 0
to Back Airflow - AFO
Fan Tray 1
to Back Airflow - AFO
Fan Tray 2
to Back Airflow - AFO

```

show chassis hardware clei-models (ACX5096 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Routing Engine 0      BUILTIN      CMMNX10BRA  ACX5096
FPC 0              REV 09      650-053391  CMMNX10BRA  ACX5096
PIC 0              BUILTIN      CMMNX10BRA  ACX5096
Power Supply 0      REV 01      740-053352  CMUPACSBAA  JPSU-850W-AC-AFO

```



```

Power Supply 1  REV 01  740-053352  CMUPACSBAA  JPSU-850W-AC-AFO
Fan Tray 0
Fan Tray 1
Fan Tray 2
ACX5K-FAN
ACX5K-FAN
ACX5K-FAN

```

show chassis hardware models (ACX5096 Router)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Routing Engine 0
FPC 0         REV 09  650-053391  VB3714510139  ACX5096
PIC 0
Power Supply 0  REV 01  740-053352  1GD14220106  JPSU-850W-AC-AFO
Power Supply 1  REV 01  740-053352  1GD14220102  JPSU-850W-AC-AFO
Fan Tray 0
Fan Tray 1
Fan Tray 2
ACX5K-FAN
ACX5K-FAN
ACX5K-FAN

```

show chassis hardware (ACX500 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 01  650-055932  VJ0214510035  ACX500-AC
Routing Engine
FEB 0
Processor
FPC 0
MIC 0
PIC 0
Xcvr 0        REV 01  740-031851  PMF2Y3C       SFP-SX
Xcvr 1        REV 01  740-031851  PN342QN       SFP-SX
MIC 1
PIC 1
Xcvr 0        REV 01  740-011613  PF30K0L       SFP-SX
MIC 2
PIC 2
BUILTIN
BUILTIN
MS BUILTIN
MS BUILTIN

```

show chassis hardware detail (ACX500 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 01  650-055932  VJ0214510035  ACX500-AC
Routing Engine
da0  3820 MB  USB DISK 2.0  BUILTIN        BUILTIN        Routing Engine
Nand Flash 0
FEB 0
Processor
FPC 0
MIC 0
PIC 0
Xcvr 0        REV 01  740-031851  PMF2Y3C       SFP-SX
Xcvr 1        REV 01  740-031851  PN342QN       SFP-SX
MIC 1
PIC 1
Xcvr 0        REV 01  740-011613  PF30K0L       SFP-SX

```

MIC 2	BUILTIN	BUILTIN	MS BUILTIN
PIC 2	BUILTIN	BUILTIN	MS BUILTIN

show chassis hardware extensive (ACX500 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
Jedec Code: 0x7fb0          EEPROM Version: 0x02
S/N: VJ0214510035
Assembly ID: 0x057c        Assembly Version: 00.00
Date: 00-00-0000          Assembly Flags: 0x00
ID: ACX500-AC
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 7c 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 56 4a 30 32 31 34 35 31 30 30 33 35 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane
REV 01 650-055932 VJ0214510035 ACX500-AC
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 650-055932          S/N: VJ0214510035
Assembly ID: 0x057c        Assembly Version: 01.00
Date: 12-23-2014          Assembly Flags: 0x00
Version: REV 01          CLEI Code: PROTOXCLEI
ID: ACX500-AC          FRU Model Number: ACX500-AC
Board Information Record:
Address 0x00: ad 01 00 80 f0 1c 2d 1b 60 80 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 05 7c 01 00 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 36 35 30 2d 30 35 35 39 33 32 00 00
Address 0x20: 56 4a 30 32 31 34 35 31 30 30 33 35 00 17 0c 07
Address 0x30: de ff ff ff ad 01 00 80 f0 1c 2d 1b 60 80 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 41
Address 0x50: 43 58 35 30 30 2d 41 43 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 30 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 56 4a 30 32 31 34 35 31 30 30 33 35
Routing Engine
da0 3820 MB USB DISK 2.0
FEB 0
Processor
FPC 0
MIC 0
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N: BUILTIN          S/N: BUILTIN
Assembly ID: 0x0a40        Assembly Version: 00.00
Date: 00-00-0000          Assembly Flags: 0x00
ID: 2x 1GE(LAN) SFP
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 40 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```

```

Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 de ad be ef 64 20 22 a8 60 af 21 38
  PIC 0          BUILTIN      BUILTIN      2x 1GE(LAN) SFP
    Xcvr 0      REV 01      740-031851    PMF2Y3C      SFP-SX
    Xcvr 1      REV 01      740-031851    PN342QN      SFP-SX
  MIC 1          BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N:          BUILTIN      S/N:          BUILTIN
Assembly ID: 0x0aac          Assembly Version: 00.00
Date:         00-00-0000    Assembly Flags: 0x00
ID: 4x 1GE(LAN) SFP, RJ45
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a ac 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 64 20 b5 c0 60 af 21 38
  PIC 1          BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45
    Xcvr 0      REV 01      740-011613    PF30K0L      SFP-SX
  MIC 2          BUILTIN      BUILTIN      MS BUILTIN
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N:          BUILTIN      S/N:          BUILTIN
Assembly ID: 0x0aaf          Assembly Version: 00.00
Date:         00-00-0000    Assembly Flags: 0x00
ID: MS BUILTIN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a af 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 de ad be ef 64 22 cd 48 60 af 21 38
  PIC 2          BUILTIN      BUILTIN      MS BUILTIN

```

show chassis hardware clei-models (ACX500 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Midplane      REV 01    650-055932  PROTOXCLEI     ACX500-AC
Routing Engine
FEB 0         BUILTIN
FPC 0         BUILTIN

```

show chassis hardware models (ACX500 Router)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number   FRU model number

```

Midplane	REV 01	650-055932	VJ0214510035	ACX500-AC
Routing Engine		BUILTIN	BUILTIN	
FEB 0		BUILTIN	BUILTIN	
FPC 0		BUILTIN	BUILTIN	

show chassis led satellite

Syntax	<code>show chassis led satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]</code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.
Description	Display the status and colors of the chassis LEDs of the satellite devices in a Junos Fusion. A major alarm (red) indicates a critical error condition that requires immediate action. A minor alarm (yellow) indicates a noncritical condition that requires monitoring or maintenance. A minor alarm that is left unchecked might cause interruption in service or performance degradation.
Options	<p>none—Display the status of the chassis status LEDs of every satellite device in the Junos Fusion.</p> <p>slot-id <i>slot-id</i>—(Optional) Display the status of the chassis status LEDs of the satellite device using the specified FPC slot identifier in the Junos Fusion. The <i>slot-id</i> is the FPC slot ID number.</p> <p>device-alias <i>alias-name</i>—(Optional) Display the status of the chassis status LEDs of the satellite device using the specified alias in the Junos Fusion.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Configuring Satellite Device Alarm Handling Using an Environment Monitoring Satellite Policy in a Junos Fusion on page 54 • Understanding Junos Fusion Provider Edge Components on page 5 • Understanding Junos Fusion Enterprise Components
List of Sample Output	show chassis led satellite on page 619
Output Fields	Table 17 on page 618 lists the output fields for the show chassis led satellite command. Output fields are listed in the approximate order in which they appear.

Table 17: show chassis led Output Fields

Field Name	Field Description
Beacon LED	<p>(Applies when QFX5100, QFX5110, and QFX5200 switches are in an satellite device role only) Indicates if the beacon feature is on or off. The beacon feature is always off in a Junos Fusion.</p> <p>The Beacon LED output maps to the ID—Identification LED state.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Chassis Status LEDs on a QFX5100 Device</i> • <i>QFX5110 Chassis Status LEDs</i> • <i>QFX5200 Chassis Status LEDs</i>
System LED	<p>Indicates the state of the System (SYS) LED on the satellite device.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Chassis Status LEDs on EX4300 Switches</i> • <i>Chassis Status LEDs on a QFX5100 Device</i> • <i>QFX5110 Chassis Status LEDs</i> • <i>QFX5200 Chassis Status LEDs</i>
Master LED	<p>Indicates the state of the Master (MST) LED on the satellite device.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Chassis Status LEDs on EX4300 Switches</i> • <i>Chassis Status LEDs on a QFX5100 Device</i> • <i>QFX5110 Chassis Status LEDs</i> • <i>QFX5200 Chassis Status LEDs</i>
Alarm LED	<p>Indicates the state of the Alarm (ALM) LED on the satellite device.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Chassis Status LEDs on EX4300 Switches</i> • <i>Chassis Status LEDs on a QFX5100 Device</i> • <i>QFX5110 Chassis Status LEDs</i> • <i>QFX5200 Chassis Status LEDs</i>
Mgmt Port0 LED	<p>(Applies when QFX5100, QFX5110, and QFX5200 switches are in an satellite device role only) Indicates the state of the management port 0 (em0) LED status on the satellite device.</p> <p>This port is always off in a Junos Fusion.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Management Port LEDs on a QFX5100 Device</i> • <i>QFX5110 Management Port LEDs</i> • <i>QFX5200 Management Port LEDs</i>

Table 17: show chassis led Output Fields (continued)

Field Name	Field Description
Mgmt Port1 LED	<p>(Applies when QFX5100, QFX5110, and QFX5200 switches are in an satellite device role only) Indicates the state of the management port 1(em0) LED status on the satellite device.</p> <p>This port is always off in a Junos Fusion.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Management Port LEDs on a QFX5100 Device</i> • <i>QFX5110 Management Port LEDs</i> • <i>QFX5200 Management Port LEDs</i>
Interface	<p>The interface name on the satellite device.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Management Port LEDs on a QFX5100 Device</i> • <i>QFX5110 Management Port LEDs</i> • <i>QFX5200 Management Port LEDs</i>
Status LED	<p>The state of the Status LED for the particular interface on the satellite device.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Network Port, Built-In QSFP+ Port, Uplink Port, and Uplink Module Port LEDs on EX4300 Switches</i> • <i>Access Port and Uplink Port LEDs on a QFX5100 Device</i> • <i>QFX5110 Network Port LEDs</i> • <i>QFX5200 Access Port and Uplink Port LEDs</i>
Link/Activity LED	<p>The state of the Link/Activity LED for the particular interface on the satellite device.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • <i>Network Port, Built-In QSFP+ Port, Uplink Port, and Uplink Module Port LEDs on EX4300 Switches</i> • <i>Access Port and Uplink Port LEDs on a QFX5100 Device</i> • <i>QFX5110 Network Port LEDs</i> • <i>QFX5200 Access Port and Uplink Port LEDs</i>

Sample Output

show chassis led satellite

```

user@aggregation-device> show chassis led satellite
LED status for: FPC 101
-----
LEDs status:
  Beacon LED: OFF
  System LED: GREEN
  Master LED: OFF

```

Alarm LED : YELLOW
 Mgmt Port0 LED: OFF
 Mgmt Port1 LED: OFF

Interface	STATUS LED	LINK/ACTIVITY LED
xe-101/0/0	green	
xe-101/0/1	green	
xe-101/0/10	off	
xe-101/0/48:0	green	
xe-101/0/48:1	green	
xe-101/0/48:2	green	
xe-101/0/48:3	green	

LED status for: FPC 102

LEDs status:

Beacon LED: OFF
 System LED: GREEN
 Master LED: OFF
 Alarm LED : YELLOW
 Mgmt Port0 LED: OFF
 Mgmt Port1 LED: OFF

Interface	STATUS LED	LINK/ACTIVITY LED
xe-102/0/0	green	
xe-102/0/1	green	
xe-102/0/10	off	
xe-102/0/48:0	green	
xe-102/0/48:1	green	
xe-102/0/48:2	green	
xe-102/0/48:3	green	

show chassis routing-engine

List of Syntax [Syntax on page 621](#)
 [Syntax \(ACX Series Universal Metro Routers\) on page 621](#)
 [Syntax \(EX Series Switches\) on page 621](#)
 [Syntax \(QFX Series\) on page 621](#)
 [Syntax \(MX Series Routers\) on page 621](#)
 [Syntax \(MX2010 Universal Routing Platforms\) on page 621](#)
 [Syntax \(MX2020 Universal Routing Platforms\) on page 621](#)
 [Syntax \(MX104 Universal Routing Platforms\) on page 622](#)
 [Syntax \(MX204 and MX10003 Universal Routing Platforms\) on page 622](#)
 [Syntax \(PTX Series Packet Transport Routers\) on page 622](#)
 [Syntax \(T Series Routers\) on page 622](#)
 [Syntax \(TX Matrix Routers\) on page 622](#)
 [Syntax \(TX Matrix Plus Routers\) on page 622](#)

Syntax show chassis routing-engine
 <bios | *slot*>

Syntax (ACX Series Universal Metro Routers) show chassis routing-engine

Syntax (EX Series Switches) show chassis routing-engine
 <*slot*>
 <satellite [slot-id *slot-id* |device-alias *alias-name*]>

Syntax (QFX Series) show chassis routing-engine
 <interconnect-device *name*>
 <node-device *name*>
 <*slot*>
 <*bios*>
 <*errors*>

Syntax (MX Series Routers) show chassis routing-engine
 <all-members>
 <bios | *slot*>
 <local>
 <member *member-id*>
 <satellite [slot-id *slot-id* |device-alias *alias-name*]>

Syntax (MX2010 Universal Routing Platforms) show chassis routing-engine
 <bios | *slot*>

Syntax (MX2020 Universal Routing Platforms) show chassis routing-engine
 <bios | *slot*>

Syntax (MX104 Universal Routing Platforms)	show chassis routing-engine
Syntax (MX204 and MX10003 Universal Routing Platforms)	show chassis routing-engine <slot> <bios> <errors>
Syntax (PTX Series Packet Transport Routers)	show chassis routing-engine
Syntax (T Series Routers)	show chassis routing-engine <bios slot>
Syntax (TX Matrix Routers)	show chassis routing-engine <bios slot> <lcc number scc>
Syntax (TX Matrix Plus Routers)	show chassis routing-engine <bios slot> <lcc number sfc number>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option introduced in Junos OS Release in 9.6 for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>5 sec CPU Utilization, 1 min CPU Utilization, 5 min CPU Utilization, and 15 min CPU Utilization output fields introduced in Junos OS Release 11.3R1.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>satellite option introduced in Junos OS Release 14.2R3.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.1R1 for EX9251 switches.</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 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.

errors—(Optional) Display routing engine errors.

interconnect-device *number*—(QFabric systems only) (Optional) Display Routing Engine information for a specified Interconnect device.

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display Routing Engine information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display Routing Engine information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(MX Series routers only) (Optional) Display Routing Engine information for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display Routing Engine information for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

node-device *number*—(QFabric systems only) (Optional) Display Routing Engine information for a specified Node device.

satellite [*slot-id slot-id* | *device-alias alias-name*]—(Junos Fusion only) (Optional) Display Routing Engine information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix routers only) (Optional) Display Routing Engine information for the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Display Routing Engine information for the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

slot—(Systems with multiple Routing Engines) (Optional) Display information for an individual Routing Engine. Replace *slot* with 0 or 1. For QFX3500 switches, there is only one Routing Engine, so you do not need to specify the slot number.

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 627](#)
[show chassis routing-engine \(M10 Router\) on page 628](#)
[show chassis routing-engine \(M20 Router\) on page 628](#)
[show chassis routing-engine \(M40 Router\) on page 629](#)
[show chassis routing-engine \(M120 Router\) on page 629](#)
[show chassis routing-engine \(M160 Router\) on page 630](#)
[show chassis routing-engine \(MX104 Router\) on page 631](#)
[show chassis routing-engine \(MX240 Router\) on page 631](#)
[show chassis routing-engine \(MX480 Router\) on page 632](#)
[show chassis routing-engine \(MX960 Router\) on page 633](#)
[show chassis routing-engine \(MX2010 Router\) on page 635](#)
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[show chassis routing-engine \(MX204 Router\) on page 637](#)
[show chassis routing-engine \(T320 Router\) on page 638](#)
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[show chassis routing-engine \(T4000 Router\) on page 640](#)
[show chassis routing-engine \(TX Matrix Router\) on page 641](#)
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[show chassis routing-engine \(ACX2000 Universal Metro Router\) on page 649](#)
[show chassis routing-engine \(ACX1000 Universal Metro Router\) on page 649](#)
[show chassis routing-engine \(Displaying the guest reboot reason on PTX5000,MX240, MX480, MX960< MX2010, and MX2020\) on page 649](#)

Output Fields [Table 18 on page 625](#) lists the output fields for the **show chassis routing-engine** command. Output fields are listed in the approximate order in which they appear.

Table 18: 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. NOTE: For platforms running Junos OS with upgraded FreeBSD, the way memory utilization is calculated has changed. Starting in Junos OS Release 15.1R1, inactive memory is no longer included in the calculation for memory utilization. Inactive memory is now considered as free. That is, the value for used memory decreases and results in more memory to be available for other processes. For platforms that run Junos OS with upgraded FreeBSD, see <i>Release Information for Junos OS with Upgraded FreeBSD</i> .
CPU utilization	Information about the Routing Engine's CPU utilization: <ul style="list-style-type: none"> • 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.
5 sec CPU Utilization	Information about the Routing Engine's CPU utilization in the past 5 seconds: <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.
1 min CPU Utilization	Information about the Routing Engine's CPU utilization in the past 1 minute: <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.

Table 18: show chassis routing-engine Output Fields (continued)

Field Name	Field Description
5 min CPU Utilization	Information about the Routing Engine's CPU utilization in the past 5 minutes: <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.
15 min CPU Utilization	Information about the Routing Engine's CPU utilization in the past 15 minutes: <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 18: 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 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. Hypervisor reboot—When both Linux host and Junos OS is rebooted using the request vmhost reboot command. VJUNOS Reboot—When Junos OS is rebooted using the request system reboot command.
Load averages	Routing Engine load averages for the last 1, 5, and 15 minutes.

Sample Output

show chassis routing-engine (M5 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature           25 degrees C / 77 degrees F
  DRAM                   768 MB
  Memory utilization     21 percent
  CPU utilization:

```

```

User                0 percent
Background          0 percent
Kernel              0 percent
Interrupt            0 percent
Idle                100 percent
Model               RE-2.0
Serial ID            31000007349bf701
Start time           2003-12-04 09:42:17 PST
Uptime               26 days, 1 hour, 12 minutes, 27 seconds
Last reboot reason   Router rebooted after a normal shutdown
Load averages:       1 minute   5 minute   15 minute
                     0.00       0.01       0.00

```

show chassis routing-engine (M10 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature        25 degrees C / 77 degrees F
  DRAM                768 MB
  Memory utilization  21 percent
  CPU utilization:
    User              0 percent
    Background        0 percent
    Kernel             0 percent
    Interrupt          0 percent
    Idle              100 percent
  Model               RE-2.0
  Serial ID            31000007349bf701
  Start time           2003-12-04 09:42:17 PST
  Uptime               26 days, 1 hour, 12 minutes, 27 seconds
  Last reboot reason   Router rebooted after a normal shutdown
  Load averages:       1 minute   5 minute   15 minute
                       0.00       0.01       0.00

```

show chassis routing-engine (M20 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Slot 0:
    Current state      Master
    Election priority   Master (default)
    Temperature        29 degrees C / 84 degrees F
    DRAM                768 MB
    Memory utilization  20 percent
    CPU utilization:
      User              1 percent
      Background        0 percent
      Kernel             2 percent
      Interrupt          0 percent
      Idle              97 percent
    Model               RE-2.0
    Serial ID            58000007348d9a01
    Start time           2003-12-30 07:05:47 PST
    Uptime               3 hours, 41 minutes, 14 seconds
    Last reboot reason   Router rebooted after a normal shutdown
    Load averages:       1 minute   5 minute   15 minute
                       0.00       0.02       0.00
  Routing Engine status:
    Slot 1:
      Current state      Backup

```



```

Election priority          Backup (default)
Temperature                29 degrees C / 84 degrees F
DRAM                      768 MB
Memory utilization        0 percent
CPU utilization:
  User                     0 percent
  Background               0 percent
  Kernel                   1 percent
  Interrupt                0 percent
  Idle                     99 percent
Model                     RE-2.0
Serial ID                 d800000734745701
Start time                2003-06-17 16:37:33 PDT
Uptime                    195 days, 18 hours, 47 minutes, 9 seconds
Last reboot reason        Router rebooted after a normal shutdown

```

show chassis routing-engine (M40 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature              25 degrees C / 77 degrees F
  DRAM                     768 MB
  Memory utilization       21 percent
  CPU utilization:
    User                   0 percent
    Background             0 percent
    Kernel                 0 percent
    Interrupt              0 percent
    Idle                   100 percent
  Model                    RE-2.0
  Serial ID                31000007349bf701
  Start time               2003-12-04 09:42:17 PST
  Uptime                   26 days, 1 hour, 12 minutes, 27 seconds
  Last reboot reason       Router rebooted after a normal shutdown
  Load averages:          1 minute   5 minute   15 minute
                           0.00        0.01        0.00

```

show chassis routing-engine (M120 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state            Master
  Election priority        Master (default)
  Temperature              46 degrees C / 114 degrees F
  CPU temperature          44 degrees C / 111 degrees F
  DRAM                     2048 MB
  Memory utilization       18 percent
  CPU utilization:
    User                   0 percent
    Background             0 percent
    Kernel                 5 percent
    Interrupt              0 percent
    Idle                   95 percent
  Model                    RE-A-1000
  Serial ID                1000621154
  Start time               2006-10-31 17:10:05 PST
  Uptime                   14 minutes, 31 seconds
  Last reboot reason       Router rebooted after a normal shutdown
  Load averages:          1 minute   5 minute   15 minute

```

```

                                0.02      0.07      0.07
Routing Engine status:
Slot 1:
  Current state                Backup
  Election priority            Backup (default)
  Temperature                  45 degrees C / 113 degrees F
  CPU temperature              42 degrees C / 107 degrees F
  DRAM                        2048 MB
  Memory utilization           15 percent
  CPU utilization:
    User                       0 percent
    Background                 0 percent
    Kernel                     0 percent
    Interrupt                   0 percent
    Idle                       100 percent
  Model                       RE-A-1000
  Serial ID                   1000621151
  Start time                  2006-10-31 17:10:04 PST
  Uptime                      14 minutes, 30 seconds
  Last reboot reason          Router rebooted after a normal shutdown

```

show chassis routing-engine (M160 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state                Master
  Election priority            Master (default)
  Temperature                  43 degrees C / 109 degrees F
  DRAM                        2048 MB
  Memory utilization           11 percent
  CPU utilization:
    User                       1 percent
    Background                 0 percent
    Kernel                     2 percent
    Interrupt                   0 percent
    Idle                       97 percent
  Model                       RE-3.0
  Serial ID                   210865700403
  Start time                  2003-12-23 12:25:55 PST
  Uptime                      6 days, 22 hours, 33 minutes, 24 seconds
  Last reboot reason          Router rebooted after a normal shutdown
  Load averages:              1 minute   5 minute   15 minute
                                0.24      0.13      0.04

Routing Engine status:
Slot 1:
  Current state                Backup
  Election priority            Backup (default)
  Temperature                  40 degrees C / 104 degrees F
  DRAM                        2048 MB
  Memory utilization           9 percent
  CPU utilization:
    User                       0 percent
    Background                 0 percent
    Kernel                     0 percent
    Interrupt                   0 percent
    Idle                       100 percent
  Model                       RE-3.0
  Serial ID                   210865700332
  Start time                  2003-12-23 12:25:55 PST

```

Uptime	6 days, 22 hours, 33 minutes, 21 seconds
Last reboot reason	Router rebooted after a normal shutdown

show chassis routing-engine (MX104 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             32 degrees C / 89 degrees F
  CPU temperature         42 degrees C / 107 degrees F
  DRAM                   3840 MB (3840 MB installed)
  Memory utilization      18 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                3 percent
    Interrupt             2 percent
    Idle                  94 percent
  Model                   RE-MX-104
  Serial ID               CAAR5925
  Start time              2013-06-05 13:17:08 IST
  Uptime                  1 hour, 15 minutes, 8 seconds
  Last reboot reason      0x200:normal shutdown
  Load averages:         1 minute  5 minute  15 minute
                        0.87      0.90      0.41

Routing Engine status:
Slot 1:
  Current state           Backup
  Election priority       Backup (default)
  Temperature             32 degrees C / 89 degrees F
  CPU temperature         38 degrees C / 100 degrees F
  DRAM                   3840 MB (3840 MB installed)
  Memory utilization      13 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             2 percent
    Idle                  97 percent
  Model                   RE-MX-104
  Serial ID               CAAM6369
  Start time              2013-06-05 13:07:37 IST
  Uptime                  1 hour, 24 minutes, 34 seconds
  Last reboot reason      0x200:normal shutdown
  Load averages:         1 minute  5 minute  15 minute
                        0.19      0.15      0.06

```

show chassis routing-engine (MX240 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             36 degrees C / 96 degrees F
  CPU temperature         35 degrees C / 95 degrees F
  DRAM                   3314 MB (8192 MB installed)
  Memory utilization      37 percent

```

```

5 sec CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
1 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
5 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
15 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          99 percent
Model          RE-S-1800x4
Serial ID      9009074155
Start time     2014-10-13 00:35:41 PDT
Uptime         98 days, 2 hours, 6 minutes, 35 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages: 1 minute  5 minute 15 minute
                  0.12      0.12      0.13

Routing Engine status:
Slot 1:
  Current state      Present

```

show chassis routing-engine (MX480 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state      Backup
  Election priority  Master (default)
  Temperature        30 degrees C / 86 degrees F
  CPU temperature    32 degrees C / 89 degrees F
  DRAM               3314 MB (8192 MB installed)
  Memory utilization  51 percent
  5 sec CPU utilization:
    User          0 percent
    Background    0 percent
    Kernel        0 percent
    Interrupt     0 percent
    Idle          100 percent
  1 min CPU utilization:
    User          0 percent
    Background    0 percent
    Kernel        0 percent
    Interrupt     0 percent
    Idle          0 percent
  5 min CPU utilization:
    User          0 percent
    Background    0 percent

```

```

Kernel                                0 percent
Interrupt                            0 percent
Idle                                0 percent
15 min CPU utilization:
  User                                0 percent
  Background                          0 percent
  Kernel                              0 percent
  Interrupt                           0 percent
  Idle                                0 percent
Model                                 RE-S-1800x4
Serial ID                             9009079817
Start time                           2015-01-19 01:45:58 PST
Uptime                               7 minutes, 23 seconds
Last reboot reason                    Router rebooted after a normal shutdown.
Load averages:                       1 minute   5 minute  15 minute
                                      0.16       0.16     0.09

Routing Engine status:
Slot 1:
  Current state                       Master
  Election priority                   Backup (default)
  Temperature                         31 degrees C / 87 degrees F
  CPU temperature                     32 degrees C / 89 degrees F
  DRAM                               8144 MB (8192 MB installed)
  Memory utilization                  23 percent
  5 sec CPU utilization:
    User                              0 percent
    Background                        0 percent
    Kernel                            1 percent
    Interrupt                         0 percent
    Idle                              99 percent
  1 min CPU utilization:
    User                              0 percent
    Background                        0 percent
    Kernel                            1 percent
    Interrupt                         0 percent
    Idle                              98 percent
  5 min CPU utilization:
    User                              0 percent
    Background                        0 percent
    Kernel                            1 percent
    Interrupt                         0 percent
    Idle                              98 percent
  15 min CPU utilization:
    User                              0 percent
    Background                        0 percent
    Kernel                            1 percent
    Interrupt                         0 percent
    Idle                              98 percent
Model                                 RE-S-1800x4
Serial ID                             9009079838
Start time                           2015-01-09 10:52:20 PST
Uptime                               9 days, 15 hours, 1 minute, 4 seconds
Last reboot reason                    Router rebooted after a normal shutdown.
Load averages:                       1 minute   5 minute  15 minute
                                      0.10       0.16     0.16

```

show chassis routing-engine (MX960 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:

```

```

Current state                Master
Election priority            Master (default)
Temperature                  37 degrees C / 98 degrees F
CPU temperature              34 degrees C / 93 degrees F
DRAM                        3313 MB (16384 MB installed)
Memory utilization           31 percent
5 sec CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     3 percent
  Interrupt                  1 percent
  Idle                       96 percent
1 min CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     4 percent
  Interrupt                  1 percent
  Idle                       96 percent
5 min CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     4 percent
  Interrupt                  1 percent
  Idle                       95 percent
15 min CPU utilization:
  User                       0 percent
  Background                 0 percent
  Kernel                     4 percent
  Interrupt                  1 percent
  Idle                       95 percent
Model                       RE-S-1800x4
Serial ID                   9013043785
Start time                  2015-01-12 23:37:53 PST
Uptime                      6 days, 2 hours, 17 minutes, 3 seconds
Last reboot reason          Router rebooted after a normal shutdown.
Load averages:              1 minute 5 minute 15 minute
                           0.00      0.02      0.00

Routing Engine status:
Slot 1:
  Current state              Backup
  Election priority          Backup (default)
  Temperature                 37 degrees C / 98 degrees F
  CPU temperature             34 degrees C / 93 degrees F
  DRAM                       3313 MB (16384 MB installed)
  Memory utilization          26 percent
  5 sec CPU utilization:
    User                     0 percent
    Background               0 percent
    Kernel                   0 percent
    Interrupt                0 percent
    Idle                     99 percent
  1 min CPU utilization:
    User                     0 percent
    Background               0 percent
    Kernel                   0 percent
    Interrupt                0 percent
    Idle                     0 percent
  5 min CPU utilization:
    User                     0 percent
    Background               0 percent
    Kernel                   0 percent

```

```

Interrupt          0 percent
Idle               0 percent
15 min CPU utilization:
User              0 percent
Background        0 percent
Kernel            0 percent
Interrupt          0 percent
Idle              0 percent
Model             RE-S-1800x4
Serial ID          9013037303
Start time         2015-01-12 23:25:29 PST
Uptime             6 days, 2 hours, 29 minutes, 21 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages:     1 minute   5 minute   15 minute
                   0.00      0.00      0.00

```

show chassis routing-engine (MX2010 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state          Master
  Election priority      Master (default)
  Temperature            41 degrees C / 105 degrees F
  CPU temperature        38 degrees C / 100 degrees F
  DRAM                   3313 MB (16384 MB installed)
  Memory utilization     37 percent
  5 sec CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel                2 percent
    Interrupt             2 percent
    Idle                  96 percent
  1 min CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel                2 percent
    Interrupt             2 percent
    Idle                  97 percent
  5 min CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel                2 percent
    Interrupt             2 percent
    Idle                  97 percent
  15 min CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel                2 percent
    Interrupt             2 percent
    Idle                  97 percent
  Model                  RE-S-1800x4
  Serial ID              9009146890
  Start time             2015-01-18 21:35:12 PST
  Uptime                  4 hours, 21 minutes, 34 seconds
  Last reboot reason      Router rebooted after a normal shutdown.
  Load averages:         1 minute   5 minute   15 minute
                        0.11      0.14      0.14

```

show chassis routing-engine (MX2020 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             2 degrees C / 35 degrees F
  CPU temperature         32 degrees C / 89 degrees F
  DRAM                   32735 MB (32768 MB installed)
  Memory utilization      10 percent
  5 sec CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  98 percent
  1 min CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  99 percent
  5 min CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  99 percent
  15 min CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                1 percent
    Interrupt             1 percent
    Idle                  99 percent
  Model                  RE-S-2X00x8
  Serial ID              CADN0309
  Start time              2015-01-08 16:31:15 PST
  Uptime                  4 days, 22 hours, 59 minutes, 3 seconds
  Last reboot reason      Router rebooted after a normal shutdown.
  Load averages:         1 minute   5 minute   15 minute
                        0.39       0.41       0.34

```

show chassis routing-engine (MX10003 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             43 degrees C / 109 degrees F
  CPU temperature         40 degrees C / 104 degrees F
  DRAM                   49112 MB (49152 MB installed)
  Memory utilization      4 percent
  5 sec CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                2 percent
    Interrupt             0 percent

```



```

Idle 98 percent
1 min CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 98 percent
5 min CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 98 percent
15 min CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 96 percent
Model RE-S-2X00x6
Start time 2017-08-08 23:13:16 PDT
Uptime 53 minutes, 38 seconds
Last reboot reason 0x1:power cycle/failure
Load averages: 1 minute 5 minute 15 minute
                0.23      0.28      0.25

Routing Engine status:
Slot 1:
Current state Backup
Election priority Backup (default)
Temperature 38 degrees C / 100 degrees F
CPU temperature 39 degrees C / 102 degrees F
DRAM 49112 MB (49152 MB installed)
Memory utilization 4 percent
5 sec CPU utilization:
User 0 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 99 percent
Model RE-S-2X00x6
Start time 2017-08-08 23:13:18 PDT
Uptime 53 minutes, 25 seconds
Last reboot reason 0x1:power cycle/failure
Load averages: 1 minute 5 minute 15 minute
                0.21      0.19      0.17

```

show chassis routing-engine (MX204 Router)

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

```

Routing Engine status:
Temperature 52 degrees C / 125 degrees F
CPU temperature 52 degrees C / 125 degrees F
DRAM 16341 MB (16384 MB installed)
Memory utilization 11 percent
5 sec CPU utilization:
User 0 percent
Background 0 percent
Kernel 0 percent
Interrupt 0 percent
Idle 100 percent

```

```

1 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        0 percent
  Interrupt     0 percent
  Idle          100 percent
5 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        0 percent
  Interrupt     0 percent
  Idle          100 percent
15 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        0 percent
  Interrupt     0 percent
  Idle          100 percent
Model          RE-S-2X00x6
Start time     2017-11-04 00:30:31 PDT
Uptime        4 days, 7 hours, 17 minutes, 3 seconds
Last reboot reason 0x1:power cycle/failure
Load averages: 1 minute   5 minute   15 minute
                  0.17       0.12       0.13

```

show chassis routing-engine (T320 Router)

```

user@host> show chassis routing-engine
Slot 0:
  Current state      Master
  Election priority  Master (default)
  Temperature        51 degrees C / 123 degrees F
  CPU temperature    55 degrees C / 131 degrees F
  DRAM               3584 MB
  Memory utilization 11 percent
  CPU utilization:
    User            0 percent
    Background      0 percent
    Kernel          2 percent
    Interrupt       0 percent
    Idle            97 percent
  Model             RE-A-2000
  Serial ID         9009010618
  Start time        2012-10-10 01:24:05 PDT
  Uptime            5 days, 10 hours, 49 minutes, 23 seconds
  Last reboot reason 0x1:power cycle/failure
  Load averages:    1 minute   5 minute   15 minute
                      0.00       0.05       0.04

Routing Engine status:
Slot 1:
  Current state      Backup
  Election priority  Backup (default)
  Temperature        45 degrees C / 113 degrees F
  CPU temperature    48 degrees C / 118 degrees F
  DRAM               3584 MB
  Memory utilization 9 percent
  CPU utilization:
    User            0 percent
    Background      0 percent
    Kernel          0 percent
    Interrupt       0 percent

```

```

Idle 100 percent
Model RE-A-2000
Serial ID 9009003642
Start time 2012-10-10 01:24:04 PDT
Uptime 5 days, 10 hours, 49 minutes, 28 seconds
Last reboot reason 0x1:power cycle/failure

```

show chassis routing-engine (T640 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state Master
  Election priority Master (default)
  Temperature 50 degrees C / 122 degrees F
  CPU temperature 58 degrees C / 136 degrees F
  DRAM 3584 MB
  Memory utilization 14 percent
  CPU utilization:
    User 1 percent
    Background 0 percent
    Kernel 4 percent
    Interrupt 1 percent
    Idle 95 percent
  Model RE-A-2000
  Serial ID 1000686556
  Start time 2012-10-10 01:24:02 PDT
  Uptime 5 days, 10 hours, 50 minutes, 27 seconds
  Last reboot reason 0x1:power cycle/failure
  Load averages: 1 minute 5 minute 15 minute
                  1.24 0.33 0.12
Routing Engine status:
Slot 1:
  Current state Backup
  Election priority Backup (default)
  Temperature 44 degrees C / 111 degrees F
  CPU temperature 49 degrees C / 120 degrees F
  DRAM 3584 MB
  Memory utilization 12 percent
  CPU utilization:
    User 0 percent
    Background 0 percent
    Kernel 0 percent
    Interrupt 1 percent
    Idle 99 percent
  Model RE-A-2000
  Serial ID 1000702739
  Start time 2012-10-10 01:24:02 PDT
  Uptime 5 days, 10 hours, 50 minutes, 26 seconds
  Last reboot reason 0x1:power cycle/failure

```

show chassis routing-engine (T1600 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state Master
  Election priority Master (default)
  Temperature 48 degrees C / 118 degrees F
  CPU temperature 58 degrees C / 136 degrees F

```

```

DRAM                                     3584 MB
Memory utilization                       13 percent
CPU utilization:
  User                                  0 percent
  Background                           0 percent
  Kernel                               3 percent
  Interrupt                             1 percent
  Idle                                  96 percent
Model                                    RE-A-2000
Serial ID                                1000704521
Start time                               2012-10-10 01:23:41 PDT
Uptime                                   5 days, 10 hours, 46 minutes, 56 seconds
Last reboot reason                       0x1:power cycle/failure
Load averages:                          1 minute   5 minute   15 minute
                                         0.05       0.03       0.01

Routing Engine status:
Slot 1:
  Current state                          Backup
  Election priority                      Backup (default)
  Temperature                            44 degrees C / 111 degrees F
  CPU temperature                        48 degrees C / 118 degrees F
  DRAM                                   3584 MB
  Memory utilization                     12 percent
  CPU utilization:
    User                                 0 percent
    Background                           0 percent
    Kernel                               0 percent
    Interrupt                             0 percent
    Idle                                  100 percent
  Model                                    RE-A-2000
  Serial ID                                9009006579
  Start time                               2012-10-10 01:23:42 PDT
  Uptime                                   5 days, 10 hours, 46 minutes, 54 seconds
  Last reboot reason                     0x1:power cycle/failure

```

show chassis routing-engine (T4000 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state                          Master
  Election priority                      Master (default)
  Temperature                            33 degrees C / 91 degrees F
  CPU temperature                        50 degrees C / 122 degrees F
  DRAM                                   8960 MB
  Memory utilization                     18 percent
  CPU utilization:
    User                                 0 percent
    Background                           0 percent
    Kernel                               4 percent
    Interrupt                             1 percent
    Idle                                  95 percent
  Model                                    RE-DUO-1800
  Serial ID                                P737F-002248
  Start time                               2012-02-09 22:49:53 PST
  Uptime                                   2 hours, 21 minutes, 35 seconds
  Last reboot reason                     Router rebooted after a normal shutdown.
  Load averages:                          1 minute   5 minute   15 minute
                                         0.00       0.04       0.00

Routing Engine status:
Slot 1:

```

Current state	Backup
Election priority	Backup (default)
Temperature	32 degrees C / 89 degrees F
CPU temperature	46 degrees C / 114 degrees F
DRAM	8960 MB
Memory utilization	24 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	99 percent
Model	RE-DUO-1800
Serial ID	P737F-002653
Start time	2012-02-08 20:12:51 PST
Uptime	1 day, 4 hours, 58 minutes, 28 seconds
Last reboot reason	Router rebooted after a normal shutdown.

show chassis routing-engine (TX Matrix Router)

```
user@host> show chassis routing-engine
scc-re0:
```

Routing Engine status:

Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	34 degrees C / 93 degrees F
CPU temperature	33 degrees C / 91 degrees F
DRAM	2048 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-4.0
Serial ID	P11123900153
Start time	2004-08-05 18:42:05 PDT
Uptime	9 days, 22 hours, 49 minutes, 50 seconds
Last reboot reason	Router rebooted after a normal shutdown
Load averages:	1 minute 5 minute 15 minute
	0.00 0.08 0.07

lcc0-re0:

Routing Engine status:

Slot 0:

Current state	Master
Election priority	Master (default)
Temperature	33 degrees C / 91 degrees F
CPU temperature	30 degrees C / 86 degrees F
DRAM	2048 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	1 percent
Interrupt	0 percent
Idle	98 percent

```

Model                RE-3.0
Serial ID            210865700363
Start time           2004-08-05 18:42:05 PDT
Uptime               9 days, 22 hours, 48 minutes, 20 seconds
Last reboot reason    Router rebooted after a normal shutdown
Load averages:       1 minute  5 minute 15 minute
                     0.00      0.02   0.00

```

```
lcc2-re0:
```

```
-----
Routing Engine status:
```

```
Slot 0:
```

```

Current state        Master
Election priority     Master (default)
Temperature           34 degrees C / 93 degrees F
CPU temperature       35 degrees C / 95 degrees F
DRAM                 2048 MB
Memory utilization    12 percent
CPU utilization:
  User                0 percent
  Background          0 percent
  Kernel              2 percent
  Interrupt           0 percent
  Idle                98 percent
Model                RE-4.0
Serial ID            P11123900126
Start time           2004-08-05 18:42:05 PDT
Uptime               9 days, 22 hours, 49 minutes, 4 seconds
Last reboot reason    Router rebooted after a normal shutdown
Load averages:       1 minute  5 minute 15 minute
                     0.01      0.01   0.0

```

show chassis routing-engine lcc (TX Matrix Router)

```
user@host> show chassis routing-engine 0 lcc 0
```

```
lcc0-re0:
```

```
-----
Routing Engine status:
```

```
Slot 0:
```

```

Current state        Master
Election priority     Master (default)
Temperature           33 degrees C / 91 degrees F
CPU temperature       30 degrees C / 86 degrees F
DRAM                 2048 MB
Memory utilization    12 percent
CPU utilization:
  User                0 percent
  Background          0 percent
  Kernel              1 percent
  Interrupt           0 percent
  Idle                98 percent
Model                RE-3.0
Serial ID            210865700363
Start time           2004-08-05 18:42:05 PDT
Uptime               7 days, 22 hours, 49 minutes, 6 seconds
Last reboot reason    Router rebooted after a normal shutdown
Load averages:       1 minute  5 minute 15 minute
                     0.00      0.00   0.00

```

show chassis routing-engine bios (TX Matrix Router)

```
user@host> show chassis routing-engine bios
scc-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.0
1cc0-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.17
1cc2-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.0
```

show chassis routing-engine (TX Matrix Plus Router)

```
user@host> show chassis routing-engine
sfc0-re0:
```

```
-----
Routing Engine status:
```

```
Slot 0:
```

Current state	Master
Election priority	Master (default)
Temperature	27 degrees C / 80 degrees F
CPU temperature	42 degrees C / 107 degrees F
DRAM	3327 MB
Memory utilization	12 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	2 percent
Interrupt	0 percent
Idle	98 percent
Model	RE-TXP-SFC
Serial ID	737A-1024
Start time	2009-05-11 17:39:49 PDT
Uptime	3 hours, 45 minutes, 25 seconds
Last reboot reason	Router rebooted after a normal shutdown.
Load averages:	1 minute 5 minute 15 minute
	0.00 0.00 0.00

```
Routing Engine status:
```

```
Slot 1:
```

Current state	Backup
Election priority	Backup (default)
Temperature	29 degrees C / 84 degrees F
CPU temperature	43 degrees C / 109 degrees F
DRAM	3327 MB
Memory utilization	11 percent
CPU utilization:	
User	0 percent
Background	0 percent
Kernel	0 percent
Interrupt	0 percent
Idle	100 percent
Model	RE-TXP-SFC
Serial ID	737A-1024
Start time	2009-05-11 17:08:54 PDT
Uptime	4 hours, 16 minutes, 52 seconds
Last reboot reason	0x1:power cycle/failure

```
1cc0-re0:
```

```

-----
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             30 degrees C / 86 degrees F
  CPU temperature         43 degrees C / 109 degrees F
  DRAM                   3327 MB
  Memory utilization      9 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                2 percent
    Interrupt             0 percent
    Idle                  98 percent
  Model                  RE-TXP-LCC
  Serial ID              737F-1024
  Start time             2009-05-11 17:40:32 PDT
  Uptime                 3 hours, 44 minutes, 51 seconds
  Last reboot reason      Router rebooted after a normal shutdown.
  Load averages:         1 minute   5 minute   15 minute
                        0.00       0.00       0.00

Routing Engine status:
Slot 1:
  Current state           Backup
  Election priority       Backup (default)
  Temperature             30 degrees C / 86 degrees F
  CPU temperature         43 degrees C / 109 degrees F
  DRAM                   3327 MB
  Memory utilization      9 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                0 percent
    Interrupt             0 percent
    Idle                  100 percent
  Model                  RE-TXP-LCC
  Serial ID              737F-1024
  Start time             2009-05-06 17:31:32 PDT
  Uptime                 5 days, 3 hours, 54 minutes, 19 seconds
  Last reboot reason      Router rebooted after a normal shutdown.

```

show chassis routing-engine lcc (TX Matrix Plus Router)

```

user@host> show chassis routing-engine 0 lcc 0
lcc0-re0:
-----
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             30 degrees C / 86 degrees F
  CPU temperature         43 degrees C / 109 degrees F
  DRAM                   3327 MB
  Memory utilization      9 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                2 percent
    Interrupt             0 percent
    Idle                  98 percent

```



```

Model RE-TXP-LCC
Serial ID 737F-1024
Start time 2009-05-11 17:40:32 PDT
Uptime 3 hours, 45 minutes, 26 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages: 1 minute 5 minute 15 minute
                0.00      0.00      0.00

Routing Engine status:
Slot 1:
  Current state Backup
  Election priority Backup (default)
  Temperature 30 degrees C / 86 degrees F
  CPU temperature 43 degrees C / 109 degrees F
  DRAM 3327 MB
  Memory utilization 9 percent
  CPU utilization:
    User 0 percent
    Background 0 percent
    Kernel 0 percent
    Interrupt 0 percent
    Idle 100 percent
  Model RE-TXP-LCC
  Serial ID 737F-1024
  Start time 2009-05-06 17:31:32 PDT
  Uptime 5 days, 3 hours, 54 minutes, 59 seconds
  Last reboot reason Router rebooted after a normal shutdown.

```

show chassis routing-engine bios (TX Matrix Plus Router)

```

user@host> show chassis routing-engine bios
sfc0-re0:

```

```

-----
Routing Engine BIOS Version: V0.0.Z

```

```

lcc0-re0:

```

```

-----
Routing Engine BIOS Version: V0.0.N

```

show chassis routing-engine (QFX Series)

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state Master
  Election priority Master (default)
  DRAM 2820 MB
  Memory utilization 49 percent
  CPU utilization:
    User 1 percent
    Background 0 percent
    Kernel 1 percent
    Interrupt 0 percent
    Idle 97 percent
  Model QFX3500-48S4Q
  Serial ID S/N ED3709
  Uptime 3 days, 4 hours, 29 minutes, 42 seconds
  Last reboot reason 0x200:chassis control reset
  Load averages: 1 minute 5 minute 15 minute
                0.37 0.26 0.19

```

show chassis routing-engine (OCX Series)

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state Master
Election priority Master (default)
DRAM 2820 MB
Memory utilization 49 percent
CPU utilization:
User 1 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 97 percent
Model OCX-1100-48SX-AFI
Serial ID S/N ED3709
Uptime 3 days, 4 hours, 29 minutes, 42 seconds
Last reboot reason 0x200:chassis control reset
Load averages: 1 minute 5 minute 15 minute
0.37 0.26 0.19

```

show chassis routing engine interconnect-device (QFabric Systems)

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state Master
Election priority Master (default)
Temperature 48 degrees C / 118 degrees F
DRAM 3312 MB
Memory utilization 63 percent
CPU utilization:
User 14 percent
Background 0 percent
Kernel 5 percent
Interrupt 0 percent
Idle 81 percent
Model RE-QFXC08-CB4S
Serial ID BUILTIN
Start time 2011-07-06 13:26:15 UTC
Uptime 11 hours, 24 minutes, 57 seconds
Last reboot reason 0x4:reset-button reset
Load averages: 1 minute 5 minute 15 minute
2.62 2.31 2.28

Routing Engine status:
Slot 1:
Current state Backup
Election priority Backup (default)
Temperature 39 degrees C / 102 degrees F
DRAM 3312 MB
Memory utilization 59 percent
CPU utilization:
User 9 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 91 percent
Model RE-QFXC08-CB4S
Serial ID BUILTIN

```

```

Start time          2011-07-06 13:24:58 UTC
Uptime              11 hours, 26 minutes, 18 seconds
Last reboot reason  0x4:reset-button reset

```

show chassis routing-engine (PTX Series Packet Transport Router)

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state          Master
  Election priority      Master (default)
  Temperature            60 degrees C / 140 degrees F
  CPU temperature        76 degrees C / 168 degrees F
  DRAM                   17152 MB
  Memory utilization     11 percent
  CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel               4 percent
    Interrupt            0 percent
    Idle                 95 percent
  Model                  RE-DUO-2600
  Serial ID              P737A-002231
  Start time             2011-12-21 16:54:37 PST
  Uptime                 25 minutes, 44 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.01        0.02        0.06

Routing Engine status:
Slot 1:
  Current state          Backup
  Election priority      Backup (default)
  Temperature            50 degrees C / 122 degrees F
  CPU temperature        64 degrees C / 147 degrees F
  DRAM                   17152 MB
  Memory utilization     10 percent
  CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel               0 percent
    Interrupt            0 percent
    Idle                 99 percent
  Model                  RE-DUO-2600
  Serial ID              P737A-002438
  Start time             2011-12-21 16:52:26 PST
  Uptime                 27 minutes, 49 seconds
  Last reboot reason     Router rebooted after a normal shutdown.

```

show chassis routing-engine (EX9200 Switch)

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state          Master
  Election priority      Master (default)
  Temperature            35 degrees C / 95 degrees F
  CPU temperature        33 degrees C / 91 degrees F
  DRAM                   8157 MB
  Installed Memory       8192 MB

```

```

Memory utilization          18 percent
CPU utilization:
  User                      1 percent
  Background                0 percent
  Kernel                    4 percent
  Interrupt                  1 percent
  Idle                      94 percent
Model                      RE-S-EX9200-1800X4
Serial ID                   9009119555
Start time                  2014-03-12 14:58:05 UTC
Uptime                      1 hour, 41 minutes, 51 seconds
Last reboot reason          Router rebooted after a normal shutdown.
Load averages:              1 minute   5 minute   15 minute
                             0.02       0.02       0.00

Routing Engine status:
Slot 1:
  Current state              Backup
  Election priority           Backup (default)

[...Output truncated...]

```

show chassis routing-engine (EX9251 Switch)

```

user@switch> show chassis routing-engine
Routing Engine status:
  Temperature                50 degrees C / 122 degrees F
  CPU temperature             50 degrees C / 122 degrees F
  DRAM                       16340 MB (16384 MB installed)
  Memory utilization          6 percent
  5 sec CPU utilization:
    User                      2 percent
    Background                0 percent
    Kernel                    19 percent
    Interrupt                  0 percent
    Idle                      79 percent
  1 min CPU utilization:
    User                      2 percent
    Background                0 percent
    Kernel                    19 percent
    Interrupt                  0 percent
    Idle                      79 percent
  5 min CPU utilization:
    User                      2 percent
    Background                0 percent
    Kernel                    19 percent
    Interrupt                  0 percent
    Idle                      79 percent
  15 min CPU utilization:
    User                      2 percent
    Background                0 percent
    Kernel                    19 percent
    Interrupt                  0 percent
    Idle                      79 percent
Model                       RE-S-2X00x6
Start time                   2018-03-08 05:11:33 PST
Uptime                       10 days, 18 hours, 59 minutes, 15 seconds
Last reboot reason            0x4000:VJUNOS reboot
Load averages:               1 minute   5 minute   15 minute
                             1.06       1.09       1.08

```

show chassis routing-engine (ACX2000 Universal Metro Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature           53 degrees C / 127 degrees F
  DRAM                   1536 MB
  Memory utilization     25 percent
  CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel               0 percent
    Interrupt            1 percent
    Idle                 99 percent
  Model                 RE-ACX-2000
  Start time             2012-05-09 00:57:07 PDT
  Uptime                 5 days, 3 hours, 16 minutes, 15 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.00        0.03        0.05

```

show chassis routing-engine (ACX1000 Universal Metro Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature           36 degrees C / 96 degrees F
  DRAM                   768 MB
  Memory utilization     50 percent
  CPU utilization:
    User                 3 percent
    Background           0 percent
    Kernel               6 percent
    Interrupt            0 percent
    Idle                 91 percent
  Model                 RE-ACX-1000
  Start time             2012-05-10 07:12:23 PDT
  Uptime                 4 days, 10 hours, 46 minutes, 53 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.00        0.00        0.00

```

show chassis routing-engine (Displaying the guest reboot reason on PTX5000, MX240, MX480, MX960, MX2010, and MX2020)

```

user@host> show chassis routing-engine re0 | match "Last reboot reason"
Last reboot reason 0x4000:VJUNOS reboot

```

show chassis satellite

Syntax	<code>show chassis satellite</code> <code>[device-alias <i>device-alias</i> fpc-slot <i>fpc-slot</i> cluster <i>cluster-name</i>]</code> <code>[brief detail extensive terse]</code> <code><since <i>time</i>></code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display the status of the satellite device connections in a Junos Fusion.
Options	<p>none—(Same as brief) Display satellite device connection information</p> <p>device-alias <i>device-alias</i>—(Optional) Display satellite device connection information for the satellite device using the specified device alias only.</p> <p>fpc-slot <i>fpc-slot</i>—(Optional) Display satellite device connection information for the satellite device using the specified FPC slot number only.</p> <p>cluster <i>cluster-name</i>—(Optional) Display satellite device connection information for the satellite devices in the specified satellite device cluster only.</p> <p>brief detail extensive terse—(Optional) Display the specified level of output.</p> <p>since <i>time</i>—(Optional) Display the satellite devices that have been added to the Junos Fusion on or after a certain date or time, in <i>YYYY-MM-DD.HH:MM:SS</i> format.</p> <p>To display all satellite devices added since a specified date, enter the specific date. For instance, to display all satellite devices added on or after December 22nd, 2015, enter 2015-12-22 as the <i>time</i>.</p> <p>To display all satellite devices added since a specified time, enter the specific date and time. For instance, to display all satellite devices added on or after 11:01AM on December 22nd, 2015, enter 2015-12-22.11:01:00 as the <i>time</i>.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• Configuring or Expanding a Junos Fusion Enterprise• Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	show chassis satellite on page 656 show chassis satellite device-alias on page 657 show chassis satellite fpc-slot 130 on page 657 show chassis satellite terse on page 657

[show chassis satellite detail on page 657](#)

Output Fields [Table 19 on page 651](#) lists the output fields for the **show chassis satellite** command. Output fields are listed in the approximate order in which they appear.

Table 19: show chassis satellite Output Fields

Field Name	Field Description	Level of Output
Fields for Interface		
Alias	The satellite device's alias.	brief
	The satellite device's alias is configured using the set chassis satellite-management fpc slot-id alias alias statement.	extensive none
Slot	The slot number of the satellite device.	brief
	The slot number can be configured using the set chassis satellite-management fpc slot-id statement..	terse extensive none

Table 19: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Device State	<p>The state of the satellite device within the Junos Fusion.</p> <p>The most common device states:</p> <ul style="list-style-type: none"> • Online—the satellite device is online and active. This is the satellite device state during normal operating procedure. • Offline—the satellite device is offline and not detected. This state is typically seen when the satellite device has been disconnected from the aggregation device, or when all cascade or uplink ports connecting the satellite device to the aggregation device are down. • Present—the satellite device is recognized by the aggregation device, but is not online. This state is typically seen before a satellite device goes online, or while satellite device configuration is in progress or finalizing. • Rebooting—the satellite device is rebooting. • Disable—the satellite device has been disabled. • Misconfig—the satellite device is not properly configured. This state is typically seen when the system ID, cascade port, or FPC slot ID defined for the satellite device has a misconfiguration. • Miswire—the satellite device is miswired. This state is typically seen when a satellite device is wired to two aggregation devices but is not configured for multihoming. Use show chassis satellite detail to gather more information on the issue when the device state is Miswire. <p>Other less common device states include:</p> <ul style="list-style-type: none"> • ModeChanging—the device is converting from a standalone device to a satellite device, or from a satellite device to a standalone device. • ModeChangeFail—the mode change operation failed. • MinorUpgradeOn—A minor satellite software upgrade is in progress. • MajorUpgradeOn—A major satellite software upgrade is in progress. • Upgrade-pending—the satellite device is waiting for a satellite software upgrade. • ProvSessionDn—the provisioning session is down. • ReconcileState—the satellite provisioning daemon has restarted and is reconciling the satellite device state. 	<p>brief terse extensive none</p>
Cascade Ports	<p>The cascade port or ports.</p> <p>A cascade port is a port on the aggregation device that connects to a satellite device in a Junos Fusion.</p>	<p>brief extensive none</p>

Table 19: *show chassis satellite Output Fields (continued)*

Field Name	Field Description	Level of Output
Port State	<p>The state of the cascade port on the aggregation device.</p> <p>Port states include:</p> <ul style="list-style-type: none"> • online—the cascade port is online and active. This is the port state during normal operating procedure. • txUpRxDn—Tx or Rx forwarding is disabled on the cascade port. This state is often seen when a second aggregation device is added to a Junos Fusion topology, and the devices in the Junos Fusion are synchronizing to the new topology. • miswire—the cascade port is miswired. This state is typically seen when a satellite device is interconnected to two aggregation devices but multihoming is not configured. Use show chassis satellite detail to gather more information on the issue when the device state is Miswire. • present—The cascade port recognized the satellite device and is up. • misconfig—the cascade port is assigned, but this interface is not working correctly due to a misconfiguration. • down—the cascade port is down. • offline—the satellite device was previously recognized from this interface, but is no longer present. • absent—the cascade port is configured but no satellite device is detected on the interface. 	<p>brief</p> <p>extensive</p> <p>none</p>
Extended Ports Total	<p>The total number of extended ports on the satellite device.</p> <p>An extended port is a network-facing port on the satellite device that sends and receives network traffic for the Junos Fusion.</p>	<p>brief</p> <p>none</p> <p>terse</p>
Extended Ports Up	The number of active extended ports.	<p>brief</p> <p>none</p> <p>terse</p>
Model	The hardware model of the satellite device.	terse
Version	The version of satellite device software running on the satellite device.	terse
Satellite Alias	<p>The satellite device's alias.</p> <p>The satellite device's alias is configured using the set chassis satellite-management fpc slot-id alias alias statement.</p>	detail
FPC slot	<p>The FPC slot number of the satellite device.</p> <p>The slot number can be configured using the set chassis satellite-management fpc slot-id statement.</p>	detail

Table 19: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Operational State	<p>The operational state of the satellite device.</p> <p>The state UFDDown indicates that uplink failure detection disabled the satellite device's extended ports due to an uplink port failure.</p>	detail
Product Model	The hardware model of the satellite device.	detail
Product Family	The product family of the satellite device.	detail
Serial number	The serial number of the satellite device.	detail
System ID	The system ID of the satellite device. The system ID is also the satellite device's MAC address.	detail
Software package version	The satellite software version running on the satellite device.	detail
Host software version	The host operating system software version running on the satellite device.	detail
Management Address	<p>The management IP address of the satellite device.</p> <p>This management IP address belongs to an internal routing instance. This management address is assigned by the control plane internally based on FPC slot ID and is used for the control plane traffic between the aggregation device and satellite device.</p> <p>All management in a Junos Fusion should be done through the aggregation device. The management IP address of the satellite device is useful for debugging purposes by expert users only.</p>	detail
UFD config state	Uplink failure detection configuration state.	detail
Minimum link	Uplink failure detection minimum active uplink port setting.	detail
Holdddown timer (seconds)	Uplink failure detection holdddown timer setting, in seconds.	detail
UFD operational state	Uplink failure detection operational state.	detail

Table 19: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Candidate uplink interfaces (pic/port)	Uplink failure detection candidate uplink interfaces.	detail
Extended Ports	The number of extended ports for the satellite device. The number on the left is the total number of extended ports, and the number on the right is the total number of extended ports currently in the up state.	extensive
When	The date and time of the event.	extensive
Event	The event.	extensive
Action	The actions that resulted from the event.	extensive
Fields for Cascade interfaces		
Interface Name	The name of the cascade interface on the aggregation device.	detail
State	The state of the cascade interface.	detail
Uplink Interface	The name of the uplink interface on the satellite device.	detail
Adjacency state	The adjacency state of the cascade to uplink interface link.	detail
Last transition	The amount of time that has passed since the last transition of the cascade to uplink interface link.	detail
Adjacency down count (Interface Name)	The number of times the cascade to uplink interface link has gone into the down state.	detail
RX Packet	The number of packets received on the cascade interface.	detail
Last received packet	The amount of time that has passed since the last packet was received on the cascade interface.	detail
Peer adjacency information	The amount of time that has passed since the last peer adjacency transition.	detail
Adjacency down count (Peer adjacency information)	The number of times the cascade to uplink interface link has gone into the down state.	detail

Table 19: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Last down cause	The cause of the last adjacency failure.	detail
SDPD restart detected	The number of times that the satellite device protocol process has restarted.	detail
Fields for Process information		
Process Name	The name of the process.	detail
PID	The process identification number of the process.	detail
State	The current state of the process.	detail
Number of restart detected	The number of times the process has restarted.	detail
Uptime	The amount of time that the process has been running.	detail

Sample Output

show chassis satellite

```

user@aggregation-device> show chassis satellite

```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
qfx5100-24q-01	100	Online	xe-0/0/1 xe-0/3/0	online	9/2
qfx5100-24q-02	101	Online	xe-0/0/2 xe-0/3/1	online	20/12
qfx5100-24q-03	102	Online	xe-0/0/3 xe-0/3/2	online	16/6
qfx5100-24q-04	103	Online	xe-0/0/4 xe-0/3/3	online	16/4
qfx5100-24q-05	104	Online	xe-0/0/5 xe-0/3/4	online	13/3
qfx5100-24q-06	105	Online	xe-0/0/6 xe-0/3/5	online	24/15
qfx5100-24q-07	106	Online	xe-0/0/7 xe-0/3/6	online	24/15
qfx5100-24q-08	107	Online	xe-0/0/8 xe-0/3/7	online	21/12
ex4300-01	109	Online	xe-1/0/1	online	49/2
ex4300-02	110	Online	xe-1/0/2	online	49/2
ex4300-03	111	Online	xe-1/0/3	online	49/2
ex4300-04	112	Online	xe-1/0/4	online	49/11
ex4300-05	113	Online	xe-1/0/5	online	49/11
ex4300-06	114	Online	xe-1/0/6	online	49/11
ex4300-07	115	Online	xe-1/0/7	online	49/11
ex4300-08	116	Online	xe-1/1/0	online	49/11
ex4300-09	117	Online	xe-1/1/1	online	49/11
ex4300-10	118	Online	xe-1/1/2	online	49/11

ex4300-11	119	Online	xe-1/1/3	online	49/11
ex4300-12	120	Online	xe-1/1/4	online	49/11
ex4300-13	121	Online	xe-1/1/5	online	49/11
ex4300-14	122	Online	xe-1/1/6	online	49/11
ex4300-15	123	Online	xe-1/1/7	online	49/11
ex4300-16	124	Online	xe-1/2/1	online	49/11
ex4300-17	125	Online	xe-1/2/2	online	49/11
ex4300-18	126	Online	xe-1/2/3	online	49/2
ex4300-19	127	Online	xe-1/2/4	online	49/1
ex4300-20	128	Online	xe-1/2/5	online	49/1
ex4300-21	129	Online	xe-1/2/6	online	49/1
ex4300-22	130	Online	xe-1/2/7	online	49/1

Sample Output

show chassis satellite device-alias

```
user@aggregation-device> show chassis satellite device-alias ex4300-22
```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
ex4300-22	130	Online	xe-0/2/7	online	49/1

Sample Output

show chassis satellite fpc-slot 130

```
user@aggregation-device> show chassis satellite fpc-slot 130
```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
ex4300-22	101	Online	xe-0/0/2 xe-0/3/1	online online	20/12

Sample Output

show chassis satellite terse

```
user@aggregation-device> show chassis satellite terse
```

Slot	Device State	Model	Extended Ports Total/Up	Version
101	Online	QFX5100-48S-6Q	7/7	3.0R1.1
102	Online	QFX5100-48S-6Q	7/7	3.0R1.1
103	Online	QFX5100-48S-6Q	6/5	3.0R1.1
104	Online	QFX5100-48S-6Q	14/14	3.0R1.1
105	Online	QFX5100-48S-6Q	18/18	3.0R1.1
106	Online	QFX5100-48S-6Q	17/16	3.0R1.1
107	Online	EX4300-48T	52/6	3.0R1.1
108	Online	EX4300-48T	52/15	3.0R1.1
109	Online	EX4300-48T	51/14	3.0R1.1
110	Online	EX4300-48T	51/14	3.0R1.1
111	Online	EX4300-48T	51/13	3.0R1.1
112	Online	EX4300-48T	51/12	3.0R1.1
113	Online	EX4300-48T	51/13	3.0R1.1
114	Online	QFX5100-24Q-2P	17/13	3.0R1.1

show chassis satellite detail

```
user@aggregation-device> show chassis satellite detail
Satellite Alias: qfx5100-48s-02
FPC Slot: 101
```

```
Operational State: Online
Product Model: QFX5100-48S-6Q
Product Family: i386
Serial number: ABC123DEF456
System id: 00:11:22:aa:bb:cc
Software package version: 3.0R1.1
Host software version: 1.0.0
Management Address: 172.16.0.101/32
Cascade interfaces:
  Interface Name: xe-0/0/2 State: online
    Uplink Interface: xe-001/0/48:0
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 65 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Interface Down
      SDPD restart detected: 3
  Interface Name: xe-0/2/1 State: online
    Uplink Interface: xe-001/0/48:1
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 64 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Interface Down
      SDPD restart detected: 3
  Interface Name: xe-2/0/0 State: online
    Uplink Interface: xe-001/0/48:2
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 65 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Interface Down
      SDPD restart detected: 3
  Interface Name: xe-2/1/6 State: online
    Uplink Interface: xe-001/0/48:3
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 65 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Hold timer expire
      SDPD restart detected: 3
Process information:
  Process Name: Provisioning PID: 6716 State: Running
    Number of restart detected: 0
    Uptime: 00:10:22
  Process Name: PFE PID: 3194 State: Running
    Number of restart detected: 0
    Uptime: 00:10:22
UFD config state: Enable (persist), Minimum link: 1,
Holdddown timer (seconds): 6
UFD operational state: Enable
Candidate uplink interfaces (pic/port):
  1/0
```

1/1
1/2
1/3
2/0
2/1
2/2
2/3

Satellite Alias: qfx5100-48s-03
FPC Slot: 102
Operational State: Online
Product Model: QFX5100-48S-6Q
Product Family: i386
Serial number: ABCDEFG12345
System id: 00:11:22:aa:ba:cc
Software package version: 3.0R1.1
Host software version: 1.0.0
Management Address: 172.16.0.102/32
Cascade interfaces:
 Interface Name: xe-0/0/3 State: online
 Uplink Interface: xe-002/0/48:0
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
 Interface Name: xe-0/2/2 State: online
 Uplink Interface: xe-002/0/48:1
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
 Interface Name: xe-2/0/1 State: online
 Uplink Interface: xe-002/0/48:2
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
 Interface Name: xe-2/1/7 State: online
 Uplink Interface: xe-002/0/48:3
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
Process information:
 Process Name: Provisioning PID: 6667 State: Running

```
Number of restart detected: 0
Uptime: 00:10:22
Process Name: PFE PID: 3155 State: Running
Number of restart detected: 0
Uptime: 00:10:22
<additional output removed for brevity>
```


show chassis satellite extended-port

Syntax	<pre>show chassis satellite extended-port <i>interface-name</i> <fpc-slot <i>fpc-slot</i>> <interface-name <i>interface-name</i>> [<i>brief</i> <i>detail</i> <i>extensive</i> <i>terse</i>] <since <i>time</i>></pre>
Release Information	<p>Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.</p> <p>Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.</p> <p>Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.</p>
Description	<p>Display the status of the extended ports on the satellite devices in a Junos Fusion.</p> <p>The extended ports are the network-facing ports on satellite devices that send and receive network traffic for a Junos Fusion.</p>
Options	<p>none—(Same as brief and terse) Display extended port status information.</p> <p>brief detail extensive terse—(Optional) Display the specified level of output.</p> <p>fpc <i>fpc-slot</i>—Display extended port status information for the specified FPC slot only. In a Junos Fusion, one FPC slot ID is assigned to each satellite device, so you can use this option to display extended port status information for all extended ports on one satellite device.</p> <p>interface-name <i>interface-name</i>—Display extended port status information for the extended port interface only.</p> <p>history—Display extended port history.</p> <p>statistics—Display extended port statistics.</p> <p>since <i>time</i>—(Optional) Display extended port status information for the satellite devices that have been added to the Junos Fusion on or after a certain date or time, which is entered in the <i>YYYY-MM-DD.HH:MM:SS</i> format.</p> <p>To display extended port status information for all satellite devices added since a specified date, enter the specific date as the <i>time</i>. For instance, 2015-12-22.</p> <p>To display extended port status information for all satellite devices added since a specified time, enter the specific date and time as the <i>time</i>. For instance, 2015-12-22.11:01:00.</p>
Required Privilege Level	view

- Related Documentation**
- [Configuring or Expanding a Junos Fusion Enterprise](#)
 - [Configuring Junos Fusion Provider Edge on page 39](#)

List of Sample Output [show chassis satellite extended-port on page 663](#)

Output Fields [Table 20 on page 662](#) lists the output fields for the **show chassis satellite extended-port** command. Output fields are listed in the approximate order in which they appear.

Table 20: show chassis satellite extended-port Output Fields

Field Name	Field Description	Level of Output
Fields for Interface		
Name	The interface name of the extended port.	brief terse detail extensive none
State	The state of the extended port.	brief terse detail extensive none
Rx Request State	The receive request state of the extended port.	brief terse detail extensive none
Tx Request State	The transmit request state of the extended port.	brief terse detail extensive none
Admin State	The administrative state of the extended port.	brief terse detail extensive none
Op State	The operational state of the extended port.	brief terse detail extensive none
IFD Idx	The internal interface index.	brief terse detail extensive none

Table 20: show chassis satellite extended-port Output Fields (continued)

Field Name	Field Description	Level of Output
PCID	The port's E-channel identifier (ECID), abbreviated as PCID.	brief terse detail extensive none
When	The date and time of the event.	detail extensive
Event	The event.	detail extensive
Action	The actions that resulted from the event.	detail extensive

Sample Output

show chassis satellite extended-port

```

user@aggregation-device> show chassis satellite extended-port
Legend for interface types:
  * -- Uplink interface

Name           State      Rx Request State Tx Request State Admin/Op IFD PCID
et-100/0/2     AddComplete None      Ready Up/Dn 838 110
et-104/0/2     AddComplete None      Ready Up/Dn 813 110
et-107/0/23    AddComplete None      Ready Up/Up 544 194
ge-109/0/0     AddComplete None      Ready Up/Up 402 115
ge-109/0/1     AddComplete None      Ready Up/Dn 403 114
ge-109/0/10    AddComplete None      Ready Up/Dn 412 113
ge-109/0/11    AddComplete None      Ready Up/Dn 413 112
ge-109/0/12    AddComplete None      Ready Up/Dn 414 123
ge-109/0/13    AddComplete None      Ready Up/Dn 415 122
ge-109/0/14    AddComplete None      Ready Up/Dn 416 125
ge-109/0/15    AddComplete None      Ready Up/Dn 417 124
ge-109/0/16    AddComplete None      Ready Up/Dn 418 131
ge-109/0/17    AddComplete None      Ready Up/Dn 419 130
ge-109/0/18    AddComplete None      Ready Up/Dn 420 133
ge-109/0/19    AddComplete None      Ready Up/Dn 421 132
ge-109/0/2     AddComplete None      Ready Up/Dn 404 117
ge-109/0/20    AddComplete None      Ready Up/Dn 422 127
ge-109/0/21    AddComplete None      Ready Up/Dn 423 126
ge-109/0/22    AddComplete None      Ready Up/Dn 424 129
ge-109/0/23    AddComplete None      Ready Up/Dn 425 128
ge-109/0/24    AddComplete None      Ready Up/Dn 426 103
ge-109/0/25    AddComplete None      Ready Up/Dn 427 102
ge-109/0/26    AddComplete None      Ready Up/Dn 428 105
ge-109/0/27    AddComplete None      Ready Up/Dn 429 104
ge-109/0/28    AddComplete None      Ready Up/Dn 430 107
ge-109/0/29    AddComplete None      Ready Up/Dn 431 106
ge-109/0/3     AddComplete None      Ready Up/Dn 405 116
ge-109/0/30    AddComplete None      Ready Up/Dn 432 109
ge-109/0/31    AddComplete None      Ready Up/Dn 433 108
ge-109/0/32    AddComplete None      Ready Up/Dn 434 135

```

ge-109/0/33	AddComplete	None	Ready	Up/Dn	435	134
ge-109/0/34	AddComplete	None	Ready	Up/Dn	436	137
ge-109/0/35	AddComplete	None	Ready	Up/Dn	437	136
ge-109/0/36	AddComplete	None	Ready	Up/Dn	438	144
ge-109/0/37	AddComplete	None	Ready	Up/Dn	439	143
ge-109/0/38	AddComplete	None	Ready	Up/Dn	440	146
ge-109/0/39	AddComplete	None	Ready	Up/Dn	441	145
ge-109/0/4	AddComplete	None	Ready	Up/Dn	406	119
ge-109/0/40	AddComplete	None	Ready	Up/Dn	442	140
ge-109/0/41	AddComplete	None	Ready	Up/Dn	443	139
ge-109/0/42	AddComplete	None	Ready	Up/Dn	444	142
ge-109/0/43	AddComplete	None	Ready	Up/Dn	445	141
ge-109/0/44	AddComplete	None	Ready	Up/Dn	446	148
ge-109/0/45	AddComplete	None	Ready	Up/Dn	447	147
ge-109/0/46	AddComplete	None	Ready	Up/Dn	448	150
ge-109/0/47	AddComplete	None	Ready	Up/Dn	449	149
ge-109/0/5	AddComplete	None	Ready	Up/Dn	407	118
ge-109/0/6	AddComplete	None	Ready	Up/Dn	408	121
ge-109/0/7	AddComplete	None	Ready	Up/Dn	409	120
ge-109/0/8	AddComplete	None	Ready	Up/Dn	410	111
ge-109/0/9	AddComplete	None	Ready	Up/Dn	411	110
ge-110/0/0	AddComplete	None	Ready	Up/Up	728	115
ge-110/0/1	AddComplete	None	Ready	Up/Dn	729	114

show chassis satellite interface

Syntax	<pre>show chassis satellite interface <interface-name> [brief detail extensive] <since time></pre>
Release Information	<p>Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.</p> <p>Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.</p> <p>Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.</p>
Description	<p>Display the status of the cascade ports as well as the internal satellite interfaces in a Junos Fusion.</p> <p>You might see sd interfaces in the output of this command. These are internal interfaces for the Junos Fusion.</p>
Options	<p>interface-name—Specify the name of the interface.</p> <p>none—(Same as brief) Display aggregation device interface information.</p> <p>brief detail extensive—(Optional) Display the specified level of output.</p> <p>since time—(Optional) Display interface status information for the satellite devices that have been added to the Junos Fusion on or after a certain date or time, which is entered in the <i>YYYY-MM-DD.HH:MM:SS</i> format.</p> <p>To display extended port status information for all satellite devices added since a specified date, enter the specific date as the <i>time</i>. For instance, 2015-12-22.</p> <p>To display extended port status information for all satellite devices added since a specified time, enter the specific date and time as the <i>time</i>. For instance, 2015-12-22.11:01:00.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • <i>Configuring or Expanding a Junos Fusion Enterprise</i> • Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	show chassis satellite interface on page 666
Output Fields	<p>Table 21 on page 666 lists the output fields for the show chassis satellite interface command. Output fields are listed in the approximate order in which they appear.</p>

Table 21: show chassis satellite interface Output Fields

Field Name	Field Description	Level of Output
Fields for Interface		
Interface	The interface name.	brief detail extensive none
State	The state of the interface.	brief detail extensive none
Type	The type of interface.	brief detail extensive none
Provisioned Addresses	The provisioned IP addresses for the Junos Fusion. This information is primarily useful for debugging purposes by expert users.	detail extensive
Operational Addresses	The operational IP addresses for the Junos Fusion. This information is primarily useful for debugging purposes by expert users.	detail extensive
When	The date and time of the event.	detail extensive
Event	The event.	detail extensive
Action	The actions that resulted from the event.	detail extensive

Sample Output

show chassis satellite interface

```
user@aggregation-device> show chassis satellite interface
```

```

Interface      State      Type
1o0            Up         Loopback

sd-101/0/0     Up         Satellite
sd-102/0/0     Up         Satellite
sd-103/0/0     Up         Satellite
sd-104/0/0     Up         Satellite

```

sd-105/0/0	Up	Satellite
sd-106/0/0	Up	Satellite
sd-107/0/0	Up	Satellite
sd-108/0/0	Up	Satellite
sd-109/0/0	Up	Satellite
sd-110/0/0	Up	Satellite
sd-111/0/0	Up	Satellite
sd-112/0/0	Up	Satellite
sd-113/0/0	Up	Satellite
sd-114/0/0	Up	Satellite
xe-0/0/1	Up	Cascade
xe-0/0/2	Up	Cascade
xe-0/0/3	Up	Cascade
xe-0/0/4	Up	Cascade
xe-0/0/5	Up	Cascade
xe-0/0/6	Up	Cascade
xe-0/0/7	Up	Cascade
xe-0/0/8	Up	Cascade
xe-0/0/9	Up	Cascade
xe-0/2/0	Up	Cascade
xe-0/2/1	Up	Cascade
xe-0/2/2	Up	Cascade
xe-0/2/3	Up	Cascade
xe-0/2/4	Up	Cascade
xe-0/2/5	Up	Cascade
xe-0/2/6	Up	Cascade
xe-0/2/7	Up	Cascade
xe-1/0/1	Up	Cascade
xe-1/0/2	Up	Cascade
xe-1/0/3	Up	Cascade

xe-1/2/1	Up	Cascade
xe-1/2/2	Up	Cascade
xe-1/2/3	Up	Cascade
xe-2/0/0	Up	Cascade
xe-2/0/1	Up	Cascade
xe-2/0/2	Up	Cascade
xe-2/0/3	Up	Cascade
xe-2/0/4	Up	Cascade
xe-2/0/5	Up	Cascade
xe-2/0/6	Up	Cascade
xe-2/0/7	Up	Cascade
xe-2/1/0	Up	Cascade
xe-2/1/1	Up	Cascade
xe-2/1/2	Up	Cascade
xe-2/1/3	Up	Cascade
xe-2/1/4	Up	Cascade
xe-2/1/5	Up	Cascade
xe-2/1/6	Up	Cascade
xe-2/1/7	Up	Cascade
xe-2/2/0	Up	Cascade
xe-2/2/1	Up	Cascade
xe-2/2/2	Up	Cascade
xe-2/2/3	Up	Cascade
xe-2/2/4	Up	Cascade
xe-2/2/5	Up	Cascade
xe-2/2/6	Up	Cascade
xe-2/2/7	Up	Cascade
xe-2/3/0	Up	Cascade
xe-2/3/3	Dn	Cascade
xe-2/3/4	Up	Cascade
xe-2/3/5	Up	Cascade

xe-2/3/6	Up	Cascade
xe-2/3/7	Up	Cascade

show chassis satellite neighbor

Syntax	<pre>show chassis satellite neighbor [<i>interface-name</i>] [<i>brief</i> <i>detail</i> <i>extensive</i> <i>terse</i>] <since <i>time</i>></pre>
Release Information	<p>Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.</p> <p>Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.</p> <p>Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.</p>
Description	Display the status of the satellite device to aggregation device links in a Junos Fusion.
Options	<p><i>interface-name</i>—Specify the name of the cascade port on the aggregation device.</p> <p><i>none</i>—(Same as <i>terse</i>) Display satellite device connection information.</p> <p><i>brief</i> <i>detail</i> <i>extensive</i> <i>terse</i>—(Optional) Display the specified level of output.</p> <p><i>since time</i>—(Optional) Display satellite device connection information for the satellite devices that have been added to the Junos Fusion on or after a certain date or time, which is entered in the <i>YYYY-MM-DD.HH:MM:SS</i> format.</p> <p>To display satellite device connection information for all satellite devices added since a specified date, enter the specific date as the <i>time</i>. For instance, 2015-12-22.</p> <p>To display satellite device connection information for all satellite devices added since a specified time, enter the specific date and time as the <i>time</i>. For instance, 2015-12-22.11:01:00.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Configuring or Expanding a Junos Fusion Enterprise • Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	show chassis satellite neighbor on page 673
Output Fields	Table 22 on page 670 lists the output fields for the show chassis satellite neighbor command. Output fields are listed in the approximate order in which they appear.

Table 22: show chassis satellite neighbor Output Fields

Field Name	Field Description	Level of Output
Fields for Interface		

Table 22: show chassis satellite neighbor Output Fields (continued)

Field Name	Field Description	Level of Output
Interface	A cascade port interface on the aggregation device in the Junos Fusion. A cascade port interface on an aggregation device connects to a satellite device in a Junos Fusion.	brief terse detail extensive none
State	The state of the interface.	brief terse detail extensive none
Port Info	The uplink port interface on the satellite device. An uplink port interface on a satellite device connects the satellite device to an aggregation device in a Junos Fusion.	brief terse detail extensive none
System Name	The system name, or alias, of the satellite device. The satellite device's alias is configured using the set chassis satellite-management fpc slot-id alias statement.	brief terse detail extensive none
Model	The hardware model of the satellite device.	brief terse detail extensive none
SW Version	The version of satellite software running on the satellite device.	brief terse detail extensive none
Adjacency up-down transition count	The number of times that the adjacency has transitioned between up and down.	brief detail extensive
Last transition	The last transition of the adjacency state.	brief detail extensive
Device Serial Number	The serial number of the satellite device.	brief detail extensive
Chassis ID	The chassis ID of the satellite device. The chassis ID of the satellite device is the satellite's device's MAC address. The chassis ID is also specified as the system ID in some Junos Fusion configuration tasks.	brief detail extensive

Table 22: show chassis satellite neighbor Output Fields (continued)

Field Name	Field Description	Level of Output
Device Family Name	The device family name.	brief detail extensive
Version Sequence Number	The version sequence number.	brief detail extensive
System Description	A plain-text description of the hardware and software currently running on the satellite device.	brief detail extensive
Build date	The date and time that the satellite software was built.	brief detail extensive
Hello interval	The current hello interval configuration.	brief detail extensive
Satellite hello interval	The current satellite device hello interval configuration.	brief detail extensive
Local-end (Local assigned primary address)	The local-end cascade port IP address.	brief detail extensive
Remote-end (Local assigned primary address)	The remote-end uplink port IP address.	brief detail extensive
Cause (Adjacency Down History)	The cause of the last adjacency down event.	brief detail extensive
Timestamp (Adjacency Down History)	The date and time of the last adjacency down event.	brief detail extensive
Information (Adjacency Down History)	Information related to the last adjacency down event.	brief detail extensive
When	The date and time of the event.	detail extensive
Event	The event.	detail extensive

Table 22: show chassis satellite neighbor Output Fields (continued)

Field Name	Field Description	Level of Output
Action	The actions that resulted from the event.	detail extensive

Sample Output

show chassis satellite neighbor

```

user@aggregation-device> show chassis satellite neighbor
Interface  State      Port Info  System Name  Model          SW Version
xe-2/3/7   Init
xe-2/3/6   Init
xe-2/3/5   Init
xe-2/3/4   Init
xe-2/3/3   Dn
xe-2/3/0   Two-Way    xe-0/2/2    ex4300-29    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/7   Two-Way    xe-0/2/2    ex4300-28    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/6   Two-Way    xe-0/2/2    ex4300-27    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/5   Two-Way    xe-0/2/2    ex4300-26    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/2/4   Init
xe-2/2/3   Init
xe-2/2/2   Two-Way    xe-0/0/48:3 qfx5100-48s-06 QFX5100-48S-6Q 0.1I20150224_18
27_dc-builder
xe-2/2/1   Two-Way    xe-0/0/48:3 qfx5100-48s-05 QFX5100-48S-6Q 0.1I20150224_18
27_dc-builder
xe-2/2/0   Init
xe-2/1/7   Init
xe-2/1/6   Init
xe-2/1/5   Two-Way    xe-0/0/4:2   qfx5100-24q-09 QFX5100-24Q-2P 0.1I20150224_18
27_dc-builder
xe-2/1/4   Two-Way    xe-0/2/1    ex4300-31    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/1/3   Two-Way    xe-0/2/1    ex4300-30    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/1/2   Two-Way    xe-0/2/1    ex4300-29    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/1/1   Two-Way    xe-0/2/1    ex4300-28    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/1/0   Init
xe-2/0/7   Two-Way    xe-0/2/1    ex4300-26    EX4300-48T    0.1I20150224_182
7_dc-builder
xe-2/0/6   Init
xe-2/0/5   Init
xe-2/0/4   Init
xe-2/0/3   Init
xe-2/0/2   Two-Way    xe-0/0/48:2 qfx5100-48s-04 QFX5100-48S-6Q 0.1I20150224_18
27_dc-builder
xe-2/0/1   Two-Way    xe-0/0/48:2 qfx5100-48s-03 QFX5100-48S-6Q 0.1I20150224_18
27_dc-builder
xe-2/0/0   Init
xe-1/2/3   Two-Way    xe-0/0/0:0   qfx5100-24q-09 QFX5100-24Q-2P 0.1I20150224_18
27_dc-builder

```

xe-1/2/2	Two-Way	xe-0/2/0	ex4300-31	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/2/1	Two-Way	xe-0/2/0	ex4300-30	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/0/3	Two-Way	xe-0/2/0	ex4300-29	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/0/2	Two-Way	xe-0/2/0	ex4300-28	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-1/0/1	Two-Way	xe-0/2/0	ex4300-27	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-0/2/7	Two-Way	xe-0/0/0:1	qfx5100-24q-09	QFX5100-24Q-2P	0.1I20150224_18
27_dc-builder					
xe-0/2/6	Init				
xe-0/2/5	Init				
xe-0/2/4	Two-Way	xe-0/0/48:1	qfx5100-48s-05	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/2/3	Two-Way	xe-0/0/48:1	qfx5100-48s-04	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/2/2	Two-Way	xe-0/0/48:1	qfx5100-48s-03	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/2/1	Init				
xe-0/2/0	Init				
xe-0/0/9	Two-Way	xe-0/2/0	ex4300-26	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-0/0/8	Two-Way	xe-0/2/0	ex4300-25	EX4300-48T	0.1I20150224_182
7_dc-builder					
xe-0/0/7	Two-Way	xe-0/0/48:0	qfx5100-48s-07	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/6	Two-Way	xe-0/0/48:0	qfx5100-48s-06	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/5	Two-Way	xe-0/0/48:0	qfx5100-48s-05	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/4	Two-Way	xe-0/0/48:0	qfx5100-48s-04	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/3	Two-Way	xe-0/0/48:0	qfx5100-48s-03	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/2	Two-Way	xe-0/0/48:0	qfx5100-48s-02	QFX5100-48S-6Q	0.1I20150224_18
27_dc-builder					
xe-0/0/1	Init				

show chassis satellite software

Syntax	show chassis satellite software [brief detail]
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display information related to the satellite software in the Junos Fusion.
Options	none —(Same as brief) Display satellite device software information. brief detail —(Optional) Display the specified level of output.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Configuring or Expanding a Junos Fusion Enterprise • Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	show chassis satellite software on page 676 show chassis satellite software detail on page 676
Output Fields	Table 23 on page 675 lists the output fields for the show chassis satellite neighbor command. Output fields are listed in the approximate order in which they appear.

Table 23: show chassis satellite software Output Fields

Field Name	Field Description	Level of Output
Fields for Interface		
Version	The versions of satellite software that are installed and associated with a software upgrade group.	brief none
Platforms	The hardware platform information.	brief none
Group	The name of the assigned satellite software group or groups, if assigned.	brief none
Software Package Version	The satellite software package version.	detail
Platform	The platform type.	detail
Host Version	The host version of software for the platform.	detail

Table 23: show chassis satellite software Output Fields (continued)

Field Name	Field Description	Level of Output
Current Groups	<p>The name or names of the satellite software upgrade groups that are using the software package.</p> <p>This output only appears if the software package is associated with a satellite software upgrade group.</p>	detail
Former Groups	<p>The name or names of satellite software upgrade groups that were previously using the software package.</p> <p>This output only appears if the software package was previously associated with a satellite software upgrade group.</p>	detail

Sample Output

show chassis satellite software

```

user@aggregation-device> show chassis satellite software
Version          Platforms          Group
3.0R1.1          i386 ppc           group0

```

Sample Output

show chassis satellite software detail

```

user@aggregation-device> show chassis satellite software detail
Software package version: 3.0R1.6
Platforms supported by package: i386 ppc arm arm563xx
Platform      Host Version  Models Supported
i386          3.0.3        QFX5100-24Q-2P
               QFX5100-48C-6Q
               QFX5100-48S-6Q
               QFX5100-48T-6Q
               QFX5100-96S-8Q
               QFX5100-48SH-6Q
               QFX5100-48TH-6Q
ppc           1.1.2        EX4300-24P
               EX4300-24T
               EX4300-48P
               EX4300-48T
               EX4300-48T-BF
               EX4300-48T-DC
               EX4300-48T-DC-BF
arm           1.0.0        EX2300-24P
               EX2300-24T-DC
               EX2300-C-12T
               EX4300-C-12P
arm563xx      1.0.0        EX3400-24P
               EX3400-24T
               EX3400-48T
               EX3400-48P
Current Groups: group1
                  group2
                  group3

```


group4
group5

show chassis satellite statistics

Syntax	show chassis satellite statistics <device-alias <i>device-alias</i> > <fpc-slot <i>fpc-slot</i> > <cluster <i>cluster-name</i> >
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display statistics for satellite devices in a Junos Fusion.
Options	<p>device-alias—Display output for the specified satellite device, which is identified by the device alias, only.</p> <p>fpc-slot—Display output for the specified satellite device, which is identified by the FPC slot ID, only.</p> <p>cluster-name—Display output for the satellite devices in the specified satellite device cluster only.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Configuring or Expanding a Junos Fusion Enterprise • Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	show chassis satellite statistics on page 679 show chassis satellite statistics device-alias qfx5100-48s-02 on page 682 show chassis satellite statistics fpc-slot 101 on page 682
Output Fields	Table 24 on page 678 lists the output fields for the show chassis satellite statistics command. Output fields are listed in the approximate order in which they appear.

Table 24: show chassis satellite statistics Output Fields

Field Name	Field Description
Fields for Interface	
Serial Number	The serial number of the satellite device.
Slot-ID	The FPC slot ID of the satellite device.
CSP down transition count	The number of times that the Control and Status Protocol (CSP) session has gone down.

Table 24: show chassis satellite statistics Output Fields (continued)

Field Name	Field Description
Last transition (CSP down transition count)	The last time that the Control and Status Protocol (CSP) session transitioned.
Reachability down transition count	The number of times the satellite device has been in the reachability down state.
Reachability change transition count (Reachability down transition count)	The number of times that the satellite device's reachability state has transitioned.
S/W image update count	The number of times that the satellite software has been updated on the satellite device.
Extended Port add/delete/up/down request/response	The number of times an extended port—a network-facing port on the satellite device—has been added, deleted, placed in the up position, received a down request, or received a response.
Extended Port Params change request	The number of times that an extended port—a network-facing port on the satellite device—has had a change request.
Extended Port up/down operational state transition	The number of times that an extended port—a network-facing port on the satellite device—has had an operational state transition to up or down.
Rx sync complete	The number of times the receive synchronization state has been completed.
Uplink ready rx count	The number of times the uplink port—the port on the satellite device that connects to the aggregation device—has been placed in the ready-to-receive state.
Uplink ready tx count	The number of times the uplink port—the port on the satellite device that connects to the aggregation device—has been placed in the ready-to-transmit state.

Sample Output

show chassis satellite statistics

```

user@aggregation-device> show chassis satellite statistics
Serial Number: TA3714160468 Slot-ID: 101
  CSP down transition count: 0 Last transition: 05:23:56
  Reachability down transition count: 0
  Reachability change transition count: 4 Last transition: 05:23:16
  S/W image update count: 0
  Extended Port add/delete/up/down request/response: 7/0/7/2 7/0/7/2
  Extended Port Params change request: 0
  Extended Port up/down operational state transition: 7/0
  Rx sync complete: 1
  Uplink ready rx count: 4
  Uplink ready tx count: 4
Serial Number: TA3714160046 Slot-ID: 102
  CSP down transition count: 0 Last transition: 05:23:55
  Reachability down transition count: 0
  Reachability change transition count: 4 Last transition: 05:23:19
  S/W image update count: 0
  Extended Port add/delete/up/down request/response: 7/0/7/2 7/0/7/2

```

```
Extended Port Params change request: 0
Extended Port up/down operational state transition: 7/0
Rx sync complete: 1
Uplink ready rx count: 4
Uplink ready tx count: 4
Serial Number: TA3714140404 Slot-ID: 103
  CSP down transition count: 0 Last transition: 05:23:57
  Reachability down transition count: 0
  Reachability change transition count: 4 Last transition: 05:23:14
  S/W image update count: 0
  Extended Port add/delete/up/down request/response: 6/0/5/3 6/0/5/3
  Extended Port Params change request: 0
  Extended Port up/down operational state transition: 5/0
  Rx sync complete: 1
  Uplink ready rx count: 4
  Uplink ready tx count: 4
Serial Number: TA3714141327 Slot-ID: 104
  CSP down transition count: 0 Last transition: 05:23:57
  Reachability down transition count: 0
  Reachability change transition count: 4 Last transition: 05:23:15
  S/W image update count: 0
  Extended Port add/delete/up/down request/response: 14/0/14/2 14/0/14/2
  Extended Port Params change request: 0
  Extended Port up/down operational state transition: 14/0
  Rx sync complete: 1
  Uplink ready rx count: 4
  Uplink ready tx count: 4
Serial Number: TA3714140200 Slot-ID: 105
  CSP down transition count: 0 Last transition: 05:23:59
  Reachability down transition count: 0
  Reachability change transition count: 4 Last transition: 05:23:15
  S/W image update count: 0
  Extended Port add/delete/up/down request/response: 18/0/18/2 18/0/18/2
  Extended Port Params change request: 6
  Extended Port up/down operational state transition: 18/0
  Rx sync complete: 1
  Uplink ready rx count: 4
  Uplink ready tx count: 4
Serial Number: TA3714140904 Slot-ID: 106
  CSP down transition count: 0 Last transition: 05:23:57
  Reachability down transition count: 0
  Reachability change transition count: 4 Last transition: 05:23:16
  S/W image update count: 0
  Extended Port add/delete/up/down request/response: 17/0/16/3 17/0/16/3
  Extended Port Params change request: 2
  Extended Port up/down operational state transition: 16/0
  Rx sync complete: 1
  Uplink ready rx count: 4
  Uplink ready tx count: 4
Serial Number: PE3714040197 Slot-ID: 107
  CSP down transition count: 0 Last transition: 05:24:32
  Reachability down transition count: 0
  Reachability change transition count: 4 Last transition: 05:23:18
  S/W image update count: 0
  Extended Port add/delete/up/down request/response: 52/0/7/50 52/0/7/50
  Extended Port Params change request: 0
  Extended Port up/down operational state transition: 7/1
  Rx sync complete: 1
  Uplink ready rx count: 4
  Uplink ready tx count: 4
Serial Number: PE3714080398 Slot-ID: 108
```

```

CSP down transition count: 0 Last transition: 05:24:32
Reachability down transition count: 0
Reachability change transition count: 4 Last transition: 05:23:18
S/W image update count: 0
Extended Port add/delete/up/down request/response: 52/0/15/40 52/0/15/40
Extended Port Params change request: 0
Extended Port up/down operational state transition: 15/0
Rx sync complete: 1
Uplink ready rx count: 4
Uplink ready tx count: 4
Serial Number: PE3714080103 Slot-ID: 109
CSP down transition count: 0 Last transition: 05:23:22
Reachability down transition count: 0
Reachability change transition count: 3 Last transition: 05:23:19
S/W image update count: 0
Extended Port add/delete/up/down request/response: 51/0/14/37 51/0/14/37
Extended Port Params change request: 51
Extended Port up/down operational state transition: 14/0
Rx sync complete: 1
Uplink ready rx count: 3
Uplink ready tx count: 3
Serial Number: PE3714090246 Slot-ID: 110
CSP down transition count: 0 Last transition: 05:23:22
Reachability down transition count: 0
Reachability change transition count: 3 Last transition: 05:23:19
S/W image update count: 0
Extended Port add/delete/up/down request/response: 51/0/14/37 51/0/14/37
Extended Port Params change request: 42
Extended Port up/down operational state transition: 14/0
Rx sync complete: 1
Uplink ready rx count: 3
Uplink ready tx count: 3
Serial Number: PE3714080417 Slot-ID: 111
CSP down transition count: 0 Last transition: 05:23:22
Reachability down transition count: 0
Reachability change transition count: 3 Last transition: 05:23:19
S/W image update count: 0
Extended Port add/delete/up/down request/response: 51/0/13/38 51/0/13/38
Extended Port Params change request: 51
Extended Port up/down operational state transition: 13/0
Rx sync complete: 1
Uplink ready rx count: 3
Uplink ready tx count: 3
Serial Number: PE3714080018 Slot-ID: 112
CSP down transition count: 0 Last transition: 05:23:22
Reachability down transition count: 0
Reachability change transition count: 2 Last transition: 05:23:18
S/W image update count: 0
Extended Port add/delete/up/down request/response: 51/0/12/39 51/0/12/39
Extended Port Params change request: 51
Extended Port up/down operational state transition: 12/0
Rx sync complete: 1
Uplink ready rx count: 2
Uplink ready tx count: 2
Serial Number: PE3714080030 Slot-ID: 113
CSP down transition count: 0 Last transition: 05:23:22
Reachability down transition count: 0
Reachability change transition count: 3 Last transition: 05:23:18
S/W image update count: 0
Extended Port add/delete/up/down request/response: 51/0/13/38 51/0/13/38
Extended Port Params change request: 51

```

```
Extended Port up/down operational state transition: 13/0
Rx sync complete: 1
Uplink ready rx count: 3
Uplink ready tx count: 3
Serial Number: TB3714070145 Slot-ID: 114
CSP down transition count: 0 Last transition: 05:23:58
Reachability down transition count: 0
Reachability change transition count: 4 Last transition: 05:23:15
S/W image update count: 0
Extended Port add/delete/up/down request/response: 17/0/13/7 17/0/13/7
Extended Port Params change request: 0
Extended Port up/down operational state transition: 13/0
Rx sync complete: 1
Uplink ready rx count: 4
Uplink ready tx count: 4
```

Sample Output

show chassis satellite statistics device-alias qfx5100-48s-02

```
user@aggregation-device> show chassis satellite statistics device-alias qfx5100-48s-02
Serial Number: TA3714160468 Slot-ID: 101
CSP down transition count: 0 Last transition: 05:52:44
Reachability down transition count: 0
Reachability change transition count: 4 Last transition: 05:52:04
S/W image update count: 0
Extended Port add/delete/up/down request/response: 7/0/7/2 7/0/7/2
Extended Port Params change request: 0
Extended Port up/down operational state transition: 7/0
Rx sync complete: 1
Uplink ready rx count: 4
Uplink ready tx count: 4
```

Sample Output

show chassis satellite statistics fpc-slot 101

```
user@aggregation-device> show chassis satellite statistics fpc-slot 101
Serial Number: TA3714160468 Slot-ID: 101
CSP down transition count: 0 Last transition: 05:52:44
Reachability down transition count: 0
Reachability change transition count: 4 Last transition: 05:52:04
S/W image update count: 0
Extended Port add/delete/up/down request/response: 7/0/7/2 7/0/7/2
Extended Port Params change request: 0
Extended Port up/down operational state transition: 7/0
Rx sync complete: 1
Uplink ready rx count: 4
Uplink ready tx count: 4
```

show chassis satellite unprovision

Syntax	<pre>show chassis satellite unprovision [brief detail extensive] [cluster <i>cluster-name</i>] <since <i>time</i>></pre>
Release Information	<p>Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge.</p> <p>Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise.</p> <p>Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.</p>
Description	<p>Display information about unprovisioned satellite devices in a Junos Fusion.</p> <p>An unprovisioned satellite device in a Junos Fusion is a satellite device that is recognized by the aggregation device, but is not participating in a Junos Fusion.</p> <p>No output appears when this command is entered when a Junos Fusion contains no unprovisioned satellite devices.</p> <p>This command is helpful in identifying satellite devices that are not participating in a Junos Fusion due to configuration issues. Notably, a satellite device that has not been associated with an FPC ID in a Junos Fusion becomes an unprovisioned satellite device. See “Configuring Junos Fusion Provider Edge” on page 39 or <i>Configuring or Expanding a Junos Fusion Enterprise</i> for information on associating an FPC ID with a Junos Fusion.</p>
Options	<p>none—(Same as brief) Display unprovisioned satellite device information.</p> <p>brief detail extensive—(Optional) Display the specified level of output.</p> <p>cluster <i>cluster-name</i>—(Optional) Display unprovisioned satellite device information for the specified satellite device cluster only.</p> <p>since <i>time</i>—(Optional) Display unprovisioned satellite device information for the satellite devices that have been unprovisioned from a Junos Fusion on or after a certain date or time, which is entered in the <i>YYYY-MM-DD.HH:MM:SS</i> format.</p> <p>To display unprovisioned satellite device information for all satellite devices unprovisioned since a specified date, enter the specific date as the <i>time</i>. For instance, 2015-12-22.</p> <p>To display unprovisioned satellite device information for all satellite devices added since a specified time, enter the specific date and time as the <i>time</i>. For instance, 2015-12-22.11:01:00.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> <i>Configuring or Expanding a Junos Fusion Enterprise</i>

- [Configuring Junos Fusion Provider Edge on page 39](#)

List of Sample Output [show chassis satellite unprovision on page 685](#)
[show chassis satellite unprovision detail on page 686](#)

Output Fields [Table 25 on page 684](#) lists the output fields for the **show chassis satellite unprovision** command. Output fields are listed in the approximate order in which they appear.

Table 25: show chassis satellite unprovision Output Fields

Field Name	Field Description	Level of Output
System-Id	The MAC address of the satellite device.	brief extensive none
Serial-Number	The serial number of the satellite device.	brief extensive none
Device State	The device state of the unprovisioned satellite device.	brief extensive none
Cascade Ports	The cascade ports on the aggregation device that are connected to the satellite device.	brief extensive none
Port State	The port state of the cascade port.	brief extensive none
Operational State	The operational state of the satellite device.	detail
Product Model	The product model of the satellite device.	detail
Product Family	The product family of the satellite device.	detail
Serial number	The serial number of the satellite device.	detail
System id	The MAC address of the satellite device.	detail
Software package version	The satellite software package version running on the satellite device.	detail
Host software version	The host software version.	detail
Fields for Cascade interfaces		
Interface Name	The interface name of the cascade port on the aggregation device.	detail
State	The state of the cascade port.	detail

Table 25: show chassis satellite unprovision Output Fields (continued)

Field Name	Field Description	Level of Output
Uplink Interface	The uplink interface name. The uplink interface is the interface on the satellite device that connects to the aggregation device.	detail
Adjacency State	The adjacency state of the uplink interface to cascade port link.	detail
Last transition	The amount of time that has passed since the last link transition.	detail
Adjacency down count	The number of times that the uplink interface to cascade port link has gone into the adjacency down count.	detail
Rx Packet	The number of received packets.	detail
Last received packet	The amount of time that has passed since the last received packet.	detail
Peer adjacency information	The amount of time that the adjacency has been active.	detail
Last down cause	The cause of the last time the adjacency went down.	detail
SDPD restart detected	The number of times that the SDPD has restarted.	detail
Fields for process information		
Process Name	The name of the process.	detail
PID	The PID of the process.	detail
State	The current state of the process.	detail
Number of restart detected	The number of times that the process has restarted.	detail
Uptime	The amount of time that the process has been active.	detail
When	The date and time of the event.	extensive
Event	The event.	extensive
Action	The actions that resulted from the event.	extensive

Sample Output

show chassis satellite unprovision

```

user@aggregation-device> show chassis satellite unprovision
System-Id      Serial-Number  Device State  Cascade Ports  Port State

```

AA:BB:CC:aa:bb:cc	TABCDE111111	Present	xe-0/0/1	present
			xe-0/1/2	present
AA:BB:CC:aa:bb:zz	PABCDE111111	Present	xe-0/0/2	present
			xe-0/3/2	present

Sample Output

show chassis satellite unprovision detail

```

user@aggregation-device> show chassis satellite unprovision detail
Operational State: Present
Product Model: QFX5100-48S-6Q
Product Family: i386
Serial number: TABCDE111111
System id: AA:BB:CC:aa:bb:cc
Software package version: 3.0R1
Host software version: 0.2.3
Cascade interfaces:
  Interface Name: xe-0/0/1 State: present
    Uplink Interface: xe-0/0/25
    Adjacency state: Two-Way
    Last transition: 3d 22:06:55
    Adjacency down count: 0
    Rx Packet: 33875 Last received packet: 00:00:09
    Peer adjacency information: 3d 22:06:55
      Adjacency down count: 3
      Last down cause: TTL is 0
      SDPD restart detected: 3
  Interface Name: xe-0/1/2 State: present
    Uplink Interface: xe-0/0/24
    Adjacency state: Two-Way
    Last transition: 3d 22:06:58
    Adjacency down count: 0
    Rx Packet: 33875 Last received packet: 00:00:09
    Peer adjacency information: 3d 22:06:58
      Adjacency down count: 5
      Last down cause: TTL is 0
      SDPD restart detected: 3
Process information:
  Process Name: Provisioning PID: 2488 State: Running
    Number of restart detected: 0
    Uptime: 3d 22:06:58
  Process Name: PFE PID: 2631 State: Running
    Number of restart detected: 0
    Uptime: 3d 22:06:58
Operational State: Present
Product Model: EX4300-48T
Product Family: ppc
Serial number: PABCDE111111
System id: AA:BB:CC:aa:bb:zz
Software package version: 3.0R1
Host software version: 0.2.4
Cascade interfaces:
  Interface Name: xe-0/0/2 State: present
    Uplink Interface: xe-0/2/1
    Adjacency state: Two-Way
    Last transition: 3d 22:06:56
    Adjacency down count: 0
    Rx Packet: 33876 Last received packet: 00:00:05
    Peer adjacency information: 3d 22:06:56
      Adjacency down count: 1

```

```
      Last down cause: TTL is 0
      SDPD restart detected: 2
Interface Name: xe-0/3/2 State: present
  Uplink Interface: xe-0/2/0
  Adjacency state: Two-Way
  Last transition: 3d 22:06:57
  Adjacency down count: 0
  Rx Packet: 33876 Last received packet: 00:00:05
  Peer adjacency information: 3d 22:06:57
    Adjacency down count: 3
    Last down cause: TTL is 0
    SDPD restart detected: 2
Process information:
  Process Name: Provisioning PID: 1603 State: Running
    Number of restart detected: 0
    Uptime: 3d 22:06:57
  Process Name: PFE PID: 1615 State: Running
    Number of restart detected: 0
    Uptime: 3d 22:06:57
```

show chassis satellite upgrade-group

Syntax	<code>show chassis satellite upgrade-group</code> <code><upgrade-group-name></code> [<code>brief</code> <code>detail</code> <code>extensive</code> <code>terse</code>]
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Display information about the satellite software upgrade groups for the Junos Fusion.</p> <p>A satellite software upgrade group is a group of satellite devices that are updated at the same time to the same version of the satellite software. One Junos Fusion can contain multiple software upgrade groups, and multiple software upgrade groups should be configured in most Junos Fusions to avoid network downtimes during satellite software installations.</p> <p>A satellite software upgrade group that contains all satellite devices in a satellite device cluster is automatically created when a satellite device cluster is configured. The software upgrade group name for these automatically created software upgrade groups is the cluster name.</p>
Options	<p>none—(Same as brief and terse) Display satellite software upgrade group information for all satellite software upgrade groups.</p> <p>brief detail extensive terse—(Optional) Display the specified level of output.</p> <p>upgrade-group-name—Display satellite software upgrade group information for the specified satellite software upgrade group only.</p> <p>The satellite software upgrade group name is set using the set chassis satellite-management upgrade-groups upgrade-group-name statement for standalone satellite devices and is the cluster name for satellite device clusters.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• <i>Configuring or Expanding a Junos Fusion Enterprise</i>• Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	show chassis satellite upgrade-group on page 690 show chassis satellite upgrade-group detail on page 690
Output Fields	Table 26 on page 689 lists the output fields for the show chassis satellite upgrade-group command. Output fields are listed in the approximate order in which they appear.

Table 26: show chassis satellite upgrade-group Output Fields

Field Name	Field Description	Level of Output
Fields for Interface		
Group	<p>The satellite software upgrade group name.</p> <p>The satellite software upgrade group name is the name of the satellite device cluster when used with a satellite device cluster. A satellite software upgrade group with the name of the satellite device cluster is created automatically when a satellite device cluster is configured.</p> <p>The satellite software upgrade group name is set using the set chassis satellite-management upgrade-groups upgrade-group-name statement for standalone satellite devices.</p>	<p>brief</p> <p>terse</p> <p>extensive</p> <p>none</p>
Sw-Version	The version of satellite software associated with the satellite software upgrade group.	<p>brief</p> <p>terse</p> <p>extensive</p> <p>none</p>
Group State	The state of the satellite software upgrade group.	<p>brief</p> <p>terse</p> <p>extensive</p> <p>none</p>
Slot	The FPC slot identification number of the satellite device that is a member of the satellite software upgrade group.	<p>brief</p> <p>terse</p> <p>detail</p> <p>extensive</p> <p>none</p>
Device State	<p>The state of the satellite software for the specified member of the satellite software upgrade group.</p> <p>The version-in-sync output appears when the satellite device is running the satellite software version that is associated with the satellite software upgrade group.</p>	<p>brief</p> <p>terse</p> <p>detail</p> <p>extensive</p> <p>none</p>
Software upgrade group	The name of the satellite software upgrade group.	detail
Software package version	The satellite software package associated with the satellite software upgrade group.	detail
Previous software package version	<p>The satellite software package that was previously associated with the satellite software upgrade group.</p> <p>This output only appears if the satellite software upgrade group was previously associated with another version of satellite software.</p>	detail

Sample Output

show chassis satellite upgrade-group

```

user@aggregation-device> show chassis satellite upgrade-group

```

Group	Sw-Version	Group State	Slot	Device State
__ungrouped__ ex4300	3.0R1.0	in-sync	107	version-in-sync
			108	version-in-sync
			109	version-in-sync
			110	version-in-sync
			111	version-in-sync
			112	version-in-sync
qfx	3.0R1.0	in-sync	113	version-in-sync
			102	version-in-sync
			103	version-in-sync
			104	version-in-sync
			105	version-in-sync
			106	version-in-sync
			114	version-in-sync

Sample Output

show chassis satellite upgrade-group detail

```

user@aggregation-device> show chassis satellite upgrade-group detail
Software upgrade group: ex4300
Software package version: 3.0R1.0
Previous software package version: 3.0R1.1
Slot  Device State
107    version-in-sync
108    version-in-sync
109    version-in-sync
110    version-in-sync
111    version-in-sync
112    version-in-sync
113    version-in-sync

Software upgrade group: qfx
Software package version: 3.0R1.0
Slot  Device State
102    version-in-sync
103    version-in-sync
104    version-in-sync
105    version-in-sync
106    version-in-sync
114    version-in-sync

```


show chassis temperature-thresholds

List of Syntax	Syntax on page 692 Syntax (TX Matrix Routers) on page 692 Syntax (TX Matrix Plus Routers) on page 692 Syntax (MX Series Routers) on page 692 Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms) on page 692 Syntax (QFX Series) on page 692 Syntax (PTX Series) on page 692 Syntax (EX9251, EX9253 Switches) on page 692
Syntax	show chassis temperature-thresholds
Syntax (TX Matrix Routers)	show chassis temperature-thresholds <fcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers)	show chassis temperature-thresholds <fcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Routers)	show chassis temperature-thresholds <all-members> <local> <member <i>member-id</i> > <satellite [<i>slot-id slot-ID</i> device-alias <i>alias-name</i>]>
Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms)	show chassis temperature-thresholds
Syntax (QFX Series)	show chassis temperature-thresholds <interconnect-device <i>name</i> > <node-device <i>name</i> >
Syntax (PTX Series)	show chassis temperature-thresholds
Syntax (EX9251, EX9253 Switches)	show chassis temperature-thresholds
Release Information	Command introduced in Junos OS Release 8.0. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc command introduced in Junos OS Release 9.6 for the TX Matrix Plus router. Command introduced in Junos OS Release 11.1 for QFX Series. Command introduced in Junos OS Release 12.1 for T4000 Core Routers.

Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.

satellite option introduced in Junos OS Release 14.2R3.

Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.

Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.

Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.

Command introduced in Junos OS Release 18.1R1 for EX9251 switches.

Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Command introduced in Junos OS Release 18.2R1 for MX10008 Routers.

Description Display chassis temperature threshold settings, in degrees Celsius.

Options **none**—Display the temperature threshold details.

all-members—(MX Series routers only) (Optional) Display the chassis temperature threshold settings of all member routers in the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems only) (Optional) Display the chassis temperature threshold settings of the Interconnect device.

lcc *number*—(TX Matrix and TX Matrix Plus routers 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. On a TX Matrix Plus router, display the temperature threshold details of a specified router (line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local—(MX Series routers only) (Optional) Display the 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.

satellite [*slot-id slot-ID* | *device-alias alias-name*]—(Junos Fusion only) (Optional) Display the chassis temperature threshold settings for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.

scc—(TX Matrix routers only) (Optional) Display the temperature threshold details of the TX Matrix router (switch-card chassis).

sfc *number*—(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.

Required Privilege Level view

List of Sample Output

- [show chassis temperature-thresholds on page 695](#)
- [show chassis temperature-thresholds \(MX150\) on page 696](#)
- [show chassis temperature-thresholds \(MX104 Router\) on page 696](#)
- [show chassis temperature-thresholds \(MX240, MX480, MX960 Routers with Application Services Modular Line Card\) on page 696](#)
- [show chassis temperature-thresholds \(MX480 Router with MPC4E\) on page 697](#)
- [show chassis temperature-thresholds \(MX2010 Router\) on page 697](#)
- [show chassis temperature-thresholds \(MX2020 Router\) on page 699](#)
- [show chassis temperature-thresholds \(MX2020 Router with MPC4E\) on page 702](#)
- [show chassis temperature-thresholds \(MX2008 Routers\) on page 704](#)
- [show chassis temperature-thresholds \(MX10003 Router\) on page 708](#)
- [show chassis temperature-thresholds \(MX10008 Router\) on page 710](#)
- [show chassis temperature-thresholds \(MX204 Router\) on page 718](#)
- [show chassis temperature-thresholds \(PTX10008 Routers\) on page 718](#)
- [show chassis temperature-thresholds \(T4000 Core Routers\) on page 720](#)
- [show chassis temperature-thresholds \(TX Matrix Plus Router\) on page 721](#)
- [show chassis temperature-thresholds lcc \(TX Matrix Plus Router\) on page 722](#)
- [show chassis temperature-thresholds sfc \(TX Matrix Plus Router\) on page 722](#)
- [show chassis temperature-thresholds \(TX Matrix Plus routers with 3D SIBs\) on page 723](#)
- [show chassis temperature-thresholds \(QFX3500 Switch and QFX3600\) on page 724](#)
- [show chassis temperature-thresholds interconnect-device \(QFabric System\) on page 725](#)
- [show chassis temperature-thresholds \(PTX5000 Packet Transport Router\) on page 725](#)
- [show chassis temperature-thresholds \(PTX1000 Packet Transport Router\) on page 726](#)
- [show chassis temperature-thresholds \(MX Routers with Media Services Blade \[MSB\]\) on page 727](#)
- [show chassis temperature-thresholds \(EX9251 Switches\) on page 727](#)
- [show chassis temperature-thresholds \(EX9253 witches\) on page 728](#)

Output Fields [Table 27 on page 695](#) lists the output fields for the **show chassis temperature-thresholds** command. Output fields are listed in the approximate order in which they appear.

Table 27: 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. <p>NOTE: On a TX Matrix Plus router with 3D SIBs, the threshold temperature at the XF junction is set to 70°C for Normal fan speed, which is less than or equal to 4800 RPM.</p> <ul style="list-style-type: none"> High—The fans operate at high speed if the component has exceeded this temperature or a fan has failed or is missing. <p>NOTE: On a TX Matrix Plus router with 3D SIBs, the threshold temperature at the XF junction is set to 75°C for High fan speed, which is greater than or equal to 5000 RPM.</p> <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 Routers 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
```

Fan speed (degrees C)	Yellow alarm (degrees C)	Red alarm (degrees C)
--------------------------	-----------------------------	--------------------------

Item	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 (MX150)

```

user@host> show chassis temperature-thresholds
Fan speed      Yellow alarm      Red alarm      Fire Shutdown
(degrees C)    (degrees C)      (degrees C)    (degrees C)
(degrees C)
Item           Normal  High   Normal  Bad fan  Normal  Bad fan
Normal
FPC 0 Sensor 1 43     65     68      68       70      70
72
FPC 0 Sensor 2 43     65     68      68       70      70
72
FPC 0 Coretemp 78     94     100     100      105     105
110

```

show chassis temperature-thresholds (MX104 Router)

```

user@host> show chassis temperature-thresholds
Fan speed      Yellow alarm      Red alarm      Fire Shutdown
(degrees C)    (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     80     95      95      105     100
108

```

show chassis temperature-thresholds (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```

user@host> show chassis temperature-thresholds
Fan speed      Yellow alarm      Red alarm      Fire Shutdown
(degrees C)    (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     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 (MX480 Router with MPC4E)

```

user@ host> show chassis temperature-thresholds
Fan speed      Yellow alarm    Red alarm      Fire Shutdown
(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    80    95     95     110    110
112
Routing Engine 1 70    80    95     95     110    110
112
FPC 2          55    60    75     65     95     80
100
FPC 3          55    60    75     65     95     80
100
FPC 4          55    60    75     65     90     80
95

```

show chassis temperature-thresholds (MX2010 Router)

```

user@host> show chassis temperature-thresholds
Fan speed      Yellow alarm    Red alarm      Fire Shutdown
(degrees C)    (degrees C)    (degrees C)    (degrees C)
Item           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)

```
user@host> show chassis temperature-thresholds
```

	Fan speed		Yellow alarm		Red alarm		Fire Shutdown
	(degrees C)		(degrees C)		(degrees C)		(degrees C)
Item	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 (MX2020 Router with MPC4E)

user@host> show chassis temperature-thresholds								
Fan speed	Yellow alarm		Red alarm		Fire Shutdown		(degrees	
C)	(degrees C)		(degrees C)		(degrees C)		(degrees	
Item	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	70	70	85	85	89
SFB 0 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 0 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 0 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 0 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 0 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 0 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 0 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 1 Intake-Zone0	56	62	70	70	85	85	89
SFB 1 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 1 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 1 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 1 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 1 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 1 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 1 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 2 Intake-Zone0	56	62	70	70	85	85	89
SFB 2 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 2 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 2 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 2 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 2 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 2 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 2 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 3 Intake-Zone0	56	62	70	70	85	85	89
SFB 3 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 3 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 3 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 3 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 3 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 3 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 3 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 4 Intake-Zone0	56	62	70	70	85	85	89
SFB 4 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 4 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 4 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 4 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 4 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 4 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 4 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 5 Intake-Zone0	56	62	70	70	85	85	89
SFB 5 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 5 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 5 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 5 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 5 SFB-XF2-Zone1	70	75	90	85	95	90	100

SFB 5 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 5 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 6 Intake-Zone0	56	62	70	70	85	85	89
SFB 6 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 6 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 6 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 6 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 6 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 6 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 6 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 7 Intake-Zone0	56	62	70	70	85	85	89
SFB 7 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 7 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 7 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 7 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 7 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 7 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 7 SFB-XF0-Zone0	70	75	90	85	95	90	100
FPC 0	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 14	55	60	75	65	95	80	100
FPC 19	55	60	75	65	90	80	95
ADC 0 Intake	50	55	60	60	65	65	80
ADC 0 Exhaust	50	55	60	60	65	65	80
ADC 0 ADC-XF1	70	75	90	85	95	90	100
ADC 0 ADC-XF0	70	75	90	85	95	90	100
ADC 9 Intake	50	55	60	60	65	65	80
ADC 9 Exhaust	50	55	60	60	65	65	80
ADC 9 ADC-XF1	70	75	90	85	95	90	100
ADC 9 ADC-XF0	70	75	90	85	95	90	100
ADC 10 Intake	50	55	60	60	65	65	80
ADC 10 Exhaust	50	55	60	60	65	65	80
ADC 10 ADC-XF1	70	75	90	85	95	90	100
ADC 10 ADC-XF0	70	75	90	85	95	90	100
ADC 14 Intake	50	55	60	60	65	65	80
ADC 14 Exhaust	50	55	60	60	65	65	80
ADC 14 ADC-XF1	70	75	90	85	95	90	100
ADC 14 ADC-XF0	70	75	90	85	95	90	100
ADC 19 Intake	50	55	60	60	65	65	80
ADC 19 Exhaust	50	55	60	60	65	65	80
ADC 19 ADC-XF1	70	75	90	85	95	90	100
ADC 19 ADC-XF0	70	75	90	85	95	90	100

show chassis temperature-thresholds (MX2008 Routers)

user@host> show chassis temperature-thresholds							
		Fan speed		Yellow alarm		Red alarm	
Shutdown						Fire	
(degrees C)		(degrees C)		(degrees C)		(degrees C)	
Item	Normal	High	Normal	Bad fan	Normal	Bad fan	
Routing Engine 0 CPU	58	63	78	75	93	90	
98							
Routing Engine 1 CPU	58	63	78	75	93	90	
98							
CB 0 Inlet1	55	60	65	62	75	72	
85							
CB 0 Inlet2	45	50	61	58	80	77	
90							

CB 0 Inlet3	57	62	68	65	80	77
90						
CB 0 Inlet4	55	60	80	77	90	87
95						
CB 0 Exhaust1	55	60	65	62	75	72
85						
CB 0 Exhaust2	50	55	60	57	80	77
90						
CB 0 Exhaust3	70	75	81	78	91	88
96						
CB 0 Exhaust4	75	80	90	87	100	97
105						
CB 1 Inlet1	55	60	65	62	75	72
85						
CB 1 Inlet2	45	50	61	58	80	77
90						
CB 1 Inlet3	57	62	68	65	80	77
90						
CB 1 Inlet4	55	60	80	77	90	87
95						
CB 1 Exhaust1	55	60	65	62	75	72
85						
CB 1 Exhaust2	50	55	60	57	80	77
90						
CB 1 Exhaust3	70	75	81	78	91	88
96						
CB 1 Exhaust4	75	80	90	87	100	97
105						
SFB 0 Inlet1	49	54	62	59	76	73
81						
SFB 0 Inlet2	65	70	71	68	83	80
88						
SFB 0 Exhaust1	45	50	61	58	75	72
80						
SFB 0 Exhaust2	60	65	69	66	80	77
85						
SFB 0 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 0 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 1 Inlet1	49	54	62	59	76	73
81						
SFB 1 Inlet2	65	70	71	68	83	80
88						
SFB 1 Exhaust1	45	50	61	58	75	72
80						
SFB 1 Exhaust2	60	65	69	66	80	77
85						
SFB 1 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 1 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 2 Inlet1	49	54	62	59	76	73
81						
SFB 2 Inlet2	65	70	71	68	83	80
88						
SFB 2 Exhaust1	45	50	61	58	75	72
80						
SFB 2 Exhaust2	60	65	69	66	80	77
85						
SFB 2 SFB2-PF-local	65	70	75	72	95	92

100						
SFB 2 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 3 Inlet1	49	54	62	59	76	73
81						
SFB 3 Inlet2	65	70	71	68	83	80
88						
SFB 3 Exhaust1	45	50	61	58	75	72
80						
SFB 3 Exhaust2	60	65	69	66	80	77
85						
SFB 3 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 3 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 4 Inlet1	49	54	62	59	76	73
81						
SFB 4 Inlet2	65	70	71	68	83	80
88						
SFB 4 Exhaust1	45	50	61	58	75	72
80						
SFB 4 Exhaust2	60	65	69	66	80	77
85						
SFB 4 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 4 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 5 Inlet1	49	54	62	59	76	73
81						
SFB 5 Inlet2	65	70	71	68	83	80
88						
SFB 5 Exhaust1	45	50	61	58	75	72
80						
SFB 5 Exhaust2	60	65	69	66	80	77
85						
SFB 5 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 5 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 6 Inlet1	49	54	62	59	76	73
81						
SFB 6 Inlet2	65	70	71	68	83	80
88						
SFB 6 Exhaust1	45	50	61	58	75	72
80						
SFB 6 Exhaust2	60	65	69	66	80	77
85						
SFB 6 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 6 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 7 Inlet1	49	54	62	59	76	73
81						
SFB 7 Inlet2	65	70	71	68	83	80
88						
SFB 7 Exhaust1	45	50	61	58	75	72
80						
SFB 7 Exhaust2	60	65	69	66	80	77
85						
SFB 7 SFB2-PF-local	65	70	75	72	95	92
100						

SFB 7 SFB2-PF-die 120	88	93	98	95	118	115
FPC 0 95	55	60	75	65	90	80
FPC 3 110	55	60	75	65	105	80
FPC 5 110	55	60	75	65	105	80
FPC 7 95	55	60	75	65	90	80
FPC 9 Intake 95	60	65	75	75	85	85
FPC 9 Exhaust A 95	60	65	75	75	85	85
FPC 9 Exhaust B 95	60	65	75	75	85	85
FPC 9 XL 0 Chip 110	70	75	85	85	102	102
FPC 9 XL 0 XR2 0 Chip 115	75	80	90	90	105	105
FPC 9 XL 0 XR2 1 Chip 115	75	80	90	90	105	105
FPC 9 XL 1 Chip 110	70	75	85	85	102	102
FPC 9 XL 1 XR2 0 Chip 115	75	80	90	90	105	105
FPC 9 XL 1 XR2 1 Chip 115	75	80	90	90	105	105
FPC 9 XM 0 Chip 110	70	75	85	85	100	100
FPC 9 XM 1 Chip 110	70	75	85	85	100	100
FPC 9 XM 2 Chip 110	70	75	85	85	100	100
FPC 9 XM 3 Chip 110	70	75	85	85	100	100
FPC 9 PCIe Switch Chip 120	80	85	95	95	105	105
ADC 0 Intake 80	50	55	65	65	75	75
ADC 0 Exhaust 80	50	55	65	65	75	75
ADC 0 ADC-XF1 100	70	75	90	85	95	90
ADC 0 ADC-XF0 100	70	75	90	85	95	90
ADC 3 Intake 80	50	55	65	65	75	75
ADC 3 Exhaust 80	50	55	65	65	75	75
ADC 3 ADC-XF1 100	70	75	90	85	95	90
ADC 3 ADC-XF0 100	70	75	90	85	95	90
ADC 5 Intake 80	50	55	65	65	75	75
ADC 5 Exhaust 80	50	55	65	65	75	75
ADC 5 ADC-XF1 100	70	75	90	85	95	90
ADC 5 ADC-XF0	70	75	90	85	95	90

100						
ADC 7 Intake	50	55	65	65	75	75
80						
ADC 7 Exhaust	50	55	65	65	75	75
80						
ADC 7 ADC-XF1	70	75	90	85	95	90
100						
ADC 7 ADC-XF0	70	75	90	85	95	90
100						

show chassis temperature-thresholds (MX10003 Router)

```
user@host> show chassis temperature-thresholds
```

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							
Routing Engine 0	48	54	85	85	100	100	
102							
Routing Engine 1	48	54	85	85	100	100	
102							
CB 0 Exhaust Temp Sensor	60	65	75	75	85	85	
95							
CB 0 Inlet Temp Sensor	60	65	75	75	85	85	
95							
CB 0 CPU DIE Temp Sensor	83	90	98	98	105	105	
110							
CB 1 Exhaust Temp Sensor	60	65	75	75	85	85	
95							
CB 1 Inlet Temp Sensor	60	65	75	75	85	85	
95							
CB 1 CPU DIE Temp Sensor	83	90	98	98	105	105	
110							
FPC 0 Intake Temp Sensor	40	45	75	70	85	80	
95							
FPC 0 Exhaust-A Temp Sensor	55	60	85	80	90	90	
100							
FPC 0 Exhaust-B Temp Sensor	55	60	85	80	90	90	
100							
FPC 0 EA0 Chip	87	92	97	97	105	105	
110							
FPC 0 EA0-XR0 Chip	88	93	98	98	120	120	
125							
FPC 0 EA0-XR1 Chip	88	93	98	98	120	120	
125							
FPC 0 EA1 Chip	87	92	97	97	105	105	
110							
FPC 0 EA1-XR0 Chip	88	93	98	98	120	120	
125							
FPC 0 EA1-XR1 Chip	88	93	98	98	120	120	
125							
FPC 0 EA2 Chip	87	92	97	97	105	105	
110							
FPC 0 EA2-XR0 Chip	88	93	98	98	120	120	
125							
FPC 0 EA2-XR1 Chip	88	93	98	98	120	120	
125							
FPC 0 PF Chip	89	94	104	104	120	120	

120							
FPC 0 EA0_HMC0 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA0_HMC0 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA0_HMC1 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA0_HMC1 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA0_HMC2 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA0_HMC2 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA1_HMC0 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA1_HMC0 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA1_HMC1 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA1_HMC1 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA1_HMC2 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA1_HMC2 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA2_HMC0 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA2_HMC0 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA2_HMC1 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA2_HMC1 DRAM botm	83	88	98	98	120	120	
125							
FPC 0 EA2_HMC2 Logic die	88	93	103	103	120	120	
125							
FPC 0 EA2_HMC2 DRAM botm	83	88	98	98	120	120	
125							
FPC 1 Intake Temp Sensor	40	45	75	70	85	80	
95							
FPC 1 Exhaust-A Temp Sensor	55	60	85	80	90	90	
100							
FPC 1 Exhaust-B Temp Sensor	55	60	85	80	90	90	
100							
FPC 1 EA0 Chip	87	92	97	97	105	105	
110							
FPC 1 EA0-XR0 Chip	88	93	98	98	120	120	
125							
FPC 1 EA0-XR1 Chip	88	93	98	98	120	120	
125							
FPC 1 EA1 Chip	87	92	97	97	105	105	
110							
FPC 1 EA1-XR0 Chip	88	93	98	98	120	120	
125							
FPC 1 EA1-XR1 Chip	88	93	98	98	120	120	
125							
FPC 1 EA2 Chip	87	92	97	97	105	105	
110							
FPC 1 EA2-XR0 Chip	88	93	98	98	120	120	
125							
FPC 1 EA2-XR1 Chip	88	93	98	98	120	120	
125							

FPC 1 PF Chip	89	94	104	104	120	120
120						
FPC 1 EA0_HMC0 Logic die	88	93	103	103	120	120
125						
FPC 1 EA0_HMC0 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA0_HMC1 Logic die	88	93	103	103	120	120
125						
FPC 1 EA0_HMC1 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA0_HMC2 Logic die	88	93	103	103	120	120
125						
FPC 1 EA0_HMC2 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA1_HMC0 Logic die	88	93	103	103	120	120
125						
FPC 1 EA1_HMC0 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA1_HMC1 Logic die	88	93	103	103	120	120
125						
FPC 1 EA1_HMC1 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA1_HMC2 Logic die	88	93	103	103	120	120
125						
FPC 1 EA1_HMC2 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA2_HMC0 Logic die	88	93	103	103	120	120
125						
FPC 1 EA2_HMC0 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA2_HMC1 Logic die	88	93	103	103	120	120
125						
FPC 1 EA2_HMC1 DRAM botm	83	88	98	98	120	120
125						
FPC 1 EA2_HMC2 Logic die	88	93	103	103	120	120
125						
FPC 1 EA2_HMC2 DRAM botm	83	88	98	98	120	120
125						

show chassis temperature-thresholds (MX10008 Router)

user@host> show chassis temperature-thresholds		Fan speed		Yellow alarm		Red alarm
Fire Shutdown		(degrees C)		(degrees C)		(degrees
C)	(degrees C)	Normal	High	Normal	Bad fan	Normal
Item						
Bad fan	Normal					
Routing Engine 0		65	70	95	95	100
100	110					
Routing Engine 1		65	70	95	95	100
100	110					
CB 0 Intake A Temp Sensor		30	35	80	80	85
85	95					
CB 0 Intake B Temp Sensor		30	35	80	80	85
85	95					
CB 0 Exhaust A Temp Sensor		40	45	80	80	85
85	95					
CB 0 Exhaust B Temp Sensor		40	45	80	80	85
85	95					
CB 0 Middle Temp Sensor		40	45	80	80	85

85	95				
CB 1 Intake A Temp Sensor		30	35	80	80
85	95				85
CB 1 Intake B Temp Sensor		30	35	80	80
85	95				85
CB 1 Exhaust A Temp Sensor		40	45	80	80
85	95				85
CB 1 Exhaust B Temp Sensor		40	45	80	80
85	95				85
CB 1 Middle Temp Sensor		40	45	80	80
85	95				85
FPC 0 Intake-A Temp Sensor		52	62	72	72
85	90				85
FPC 0 Exhaust-A Temp Sensor		75	85	98	98
103	108				103
FPC 0 Exhaust-B Temp Sensor		75	85	98	98
103	108				103
FPC 0 EA0 Temp Sensor		62	72	90	90
100	105				100
FPC 0 EA0_XR0 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA0_XR1 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA1 Temp Sensor		62	72	90	90
100	105				100
FPC 0 EA1_XR0 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA1_XR1 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA2 Temp Sensor		62	72	90	90
100	105				100
FPC 0 EA2_XR0 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA2_XR1 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA3 Temp Sensor		62	72	90	90
100	105				100
FPC 0 EA3_XR0 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA3_XR1 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA4 Temp Sensor		62	72	90	90
100	105				100
FPC 0 EA4_XR0 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA4_XR1 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA5 Temp Sensor		62	72	90	90
100	105				100
FPC 0 EA5_XR0 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA5_XR1 Temp Sensor		77	87	100	100
105	108				105
FPC 0 EA0_HMC0 Logic die		79	89	103	103
110	115				110
FPC 0 EA0_HMC0 DRAM botm		74	84	98	98
105	110				105
FPC 0 EA0_HMC1 Logic die		79	89	103	103
110	115				110
FPC 0 EA0_HMC1 DRAM botm		74	84	98	98
105	110				105

FPC 0 EA0_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 0 EA0_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA1_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 0 EA1_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA1_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 0 EA1_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA1_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 0 EA1_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA2_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 0 EA2_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA2_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 0 EA2_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA2_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 0 EA2_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA3_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 0 EA3_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA3_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 0 EA3_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA3_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 0 EA3_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA4_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 0 EA4_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA4_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 0 EA4_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA4_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 0 EA4_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA5_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 0 EA5_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA5_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 0 EA5_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 0 EA5_HMC2 Logic die	79	89	103	103	110

110	115				
FPC 0 EA5_HMC2 DRAM botm		74	84	98	98 105
105	110				
FPC 2 Intake-A Temp Sensor		52	62	72	72 85
85	90				
FPC 2 Exhaust-A Temp Sensor		75	85	98	98 103
103	108				
FPC 2 Exhaust-B Temp Sensor		75	85	98	98 103
103	108				
FPC 2 EA0 Temp Sensor		62	72	90	90 100
100	105				
FPC 2 EA0_XR0 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA0_XR1 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA1 Temp Sensor		62	72	90	90 100
100	105				
FPC 2 EA1_XR0 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA1_XR1 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA2 Temp Sensor		62	72	90	90 100
100	105				
FPC 2 EA2_XR0 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA2_XR1 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA3 Temp Sensor		62	72	90	90 100
100	105				
FPC 2 EA3_XR0 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA3_XR1 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA4 Temp Sensor		62	72	90	90 100
100	105				
FPC 2 EA4_XR0 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA4_XR1 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA5 Temp Sensor		62	72	90	90 100
100	105				
FPC 2 EA5_XR0 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA5_XR1 Temp Sensor		77	87	100	100 105
105	108				
FPC 2 EA0_HMC0 Logic die		79	89	103	103 110
110	115				
FPC 2 EA0_HMC0 DRAM botm		74	84	98	98 105
105	110				
FPC 2 EA0_HMC1 Logic die		79	89	103	103 110
110	115				
FPC 2 EA0_HMC1 DRAM botm		74	84	98	98 105
105	110				
FPC 2 EA0_HMC2 Logic die		79	89	103	103 110
110	115				
FPC 2 EA0_HMC2 DRAM botm		74	84	98	98 105
105	110				
FPC 2 EA1_HMC0 Logic die		79	89	103	103 110
110	115				
FPC 2 EA1_HMC0 DRAM botm		74	84	98	98 105
105	110				

FPC 2 EA1_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 2 EA1_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA1_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 2 EA1_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA2_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 2 EA2_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA2_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 2 EA2_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA2_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 2 EA2_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA3_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 2 EA3_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA3_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 2 EA3_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA3_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 2 EA3_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA4_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 2 EA4_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA4_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 2 EA4_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA4_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 2 EA4_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA5_HMC0 Logic die	79	89	103	103	110
110 115					
FPC 2 EA5_HMC0 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA5_HMC1 Logic die	79	89	103	103	110
110 115					
FPC 2 EA5_HMC1 DRAM botm	74	84	98	98	105
105 110					
FPC 2 EA5_HMC2 Logic die	79	89	103	103	110
110 115					
FPC 2 EA5_HMC2 DRAM botm	74	84	98	98	105
105 110					
FPC 3 Intake-A Temp Sensor	52	62	72	72	85
85 90					
FPC 3 Exhaust-A Temp Sensor	75	85	98	98	103
103 108					
FPC 3 Exhaust-B Temp Sensor	75	85	98	98	103

103	108				
FPC 3 EA0 Temp Sensor		62	72	90	100
100	105				
FPC 3 EA0_XR0 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA0_XR1 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA1 Temp Sensor		62	72	90	100
100	105				
FPC 3 EA1_XR0 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA1_XR1 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA2 Temp Sensor		62	72	90	100
100	105				
FPC 3 EA2_XR0 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA2_XR1 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA3 Temp Sensor		62	72	90	100
100	105				
FPC 3 EA3_XR0 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA3_XR1 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA4 Temp Sensor		62	72	90	100
100	105				
FPC 3 EA4_XR0 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA4_XR1 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA5 Temp Sensor		62	72	90	100
100	105				
FPC 3 EA5_XR0 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA5_XR1 Temp Sensor		77	87	100	105
105	108				
FPC 3 EA0_HMC0 Logic die		79	89	103	110
110	115				
FPC 3 EA0_HMC0 DRAM botm		74	84	98	105
105	110				
FPC 3 EA0_HMC1 Logic die		79	89	103	110
110	115				
FPC 3 EA0_HMC1 DRAM botm		74	84	98	105
105	110				
FPC 3 EA0_HMC2 Logic die		79	89	103	110
110	115				
FPC 3 EA0_HMC2 DRAM botm		74	84	98	105
105	110				
FPC 3 EA1_HMC0 Logic die		79	89	103	110
110	115				
FPC 3 EA1_HMC0 DRAM botm		74	84	98	105
105	110				
FPC 3 EA1_HMC1 Logic die		79	89	103	110
110	115				
FPC 3 EA1_HMC1 DRAM botm		74	84	98	105
105	110				
FPC 3 EA1_HMC2 Logic die		79	89	103	110
110	115				
FPC 3 EA1_HMC2 DRAM botm		74	84	98	105
105	110				

FPC 3 EA2_HMC0 Logic die 110 115	79	89	103	103	110
FPC 3 EA2_HMC0 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA2_HMC1 Logic die 110 115	79	89	103	103	110
FPC 3 EA2_HMC1 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA2_HMC2 Logic die 110 115	79	89	103	103	110
FPC 3 EA2_HMC2 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA3_HMC0 Logic die 110 115	79	89	103	103	110
FPC 3 EA3_HMC0 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA3_HMC1 Logic die 110 115	79	89	103	103	110
FPC 3 EA3_HMC1 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA3_HMC2 Logic die 110 115	79	89	103	103	110
FPC 3 EA3_HMC2 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA4_HMC0 Logic die 110 115	79	89	103	103	110
FPC 3 EA4_HMC0 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA4_HMC1 Logic die 110 115	79	89	103	103	110
FPC 3 EA4_HMC1 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA4_HMC2 Logic die 110 115	79	89	103	103	110
FPC 3 EA4_HMC2 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA5_HMC0 Logic die 110 115	79	89	103	103	110
FPC 3 EA5_HMC0 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA5_HMC1 Logic die 110 115	79	89	103	103	110
FPC 3 EA5_HMC1 DRAM botm 105 110	74	84	98	98	105
FPC 3 EA5_HMC2 Logic die 110 115	79	89	103	103	110
FPC 3 EA5_HMC2 DRAM botm 105 110	74	84	98	98	105
SFB 0 Intake-A 95 105	65	75	85	85	95
SFB 0 Intake-B 95 105	65	75	85	85	95
SFB 0 Exhaust-A 95 105	75	85	95	95	95
SFB 0 Exhaust-B 95 105	75	85	95	95	95
SFB 0 PF0 105 115	65	75	100	100	105
SFB 0 PF1 105 115	65	75	100	100	105
SFB 1 Intake-A	65	75	85	85	95

95	105				
SFB 1 Intake-B		65	75	85	85 95
95	105				
SFB 1 Exhaust-A		75	85	95	95 95
95	105				
SFB 1 Exhaust-B		75	85	95	95 95
95	105				
SFB 1 PF0		65	75	100	100 105
105	115				
SFB 1 PF1		65	75	100	100 105
105	115				
SFB 2 Intake-A		65	75	85	85 95
95	105				
SFB 2 Intake-B		65	75	85	85 95
95	105				
SFB 2 Exhaust-A		75	85	95	95 95
95	105				
SFB 2 Exhaust-B		75	85	95	95 95
95	105				
SFB 2 PF0		65	75	100	100 105
105	115				
SFB 2 PF1		65	75	100	100 105
105	115				
SFB 3 Intake-A		65	75	85	85 95
95	105				
SFB 3 Intake-B		65	75	85	85 95
95	105				
SFB 3 Exhaust-A		75	85	95	95 95
95	105				
SFB 3 Exhaust-B		75	85	95	95 95
95	105				
SFB 3 PF0		65	75	100	100 105
105	115				
SFB 3 PF1		65	75	100	100 105
105	115				
SFB 4 Intake-A		65	75	85	85 95
95	105				
SFB 4 Intake-B		65	75	85	85 95
95	105				
SFB 4 Exhaust-A		75	85	95	95 95
95	105				
SFB 4 Exhaust-B		75	85	95	95 95
95	105				
SFB 4 PF0		65	75	100	100 105
105	115				
SFB 4 PF1		65	75	100	100 105
105	115				
SFB 5 Intake-A		65	75	85	85 95
95	105				
SFB 5 Intake-B		65	75	85	85 95
95	105				
SFB 5 Exhaust-A		75	85	95	95 95
95	105				
SFB 5 Exhaust-B		75	85	95	95 95
95	105				
SFB 5 PF0		65	75	100	100 105
105	115				
SFB 5 PF1		65	75	100	100 105
105	115				

show chassis temperature-thresholds (MX204 Router)

user@host> show chassis temperature-thresholds

Fire Shutdown		Fan speed		Yellow alarm		Red alarm
(degrees C)		(degrees C)		(degrees C)		(degrees
Item	Normal	Normal	High	Normal	Bad fan	Normal
Routing Engine						
100	102	48	54	85	85	100
CB Top Right Inlet Sensor						
85	95	35	40	63	63	85
CB Top Left Inlet Sensor						
85	95	40	45	65	65	85
CB Top Right Exhaust Sensor						
85	95	45	50	68	68	85
CB Top Left Exhaust Sensor						
85	95	65	70	78	78	85
CB CPU Core-0 Temp						
90	100	65	70	80	80	90
CB CPU Core-1 Temp						
90	100	65	70	80	80	90
CB CPU Core-2 Temp						
90	100	65	70	80	80	90
CB CPU Core-3 Temp						
90	100	65	70	80	80	90
CB CPU Core-4 Temp						
90	100	65	70	80	80	90
CB CPU Core-5 Temp						
90	100	65	70	80	80	90
CB CPU Core-6 Temp						
90	100	65	70	80	80	90
CB CPU Core-7 Temp						
90	100	65	70	80	80	90
FPC EA0_HMC0 Logic die						
105	110	85	90	95	95	105
FPC EA0_HMC0 DRAM botm						
105	110	80	85	90	90	105
FPC EA0_HMC1 Logic die						
105	110	85	90	95	95	105
FPC EA0_HMC1 DRAM botm						
105	110	80	85	90	90	105
FPC EA0 Chip						
109	115	92	97	103	103	109
FPC EA0-XR0 Chip						
103	110	85	90	98	98	103
FPC EA0-XR1 Chip						
103	110	85	90	98	98	103

show chassis temperature-thresholds (PTX10008 Routers)

user@host> show chassis temperature-thresholds

Shutdown		Fan speed		Yellow alarm		Red alarm	Fire
(degrees C)		(degrees C)		(degrees C)		(degrees C)	
Item	Normal	Normal	High	Normal	Bad fan	Normal	Bad fan
Normal							

Routing Engine 0 102	48	54	85	85	100	100
Routing Engine 1 102	48	54	85	85	100	100
CB 0 Intake Temp Sensor 95	30	35	80	80	85	85
CB 0 Exhaust Temp Sensor 95	30	35	80	80	85	85
CB 0 CPU Die Temp Sensor 110	40	45	95	95	100	100
CB 1 Intake Temp Sensor 95	30	35	80	80	85	85
CB 1 Exhaust Temp Sensor 95	30	35	80	80	85	85
CB 1 CPU Die Temp Sensor 110	40	45	95	95	100	100
FPC 0 Intake-A Temp Sensor 95	30	35	80	80	85	85
FPC 0 Intake-B Temp Sensor 95	30	35	80	80	85	85
FPC 0 Exhaust-A Temp Sensor 95	30	35	80	80	85	85
FPC 0 Exhaust-B Temp Sensor 95	30	35	80	80	85	85
FPC 0 Exhaust-C Temp Sensor 95	30	35	80	80	85	85
FPC 0 PE0 Temp Sensor 115	40	45	100	100	105	105
FPC 0 PE1 Temp Sensor 115	40	45	100	100	105	105
FPC 0 PE2 Temp Sensor 115	40	45	100	100	105	105
FPC 0 LCPU Temp Sensor 110	40	45	95	95	100	100
FPC 5 Intake-A Temp Sensor 95	30	35	80	80	85	85
FPC 5 Intake-B Temp Sensor 95	30	35	80	80	85	85
FPC 5 Exhaust-A Temp Sensor 95	30	35	80	80	85	85
FPC 5 Exhaust-B Temp Sensor 95	30	35	80	80	85	85
FPC 5 Exhaust-C Temp Sensor 95	30	35	80	80	85	85
FPC 5 PE0 Temp Sensor 115	40	45	100	100	105	105
FPC 5 PE1 Temp Sensor 115	40	45	100	100	105	105
FPC 5 PE2 Temp Sensor 115	40	45	100	100	105	105
FPC 5 PE3 Temp Sensor 115	40	45	100	100	105	105
FPC 5 PE4 Temp Sensor 115	40	45	100	100	105	105
FPC 5 PE5 Temp Sensor 115	40	45	100	100	105	105
FPC 5 LCPU Temp Sensor 110	40	45	95	95	100	100
FPC 6 Intake-A Temp Sensor 95	30	35	80	80	85	85
FPC 6 Intake-B Temp Sensor	30	35	80	80	85	85

95							
FPC 6 Exhaust-A Temp Sensor	30	35	80	80	85	85	
95							
FPC 6 Exhaust-B Temp Sensor	30	35	80	80	85	85	
95							
FPC 6 Exhaust-C Temp Sensor	30	35	80	80	85	85	
95							
FPC 6 PE0 Temp Sensor	40	45	100	100	105	105	
115							
FPC 6 PE1 Temp Sensor	40	45	100	100	105	105	
115							
FPC 6 PE2 Temp Sensor	40	45	100	100	105	105	
115							
FPC 6 PE3 Temp Sensor	40	45	100	100	105	105	
115							
FPC 6 PE4 Temp Sensor	40	45	100	100	105	105	
115							
FPC 6 PE5 Temp Sensor	40	45	100	100	105	105	
115							
FPC 6 LCPU Temp Sensor	40	45	95	95	100	100	
110							
SIB 0 Intake-A Temp Sensor	40	45	90	90	95	95	
105							
SIB 0 Intake-B Temp Sensor	40	45	90	90	95	95	
105							
SIB 0 Exhaust-A Temp Sensor	40	45	90	90	95	95	
105							
SIB 0 Exhaust-B Temp Sensor	40	45	90	90	95	95	
105							
SIB 0 PF0 Temp Sensor	50	55	100	100	105	105	
115							
SIB 0 PF1 Temp Sensor	50	55	100	100	105	105	
115							
SIB 1 Intake-A Temp Sensor	40	45	90	90	95	95	
105							
SIB 1 Intake-B Temp Sensor	40	45	90	90	95	95	
105							
SIB 1 Exhaust-A Temp Sensor	40	45	90	90	95	95	
105							
SIB 1 Exhaust-B Temp Sensor	40	45	90	90	95	95	
105							
SIB 1 PF0 Temp Sensor	50	55	100	100	105	105	
115							
SIB 1 PF1 Temp Sensor	50	55	100	100	105	105	
115							

show chassis temperature-thresholds (T4000 Core Routers)

```
user@host> show chassis temperature-thresholds
```

Item	Fan speed		Yellow alarm		Red alarm		Fire Shutdown
	(degrees C) Normal	High	(degrees C) Normal	Bad fan	(degrees C) Normal	Bad fan	(degrees C) 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 (TX Matrix Plus Router)

```
user@host> show chassis temperature-thresholds
sfc0-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
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

```
1cc0-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 (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
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 sfc (TX Matrix Plus Router)

```

user@host> show chassis temperature-thresholds sfc 0
sfc0-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
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 (TX Matrix Plus routers with 3D SIBs)

```
user@host> show chassis temperature-thresholds
sfc0-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	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	70	75	82	74	105	100	
107							
SIB F13 4 Board	60	65	78	75	85	80	
95							
SIB F13 4 XF Junction	70	75	82	74	105	100	
107							
SIB F13 6 Board	60	65	78	75	85	80	
95							
SIB F13 6 XF Junction	70	75	82	74	105	100	
107							
SIB F2S 16 Board	60	65	78	75	85	80	
95							
SIB F2S 16 XF Junction	70	75	82	74	105	100	
107							
SIB F2S 17 Board	60	65	78	75	85	80	
95							
SIB F2S 17 XF Junction	70	75	82	74	105	100	
107							
SIB F2S 18 Board	60	65	78	75	85	80	
95							
SIB F2S 18 XF Junction	70	75	82	74	105	100	
107							
SIB F2S 19 Board	60	65	78	75	85	80	
95							
SIB F2S 19 XF Junction	70	75	82	74	105	100	
107							
SIB F2S 24 Board	60	65	78	75	85	80	

95						
SIB F2S 24 XF Junction	70	75	82	74	105	100
107						
SIB F2S 25 Board	60	65	78	75	85	80
95						
SIB F2S 25 XF Junction	70	75	82	74	105	100
107						
SIB F2S 26 Board	60	65	78	75	85	80
95						
SIB F2S 26 XF Junction	70	75	82	74	105	100
107						
SIB F2S 27 Board	60	65	78	75	85	80
95						
SIB F2S 27 XF Junction	70	75	82	74	105	100
107						

```
lcc0-re0:
```

Shutdown (degrees C) Item	Fan speed		Yellow alarm		Red alarm		Fire
	(degrees C)		(degrees C)		(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							
FPC 0	63	68	75	70	90	83	
95							
FPC 1	56	62	75	63	83	76	
95							
FPC 7	56	62	75	63	83	76	
95							
SIB 0	64	70	76	72	87	84	
95							
SIB 0 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							
SIB 3	64	70	76	72	87	84	
95							
SIB 3 ASIC Junction	63	68	75	70	105	100	
107							

show chassis temperature-thresholds (QFX3500 Switch and QFX3600)

```
user@switch> show chassis temperature-thresholds
```

Item	Fan speed		Yellow alarm		Red alarm	
	(degrees C)		(degrees C)		(degrees C)	
	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
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 (PTX5000 Packet Transport Router)

```

user@switch> show chassis temperature-thresholds
user@switch> show chassis temperature-thresholds

```

Shutdown (degrees C) Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)		Fire
	Normal	High	Normal	Bad fan	Normal	Bad fan	
Routing Engine 0	80	90	95	85	105	95	
CB 0 Exhaust A	60	65	78	75	85	80	
CB 0 Exhaust B	60	65	78	75	85	80	
CB 1 Exhaust A	60	65	78	75	85	80	
CB 1 Exhaust B	60	65	78	75	85	80	
FPC 3 Exhaust A	80	90	95	85	105	95	
FPC 3 Exhaust B	80	90	95	85	105	95	
FPC 3 TL5	80	90	95	85	105	95	
FPC 3 TQ5	80	90	95	85	105	95	
FPC 3 TL6	80	90	95	85	105	95	
FPC 3 TQ6	80	90	95	85	105	95	
FPC 3 TL1	80	90	95	85	105	95	
FPC 3 TQ1	80	90	95	85	105	95	
FPC 3 TL2	80	90	95	85	105	95	
FPC 3 TQ2	80	90	95	85	105	95	
FPC 3 TL4	80	90	95	85	105	95	
FPC 3 TQ4	80	90	95	85	105	95	
FPC 3 TL7	80	90	95	85	105	95	

FPC 3 TQ7 115	80	90	95	85	105	95
FPC 3 TL0 115	80	90	95	85	105	95
FPC 3 TQ0 115	80	90	95	85	105	95
FPC 3 TL3 115	80	90	95	85	105	95
FPC 3 TQ3 115	80	90	95	85	105	95
SIB 0 Exhaust 95	60	65	78	75	85	80
SIB 0 Junction 115	75	80	90	85	105	95
SIB 1 Exhaust 95	60	65	78	75	85	80
SIB 1 Junction 115	75	80	90	85	105	95
SIB 2 Exhaust 95	60	65	78	75	85	80
SIB 2 Junction 115	75	80	90	85	105	95
SIB 3 Exhaust 95	60	65	78	75	85	80
SIB 3 Junction 115	75	80	90	85	105	95
SIB 4 Exhaust 95	60	65	78	75	85	80
SIB 4 Junction 115	75	80	90	85	105	95
SIB 5 Exhaust 95	60	65	78	75	85	80
SIB 5 Junction 115	75	80	90	85	105	95
SIB 6 Exhaust 95	60	65	78	75	85	80
SIB 6 Junction 115	75	80	90	85	105	95
SIB 7 Exhaust 95	60	65	78	75	85	80
SIB 7 Junction 115	75	80	90	85	105	95
SIB 8 Exhaust 95	60	65	78	75	85	80
SIB 8 Junction 115	75	80	90	85	105	95

show chassis temperature-thresholds (PTX1000 Packet Transport Router)

```
user@host> show chassis temperature-thresholds
```

Shutdown (degrees C) Item	Fan speed		Yellow alarm		Red alarm		Fire
	Normal	High	Normal	Bad fan	Normal	Bad fan	
FPC 0 Intake Temp Sensor 75	30	65	65	65	70	70	

FPC 0 Exhaust Temp Sensor 75	30	65	65	65	70	70
FPC 0 Mezz Temp Sensor 0 75	30	65	65	65	70	70
FPC 0 Mezz Temp Sensor 1 75	30	65	65	65	70	70
FPC 0 PE2 Temp Sensor 103	50	90	90	90	100	100
FPC 0 PE1 Temp Sensor 103	50	90	90	90	100	100
FPC 0 PF0 Temp Sensor 103	50	90	90	90	100	100
FPC 0 PE0 Temp Sensor 103	50	90	90	90	100	100
FPC 0 PE5 Temp Sensor 103	50	90	90	90	100	100
FPC 0 PE4 Temp Sensor 103	50	90	90	90	100	100
FPC 0 PF1 Temp Sensor 103	50	90	90	90	100	100
FPC 0 PE3 Temp Sensor 103	50	90	90	90	100	100
FPC 0 CPU Die Temp Sensor 103	50	90	90	90	100	100
FPC 0 OCX0 Temp Sensor 103	50	90	90	90	100	100

show chassis temperature-thresholds (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis temperature-thresholds
  Fan speed      Yellow alarm      Red alarm      Fire Shutdown
              (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    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 (EX9251 Switches)

```

user@switch> show chassis temperature-thresholds

Shutdown              Fan speed      Yellow alarm      Red alarm      Fire

```

(degrees C) Item Normal	(degrees C)		(degrees C)		(degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Routing Engine			48	54	85	100
100 102						
CB Top Right Inlet Sensor			35	40	63	85
85 95						
CB Top Left Inlet Sensor			40	45	65	85
85 95						
CB Top Right Exhaust Sensor			45	50	68	85
85 95						
CB Top Left Exhaust Sensor			65	70	78	85
85 95						
CB CPU Core-0 Temp			65	70	80	90
90 100						
CB CPU Core-1 Temp			65	70	80	90
90 100						
CB CPU Core-2 Temp			65	70	80	90
90 100						
CB CPU Core-3 Temp			65	70	80	90
90 100						
CB CPU Core-4 Temp			65	70	80	90
90 100						
CB CPU Core-5 Temp			65	70	80	90
90 100						
CB CPU Core-6 Temp			65	70	80	90
90 100						
CB CPU Core-7 Temp			65	70	80	90
90 100						
FPC EA0_HMC0 Logic die			85	90	95	105
105 110						
FPC EA0_HMC0 DRAM botm			80	85	90	105
105 110						
FPC EA0_HMC1 Logic die			85	90	95	105
105 110						
FPC EA0_HMC1 DRAM botm			80	85	90	105
105 110						
FPC EA0 Chip			92	97	103	109
109 115						
FPC EA0-XR0 Chip			85	90	98	103
103 110						
FPC EA0-XR1 Chip			85	90	98	103
103 110						

show chassis temperature-thresholds (EX9253 witches)

```
user@switch> show chassis temperature-thresholds
```

(degrees C) Item Normal	Fan speed		Yellow alarm		Red alarm		Fire
	(degrees C)		(degrees C)		(degrees C)		
	Normal	High	Normal	Bad fan	Normal	Bad fan	
Shutdown							
Routing Engine 0			48	54	85	100	
100 102							
CB 0 Exhaust Temp Sensor			60	65	75	85	
85 95							
CB 0 Inlet Temp Sensor			60	65	75	85	
85 95							

CB 0 CPU DIE Temp Sensor	83	90	98	98	105
105 110					
CB 1 Exhaust Temp Sensor	60	65	75	75	85
85 95					
CB 1 Inlet Temp Sensor	60	65	75	75	85
85 95					
CB 1 CPU DIE Temp Sensor	83	90	98	98	105
105 110					
FPC 0 Intake Temp Sensor	40	45	75	70	85
80 95					
FPC 0 Exhaust-A Temp Sensor	55	60	85	80	90
90 100					
FPC 0 Exhaust-B Temp Sensor	55	60	85	80	90
90 100					
FPC 0 EA0 Chip	87	92	97	97	105
105 110					
FPC 0 EA0-XR0 Chip	88	93	98	98	120
120 125					
FPC 0 EA0-XR1 Chip	88	93	98	98	120
120 125					
FPC 0 EA1 Chip	87	92	97	97	105
105 110					
FPC 0 EA1-XR0 Chip	88	93	98	98	120
120 125					
FPC 0 EA1-XR1 Chip	88	93	98	98	120
120 125					
FPC 0 EA2 Chip	87	92	97	97	105
105 110					
FPC 0 EA2-XR0 Chip	88	93	98	98	120
120 125					
FPC 0 EA2-XR1 Chip	88	93	98	98	120
120 125					
FPC 0 PF Chip	89	94	104	104	120
120 120					
FPC 0 EA0_HMC0 Logic die	88	93	103	103	120
120 125					
FPC 0 EA0_HMC0 DRAM botm	83	88	98	98	120
120 125					
FPC 0 EA0_HMC1 Logic die	88	93	103	103	120
120 125					
FPC 0 EA0_HMC1 DRAM botm	83	88	98	98	120
120 125					
FPC 0 EA0_HMC2 Logic die	88	93	103	103	120
120 125					
FPC 0 EA0_HMC2 DRAM botm	83	88	98	98	120
120 125					
FPC 0 EA1_HMC0 Logic die	88	93	103	103	120
120 125					
FPC 0 EA1_HMC0 DRAM botm	83	88	98	98	120
120 125					
FPC 0 EA1_HMC1 Logic die	88	93	103	103	120
120 125					
FPC 0 EA1_HMC1 DRAM botm	83	88	98	98	120
120 125					
FPC 0 EA1_HMC2 Logic die	88	93	103	103	120
120 125					
FPC 0 EA1_HMC2 DRAM botm	83	88	98	98	120
120 125					
FPC 0 EA2_HMC0 Logic die	88	93	103	103	120
120 125					
FPC 0 EA2_HMC0 DRAM botm	83	88	98	98	120

120	125				
FPC 0 EA2_HMC1 Logic die		88	93	103	103
120	125				
FPC 0 EA2_HMC1 DRAM botm		83	88	98	98
120	125				
FPC 0 EA2_HMC2 Logic die		88	93	103	103
120	125				
FPC 0 EA2_HMC2 DRAM botm		83	88	98	98
120	125				
FPC 1 Intake Temp Sensor		40	45	75	70
80	95				85
FPC 1 Exhaust-A Temp Sensor		55	60	85	80
90	100				90
FPC 1 Exhaust-B Temp Sensor		55	60	85	80
90	100				90
FPC 1 EA0 Chip		87	92	97	97
105	110				105
FPC 1 EA0-XR0 Chip		88	93	98	98
120	125				120
FPC 1 EA0-XR1 Chip		88	93	98	98
120	125				120
FPC 1 EA1 Chip		87	92	97	97
105	110				105
FPC 1 EA1-XR0 Chip		88	93	98	98
120	125				120
FPC 1 EA1-XR1 Chip		88	93	98	98
120	125				120
FPC 1 EA2 Chip		87	92	97	97
105	110				105
FPC 1 EA2-XR0 Chip		88	93	98	98
120	125				120
FPC 1 EA2-XR1 Chip		88	93	98	98
120	125				120
FPC 1 PF Chip		89	94	104	104
120	120				120
FPC 1 EA0_HMC0 Logic die		88	93	103	103
120	125				120
FPC 1 EA0_HMC0 DRAM botm		83	88	98	98
120	125				120
FPC 1 EA0_HMC1 Logic die		88	93	103	103
120	125				120
FPC 1 EA0_HMC1 DRAM botm		83	88	98	98
120	125				120
FPC 1 EA0_HMC2 Logic die		88	93	103	103
120	125				120
FPC 1 EA0_HMC2 DRAM botm		83	88	98	98
120	125				120
FPC 1 EA1_HMC0 Logic die		88	93	103	103
120	125				120
FPC 1 EA1_HMC0 DRAM botm		83	88	98	98
120	125				120
FPC 1 EA1_HMC1 Logic die		88	93	103	103
120	125				120
FPC 1 EA1_HMC1 DRAM botm		83	88	98	98
120	125				120
FPC 1 EA1_HMC2 Logic die		88	93	103	103
120	125				120
FPC 1 EA1_HMC2 DRAM botm		83	88	98	98
120	125				120
FPC 1 EA2_HMC0 Logic die		88	93	103	103
120	125				120

FPC 1 EA2_HMC0 DRAM botm	83	88	98	98	120
120 125					
FPC 1 EA2_HMC1 Logic die	88	93	103	103	120
120 125					
FPC 1 EA2_HMC1 DRAM botm	83	88	98	98	120
120 125					
FPC 1 EA2_HMC2 Logic die	88	93	103	103	120
120 125					
FPC 1 EA2_HMC2 DRAM botm	83	88	98	98	120
120 125					

show interfaces extensive satellite-device

Syntax	show interfaces extensive satellite-device (device-alias all)
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Enterprise.
Description	Display the satellite device extended ports in a Junos Fusion.
Options	<p>device-alias <i>device-alias</i>—Display extended port information for the satellite device using the specified device alias only.</p> <p>all—Display information for all extended ports and aggregated Ethernet interfaces with extended ports as members configured on all of the satellite devices.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> <i>Configuring or Expanding a Junos Fusion Enterprise</i>
List of Sample Output	show interfaces extensive satellite-device all on page 738
Output Fields	Table 28 on page 732 lists the output fields for the show interfaces extensive satellite-device command. Output fields are listed in the approximate order in which they appear.

Table 28: show interfaces extensive satellite-device Output Fields

Field Name	Field Description	Level of Output
Physical Interface		
Physical interface	Name of the physical interface.	All levels
Interface index	Index number of the physical interface, which reflects its initialization sequence.	detail extensive none
Device flags	Information about the physical device.	All levels
Flow control	Flow control status: Enabled or Disabled . NOTE: This field is only displayed if asymmetric flow control is not configured.	All levels
Pad to minimum frame size	Pad Tx VLAN-tagged frame to minimum of 68 bytes.	
Device flags	Information about the physical device.	All levels
Interface flags	Information about the interface.	All levels

Table 28: *show interfaces extensive satellite-device Output Fields (continued)*

Field Name	Field Description	Level of Output
Current address	Configured MAC address.	detail extensive none
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: 2008-01-16 10:52:40 UTC (3d 22:58 ago) .	detail extensive none
Statistics last cleared	Time when the statistics for the interface were last set to zero.	detail extensive
Extended port information	Satellite device port ID	
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: The bandwidth bps counter is not enabled.</p>	detail extensive
IPv6 transit 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: The bandwidth bps counter is not enabled.</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. Giants—Number of frames received that are greater than the giant 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 Junos OS does not handle. Resource errors—Sum of transmit drops. 	extensive

Table 28: *show interfaces extensive satellite-device 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. • 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	<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
Queue Number	The CoS queue number and the forwarding classes mapped to the queue number. The Mapped forwarding class column lists the forwarding classes mapped to each CoS queue.	detail extensive
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 switch configuration, an alarm can ring the red or yellow alarm bell on the switch, 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

Table 28: *show interfaces extensive satellite-device Output Fields (continued)*

Field Name	Field Description	Level of Output
MAC statistics	<p>Receive and Transmit statistics reported by the PIC's MAC subsystem.</p> <ul style="list-style-type: none"> • Total octets and total packets—Total number of octets and packets. For Gigabit Ethernet IQ PICs, the received octets count varies by interface type. • 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 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 packets that exceeds the configured MTU. • 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. This counter is not supported on EX Series switches and is always displayed as 0. • Code violations—Number of times an event caused the PHY to indicate "Data reception error" or "invalid data symbol error." 	extensive
Filter statistics	<p>Receive and Transmit statistics reported by the PIC's MAC address filter subsystem.</p>	extensive

Table 28: *show interfaces extensive satellite-device Output Fields (continued)*

Field Name	Field Description	Level of Output
Packet Forwarding Engine configuration	Information about the configuration of the Packet Forwarding Engine: <ul style="list-style-type: none"> • Destination slot—FPC slot number. • 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.	All levels
Statistics	<ul style="list-style-type: none"> • Packets • pps • Bytes • bps 	All levels
Bundle	Provide information for each active bundle link. <ul style="list-style-type: none"> • Input <ul style="list-style-type: none"> • Packets— • pps • Bytes • bps • Output <ul style="list-style-type: none"> • Packets— • pps • Bytes • bps 	All levels

Table 28: *show interfaces extensive satellite-device Output Fields (continued)*

Field Name	Field Description	Level of Output
Adaptive Statistics	<ul style="list-style-type: none"> • Adaptive Adjusts • Adaptive Scans • Adaptive Updates 	All levels
Link	Link state: up or down.	All levels
LACP info	<p>LACP state information for each aggregated interface:</p> <ul style="list-style-type: none"> • Role priority—Role played by the interface. It can be one of the following: <ul style="list-style-type: none"> • Actor—Local device participating in LACP negotiation. • Partner—Remote device participating in LACP negotiation. • System identifier—48-bit (6-byte) globally unique field. • System priority—LACP system priority at the aggregated Ethernet interface level. This system priority value takes precedence over a system priority value configured at the global [edit chassis] hierarchy level. • Port number • Port key • Port 	All levels
LACP Statistics	<p>LACP statistics are returned when the extensive option is used and provides the following information:</p> <ul style="list-style-type: none"> • LACP Rx—LACP received counter that increments for each normal hello. • LACP Tx—Number of LACP transmit packet errors logged. • Unknown Rx—Number of unrecognized packet errors logged. • Illegal Rx—Number of invalid packets received. 	All levels
Marker statistics	<p>Marker statistics are returned when the extensive option is used and provides the following information:</p> <ul style="list-style-type: none"> • Marker Rx—Marker received counter that increments for each normal hello. • Resp Tx—Number of RESP transmit packet errors logged. • Unknown Rx—Number of unrecognized packet errors logged. • Illegal Rx—Number of invalid packets received. 	All levels
Protocol	Protocol family configured on the logical interface.	All levels
MTU	MTU size on the logical interface. If the MTU value is negotiated down to meet the MRRU requirement on the remote side, this value is marked Adjusted.	All levels
Generation	Unique number for use by Juniper Networks technical support only.	All levels
Route table	Routing table in which this address exists. For example, Route table:0 refers to inet.0.	All levels
Mesh table	Information regarding mesh topology.	All levels

Sample Output

show interfaces extensive satellite-device all

```

user@aggregation-device> show interfaces extensive satellite-device all
Physical interface: ae0 (Extended Port, Enabled, Physical link is Up
  Interface index: 128, SNMP ifIndex: 574, Generation: 131
  Link-level type: Ethernet, MTU: 1514, Speed: 2Gbps, BPDU Error: None, MAC-REWRITE
Error: None, Loopback: Disabled, Source filtering: Disabled,
  Flow control: Disabled
  Pad to minimum frame size: Disabled
  Minimum links needed: 1, Minimum bandwidth needed: 1bps
  Device flags   : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  Current address: f4:b5:2f:f7:3f:c0, Hardware address: f4:b5:2f:f7:3f:c0
  Last flapped   : 2015-03-31 18:36:43 PDT (07:05:56 ago)
  Statistics last cleared: Never
  Extended port information:
    Satellite device port id : 415
  Traffic statistics:
    Input bytes :          13515908          2032 bps
    Output bytes :          12289920          2032 bps
    Input packets:           99514           2 pps
    Output packets:          96015           2 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, 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, 7 in use
  Queue counters:

```

Queue counters:	Queued packets	Transmitted packets	Dropped packets
0	0	95867	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
7	0	0	0

```

  Queue number:      Mapped forwarding classes
    0                FC0
    1                FC1
    2                FC2
    3                FC3
    4                FC4
    5                FC5, be-3
    7                be-2

```

```

Logical interface ae0.0 (Index 337) (SNMP ifIndex 575) (Generation 1194)
Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge
Statistics          Packets          pps          Bytes          bps
Bundle:
  Input :           1729             0          601692          0
  Output:             0             0              0          0
Adaptive Statistics:
  Adaptive Adjusts:             0
  Adaptive Scans :             0
  Adaptive Updates:             0
Link:
  ge-104/0/24.0
    Input :             0             0              0          0
    Output:             0             0              0          0
  ge-103/0/0.0
    Input :           1729             0          601692          0
    Output:             0             0              0          0
LACP info:          Role      System          System      Port      Port      Port
                  priority      identifier      priority      number      key

  ge-104/0/24.0  Actor        127  f4:b5:2f:f7:3f:c0        127        31        1
  ge-104/0/24.0  Partner      127  f4:b5:2f:41:0a:40        127        24        1
  ge-103/0/0.0   Actor        127  f4:b5:2f:f7:3f:c0        127         7        1
  ge-103/0/0.0   Partner      127  f4:b5:2f:41:0a:40        127         1        1

LACP Statistics:      LACP Rx      LACP Tx      Unknown Rx      Illegal Rx
  ge-104/0/24.0        25470        25495          0              0
  ge-103/0/0.0        25469        25512          0              0
Marker Statistics:    Marker Rx      Resp Tx      Unknown Rx      Illegal Rx
  ge-104/0/24.0          0              0              0              0
  ge-103/0/0.0          0              0              0              0
Protocol bridge, MTU: 1514, Generation: 1229, Route table: 3, Mesh Group:
__all_ces__
Physical interface: ae1 (Extended Port, Enabled, Physical link is Up)
Interface index: 129, SNMP ifIndex: 790, Generation: 132
Link-level type: Ethernet, MTU: 1514, Speed: 200mbps, BPDU Error: None,
MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled,
Flow control: Disabled
Pad to minimum frame size: Disabled
Minimum links needed: 1, Minimum bandwidth needed: 1bps
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: f4:b5:2f:f7:3f:c1, Hardware address: f4:b5:2f:f7:3f:c1
Last flapped : 2015-03-31 18:36:44 PDT (07:05:55 ago)
Statistics last cleared: Never
Extended port information:
  Satellite device port id : 431
Traffic statistics:
  Input bytes :           13285288          2032 bps
  Output bytes :          12166400          2032 bps
  Input packets:           98447           2 pps
  Output packets:          95050           2 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, 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, 7 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

  0                    0                94909                    0
  1                    0                 0                    0
  2                    0                 0                    0
  3                    0                 0                    0
  4                    0                 0                    0
  5                    0                 0                    0
  7                    0                 0                    0

Queue number:      Mapped forwarding classes
  0                FC0
  1                FC1
  2                FC2
  3                FC3
  4                FC4
  5                FC5, be-3
  7                be-2

Logical interface ae1.0 (Index 338) (SNMP ifIndex 1216) (Generation 1195)
Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge
Statistics      Packets      pps      Bytes      bps
Bundle:
  Input :        2785         0      688380         0
  Output:         0         0         0         0
Adaptive Statistics:
  Adaptive Adjusts:      0
  Adaptive Scans :      0
  Adaptive Updates:     0
Link:
  ge-104/0/25.0
    Input :         10         0         600         0
    Output:         0         0         0         0
  ge-103/0/1.0
    Input :        2775         0      687780         0
    Output:         0         0         0         0
LACP info:      Role      System      System      Port      Port      Port
                  priority      identifier  priority  number  key

  ge-104/0/25.0  Actor      127      f4:b5:2f:f7:3f:c0      127      32      2
  ge-104/0/25.0  Partner    127      f4:b5:2f:41:0a:40      127      25      2
  ge-103/0/1.0   Actor      127      f4:b5:2f:f7:3f:c0      127      8       2
  ge-103/0/1.0   Partner    127      f4:b5:2f:41:0a:40      127      2       2

```



```

LACP Statistics:      LACP Rx      LACP Tx      Unknown Rx      Illegal Rx
ge-104/0/25.0        25470        25494         0              0
ge-103/0/1.0         25469        25513         0              0
Marker Statistics:   Marker Rx      Resp Tx      Unknown Rx      Illegal Rx
ge-104/0/25.0         0             0            0              0
ge-103/0/1.0         0             0            0              0
Protocol bridge, MTU: 1514, Generation: 1230, Route table: 3, Mesh Group:
__all_ces__
Physical interface: ae0 (Extended Port, Enabled, Physical link is Up
Interface index: 128, SNMP ifIndex: 574, Generation: 131
Link-level type: Ethernet, MTU: 1514, Speed: 2Gbps, BPDU Error: None, MAC-REWRITE
Error: None, Loopback: Disabled, Source filtering: Disabled,
Flow control: Disabled
Pad to minimum frame size: Disabled
Minimum links needed: 1, Minimum bandwidth needed: 1bps
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: f4:b5:2f:f7:3f:c0, Hardware address: f4:b5:2f:f7:3f:c0
Last flapped : 2015-03-31 18:36:43 PDT (07:05:56 ago)
Statistics last cleared: Never
Extended port information:
  Satellite device port id : 415
Traffic statistics:
Input bytes :          13515908          2032 bps
Output bytes :          12289920          2032 bps
Input packets:           99514           2 pps
Output packets:          96015           2 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, 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, 7 in use
Queue counters:      Queued packets      Transmitted packets      Dropped packets

0                    0                    95867                    0
1                    0                    0                      0
2                    0                    0                      0
3                    0                    0                      0
4                    0                    0                      0
5                    0                    0                      0
7                    0                    0                      0

Queue number:      Mapped forwarding classes
0                  FC0
1                  FC1
2                  FC2
3                  FC3

```

```

4          FC4
5          FC5, be-3
7          be-2

```

Logical interface ae0.0 (Index 337) (SNMP ifIndex 575) (Generation 1194)

Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge

Statistics Packets pps Bytes bps

Bundle:

```

Input :          1729          0      601692          0
Output:           0          0          0          0

```

Adaptive Statistics:

```

Adaptive Adjusts:      0
Adaptive Scans :      0
Adaptive Updates:     0

```

Link:

ge-104/0/24.0

```

Input :           0           0           0           0
Output:           0           0           0           0

```

ge-103/0/0.0

```

Input :          1729          0      601692          0
Output:           0          0          0          0

```

LACP info: Role System System Port Port Port

 priority identifier priority number key

ge-104/0/24.0 Actor 127 f4:b5:2f:f7:3f:c0 127 31 1

ge-104/0/24.0 Partner 127 f4:b5:2f:41:0a:40 127 24 1

ge-103/0/0.0 Actor 127 f4:b5:2f:f7:3f:c0 127 7 1

ge-103/0/0.0 Partner 127 f4:b5:2f:41:0a:40 127 1 1

LACP Statistics: LACP Rx LACP Tx Unknown Rx Illegal Rx

ge-104/0/24.0 25470 25495 0 0

ge-103/0/0.0 25469 25512 0 0

Marker Statistics: Marker Rx Resp Tx Unknown Rx Illegal Rx

ge-104/0/24.0 0 0 0 0

ge-103/0/0.0 0 0 0 0

Protocol bridge, MTU: 1514, Generation: 1229, Route table: 3, Mesh Group:

__all_ces__

Physical interface: ae1 (Extended Port, Enabled, Physical link is Up

Interface index: 129, SNMP ifIndex: 790, Generation: 132

Link-level type: Ethernet, MTU: 1514, Speed: 200mbps, BPDU Error: None,

MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled,

Flow control: Disabled

Pad to minimum frame size: Disabled

Minimum links needed: 1, Minimum bandwidth needed: 1bps

Device flags : Present Running

Interface flags: SNMP-Traps Internal: 0x4000

Current address: f4:b5:2f:f7:3f:c1, Hardware address: f4:b5:2f:f7:3f:c1

Last flapped : 2015-03-31 18:36:44 PDT (07:05:55 ago)

Statistics last cleared: Never

Extended port information:

Satellite device port id : 431

Traffic statistics:

Input bytes : 13285288 2032 bps

Output bytes : 12166400 2032 bps

Input packets: 98447 2 pps

Output packets: 95050 2 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, 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, 7 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

  0                    0                94909                    0
  1                    0                 0                    0
  2                    0                 0                    0
  3                    0                 0                    0
  4                    0                 0                    0
  5                    0                 0                    0
  7                    0                 0                    0

Queue number:      Mapped forwarding classes
  0                FC0
  1                FC1
  2                FC2
  3                FC3
  4                FC4
  5                FC5, be-3
  7                be-2

Logical interface ae1.0 (Index 338) (SNMP ifIndex 1216) (Generation 1195)
Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge
Statistics      Packets      pps      Bytes      bps
Bundle:
  Input :      2785          0      688380      0
  Output:        0          0         0         0
Adaptive Statistics:
  Adaptive Adjusts:      0
  Adaptive Scans :      0
  Adaptive Updates:      0
Link:
  ge-104/0/25.0
    Input :      10          0         600         0
    Output:        0          0         0         0
  ge-103/0/1.0
    Input :      2775          0      687780      0
    Output:        0          0         0         0
LACP info:      Role      System      System      Port      Port      Port
                  priority      identifier  priority  number  key

  ge-104/0/25.0  Actor      127  f4:b5:2f:f7:3f:c0      127      32      2
  ge-104/0/25.0  Partner    127  f4:b5:2f:41:0a:40      127      25      2

```

```

ge-103/0/1.0 Actor      127 f4:b5:2f:f7:3f:c0      127      8      2
ge-103/0/1.0 Partner    127 f4:b5:2f:41:0a:40      127      2      2

LACP Statistics:      LACP Rx      LACP Tx      Unknown Rx      Illegal Rx
ge-104/0/25.0         25470         25494          0          0
ge-103/0/1.0          25469         25513          0          0
Marker Statistics:    Marker Rx      Resp Tx      Unknown Rx      Illegal Rx
ge-104/0/25.0          0             0            0            0
ge-103/0/1.0          0             0            0            0
Protocol bridge, MTU: 1514, Generation: 1230, Route table: 3, Mesh Group:
__all_ces__

Physical interface: ae0 (Extended Port, Enabled, Physical link is Up
Interface index: 128, SNMP ifIndex: 574, Generation: 131
Link-level type: Ethernet, MTU: 1514, Speed: 2Gbps, BPDU Error: None, MAC-REWRITE
Error: None, Loopback: Disabled, Source filtering: Disabled,
Flow control: Disabled
Pad to minimum frame size: Disabled
Minimum links needed: 1, Minimum bandwidth needed: 1bps
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: f4:b5:2f:f7:3f:c0, Hardware address: f4:b5:2f:f7:3f:c0
Last flapped : 2015-03-31 18:36:43 PDT (07:05:56 ago)
Statistics last cleared: Never
Extended port information:
  Satellite device port id : 415
Traffic statistics:
Input bytes :          13515908          2032 bps
Output bytes :          12289920          2032 bps
Input packets:           99514           2 pps
Output packets:          96015           2 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, 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, 7 in use
Queue counters:      Queued packets      Transmitted packets      Dropped packets

0                      0                      95867                      0
1                      0                      0                        0
2                      0                      0                        0
3                      0                      0                        0
4                      0                      0                        0
5                      0                      0                        0
7                      0                      0                        0

Queue number:          Mapped forwarding classes

```

```

0          FC0
1          FC1
2          FC2
3          FC3
4          FC4
5          FC5, be-3
7          be-2

```

Logical interface ae0.0 (Index 337) (SNMP ifIndex 575) (Generation 1194)

Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge

Statistics Packets pps Bytes bps

Bundle:

```

Input :      1729      0      601692      0
Output:       0       0       0       0

```

Adaptive Statistics:

```

Adaptive Adjusts:      0
Adaptive Scans :      0
Adaptive Updates:     0

```

Link:

ge-104/0/24.0

```

Input :      0       0       0       0
Output:      0       0       0       0

```

ge-103/0/0.0

```

Input :      1729      0      601692      0
Output:       0       0       0       0

```

LACP info: Role System System Port Port Port

priority identifier priority number key

ge-104/0/24.0 Actor 127 f4:b5:2f:f7:3f:c0 127 31 1

ge-104/0/24.0 Partner 127 f4:b5:2f:41:0a:40 127 24 1

ge-103/0/0.0 Actor 127 f4:b5:2f:f7:3f:c0 127 7 1

ge-103/0/0.0 Partner 127 f4:b5:2f:41:0a:40 127 1 1

LACP Statistics: LACP Rx LACP Tx Unknown Rx Illegal Rx

ge-104/0/24.0 25470 25495 0 0

ge-103/0/0.0 25469 25512 0 0

Marker Statistics: Marker Rx Resp Tx Unknown Rx Illegal Rx

ge-104/0/24.0 0 0 0 0

ge-103/0/0.0 0 0 0 0

Protocol bridge, MTU: 1514, Generation: 1229, Route table: 3, Mesh Group:

__all_ces__

Physical interface: ae1 (Extended Port, Enabled, Physical link is Up

Interface index: 129, SNMP ifIndex: 790, Generation: 132

Link-level type: Ethernet, MTU: 1514, Speed: 200mbps, BPDU Error: None,

MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled,

Flow control: Disabled

Pad to minimum frame size: Disabled

Minimum links needed: 1, Minimum bandwidth needed: 1bps

Device flags : Present Running

Interface flags: SNMP-Traps Internal: 0x4000

Current address: f4:b5:2f:f7:3f:c1, Hardware address: f4:b5:2f:f7:3f:c1

Last flapped : 2015-03-31 18:36:44 PDT (07:05:55 ago)

Statistics last cleared: Never

Extended port information:

Satellite device port id : 431

Traffic statistics:

Input bytes : 13285288 2032 bps

```

Output bytes :          12166400          2032 bps
Input packets:          98447           2 pps
Output packets:         95050           2 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, 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, 7 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

  0                   0                94909                   0
  1                   0                0                     0
  2                   0                0                     0
  3                   0                0                     0
  4                   0                0                     0
  5                   0                0                     0
  7                   0                0                     0

Queue number:      Mapped forwarding classes
  0                FC0
  1                FC1
  2                FC2
  3                FC3
  4                FC4
  5                FC5, be-3
  7                be-2

Logical interface ae1.0 (Index 338) (SNMP ifIndex 1216) (Generation 1195)
Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge
Statistics      Packets      pps      Bytes      bps
Bundle:
  Input :        2785         0      688380       0
  Output:         0         0         0         0
Adaptive Statistics:
  Adaptive Adjusts:      0
  Adaptive Scans :      0
  Adaptive Updates:     0
Link:
  ge-104/0/25.0
    Input :         10         0         600         0
    Output:         0         0         0         0
  ge-103/0/1.0
    Input :        2775         0      687780       0
    Output:         0         0         0         0
LACP info:      Role      System      System      Port      Port      Port
                  priority      identifier priority number key

```

```

ge-104/0/25.0 Actor 127 f4:b5:2f:f7:3f:c0 127 32 2
ge-104/0/25.0 Partner 127 f4:b5:2f:41:0a:40 127 25 2
ge-103/0/1.0 Actor 127 f4:b5:2f:f7:3f:c0 127 8 2
ge-103/0/1.0 Partner 127 f4:b5:2f:41:0a:40 127 2 2

LACP Statistics: LACP Rx LACP Tx Unknown Rx Illegal Rx
ge-104/0/25.0 25470 25494 0 0
ge-103/0/1.0 25469 25513 0 0
Marker Statistics: Marker Rx Resp Tx Unknown Rx Illegal Rx
ge-104/0/25.0 0 0 0 0
ge-103/0/1.0 0 0 0 0
Protocol bridge, MTU: 1514, Generation: 1230, Route table: 3, Mesh Group:
__all_ces__
Physical interface: ge-101/0/7 (Extended Port, Enabled, Physical link is Down
Interface index: 328, SNMP ifIndex: 1587, Generation: 331
Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 1000mbps
Device flags : Present Running
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
Damping : half-life: 0 sec, max-suppress: 0 sec, reuse: 0, suppress: 0,
state: unsuppressed
Current address: 10:0e:7e:bf:2d:0c, Hardware address: 10:0e:7e:bf:2d:0c
Last flapped : Never
Statistics last cleared: Never
Extended port information:
Satellite device port id : 143
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, 7 in use
Queue counters: Queued packets Transmitted packets Dropped packets

0 0 0 0
1 0 0 0
2 0 0 0
3 0 0 0
4 0 0 0

```

5	0	0	0
7	0	0	0

Queue number:	Mapped forwarding classes
0	FC0
1	FC1
2	FC2
3	FC3
4	FC4
5	FC5, be-3
7	be-2

Active alarms : None

Active defects : None

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	
Total errors	0	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: 0 (0x00)

CoS information:

Direction : Output

CoS transmit queue	Bandwidth	Buffer Priority
Limit		
	% bps %	usec
0 FC0	95 950000000 95	0 low
none		
3 FC3	5 50000000 5	0 low
none		

Interface transmit statistics: Disabled

Physical interface: ge-101/0/8 (Extended Port, Enabled, Physical link is Down)

Interface index: 329, SNMP ifIndex: 1586, Generation: 332

Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 1000mbps

Device flags : Present Running

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

Damping : half-life: 0 sec, max-suppress: 0 sec, reuse: 0, suppress: 0,


```

state: unsuppressed
Current address: 10:0e:7e:bf:2d:0d, Hardware address: 10:0e:7e:bf:2d:0d
Last flapped : Never
Statistics last cleared: Never
Extended port information:
  Satellite device port id : 159
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, 7 in use
Queue counters:      Queued packets  Transmitted packets      Dropped packets

0                    0                0                0
1                    0                0                0
2                    0                0                0
3                    0                0                0
4                    0                0                0
5                    0                0                0
7                    0                0                0

Queue number:      Mapped forwarding classes
0                  FC0
1                  FC1
2                  FC2
3                  FC3
4                  FC4
5                  FC5, be-3
7                  be-2

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
Total errors                                 0          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: 0 (0x00)
CoS information:
  Direction : Output
  CoS transmit queue      Bandwidth      Buffer Priority
Limit                    %      bps      %      usec      low
  0 FC0                    95      950000000  95      0
none
  3 FC3                     5       50000000   5      0
none
Interface transmit statistics: Disabled

```

show interfaces satellite-device

Syntax	show interfaces satellite-device (device-alias all)
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display the satellite device extended ports in a Junos Fusion.
Options	<p>device-alias <i>device-alias</i>—Display extended port information for the satellite device using the specified device alias only.</p> <p>all—Display information for all extended ports and aggregated Ethernet interfaces with extended ports as members configured on all of the satellite devices.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> <i>Configuring or Expanding a Junos Fusion Enterprise</i>
List of Sample Output	show interfaces satellite-device all on page 753
Output Fields	Table 29 on page 751 lists the output fields for the show interfaces satellite-device command. Output fields are listed in the approximate order in which they appear.

Table 29: show interfaces satellite-device Output Fields

Field Name	Field Description	Level of Output
Physical Interface		
Physical interface	Name of the physical interface.	All levels
Interface index	Index number of the physical interface, which reflects its initialization sequence.	detail extensive none
Link-level type	Encapsulation being used on the physical interface.	All levels
Device flags	Information about the physical device.	All levels
Flow control	Flow control status: Enabled or Disabled . NOTE: This field is only displayed if asymmetric flow control is not configured.	All levels
Pad to minimum frame size	Pad Tx VLAN-tagged frame to minimum of 68 bytes.	All levels

Table 29: *show interfaces satellite-device* Output Fields (continued)

Field Name	Field Description	Level of Output
Minimum links needed	Minimum number of aggregated links.	All levels
Minimum bandwidth needed	Minimum bandwidth configured for aggregated bundle.	All levels
Device flags	Information about the physical device.	All levels
Interface flags	Information about the interface.	All levels
Current address	Configured MAC address.	detail extensive none
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: 2008-01-16 10:52:40 UTC (3d 22:58 ago) .	detail extensive none
Input rate	Input rate in bits per second (bps) and packets per second (pps). The value in this field also includes the Layer 2 overhead bytes for ingress traffic on Ethernet interfaces if you enable accounting of Layer 2 overhead at the PIC level or the logical interface level.	All levels
Output rate	Output rate in bps and pps. The value in this field also includes the Layer 2 overhead bytes for egress traffic on Ethernet interfaces if you enable accounting of Layer 2 overhead at the PIC level or the logical interface level.	All levels
Extended port information	Satellite device port ID	All levels
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 switch configuration, an alarm can ring the red or yellow alarm bell on the switch, 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
Interface transmit statistics	All levels	All levels
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

Table 29: *show interfaces satellite-device* Output Fields (continued)

Field Name	Field Description	Level of Output
Flags	Information about the logical interface.	All levels
Statistics	<ul style="list-style-type: none"> • Packets • pps • Bytes • bps 	All levels
Bundle	Provides information for each active bundle link. <ul style="list-style-type: none"> • Input <ul style="list-style-type: none"> • Packets • pps • Bytes • bps • Output <ul style="list-style-type: none"> • Packets— • pps • Bytes • bps 	All levels
Adaptive Statistics	<ul style="list-style-type: none"> • Adaptive Adjusts • Adaptive Scans • Adaptive Updates 	All levels
Protocol	Protocol family configured on the logical interface.	All levels

Sample Output

Sample Output

show interfaces satellite-device all

```

user@aggregation-device> show interfaces satellite-device all
Physical interface: ae0 (Extended Port, Enabled, Physical link is Up
  Interface index: 128, SNMP ifIndex: 574
  Link-level type: Ethernet, MTU: 1514, Speed: 2Gbps, BPDU Error: None, MAC-REWRITE
  Error: None, Loopback: Disabled, Source filtering: Disabled,
  Flow control: Disabled
  Pad to minimum frame size: Disabled
  Minimum links needed: 1, Minimum bandwidth needed: 1bps
  Device flags   : Present Running
  Interface flags: SNMP-Traps Internal: 0x4000
  Current address: f4:b5:2f:f7:3f:c0, Hardware address: f4:b5:2f:f7:3f:c0
  Last flapped   : 2015-03-31 18:36:43 PDT (06:54:08 ago)
  Input rate      : 2032 bps (2 pps)
  Output rate     : 3048 bps (2 pps)

Logical interface ae0.0 (Index 337) (SNMP ifIndex 575)
  Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge

```

Statistics	Packets	pps	Bytes	bps
Bundle:				
Input :	1704	0	592992	0
Output:	0	0	0	0
Adaptive Statistics:				
Adaptive Adjusts:		0		
Adaptive Scans :		0		
Adaptive Updates:		0		
Protocol bridge, MTU: 1514				

Physical interface: ae1 (Extended Port, Enabled, Physical link is Up
Interface index: 129, SNMP ifIndex: 790
Link-level type: Ethernet, MTU: 1514, Speed: 200mbps, BPDU Error: None,
MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled,
Flow control: Disabled
Pad to minimum frame size: Disabled
Minimum links needed: 1, Minimum bandwidth needed: 1bps
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Current address: f4:b5:2f:f7:3f:c1, Hardware address: f4:b5:2f:f7:3f:c1
Last flapped : 2015-03-31 18:36:44 PDT (06:54:07 ago)
Input rate : 2032 bps (2 pps)
Output rate : 2032 bps (2 pps)

Logical interface ae1.0 (Index 338) (SNMP ifIndex 1216)
Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge

Statistics	Packets	pps	Bytes	bps
Bundle:				
Input :	2759	0	679982	0
Output:	0	0	0	0
Adaptive Statistics:				
Adaptive Adjusts:		0		
Adaptive Scans :		0		
Adaptive Updates:		0		
Protocol bridge, MTU: 1514				

Physical interface: xe-101/0/31 (Extended Port, Enabled, Physical link is Up
Interface index: 336, SNMP ifIndex: 829
Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000
Link flags : None
CoS queues : 8 supported, 8 maximum usable queues
Current address: 10:0e:7e:bf:2d:24, Hardware address: 10:0e:7e:bf:2d:24
Last flapped : 2015-03-31 08:28:23 PDT (17:02:29 ago)
Input rate : 0 bps (0 pps)
Output rate : 0 bps (0 pps)
Active alarms : None
Active defects : None
Interface transmit statistics: Disabled

Logical interface xe-101/0/31.0 (Index 491) (SNMP ifIndex 926)
Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge
Input packets : 0
Output packets: 0
Protocol bridge, MTU: 1514

Physical interface: xe-101/0/32 (Extended Port, Enabled, Physical link is Up
Interface index: 337, SNMP ifIndex: 836
Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x4000

Link flags : None
CoS queues : 8 supported, 8 maximum usable queues
Current address: 10:0e:7e:bf:2d:25, Hardware address: 10:0e:7e:bf:2d:25
Last flapped : 2015-03-31 08:28:23 PDT (17:02:29 ago)
Input rate : 0 bps (0 pps)
Output rate : 0 bps (0 pps)
Active alarms : None
Active defects : None
Interface transmit statistics: Disabled

Logical interface xe-101/0/32.0 (Index 492) (SNMP ifIndex 935)
Flags: Up SNMP-Traps 0x24024000 Encapsulation: Ethernet-Bridge
Input packets : 0
Output packets: 0
Protocol bridge, MTU: 1514

show interfaces statistics

Syntax `show interfaces statistics interface-name`
 `<satellite-device [device-alias-name | all]>`
 `<detail>`

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.
 Command introduced in Junos OS Release 12.2 for ACX Series Routers.
 satellite-device option introduced in Junos OS Release 14.2R3.

Description Display static interface statistics, such as errors.



NOTE: When the `show interfaces statistics` command is executed on an interface that is configured on 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

Options *interface-name*—Name of an interface.

satellite-device [*device-alias-name* | all]—(Junos Fusion only) (Optional) Display interface statistics for interfaces on the specified satellite device in the Junos Fusion, or on all satellite devices in the Junos Fusion.



NOTE: In a Junos Fusion Enterprise, logical interface statistics are not synced across aggregation devices in a dual-aggregation device topology.

detail—(Optional) Display detailed output.

Required Privilege Level view

Related Documentation

- *clear interfaces statistics*

List of Sample Output [show interfaces statistics \(Fast Ethernet\) on page 757](#)
 [show interfaces statistics \(Gigabit Ethernet PIC—Egress\) on page 758](#)

[show interfaces statistics detail \(Aggregated Ethernet\) on page 759](#)
[show interfaces statistics detail \(Aggregated Ethernet—Ingress\) on page 761](#)
[show interfaces statistics detail \(Aggregated Ethernet—Egress\) on page 762](#)
[show interfaces statistics \(SONET/SDH\) on page 763](#)
[show interfaces statistics \(Aggregated SONET/SDH—Ingress\) on page 764](#)
[show interfaces statistics \(Aggregated SONET/SDH—Egress\) on page 765](#)
[show interfaces statistics \(MX Series Routers\) on page 766](#)
[show interfaces statistics \(PTX Series Packet Transport Routers\) on page 767](#)
[show interfaces statistics \(ACX Series routers\) on page 767](#)

Output Fields Output from both the **show interfaces *interface-name* detail** and the **show interfaces *interface-name* extensive** commands include all the information displayed in the output from the **show interfaces statistics** 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: 00:00:5E:00:53:dc, Hardware address: 00:00:5E:00:53: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) (              0)
      silver2                 0              0
      (                       0) (              0)
      silver3                 0              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 (Gigabit Ethernet PIC—Egress)

```

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
  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: 00:00:5E:00:53:74, Hardware address: 00:00:5E:00:53:74
  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
Egress account overhead: 100
Ingress account overhead: 90
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: 10.40.40.0/30, Local: 10.40.40.2, Broadcast: 10.40.40.3,
Generation: 167
Protocol inet6, MTU: 1500, Generation: 152, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: ::10.40.40.0/126, Local: ::10.40.40.2
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: 00:00:5E:0053:f0, Hardware address: 00:00:5E:00:53:f0
Last flapped : Never
Statistics last cleared: 2006-12-23 03:04:16 PST (01:16:24 ago)
Traffic statistics:
Input bytes :                28544                0 bps
Output bytes :                39770                0 bps
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 (Aggregated Ethernet—Ingress)

```

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
  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: 00:00:5E:00:53:f0, Hardware address: 00:00:5E:00:53: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: 10.30.30.0/30, Local: 10.30.30.2, Broadcast: 10.30.30.3,
Generation: 310
  Protocol inet6, MTU: 1500, Generation: 237, Route table: 0
    Addresses, Flags: Is-Preferred Is-Primary
      Destination: ::10.30.30.0/126, Local: ::10.30.30.2
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 (Aggregated Ethernet—Egress)

```

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
  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: 00:00:5E:00:53:f0, Hardware address: 00:00:5E:00:53: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: 10.30.30.0/30, Local: 10.30.30.1, Broadcast: 10.30.30.3,

Generation: 420

Protocol inet6, MTU: 1500, Generation: 292, Route table: 0

Addresses, Flags: Is-Preferred Is-Primary

Destination: ::/26, Local: ::10.30.30.1

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, mpls: 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: 10.30.30.0/30, Local: 10.30.30.2, Broadcast: 10.30.30.3,
Generation: 322
  Protocol inet6, MTU: 4470, Generation: 245, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: ::10.30.30.0/126, Local: ::10.30.30.2
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: 10.30.30.0/30, Local: 10.30.30.2, Broadcast: 10.30.30.3,
Generation: 316
Protocol inet6, MTU: 4470, Generation: 241, Route table: 0
  Addresses, Flags: Is-Preferred Is-Primary
    Destination: ::10.30.30.0/126, Local: ::10.30.30.2
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: 10.30.30.0/30, Local: 10.30.30.1, Broadcast: 10.30.30.3,
Generation: 426
Protocol inet6, MTU: 4470, Generation: 296, Route table: 0
Addresses, Flags: Is-Preferred Is-Primary
  Destination: ::/26, Local: ::10.30.30.1
Generation: 428
Addresses, Flags: Is-Preferred
  Destination: fe80::/64, Local: fe80::2a0:a5ff:fe63:1d0a
Generation: 429

```

show interfaces statistics (MX Series Routers)

```

user@host> show interfaces xe-0/0/0 statistics
Physical interface: xe-0/0/0, Enabled, Physical link is Up
Interface index: 145, SNMP ifIndex: 592
Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 10Gbps, BPDU Error:
None, Loopback: None, Source filtering: Disabled, Flow control: Enabled
Pad to minimum frame size: Enabled
Device flags : Present Running
Interface flags: SNMP-Traps Internal: 0x0
Link flags : None
CoS queues : 8 supported, 8 maximum usable queues

```

```

Current address: 00:00:5E:00:53:f0, Hardware address: 00:00:5E:00:53:f0
Last flapped   : 2013-10-26 03:20:40 test (2w3d 03:29 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  : LINK
Active defects : LINK
PCS statistics                               Seconds
  Bit errors                               109
  Errored blocks                           109
Interface transmit statistics: Disabled

```

show interfaces statistics (PTX Series Packet Transport Routers)

```

user@host> show interfaces statistics 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: 00:00:5E:00:53:1b, Hardware address: 00:00:5E:00:53:1b
  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: 00:00:5E:00:53:a3, Hardware address: 00:00:5E:00:53: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 satellite-device

Syntax	show interfaces terse satellite-device (device-alias all)
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display the satellite device extended ports in a Junos Fusion.
Options	<p>device-alias <i>device-alias</i>—Display extended port information for the satellite device using the specified device alias only.</p> <p>all—Display information for all extended ports and aggregated Ethernet interfaces with extended ports as members configured on all of the satellite devices.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> <i>Configuring or Expanding a Junos Fusion Enterprise</i>
List of Sample Output	show interfaces terse satellite-device device-alias on page 770 show interfaces terse satellite-device all on page 770
Output Fields	Table 30 on page 769 lists the output fields for the show interfaces terse satellite-device command. Output fields are listed in the approximate order in which they appear.

Table 30: show interfaces terse satellite-device 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.
Local	Local IP address of the logical interface.
Remote	Remote IP address of the logical interface.

Sample Output

show interfaces terse satellite-device device-alias

```

user@aggregation-device> show interfaces terse satellite-device TOR1
Interface      Admin Link Proto  Local Remote
sd-101/0/0      up   up
sd-101/0/0.32770 up   up   bridge
xe-101/0/14     up   up
xe-101/0/15     up   up
xe-101/0/16     up   up
xe-101/0/17     up   up
xe-101/0/24     up   up
xe-101/0/25     up   up
xe-101/0/31     up   up
xe-101/0/31.0   up   up   bridge
xe-101/0/32     up   down
xe-101/0/32.0   up   down bridge
xe-101/0/33     up   down
xe-101/0/33.0   up   down bridge
ge-101/0/36     up   down
et-101/0/48     up   down
xe-101/0/50:0   up   up
xe-101/0/50:0.0 up   up   bridge
xe-101/0/50:1   up   up
xe-101/0/50:2   up   up
xe-101/0/50:2.0 up   up   bridge
xe-101/0/50:3   up   up

```

Sample Output

show interfaces terse satellite-device all

```

user@aggregation-device> show interfaces terse satellite-device all
Interface      Admin Link Proto  Local Remote
ae0             up   up
ae0.0           up   up   bridge
ae1             up   up
ae1.0           up   up   bridge
ae2             up   up
ae2.0           up   up   bridge
ae3             up   up
ae3.0           up   up   bridge
ae4             up   up
ae4.0           up   up   bridge
ae5             up   up
ae5.0           up   up   bridge
ae6             up   up
ae6.0           up   up   bridge
ae7             up   up
ae7.0           up   up   bridge
ae8             up   up
ae8.0           up   up   bridge
ae9             up   up
ae9.0           up   up   bridge
ae10            up   down
ae10.0          up   down bridge
xe-101/0/14     up   up
xe-101/0/15     up   up
xe-101/0/16     up   up

```

xe-101/0/17	up	up	
xe-101/0/24	up	up	
xe-101/0/25	up	up	
xe-101/0/31	up	up	
xe-101/0/31.0	up	up	bridge
xe-101/0/32	up	down	
xe-101/0/32.0	up	down	bridge
xe-101/0/33	up	down	
xe-101/0/33.0	up	down	bridge
ge-101/0/36	up	down	
et-101/0/48	up	down	
xe-101/0/50:0	up	up	
xe-101/0/50:0.0	up	up	bridge
xe-101/0/50:1	up	up	
xe-101/0/50:2	up	up	
xe-101/0/50:2.0	up	up	bridge
xe-101/0/50:3	up	up	
xe-102/0/10	up	up	
xe-102/0/11	up	up	
xe-102/0/12	up	down	
xe-102/0/13	up	up	
xe-102/0/14	up	up	
xe-102/0/15	up	up	
xe-102/0/16	up	up	
xe-102/0/17	up	up	
xe-102/0/24	up	up	
xe-102/0/25	up	up	
xe-102/0/31	up	up	
xe-102/0/31.0	up	up	bridge
xe-102/0/32	up	up	
xe-102/0/32.0	up	up	bridge
xe-102/0/33	up	up	
xe-102/0/45	up	down	
ge-102/0/46	up	down	
xe-102/0/47	up	down	
et-102/0/48	up	down	
et-102/0/49	up	down	
et-102/0/50	up	down	
et-102/0/51	up	down	
et-102/0/52	up	down	
et-102/0/53	up	down	
ge-103/0/0	up	up	
ge-103/0/0.0	up	up	aenet --> ae0.0
ge-103/0/1	up	down	
ge-103/0/1.0	up	down	aenet --> ae1.0
ge-103/0/2	up	up	
ge-103/0/2.0	up	up	aenet --> ae2.0
ge-103/0/3	up	up	

show system core-dumps

List of Syntax	Syntax on page 772 Syntax (EX Series Switches) on page 772 Syntax (TX Matrix Router) on page 772 Syntax (TX Matrix Plus Router) on page 772 Syntax (QFX Series and OCX Series) on page 772
Syntax	<code>show system core-dumps</code> <code><re0></code> <code><re1></code> <code><routing-engine></code> <code><satellite [<i>fpc-slot-id</i> device-alias <i>alias-name</i>]></code>
Syntax (EX Series Switches)	<code>show system core-dumps</code> <code><all-members></code> <code><local></code> <code><member <i>member-id</i>></code>
Syntax (TX Matrix Router)	<code>show system core-dumps</code> <code><all-chassis all-lcc lcc <i>number</i> scc></code>
Syntax (TX Matrix Plus Router)	<code>show system core-dumps</code> <code><all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>></code>
Syntax (QFX Series and OCX Series)	<code>show system core-dumps</code> <code><component (<i>UUID</i> <i>serial number</i> all)></code> <code><display-period (<i>hours</i> <i>minutes</i> <i>seconds</i>)></code> <code><display-order></code> <code><kernel-crashinfo component (<i>UUID</i> <i>serial number</i>)></code> <code><repository (core log)></code>
Release Information	Command introduced before Junos OS Release 8.5. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router. Command introduced in Junos OS Release 11.1 for the QFX Series. re0 , re1 , and routing-engine options introduced for dual Routing Engines in Junos OS Release 13.1. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. satellite option introduced in Junos OS Release 14.2R3. core-file-info option is deprecated in Junos OS Release 16.1R3.
Description	Show core files on all routers or switches running Junos OS. You can use the show system core-dumps command to show a list of system core files created when the router or switch has failed. This command can be useful for diagnostic purposes. Each list item includes the file permissions, number of links, owner, group, size, modification date, and path and filename. If dual Routing Engines are present, you can view core-dump files for either routing engine or both routing engines together. On a QFabric system, you can view

core-dump files on individual QFabric system devices as well as on the entire QFabric system.

Options **none**—Display a list of all existing core-dump files.



NOTE: If dual Routing Engines are present, then only the core-dump files for the active Routing Engine are listed.

all-chassis—(TX Matrix and TX Matrix Plus routers only) (Optional) On a routing matrix based on a TX Matrix router, display system core files for the TX Matrix router switch-card chassis [SCC] and all the T640 routers [LCCs] connected to the TX Matrix router.

On a routing matrix based on a TX Matrix Plus router, display system core files for the TX Matrix Plus router (switch-fabric chassis [SFC]) and all the T1600 routers [LCCs] connected to the TX Matrix Plus router.

<all-lcc | lcc number>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a routing matrix based on the TX Matrix router, display core dump files for all T640 routers (line-card chassis [LCCs]) or a specific T640 router [LCC] connected to the TX Matrix router.

On a routing matrix based on the TX Matrix Plus router, display logging information for all T1600 routers (line-card chassis [LCCs]) or a specific T1600 router (LCC) connected to the TX Matrix Plus router. When using the **lcc number** option, replace **number** with a value from 0 through 3.



NOTE: The **all-chassis** option displays system core files for the SCC or SFC and the LCCs connected to the SCC or SFC in the routing matrix while the **all-lcc** option only displays system core files for the LCCs in the routing matrix.

all-members—(EX4200 switches) (Optional) Display system core files on all members of the Virtual Chassis configuration.

component (UUID | serial number | all)—(QFabric systems only) (Optional) Display a list of core-dump files located on individual QFabric system device or on the entire QFabric system.

display-order (timestamp-sort | alphanumeric-sort)—(QFabric systems only) (Optional) Display list of debug artifacts generated within the specified period—for example, within the last hour, within the last 20 minutes, or within the last 32 seconds—or according to their filename.

display-period (*hours | minutes | seconds*)—(QFabric systems only) (Optional) Display core-dump files generated within the specified period—for example, within the last hour, within the last 20 minutes, or within the last 32 seconds.

kernel-crashinfo component (*UUID | serial number*)—(QFabric systems only) (Optional) Display kernel crash information from the EEPROM on a QFabric system device.

local—(EX4200 switches only) (Optional) Display system core files on the local Virtual Chassis member.

member *member-id*—(EX4200 switches only) (Optional) Display system core files on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

re0—(Dual Routing Engines only) Display the core-dump files on re0.

re1—(Dual Routing Engines only) Display the coredump files on re1.

repository (*core | log*)—(QFabric systems only) (Optional) Specify either the core or log repository in which to view core-dump files.

routing-engine (*backup | both | local | master | other*)—(Dual routing engines only) Display a list of core-dump files for either the backup, local, master, or other routing engine or both routing engines.

satellite [*fpc-slot-id | device-alias alias-name*]—(Junos Fusion only) (Optional) Display system core files for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix routers only) (Optional) Display system core files on the TX Matrix router (or switch-card chassis).

sfc—(TX Matrix Plus routers only) (Optional) Display system core files on the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level

view

List of Sample Output

[show system core-dumps on page 776](#)

[show system core-dumps on page 776](#)

[show system core-dumps routing-engine both on page 777](#)

[show system core-dumps \(TX Matrix Plus Router\) on page 777](#)

[show system core-dumps \(QFX3500 Switch\) on page 779](#)

[show system core-dumps \(QFabric Systems\) on page 779](#)

[show system core-dumps component serial number display-order alphanumeric-sort repository core \(QFabric Systems\) on page 780](#)

[show system core-dumps display-period \(QFabric Systems\) on page 780](#)

[show system core-dumps kernel-crashinfo component serial number \(QFabric Systems\) on page 782](#)

[show system core-dumps repository core \(QFabric Systems\) on page 783](#)

[show system core-dumps repository log \(QFabric Systems\) on page 784](#)

Output Fields Table 31 on page 775 describes the output fields for the **show system core-dumps** command. Output fields are listed in the approximate order in which they appear.

Table 31: show system core-dumps Output Fields

Field Name	Field Description
<i>Permissions</i>	Read/write permissions for the file named.
<i>Links</i>	Number of links to the file.
<i>Owner</i>	Name of the file owner.
<i>Group</i>	Name of the group with file access.
<i>File size</i>	File size in bytes.
<i>Modified</i>	Last file modification date and time.
<i>Path/filename</i>	File path where the file resides and the filename. (MX Series routers only) When you display the core files for an MX Series Virtual Chassis, the show system core-dumps command does not display information about files pertaining to the relayd process.
Repository scope:	Repository where core-dump files and log files are stored. The core-dump files are located in the core repository, and the log files are located in the log repository. The default Repository scope is shared since both the core and log repositories are shared by all of the QFabric system devices.
Repository head:	Path to the top-level repository location.
Repository name:	Name of the repository: core or log .
List of nodes for core repository:	List of core-dump files associated with a particular QFabric system device located in the core repository.
Node Group	Name of the QFabric system device.
Node Identifier	UUID or serial number of the QFabric system device.
Num	Number of core-dump and log files.
Model	Model number of the QFabric system device.
Usage	Usage of the repository in megabytes.
Total usage of core repository:	Total usage of core-dump files associated with a particular QFabric system device located in the core repository. Usage is specified in megabytes and as a percentage.

Table 31: show system core-dumps Output Fields (continued)

Field Name	Field Description
Total usage of log repository:	Total usage of log files associated with a particular QFabric system device located in the log repository. Usage is specified in megabytes and as a percentage.
List of nodes for core repository:	List of core-dump files associated with a particular QFabric system device located in the core repository.
List of nodes for log repository:	List of log files associated with a particular QFabric system device located in the log repository.
Filename	Name of the core-dump file.
Date	Last core-dump file modification date and time.
Size	Size of the core-dump file.
Core filename	Filename of the core-dump file.
Process name	Name of the process that is generating a core-dump file or log file.
Release	Junos OS release.
Build server	Junos OS build server.
Build date	Junos OS build date.
Stack trace	Stack trace of the core-dump file.

Sample Output

show system core-dumps

This example shows the command output if core files exist.

```
user@host> show system core-dumps
-rw----- 1 root wheel 268369920 Jun 18 17:59 /var/crash/vmcore.0
-rw-rw---- 1 root field 3371008 Jun 18 17:53 /var/tmp/rpd.core.0
-rw-r--r-- 1 root wheel 27775914 Jun 18 17:59 /var/crash/kernel.0
```

show system core-dumps

This example shows the command output if core files do not exist.

```
user@host> show system core-dumps
/var/crash/*core*: No such file or directory
/var/tmp/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory
```

show system core-dumps routing-engine both

This example shows the command output if dual Routing Engines are present.

```

user@host> show system core-dumps routing-engine both
re0:
-----
/var/crash/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory

/var/tmp/cores:
total blocks: 496776
-rw-rw---- 1 root field 11910589 Nov 8 13:20 chassisd.core.0.201311081320
...

-rw-rw---- 1 root field 11737227 Oct 28 14:21
rpd.core-tarball.4.tgz.201310281421.3458162
total files: 10

re1:
-----
/var/crash/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory

/var/tmp/cores:
total blocks: 3178420
-rw-rw---- 1 root field 19039721 Nov 8 14:29
chassisd.core.0.201311081429.3485600.gz
-rw-rw---- 1 root field 19039793 Nov 8 14:37
chassisd.core.1.201311081437.3485599.gz
..

-rw-rw---- 1 root field 11710113 Oct 17 15:26
rpd.core-tarball.1.1.tgz.201310171526.3430028

```

show system core-dumps (TX Matrix Plus Router)

```

user@host> show system core-dumps
sfc0-re0:
-----
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory

/var/crash/cores:
total 8

/var/tmp/cores:
total 1627592
-rw-r--r-- 1 root field 535346090 May 15 07:36
rpd.core-tarball.0.090515.0736.tgz
-rw-r--r-- 1 root field 105632057 May 15 07:37
rpd.core-tarball.1.090515.0737.tgz
-rw-r--r-- 1 root field 101981681 May 15 07:38
rpd.core-tarball.2.090515.0738.tgz
-rw-r--r-- 1 root field 85854573 May 15 07:40
rpd.core-tarball.3.090515.0740.tgz
-rw-r--r-- 1 root field 4157845 May 15 08:18
rpd.core-tarball.4.090515.0818.tgz

```

```

lcc0-re0:
-----
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory

/var/crash/cores:
total 8

/var/tmp/cores:
total 12

lcc1-re0:
-----
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory

/var/crash/cores:
total 8

/var/tmp/cores:
total 10024
-rw-r--r-- 1 root field 1875794 Apr 22 15:47
chassisd.core-tarball.0.090422.1547.tgz
-rw-r--r-- 1 root field 1894183 Apr 22 19:02
chassisd.core-tarball.0.090422.1902.tgz
-rw-r--r-- 1 root field 1290240 Apr 26 16:01 ksyncd_1558.core.0.090426.1601

lcc2-re0:
-----
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory

/var/crash/cores:
total 21124008
-rw-r--r-- 1 root wheel 1022376528 May 2 06:43
core-LCC2-EGFPC7.core.0.090502.0643
-rw-r--r-- 1 root wheel 1022376528 May 2 08:13
core-LCC2-EGFPC7.core.0.090502.0813
-rw-r--r-- 1 root wheel 1022376544 May 5 06:15
core-LCC2-EGFPC7.core.0.090505.0615
-rw-r--r-- 1 root wheel 1022376544 May 6 10:59
core-LCC2-EGFPC7.core.0.090506.1059
-rw-r--r-- 1 root wheel 1022376528 May 2 06:58
core-LCC2-EGFPC7.core.1.090502.0658
-rw-r--r-- 1 root wheel 754271232 May 5 06:33
core-LCC2-EGFPC7.core.1.090505.0633
-rw-r--r-- 1 root wheel 264897536 May 6 11:12
core-LCC2-EGFPC7.core.1.090506.1112
-rw-r--r-- 1 root wheel 1022376528 May 2 07:22
core-LCC2-EGFPC7.core.2.090502.0722
-rw-r--r-- 1 root wheel 163633152 May 5 06:52
core-LCC2-EGFPC7.core.2.090505.0652
-rw-r--r-- 1 root wheel 171312128 May 6 12:13
core-LCC2-EGFPC7.core.2.090506.1213
-rw-r--r-- 1 root wheel 1022376528 May 2 07:39
core-LCC2-EGFPC7.core.3.090502.0739
-rw-r--r-- 1 root wheel 1022376528 May 2 07:55
core-LCC2-EGFPC7.core.4.090502.0755
-rw-r--r-- 1 root wheel 427277312 May 7 04:47
core-LCC2-STFPC4.core.0.090507.0447

```

```

-rw-r--r-- 1 root wheel 419609600 May 7 04:47
core-LCC2-STFPC5.core.0.090507.0447
-rw-r--r-- 1 root wheel 432356352 May 7 04:47
core-LCC2-STFPC6.core.0.090507.0447

/var/tmp/cores:
total 2568
-rw-r--r-- 1 root field 1290240 May 14 14:26 ksyncd_1540.core.0.090514.1426
...

```

show system core-dumps (QFX3500 Switch)

```

user@switch> show system core-dumps
/var/crash/*core*: No such file or directory
-rw-rw---- 1 root field 1545143 Jun 4 2012 /var/tmp/pafxpc.core.0.gz
-rw-rw---- 1 root field 1545146 Jun 4 2012 /var/tmp/pafxpc.core.1.gz
-rw-rw---- 1 root field 1545141 Jun 4 2012 /var/tmp/pafxpc.core.2.gz
-rw-rw---- 1 root field 1545146 Jun 4 2012 /var/tmp/pafxpc.core.3.gz
-rw-rw---- 1 root field 1545142 Jun 5 2012 /var/tmp/pafxpc.core.4.gz
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory
total 5

```

show system core-dumps (QFabric Systems)

```

user@switch> show system core-dumps
Repository scope: shared
Repository head: /pbdata/export
List of nodes for core repository: /pbdata/export/r.dumps/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	OM
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	0	fx-jvre	OM
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	0	fx-jvre	OM
NW-NG-0	BBAK0394	0	qfx3500	OM
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	0	fx-jvre	OM
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	0	fx-jvre	OM
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	0	fx-jvre	OM
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	0	fx-jvre	OM
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YW3803	0	qfxc08-3008	OM
IC-WS001	WS001/YN5999	0	qfxc08-3008	OM
node-device1	BBAK0372	0	qfx3500	OM
node-device1	EE3093	0	qfx3500	OM

Total usage of core repository: 0M of 70000M (0.0%)

```

List of nodes for log repository: /pbdata/export/r.logs/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	OM
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	1	fx-jvre	OM
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	1	fx-jvre	OM
NW-NG-0	BBAK0394	1	qfx3500	OM
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	1	fx-jvre	OM
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	3	fx-jvre	OM
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	1	fx-jvre	OM
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	1	fx-jvre	OM
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YN5999	1	qfxc08-3008	OM

IC-WS001	WS001/YW3803	1	qfxc08-3008	OM
node-device1	BBAK0372	1	qfx3500	OM
node-device1	EE3093	1	qfx3500	OM

Total usage of log repository:OM of 70000M (0.0%)

show system core-dumps component serial number display-order alphanumeric-sort repository core (QFabric Systems)

```
user@switch> show system core-dumps component BBAK8891 display-order alphanumeric-sort repository core
Repository scope: shared
Repository head: /pbdata/export
Repository name: core
List of core dumps for component BBAK8891
Repository location: /pbdata/export/rdumps/BBAK8891
```

Filename	Date	Size
eswd.core.0.1361.11172011214257.gz	Nov 17 21:43:10 2011	4779553
eswd.core.1.80267.11172011214514.gz	Nov 17 21:45:19 2011	3541648
eswd.core.2.80682.11172011214535.gz	Nov 17 21:45:43 2011	2156683
vccpd.core.0.1195.11182011151131.gz	Nov 18 15:11:35 2011	375617

Number of core dumps in repository:4

show system core-dumps display-period (QFabric Systems)

```
user@switch> show system core-dumps display-period 24h
show system core-dumps display-period 24h
Repository scope: shared
Repository head: /pbdata/export
List of core dumps at repository: /pbdata/export/rdumps
Delta timespec: Last 24h
Component: BBAK8273
```

Filename	Size	Date
vccpd.core.0.1195.11182011151131.gz	Nov 18 15:11:35 2011	375794

Component: cedb7b0e-0025-11e1-9a5f-00e081c52990

Filename	Size	Date
vccpd.core.0.1461.11182011151131.gz	Nov 18 15:11:31 2011	120951

Component: ee19c4f8-0025-11e1-aef6-00e081c52990

Filename	Size	Date
vccpd.core.0.1462.11182011151131.gz	Nov 18 15:11:31 2011	109420

Component: BBAK8281

Filename	Size	Date
vccpd.core.0.1196.11182011151131.gz	Nov 18 15:11:36 2011	375373

Component: BBAK8891

Filename	Size	Date
vccpd.core.0.1195.11182011151131.gz	Nov 18 15:11:35 2011	375617

Component: BBAK8276

Filename	Size	Date
vccpd.core.0.1196.11182011151131.gz	Nov 18 15:11:35 2011	375350

Component: BBAK8868

Filename	Size	Date
vccpd.core.0.1196.11182011151130.gz	Nov 18 15:11:34 2011	376211

Component: BBAK8835

Filename	Size	Date
vccpd.core.0.1195.11182011151130.gz Component: BBAK8283	Nov 18 15:11:35 2011	375700
Filename	Size	Date
vccpd.core.0.1195.11182011151131.gz Component: YW3781/YW3781	Nov 18 15:11:36 2011	368298
Filename	Size	Date
vccpd.core.0.1220.11182011151131.gz Component: 09726be2-0026-11e1-82d9-00e081c52990	Nov 18 15:11:38 2011	380002
Filename	Size	Date
vccpd.core.0.1461.11182011151130.gz Component: BBAK8309	Nov 18 15:11:31 2011	119965
Filename	Size	Date
vccpd.core.0.1196.11182011151131.gz Component: 303d476a-0026-11e1-abf4-00e081c52990	Nov 18 15:11:36 2011	378930
Filename	Size	Date
vccpd.core.0.1460.11182011151131.gz Component: YW3798/YW3798	Nov 18 15:11:31 2011	118385
Filename	Size	Date
vccpd.core.0.1219.11182011151131.gz List of log dumps at repository: /pbdata/export/rlogs Delta timespec: Last 24h Component: BBAK8273	Nov 18 15:11:36 2011	380455
Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz Component: cedb7b0e-0025-11e1-9a5f-00e081c52990	Nov 18 15:11:39 2011	20415
Filename	Size	Date
vccpd.tarball.0.1461.11182011151131.tgz Component: ee19c4f8-0025-11e1-aef6-00e081c52990	Nov 18 15:11:33 2011	19651
Filename	Size	Date
vccpd.tarball.0.1462.11182011151133.tgz Component: BBAK8281	Nov 18 15:11:36 2011	24650
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz Component: BBAK8891	Nov 18 15:11:41 2011	19445
Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz Component: BBAK8276	Nov 18 15:11:41 2011	21916
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz Component: BBAK8868	Nov 18 15:11:39 2011	20461
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz Component: BBAK8835	Nov 18 15:11:41 2011	21924
Filename	Size	Date
vccpd.tarball.0.1195.11182011151137.tgz	Nov 18 15:11:39 2011	19424

Component: BBAK8283		
Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz	Nov 18 15:11:42 2011	31186
Component: YW3781/YW3781		
Filename	Size	Date
vccpd.tarball.0.1220.11182011151141.tgz	Nov 18 15:11:45 2011	27565
Component: 09726be2-0026-11e1-82d9-00e081c52990		
Filename	Size	Date
vccpd.tarball.0.1461.11182011151130.tgz	Nov 18 15:11:34 2011	19613
Component: BBAK8309		
Filename	Size	Date
vccpd.tarball.0.1196.11182011151138.tgz	Nov 18 15:11:46 2011	50362
Component: 303d476a-0026-11e1-abf4-00e081c52990		
Filename	Size	Date
vccpd.tarball.0.1460.11182011151133.tgz	Nov 18 15:11:33 2011	19360
Component: YW3798/YW3798		
Filename	Size	Date
vccpd.tarball.0.1219.11182011151140.tgz	Nov 18 15:11:49 2011	24473

show system core-dumps kernel-crashinfo component serial number (QFabric Systems)

```

user@switch> show system core-dumps kernel-crashinfo component A0001/YA0197
Node: A0001/YA0197

Information about previous kernel crash:

-- Kernel panic data --

Panic string: kdb_sysctl_panic
System uptime: 3 day 20 hr 59 min 40 sec Kernel crash time: 2011-11-15 Wed 15:25:17
Kernel build linkstamp: JUNOS 11.3I #0: 2011-11-10 20:42:27 UTC

-- Stacktrace of panicing context --
Processor 1 (crash monarch):
savectx+0x0 (c9552800,80214efc,802a7fbc,c88ad05c) ra 801b93a8 sz 0
kdm_kcore_save_crashinfo+0x254 (c9552800,0,802a7fbc,c88ad05c) ra 801b9f44 sz 784
kdm_kcore_kern_panic_event_handler+0x4b0 (c9552800,0,802a7fbc,c88ad05c) ra
8022a9b8 sz 88
panic+0x1d0 (c9552800,0,4,77fed534) ra 802540c0 sz 56
kdb_sysctl_panic+0x70 (c9552800,0,4,77fed534) ra 80237e58 sz 40 sysctl_root+0x12c
(c9552800,0,4,e8bc5cf8) ra 80238e50 sz 48
userland_sysctl+0x164 (c9552800,0,4,e8bc5cf8) ra 8023956c sz 104
__sysctl+0xe4 (c9552800,0,4,e8bc5cf8) ra 806d62e8 sz 160
trap+0xe1c (c9552800,0,4,e8bc5cf8) ra 80896e68 sz 128
MipsUserGenException+0x1a4 (c9552800,0,4,405cd12c) ra 0 sz 0
pid 82340, process: sysctl

Processor 0:
restoreintr+0x14 (1,81bca820,3,0) ra 806cdc3c sz 0
spinlock_exit+0x30 (1,81bca820,3,0) ra 8025d354 sz 24
sleepq_release+0x64 (1,81bca820,3,0) ra 8025e670 sz 24
sleepq_timeout+0x224 (1,81bca820,3,0) ra 80240294 sz 48
softclock+0x434 (1,81bca820,3,0) ra 802067f8 sz 80
ithread_loop+0x244 (1,81bca820,3,0) ra 80200e28 sz 64 fork_exit+0xc0
(1,81bca820,3,0) ra 80897c28 sz 48

```

```

MipsNMIException+0x34 (1,81bca820,3,0) ra 0 sz 0
pid 82340, process: sysctl

Processor 2:
cpu_idle+0x20 (80960000,51bbc,2031df,81bca1b8) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2031df,81bca1b8) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2031df,81bca1b8) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2031df,81bca1b8) ra 0 sz 0
pid 82340, process: sysctl

Processor 3:
cpu_idle+0x20 (80960000,51bbc,2038df,81bca300) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2038df,81bca300) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2038df,81bca300) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2038df,81bca300) ra 0 sz 0
pid 82340, process: sysctl

Processor 4:
cpu_idle+0x20 (80960000,51bbc,2037df,81bca448) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2037df,81bca448) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2037df,81bca448) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2037df,81bca448) ra 0 sz 0
pid 82340, process: sysctl

Processor 5:
restoreintr+0x14 (1,51bbc,203edf,81bca590) ra 806cdc3c sz 0
spinlock_exit+0x30 (1,51bbc,203edf,81bca590) ra 80204a34 sz 24 idle_proc+0x21c
(1,51bbc,203edf,81bca590) ra 80200e28 sz 56 fork_exit+0xc0
(1,51bbc,203edf,81bca590) ra 80897c28 sz 48
MipsNMIException+0x34 (1,51bbc,203edf,81bca590) ra 0 sz 0
pid 82340, process: sysctl

Processor 6:
cpu_idle+0x20 (80960000,51bbc,205cdf,81bca6d8) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,205cdf,81bca6d8) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,205cdf,81bca6d8) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,205cdf,81bca6d8) ra 0 sz 0
pid 82340, process: sysctl

Processor 7:
lockmgr+0x5ac (c97e8484,c8dd9800,0,c8dd9800) ra 8c11c81c sz 48
sal_sem_take+0x134 (c97e8484,c8dd9800,0,c8dd9800) ra 8c351108 sz 56
_bcm_esw_linkscan_thread+0x45c (c97e8484,c8dd9800,0,c8dd9800) ra 8c11cdb4 sz 104
sal_thread_start_wrap+0x74 (c97e8484,c8dd9800,0,c8dd9800) ra 80200e28 sz 32
fork_exit+0xc0 (c97e8484,c8dd9800,0,c8dd9800) ra 80897c28 sz 48
MipsNMIException+0x34 (c97e8484,c8dd9800,0,c8dd9800) ra 0 sz 0
pid 82340, process: sysctl
-- End of stacktrace --

```

show system core-dumps repository core (QFabric Systems)

```

user@switch> show system core-dumps repository core
Repository scope: shared
Repository head: /pbdata/export
Repository name: core
List of nodes for core repository: /pbdata/export/rdumps/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	0M
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	0	fx-jvve	0M
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	0	fx-jvve	0M

NW-NG-0	BBAK0394	0	qfx3500	0M
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	0	fx-jvre	0M
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	0	fx-jvre	0M
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	0	fx-jvre	0M
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	0	fx-jvre	0M
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YW3803	0	qfxc08-3008	0M
IC-WS001	WS001/YN5999	0	qfxc08-3008	0M
node-device1	BBAK0372	0	qfx3500	0M
node-device1	EE3093	0	qfx3500	0M

Total usage of core repository:0M of 70000M (0.0%)

show system core-dumps repository log (QFabric Systems)

```

user@switch> show system core-dumps repository log
Repository scope: shared
Repository head: /pbdata/export
Repository name: log
List of nodes for log repository: /pbdata/export/rlogs/

```

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	0M
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	1	fx-jvre	0M
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	1	fx-jvre	0M
NW-NG-0	BBAK0394	1	qfx3500	0M
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	1	fx-jvre	0M
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	3	fx-jvre	0M
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	1	fx-jvre	0M
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	1	fx-jvre	0M
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YN5999	1	qfxc08-3008	0M
IC-WS001	WS001/YW3803	1	qfxc08-3008	0M
node-device1	BBAK0372	1	qfx3500	0M
node-device1	EE3093	1	qfx3500	0M

Total usage of log repository:0M of 70000M (0.0%)

show system storage satellite

Syntax	show system storage satellite <fpc-slot> device-alias <device-alias>
Release Information	Command introduced in Junos OS Release 17.1R1.
Description	Displays the storage usage of satellite devices in Junos Fusion.
Options	<p>none—Display the storage usage for all listed satellite devices.</p> <p>detail—(Optional) Display detail output.</p> <p>fpc-slot—(Optional) Display satellite device connection information for the satellite device using the specified FPC slot number only.</p> <p>device-alias device-alias—(Optional) Display satellite device connection information for the satellite device using the specified device alias only.</p>
Required Privilege Level	view
List of Sample Output	show system storage satellite on page 785
Output Fields	Table 32 on page 785 describes the output fields for the show system storage command. Output fields are listed in the approximate order in which they appear.

Table 32: show system storage Output Fields

Field Name	Field Description
Filesystem	Name of the filesystem.
Size	Size of the filesystem.
Used	Amount of space used in the filesystem.
Avail	Amount of space available in the filesystem.
Use %	Percentage of the filesystem space that is being used.
Mounted on	Directory in which the filesystem is mounted.

Sample Output

show system storage satellite

```
user@host> show system storage satellite
```

Slot-ID: 125

Filesystem	Size	Used	Avail	Use%	Mounted on
rootfs	665M	287M	330M	47%	/
udev	896M	24K	896M	1%	/dev
none	896M	24K	896M	1%	/dev
tmpfs	936M	812K	935M	1%	/run
/dev/sda3	665M	287M	330M	47%	/
/dev/sda5	327M	99M	207M	33%	/var
tmpfs	936M	812K	935M	1%	/run
tmpfs	936M	14M	923M	2%	/var/volatile
/dev/sda1	481M	254M	228M	53%	/boot
/dev/sda2	259M	2.1M	240M	1%	/app_disk
tmpfs	936M	812K	935M	1%	/run/named-chroot/var/run/named
tmpfs	936M	812K	935M	1%	/run/named-chroot/var/run/bind
none	896M	24K	896M	1%	/run/named-chroot/dev/random
none	896M	24K	896M	1%	/run/named-chroot/dev/zero
none	896M	24K	896M	1%	/run/named-chroot/dev/null

Slot-ID: 134

Filesystem	Size	Used	Avail	Use%	Mounted on
rootfs	665M	287M	330M	47%	/
udev	896M	24K	896M	1%	/dev
none	896M	24K	896M	1%	/dev
tmpfs	936M	812K	935M	1%	/run
/dev/sda3	665M	287M	330M	47%	/
/dev/sda5	327M	97M	209M	32%	/var
tmpfs	936M	812K	935M	1%	/run
tmpfs	936M	13M	924M	2%	/var/volatile
/dev/sda1	481M	254M	228M	53%	/boot
/dev/sda2	259M	2.1M	240M	1%	/app_disk
tmpfs	936M	812K	935M	1%	/run/named-chroot/var/run/named
tmpfs	936M	812K	935M	1%	/run/named-chroot/var/run/bind
none	896M	24K	896M	1%	/run/named-chroot/dev/random
none	896M	24K	896M	1%	/run/named-chroot/dev/zero
none	896M	24K	896M	1%	/run/named-chroot/dev/null

CHAPTER 6

Power over Ethernet, LLDP, and LLDP-MED on a Junos Fusion Provider Edge

- [Understanding Power over Ethernet in a Junos Fusion on page 787](#)
- [Understanding LLDP and LLDP-MED on a Junos Fusion on page 790](#)
- [Configuring Power over Ethernet in a Junos Fusion on page 791](#)
- [Verifying PoE Configuration and Status for a Junos Fusion \(CLI Procedure\) on page 795](#)

Understanding Power over Ethernet in a Junos Fusion

This topic describes Power over Ethernet (PoE) in a Junos Fusion.

This topic covers:

- [Power over Ethernet in a Junos Fusion Overview on page 787](#)
- [Understanding the Role of the Aggregation Devices for PoE Support in a Junos Fusion on page 788](#)
- [Understanding the Role of the Satellite Devices for PoE Support in a Junos Fusion on page 788](#)
- [Understanding PoE Configuration in a Junos Fusion on page 788](#)
- [Understanding PoE Support Standards for Extended Ports in a Junos Fusion on page 789](#)
- [Understanding Maximum PoE Power Budgets in a Junos Fusion on page 789](#)
- [Understanding PoE Controller Software in a Junos Fusion on page 789](#)
- [Understanding PoE Power Allocation Configuration Options in a Junos Fusion on page 790](#)

Power over Ethernet in a Junos Fusion Overview

Power over Ethernet (PoE) enables electric power, along with data, to be passed over a copper Ethernet LAN cable. Powered devices—such as VoIP telephones, wireless access points, video cameras, and point-of-sale devices—that support PoE can receive power safely from the same access ports that are used to connect personal computers to the network. This reduces the amount of wiring in a network, and it also eliminates the need to position a powered device near an AC power outlet, making network design more flexible and efficient.

In a Junos Fusion, PoE is used to carry electric power from an extended port on a satellite device to a connected device. An extended port is any network-facing port on a satellite device in a Junos Fusion.

Many PoE concepts for standalone switches also apply to PoE on Junos Fusion. See *Understanding PoE on EX Series Switches* for a detailed overview of PoE on standalone EX Series switches.

Understanding the Role of the Aggregation Devices for PoE Support in a Junos Fusion

An aggregation device is responsible for configuring, monitoring, and maintaining all configurations for all extended ports in a Junos Fusion, including PoE. Therefore, all commands used to configure, monitor, and maintain PoE in a Junos Fusion are entered from the aggregation device.

An extended port on the satellite device must support PoE to enable PoE in a Junos Fusion. No hardware limitations for PoE support are introduced by the aggregation device in a Junos Fusion.



NOTE: PoE is supported in a Junos Fusion Provide Edge and a Junos Fusion Enterprise despite not being supported in MX series routers or standalone EX9200 switches. All MX series routers and EX9200 switch models, when configured into the aggregation device role in a Junos Fusion, can enable PoE Junos Fusion because the PoE hardware support is supported on the satellite devices.

Understanding the Role of the Satellite Devices for PoE Support in a Junos Fusion

A satellite device in a Junos Fusion provides PoE hardware support in a Junos Fusion. Each satellite device in a Junos Fusion that supports PoE has its own PoE controller. The PoE controller keeps track of the PoE power consumption on the satellite device and allocates power to PoE extended ports. The maximum PoE power consumption for a satellite device—the total amount of power available for the satellite device's PoE controller to allocate to all of the satellite device's PoE interfaces—is determined individually by the switch model of the satellite devices and by the power supply or supplies installed in that satellite device.

In allocating power, the satellite device's PoE controller cannot exceed the satellite device's maximum PoE power availability.

The maximum PoE power consumption varies by satellite device in a Junos Fusion, because the hardware specifications of the satellite devices determine the maximum PoE power availability.

See *Understanding PoE on EX Series Switches* for a listing of the PoE power consumption limit for each EX Series switch model and power supply configuration.

Understanding PoE Configuration in a Junos Fusion

Like all features in a Junos Fusion, PoE is configured from the aggregation devices.

In dual aggregation device topologies, the PoE configurations should match identically on both aggregation devices.

PoE in a Junos Fusion works by periodically checking the PoE configuration on each aggregation device, and updating the configuration when a PoE change is identified. If the aggregation devices have different PoE configurations, the PoE configurations for the Junos Fusion will continually change because the Junos Fusion always uses the PoE configuration of the last aggregation device that was checked.

Understanding PoE Support Standards for Extended Ports in a Junos Fusion

The extended port hardware—specifically, the extended port hardware interface on the satellite device in the Junos Fusion —must support PoE to enable PoE in a Junos Fusion.

All extended ports that support PoE on satellite devices in a Junos Fusion support the IEEE 802.3at PoE+ standard. The IEEE 802.3at PoE+ standard allows an extended port that supports PoE to provide up to 30 W of power to a connected device.

Understanding Maximum PoE Power Budgets in a Junos Fusion

The maximum PoE power budgets are determined for each individual satellite device in a Junos Fusion.

Maximum PoE power budgets for a satellite device vary by the switch model and power supply configuration of the satellite device.

To learn the maximum PoE power supply budget for a satellite device:

- See *Understanding PoE on EX Series Switches* for a table of maximum power supply budgets by switch device model.
- Enter the **show poe controller** command from your aggregation device and view the Maximum Power output.

Understanding PoE Controller Software in a Junos Fusion

All switches that support PoE have a PoE controller that runs PoE controller software, including switches acting as satellite devices in a Junos Fusion.

PoE controller software is bundled with Junos OS. PoE controller software should be updated before installing a switch as a satellite device in a Junos Fusion.

For information on PoE controller software requirements in a Junos Fusion Enterprise, see *Understanding Junos Fusion Enterprise Software and Hardware Requirements*.

For information on PoE controller software requirements in a Junos Fusion Provider Edge, see [“Understanding Junos Fusion Provider Edge Software and Hardware Requirements” on page 21](#)

For information on checking or upgrading the PoE controller software version, see *Upgrading the PoE Controller Software*.

Understanding PoE Power Allocation Configuration Options in a Junos Fusion

Junos Fusion supports several optional features that help manage PoE power allocation on the satellite devices.

The PoE power allocation options are discussed in greater detail in *Understanding PoE on EX Series Switches*.

Related Documentation

- [Configuring Power over Ethernet in a Junos Fusion on page 791](#)
- [Verifying PoE Configuration and Status for a Junos Fusion \(CLI Procedure\) on page 795](#)

Understanding LLDP and LLDP-MED on a Junos Fusion

This topic describes Link Layer Discovery Protocol (LLDP) and Link Layer Discovery Protocol–Media Endpoint Discovery (LLDP-MED) in a Junos Fusion.

This topic covers:

- [LLDP and LLDP-MED in a Junos Fusion Overview on page 790](#)
- [Understanding LLDP and LLDP-MED Configuration and Traffic Handling in a Junos Fusion on page 791](#)

LLDP and LLDP-MED in a Junos Fusion Overview

LLDP and LLDP-MED are used to learn and distribute device information on network links. The information enables the switch to quickly identify a variety of devices, resulting in a LAN that interoperates smoothly and efficiently.

LLDP-capable devices transmit information in type, length, and value (TLV) messages to neighbor devices. Device information can include information such as chassis and port identification and system name and system capabilities. The TLVs leverage this information from parameters that have already been configured in the Junos operating system (Junos OS).

Many LLDP and LLDP-MED concepts for standalone EX Series switches that support the features also apply to LLDP and LLDP-MED on Junos Fusion. See *Understanding LLDP and LLDP-MED on EX Series Switches* for a detailed overview of LLDP and LLDP-MED on standalone EX Series switches.



NOTE: LLDP-MED goes one step further than LLDP, exchanging IP-telephony messages between the switch and the IP telephone. LLDP-MED is an important access layer switch feature that is supported in a Junos Fusion despite not being supported on a standalone EX9200 switch.

Understanding LLDP and LLDP-MED Configuration and Traffic Handling in a Junos Fusion

LLDP and LLDP-MED traffic is generally handled the same in a Junos Fusion or a standalone series switch. LLDP and LLDP-MED configuration on an extended port in a Junos Fusion is identical for a standalone EX Series switch. See *Configuring LLDP (CLI Procedure)* or *Configuring LLDP-MED (CLI Procedure)*.

The following specifications apply to the device information transmitted by LLDP and LLDP-MED in a Junos Fusion topology with two or more aggregation devices:

- Management address TLVs are merged into a single packet in such a way that the packet contains two or more management address TLVs.
- The SNMP index used as the port ID TLV is derived so that all aggregation devices receive the same index value for port IDs of extended ports.
- The system name for extended ports is the configured redundancy group name. A redundancy group has to be configured in order to enable a topology with two or more aggregation devices.
- The chassis ID is the same for all aggregation devices. If a system MAC address is defined for the redundancy group, is it used as the chassis ID. The system MAC address is configured using the **set chassis satellite-management redundancy-groups *redundancy-group-name* system-mac-address *system-mac-address*** command. If the system MAC is not configured, the chassis ID is the default MAC address, which is 00:00:00:00:00:01.



BEST PRACTICE: We recommend specifying a system MAC address if you are running LLDP or LLCP-MED traffic in your Junos Fusion topology.

Related Documentation

- [Configuring LLDP \(CLI Procedure\)](#)
- [Configuring LLDP-MED \(CLI Procedure\)](#)

Configuring Power over Ethernet in a Junos Fusion

- [PoE Configurable Options on page 792](#)
- [Enabling PoE on page 792](#)
- [Disabling PoE on page 793](#)
- [Setting the Power Management Mode on page 793](#)
- [Setting the Maximum Power That Can Be Delivered from a PoE Interface on page 794](#)
- [Setting the Guard Band on page 794](#)
- [Setting the PoE Interface Priority on page 794](#)

PoE Configurable Options

Table 33 on page 792 shows the configurable PoE options and their default settings in a Junos Fusion.

Some PoE options can be configured globally and per interface. In cases where a PoE interface setting is different from a global PoE setting, the PoE interface setting is configured on the interface.

Table 33: Configurable PoE Options and Default Settings

Option	Default	Description
disable (Power over Ethernet)	Not included in default configuration. NOTE: PoE ports are disabled by default in a Junos Fusion.	Disables PoE on the interface if PoE was enabled. The interface maintains network connectivity but no longer supplies power to a connected powered device. Power is not allocated to the interface.
guard-band	0 W	Reserves a specified amount of power from the PoE power budget for possible spikes in PoE power consumption. In a Junos Fusion, the guard band can be 0 to 19 W.
management	class	Sets the PoE power management mode for the extended port. The power management mode determines how power to a PoE extended port is allocated: <ul style="list-style-type: none"> • class—In this mode, the power allocated to a PoE extended port is determined by the class of the connected powered device. If there is no powered device connected, standard 15.4W power is allocated on the interface. • static—The maximum power delivered by an interface is statically configured and is independent of the class of the connected powered device. The maximum power is allocated to the interface even if a powered device is not connected.
maximum-power (Interface)	30.0 W (PoE+, IEEE 802.3at)	Sets the maximum power that can be delivered by a PoE interface when the power management mode is static . In a Junos Fusion, all extended ports support PoE+ so the maximum power is up to 30 W. This setting is ignored if the power management mode is class .
priority (Power over Ethernet)	low	Sets an interface's power priority to either low or high . If power is insufficient for all PoE interfaces, the PoE power to low-priority interfaces is shut down before power to high-priority interfaces is shut down. Among interfaces that have the same assigned priority, the power priority is determined by port number, with lower-numbered ports having higher priority.

Enabling PoE

PoE is disabled by default for all extended ports in a Junos Fusion.

To enable PoE on all PoE-supported interfaces:

```
[edit]
user@aggregation-device# set poe interface all-extended
```

To enable PoE on a specific PoE-supported interface:

```
[edit]
user@aggregation-device# set poe interface interface-name
```

For instance, to enable PoE on extended port interface ge-100/0/24:

```
[edit]
user@aggregation-device# set poe interface ge-100/0/24
```

Disabling PoE

PoE is disabled by default in a Junos Fusion. Use this procedure to disable PoE in a Junos Fusion that has PoE previously enabled.

If PoE is enabled globally but disabled on a specific interface, PoE is disabled on the specified interface. This procedure can, therefore, be used to individually disable ports in cases where PoE is globally enabled.

If you want to disable PoE on all extended port interfaces in a Junos Fusion:

```
[edit]
user@aggregation-device# set poe interface all-extended disable
```

If you want to disable PoE on one extended port interface:

```
[edit]
user@aggregation-device# set poe interface interface-name disable
```

For instance, to disable PoE on extended port 101/0/1 in a Junos Fusion:

```
[edit]
user@aggregation-device# set poe interface 101/0/1 disable
```

If you want to enable PoE on all PoE-supported extended ports in a Junos Fusion except 101/0/10, enter the following commands:

```
[edit]
user@aggregation-device# set poe interface all-extended
user@aggregation-device# set poe interface 101/0/10 disable
```

Setting the Power Management Mode

The power management mode in a Junos Fusion is set for all extended ports in a Junos Fusion .

The default power management mode is class.

To set the power management mode to static for all PoE extended ports:

```
[edit]
user@aggregation-device# set poe management static
```

To set the power management mode back to class for all PoE extended ports:

```
[edit]
user@aggregation-device# set poe management class
```

Setting the Maximum Power That Can Be Delivered from a PoE Interface

To set the maximum power that can be delivered to a connected device using PoE when the power management mode is set to static:

```
[edit]
user@aggregation-device# set poe interface interface-name maximum-power watts
```

To configure all extended port interfaces to the same maximum power, enter **all-extended** as the *interface-name*.

For instance, to change the maximum power for all PoE extended ports configured in static power management mode to 25 watts:

```
[edit]
user@aggregation-device# set poe interface all-extended maximum-power 25
```

To change the maximum power for interface 101/0/1 to 25 watts:

```
[edit]
user@aggregation-device# set poe interface 101/0/1 maximum-power 25
```

Setting the Guard Band

One guard band is configured for all extended ports in a Junos Fusion.

To set the guard band for all extended ports in a Junos Fusion:

```
[edit]
user@aggregation-device# set poe guard-band watts
```

For instance, to set the guard-band to 19 watts for all PoE extended ports:

```
[edit]
user@aggregation-device# set poe guard-band 19
```

Setting the PoE Interface Priority

To set a PoE interface priority to high:

```
[edit]
user@aggregation-device# set poe interface interface-name priority high
```

For instance, to assign a high priority to interface 101/0/1:

```
[edit]
```

```
user@aggregation-device# set poe interface 101/0/1 priority high
```

To set a PoE interface priority to low:

```
[edit]
user@aggregation-device# set poe interface interface-name priority low
```

For instance, to assign a low priority to interface 102/0/1:

```
[edit]
user@aggregation-device# set poe interface 102/0/1 priority low
```

- Related Documentation**
- [Verifying PoE Configuration and Status for a Junos Fusion \(CLI Procedure\) on page 795](#)
 - [Understanding Power over Ethernet in a Junos Fusion on page 787](#)

Verifying PoE Configuration and Status for a Junos Fusion (CLI Procedure)

You can verify the Power over Ethernet (PoE) configuration and status on Junos Fusion.

This topic describes how to verify:

- [PoE Power Budgets, Consumption, and Mode on Satellite Devices on page 795](#)
- [PoE Interface Configuration and Status on page 796](#)

PoE Power Budgets, Consumption, and Mode on Satellite Devices

Purpose Verify the PoE configuration and status, such as the PoE power budget, total PoE power consumption, power management mode, and the supported PoE standard.

Action Enter the following command:

```
user@aggregation-device> show poe controller
```

Controller index	Maximum power	Power consumption	Guard band	Management	Status	Lldp Priority
100	925.00W	0.00W	19W	Class	AT_MODE	Disabled
120	125.00W	6.08W	19W	Class	AT_MODE	Disabled

- Meaning**
- Satellite device 100 has a PoE power budget of 925 W, of which 0 W were being used by the PoE extended ports at the time the command was executed. The Guard band field shows that 19 W of power is reserved out of the PoE power budget to protect against spikes in power demand. The power management mode is class. The PoE ports on the switch support PoE+ (IEEE 802.3at).
 - Satellite device 120 has a PoE power budget of 125 W, of which 6.08 W were being used by the PoE extended ports at the time the command was executed. The Guard band field shows that 19 W of power is reserved out of the PoE power budget to protect

against spikes in power demand. The power management mode is class. The PoE ports on the switch support PoE+ (IEEE 802.3at).

PoE Interface Configuration and Status

Purpose Verify that PoE interfaces are enabled and set to the correct maximum power and priority settings. Also verify current operational status and power consumption.

Action To view configuration and status for all PoE interfaces, enter:

```
user@switch> show poe interface
```

Interface	Admin status	Oper status	Max power	Priority	Power consumption	Class
ge-100/0/0	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/1	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/2	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/3	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/4	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/5	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/6	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/7	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/8	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/9	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/10	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/11	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/12	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/13	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/14	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/15	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/16	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/17	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/18	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/19	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/20	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/21	Enabled	OFF	16.0W	Low	0.0W	
not-applicable						
ge-100/0/22	Enabled	OFF	16.0W	Low	0.0W	

not-applicable							
ge-100/0/23	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/24	Enabled	ON	16.0W	Low	3.7W	2	
ge-100/0/25	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/26	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/27	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/28	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/29	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/30	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/31	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/32	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/33	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/34	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/35	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/36	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/37	Enabled	ON	16.0W	Low	2.0W	0	
ge-100/0/38	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/39	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/40	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/41	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/42	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/43	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/44	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/45	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/46	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-100/0/47	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-120/0/0	Enabled	ON	16.0W	Low	3.9W	2	
ge-120/0/1	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-120/0/2	Enabled	OFF	16.0W	Low	2.0W		
not-applicable							
ge-120/0/3	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-120/0/4	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-120/0/5	Enabled	OFF	16.0W	Low	0.0W		
not-applicable							
ge-120/0/6	Enabled	ON	16.0W	Low	0.0W	4	

```
ge-120/0/7  Enabled    OFF    0.0W    Low      0.0W
not-applicable
ge-120/0/8  Enabled    OFF    0.0W    Low      0.0W
not-applicable
ge-120/0/9  Enabled    OFF    0.0W    Low      0.0W
not-applicable
ge-120/0/10 Enabled    OFF    0.0W    Low      0.0W
not-applicable
ge-120/0/11 Enabled    OFF    0.0W    Low      0.0W
not-applicable
<additional output removed for brevity>
```

To view configuration and status for a single PoE interface, enter:

```
user@switch> show poe interface ge-120/0/0
PoE interface status:
PoE interface           : ge-120/0/0
Administrative status   : Enabled
Operational status      : ON
Power limit on the interface : 7.0W
Priority                 : Low
Power consumed           : 3.9W
Class of power device    :      2
PoE Mode                 : 802.3at
```

Meaning The command output shows the status and configuration of interfaces. For example, the interface 120/0/0 is administratively enabled. Its operational status is **ON**; that is, the interface is currently delivering power to a connected powered device. The maximum power allocated to the interface is 7.0 W. The interface has a low PoE power priority. At the time the command was executed, the powered device was consuming 3.9 W. The class of the powered device is class 2. If the PoE power management mode is class, the class of the powered device determines the maximum power allocated to the interface, which is 7 W in the case of class 2 devices.

The PoE Mode field indicates that the interface supports IEEE 802.3at (PoE+).

Related Documentation

- [Configuring Power over Ethernet in a Junos Fusion on page 791](#)
- [Understanding Power over Ethernet in a Junos Fusion on page 787](#)

CHAPTER 7

Configuration Statements for Power over Ethernet and Power Supply Management on a Junos Fusion Provider Edge

- [disable \(Power over Ethernet\) on page 800](#)
- [guard-band on page 801](#)
- [interface \(Power over Ethernet\) on page 802](#)
- [management on page 803](#)
- [maximum-power \(Interface\) on page 804](#)
- [n-plus-n \(satellite-management\) on page 806](#)
- [poe on page 807](#)
- [priority \(Power over Ethernet\) on page 809](#)
- [psu \(satellite-management\) on page 810](#)
- [redundancy \(satellite-management\) on page 810](#)

disable (Power over Ethernet)

Syntax	disable;
Hierarchy Level	[edit poe interface (all all-extended <i>interface-name</i>)], [edit poe interface (all all-extended <i>interface-name</i>) telemetries], [edit poe notification-control fpc <i>slot-number</i>]
Release Information	Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 12.2 for ACX2000 Universal Metro Routers. all-extended option introduced in Junos OS Release 16.1R1. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	<p>Disable a PoE interface, disable the collection of power consumption data for a PoE interface, or disable the generation of the PoE SNMP traps. The action of the disable statement depends on which statement it is used with:</p> <ul style="list-style-type: none">• When used with interface—Disable the PoE capability of this interface. The interface operates as a standard network access interface, and power is no longer allocated to it from the PoE power budget. Although the PoE capability is disabled, the PoE configuration for the interface is retained. To reenable the PoE capability of this interface, delete the disable statement from the interface entry in the configuration.• When used with telemetries—Disable the collection of PoE power consumption records for this interface. Any previously collected records are deleted. However, the telemetries configuration is retained, including the values for interval and duration. To reenable record collection, delete the disable statement from the telemetries entry in the configuration.• When used with notification-control—Disable the generation of PoE SNMP traps. To reenable PoE traps, delete the disable statement from the notification-control entry in the configuration.
Required Privilege Level	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Example: Configuring PoE Interfaces with Different Priorities on an EX Series Switch</i>• <i>Configuring PoE on EX Series Switches (CLI Procedure)</i>• Configuring Power over Ethernet in a Junos Fusion on page 791

guard-band

Syntax	<code>guard-band <i>watts</i>;</code>
Hierarchy Level	[edit poe], [edit poe (all fpc <i>slot-number</i>)]
Release Information	Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 12.2 for ACX2000 Universal Metro Routers. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Reserve a specified amount of power from the PoE power budget for the switch, line card, or satellite device in case of a spike in PoE consumption.
Options	watts —Amount of power to be reserved in case of a spike in PoE consumption. Range: 0 through 19 for all switches except EX6200 and EX8200 switches.0 through 19 for ACX2000 routers.0 through 15 for EX6200 and EX8200 switches.0 through 19 for satellite devices in a Junos Fusion. Default: 0
Required Privilege Level	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring PoE on EX Series Switches (CLI Procedure)• Configuring Power over Ethernet in a Junos Fusion on page 791

interface (Power over Ethernet)

Syntax	<pre>interface (all all-extended <i>interface-name</i>) { af-mode; disable; maximum-power <i>watts</i>; priority (high low); telemetries { disable; duration <i>hours</i>; interval <i>minutes</i>; } }</pre>
Hierarchy Level	[edit poe]
Release Information	Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Specify a PoE interface to be configured.
Options	<p>all—All PoE interfaces on the switch that have not been individually configured for PoE. If a PoE interface has been individually configured, that configuration overrides any settings specified with all.</p> <p>all-extended—(Junos Fusion only) All PoE extended port interfaces in a Junos Fusion that have not been individually configured for PoE. If a PoE interface has been individually configured, that configuration overrides any settings specified with all-extended.</p> <p><i>interface-name</i>—Name of the specific interface being configured.</p> <p>If you use the interface statement without any substatements, default values are used for the remaining statements.</p> <p>The remaining statements are explained separately. See CLI Explorer.</p>
Required Privilege Level	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Example: Configuring PoE Interfaces with Different Priorities on an EX Series Switch</i>• <i>Configuring PoE on EX Series Switches (CLI Procedure)</i>• Configuring Power over Ethernet in a Junos Fusion on page 791

management

Syntax	<code>management (class static high-power);</code>
Hierarchy Level	<code>[edit poe],</code> <code>[edit poe (all fpc slot-number)]</code>
Release Information	Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 12.2 for ACX2000 Universal Metro Routers. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Designate how the PoE controller allocates power to the PoE interfaces.
Default	class
Options	<ul style="list-style-type: none"> • class—The amount of power allocated to the interface is determined by the class of the connected powered device. If no powered device is connected, standard 15.4 W power is allocated to the interface. See <i>Understanding PoE on EX Series Switches</i> for more information about classes of powered devices. • static—The amount of power allocated to the interface is determined by the value of the <code>maximum-power</code> statement, not the class of the connected powered device. This amount is allocated even when a powered device is not connected to the interface, ensuring that power is available when needed. • high-power—(ACX2000 routers only) ACX2000 PoE interfaces support power delivery of up to 65 W per port using all four pairs of Ethernet RJ45 cables. Traditional PoE ports use only two pairs of Ethernet cable for power delivery. According to the IEEE 802.3af standard, each port can deliver a maximum power of up to 32 W. With high-power mode of power delivery over all four pairs, the power sourcing equipment (PSE) has an option to deliver up to 65 W per port, provided the powered devices request this high power over all four pairs of the Ethernet cable. By default, high-power mode is not enabled and has to be explicitly enabled. When the PoE controller is configured for high-power mode, the PoE controller does not deliver power to normal powered devices that request power over two pairs.
Required Privilege Level	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • <i>Configuring PoE on EX Series Switches (CLI Procedure)</i> • Configuring Power over Ethernet in a Junos Fusion on page 791 • <i>Understanding PoE on EX Series Switches</i>

maximum-power (Interface)

Syntax `maximum-power watts;`

Hierarchy Level [edit `poe interface` (all | all-extended | *interface-name*)]

Release Information Statement introduced in Junos OS Release 9.0 for EX Series switches.
Statement introduced in Junos OS Release 12.2 for ACX2000 routers.
Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.

Description Set the maximum amount of power that the switch can supply to the PoE port.



NOTE: Although you can set this value when PoE power management is in class mode, it does not establish the maximum power for the port. Instead, the IEEE 802.3af (PoE) or IEEE 802.3at (PoE+) class of the connected device determines the maximum power for the port.

A standalone switch's default setting and range for maximum power does not change if the switch is configured as a satellite device in a Junos Fusion. For instance, an EX4300 switch has a 30W default and a range of 0.0 through 30.0 W when configured as a standalone switch and when it is configured into a satellite device in a Junos Fusion.

Options **watts**—The maximum power in watts that can be supplied to the ports..

For EX2200, EX3300, EX4200, EX4300, EX4600, EX6200, and EX8200 switches:

Range: 0.0 through 30.0

Default: 15.4 W for ports that support IEEE 802.3af and 30 W for ports that support IEEE 802.3at

For EX3200 switches:

Range: 0.0 through 18.6

Default: 15.4 W



NOTE: EX4600 switches support PoE only when operating in a mixed Virtual Chassis with EX4300 switches.

For ACX2000 routers:

Range: 1 through 65 W

Default: 32 W



NOTE: The maximum-power setting permitted by the CLI might be greater than the maximum power a given PoE port can deliver. For example, the CLI permits you to set any PoE port on an EX8200 line card to 30 W; however, only ports 0 through 11 support 30 W. Similarly, the CLI permits you to set any PoE port on an EX4200 switch to 30 W, but some models of EX4200 switch support only 18.6 W per port. If you configure a maximum-power value that is greater than the maximum power supported by a port, the power allocated to the port will be the maximum supported.

If you use the all option to set maximum-power to a value greater than 15.4 W on all interfaces on an EX8200 line card, the maximum power allocated to all ports is 15.4 W.



NOTE: Support for a maximum of 18.6 W per port instead of 15.4 W per port on EX3200 switches and P and T models of EX4200 switch requires Junos OS Release 11.1 or later. In addition to requiring an upgrade of Junos OS to Release 11.1 or later, switches that are running an earlier release of Junos OS release require the PoE controller software be upgraded as described in *Upgrading the PoE Controller Software*. If the controller software is not upgraded and you set maximum-power to a value greater than 15.4 W, the configuration is accepted when you commit it, but the actual power allocated to the port will be 15.4 W.



NOTE: On ACX2000 routers, the power sourcing equipment (PSE) delivers up to 65 W per port, provided the management mode is set to high-power mode, by using the high-power option at the [edit poe management] hierarchy level. By default, the management mode is set to static. In the static mode, the PSE can deliver power up to 32 W.

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

Related Documentation

- [Configuring PoE on EX Series Switches \(CLI Procedure\)](#)
- [Configuring Power over Ethernet in a Junos Fusion on page 791](#)
- [management on page 803](#)

n-plus-n (satellite-management)

Syntax	n-plus-n
Hierarchy Level	[edit chassis satellite-management psu redundancy]
Release Information	Statement introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Configure N+N power supply redundancy for the satellite devices in a Junos Fusion.
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">• Understanding Power over Ethernet in a Junos Fusion on page 787

poe

Syntax For switches other than EX6200 and EX8200 switches:

```
poe {
  guard-band watts;
  interface (all | interface-name) {
    disable;
    maximum-power watts;
    priority (high | low);
    telemetry {
      disable;
      duration hours;
      interval minutes;
    }
  }
  lldp-priority;
  management (class | static);
  notification-control {
    fpc slot-number {
      disable;
    }
  }
}
```

For a Junos Fusion:

```
poe {
  guard-band watts;
  interface (all-extended | interface-name) {
    disable;
    maximum-power watts;
    priority (high | low);
  }
  management (class | static);
}
```

For EX6200 and EX8200 switches:

```
poe {
  fpc (all | slot-number) {
    guard-band watts;
    lldp-priority;
    management (class | static);
    maximum-power watts;
  }
  interface (all | interface-name) {
    af-mode;
    disable;
    maximum-power watts;
    priority (high | low);
    telemetry {
      disable;
      duration hours;
      interval minutes;
    }
  }
}
```

```
    }  
  }  
  notification-control {  
    fpc slot-number {  
      disable;  
    }  
  }  
}
```

Hierarchy Level [edit]

Release Information Statement introduced in Junos OS Release 9.0 for EX Series switches.
Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.

Description Configure PoE options. PoE ports on Juniper network switches provide power to PoE-enabled devices only when straight-through cables are used. Power is not provided when crossover cables are used.

The remaining statements are explained separately. See [CLI Explorer](#).

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

Related Documentation

- *Example: Configuring PoE Interfaces with Different Priorities on an EX Series Switch*
- *Example: Configuring PoE on an EX6200 or EX8200 Switch*
- *Configuring PoE on EX Series Switches (CLI Procedure)*
- [Configuring Power over Ethernet in a Junos Fusion on page 791](#)

priority (Power over Ethernet)

Syntax	priority (low high);
Hierarchy Level	[edit poe interface (<i>interface-name</i> all all-extended)]
Release Information	Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Set the power priority for individual interfaces when there is insufficient power for all PoE interfaces. If the switch needs to shut down powered devices because PoE demand exceeds the PoE budget, low-priority devices are shut down before high-priority devices. Among interfaces that have the same assigned priority, priority is determined by port number, with lower-numbered ports having higher priority.
Default	low
Options	high —Specifies that this interface is to be treated as high-priority in terms of power allocation. If the switch needs to shut down powered devices because PoE demand exceeds the PoE budget, power is not shut down on this interface until it has been shut down on all the low-priority interfaces. low —Specifies that this interface is to be treated as low-priority in terms of power allocation. If the switch needs to shut down powered devices because PoE demand exceeds the PoE budget, power is shut down on this interface before it is shut down on high-priority interfaces.
Required Privilege Level	system—To view this statement in the configuration. system-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Example: Configuring PoE Interfaces with Different Priorities on an EX Series Switch</i>• <i>Configuring PoE on EX Series Switches (CLI Procedure)</i>• Configuring Power over Ethernet in a Junos Fusion on page 791

psu (satellite-management)

Syntax	<pre>psu { redundancy { n-plus-n; } }</pre>
Hierarchy Level	[edit chassis satellite-management]
Release Information	Statement introduced in Junos OS Release 16.1R1 for a Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Configure N+N power supply redundancy for the satellite devices in a Junos Fusion. The remaining statements are explained separately. See CLI Explorer .
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Understanding Power over Ethernet in a Junos Fusion on page 787

redundancy (satellite-management)

Syntax	<pre>redundancy { n-plus-n; }</pre>
Hierarchy Level	[edit chassis satellite-management psu]
Release Information	Statement introduced in Junos OS Release 16.1R1 for a Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Configure N+N power supply redundancy for the satellite devices in a Junos Fusion. The remaining statement is explained separately. See CLI Explorer .
Default	N+1 power supply redundancy is configured on each satellite device by default.
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">• Understanding Power over Ethernet in a Junos Fusion on page 787

CHAPTER 8

Operational Commands for Power over Ethernet and Power Supply Management on Junos Fusion Provider Edge

- `show chassis satellite power-budget-statistics`
- `show poe controller`
- `show poe interface`

show chassis satellite power-budget-statistics

Syntax	show chassis satellite power-budget-statistics <slot-id slot-id-number>
Release Information	Command introduced in Junos OS Release 16.1R1 for a Junos Fusion Enterprise. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Display the power budget statistics of a satellite device or devices in a Junos Fusion.
Options	none —Display power budget statistics for all satellite devices in the Junos Fusion. slot-id slot-id-number —Display power budget statistics for the specified satellite device only. The <i>slot-id-number</i> and the FPC ID are the same number in a Junos Fusion.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Power over Ethernet in a Junos Fusion on page 787
List of Sample Output	show chassis satellite power-budget-statistics on page 813
Output Fields	Table 34 on page 812 lists the output fields for the show chassis satellite-management power-budget-statistics command. Output fields are listed in the approximate order in which they appear.

Table 34: show chassis satellite-management power-budget-statistics Output Fields

Field Name	Field Description
FPC <i>n</i>	The FPC slot ID number in the Junos Fusion, where <i>n</i> is the FPC slot ID. The FPC slot ID and the satellite device number are the same thing in a Junos Fusion.
PSU <i>n</i> (supply type)	Capacity rating of the power supply and whether the power supply is currently operating (Online) or not (Offline). If a power supply is offline, the capacity is shown as 0 W.
Total Power supplied by all Online PSUs	Total number of watts supplied by all currently operating power supplies for the satellite device.
Power Redundancy Configuration	Configured power redundancy setting, either <i>N+1</i> or <i>N+N</i> .
Base power reserved	Total number of watts reserved for the satellite device.
Non-PoE power being consumed	The amount of power, in W, currently being consumed for functions other than PoE by the satellite device.

Table 34: show chassis satellite-management power-budget-statistics Output Fields (continued)

Field Name	Field Description
Total Power allocated for PoE	The total of the PoE power budgets allocated to the satellite device.
Total PoE power consumed	The amount of power that has been consumed by PoE by the satellite device.
Total PoE power remaining	The amount of available power remaining that can be used for PoE on the satellite device.

Sample Output

show chassis satellite power-budget-statistics

```

user@aggregation-device> show chassis satellite power-budget-statistics
fpc 100:
-----
PSU 0   (JPSU-550-DC-AFI  )      :    550 W   Online
PSU 1   (JPSU-550-DC-AFO  )      :    550 W   Online
Power redundancy configuration    :    N+N
Total power supplied by all online PSUs :    522 W
Base power reserved               :    175 W
Non-PoE power being consumed     :     82 W
Total power allocated for PoE    :    347 W
Total PoE power consumed         :     0 W
Total PoE power remaining        :    347 W

fpc 120:
-----
Power redundancy configuration    :    N+N
Total power supplied by all online PSUs :    170 W
Base power reserved               :     0 W
Non-PoE power being consumed     :     0 W

fpc 128:
-----
Power redundancy configuration    :    N+N
Total power supplied by all online PSUs :     0 W
Base power reserved               :     0 W
Non-PoE power being consumed     :     0 W

fpc 133:
-----
PSU 0   (JPSU-1100-AC-AFO  )      :     0 W   Offline
PSU 1   (JPSU-1100-AC-AFO  )      :    1100 W   Online
Power redundancy configuration    :    N+N
Total power supplied by all online PSUs :    1100 W
Base power reserved               :    175 W
Non-PoE power being consumed     :     74 W
Total power allocated for PoE    :    925 W
Total PoE power consumed         :     0 W
Total PoE power remaining        :    925 W

fpc 240:
-----
Power redundancy configuration    :    N+N
Total power supplied by all online PSUs :     0 W
Base power reserved               :     0 W
Non-PoE power being consumed     :     0 W

```


show poe controller

Syntax	show poe controller
Release Information	<p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.2 for ACX2000 routers.</p> <p>Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.</p>
Description	Display configuration and status of the PoE controllers.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show poe interface on page 818 • <i>request system firmware upgrade poe</i> • <i>Verifying PoE Configuration and Status (CLI Procedure)</i> • Verifying PoE Configuration and Status for a Junos Fusion (CLI Procedure) on page 795 • <i>Monitoring PoE Power Consumption (CLI Procedure)</i> • <i>Upgrading the PoE Controller Software</i>
List of Sample Output	<p>show poe controller (EX3200 Switch) on page 816</p> <p>show poe controller (EX8200 Switch) on page 816</p> <p>show poe controller (Controller Software Upgrade in Progress) on page 817</p> <p>show poe controller (ACX2000 Router) on page 817</p>
Output Fields	Table 35 on page 815 lists the output fields for the show poe controller command. Output fields are listed in the approximate order in which they appear.

Table 35: show poe controller Output Fields

Field Name	Field Description
Controller index	<p>PoE controller number:</p> <ul style="list-style-type: none"> • 0 for EX2200, EX3200, standalone EX3300, standalone EX4200 switches, standalone EX4300 switches, and ACX2000 routers. • Member ID for switches in an EX3300 Virtual Chassis, EX4200 Virtual Chassis, EX4300 Virtual Chassis, a mixed EX4200 and EX4500 Virtual Chassis. • Slot number for line cards with a PoE controller in an EX6200 or EX8200 switch.
Maximum power	The maximum PoE power consumption for the switch or line card. This is the total amount of power available to the PoE controller to allocate to the PoE ports.

Table 35: show poe controller Output Fields (continued)

Field Name	Field Description
Power consumption	Total amount of power being consumed by the PoE ports at the time the command is executed. This value, which represents actual power consumption, cannot exceed the value for Maximum power .
Guard Band	Amount of power that has been placed in reserve for power demand spikes and that cannot be allocated to a PoE interface.
Management	Power management mode: class or static or high-power . NOTE: The mode high-power is available on only ACX2000 routers.
Status	Status of the PoE controller: <ul style="list-style-type: none"> • AF_ENHANCE—Controller supports enhanced PoE. The maximum power per PoE port is 18.6 W in static mode (15.4 W in class mode). • DEVICE FAIL—Software download to the controller has failed or the PoE controller is not initialized because of a hardware failure. • DOWNLOAD_INIT—Software download to the controller is in the initial phase. • AF_MODE—Controller supports standard IEEE 802.3af. The maximum power per PoE port is 15.4 W. • AT/AF COMBO—Controller supports a mix of standard IEEE 802.3af and IEEE 802.3at (PoE+) ports. The maximum power per port is 30 W for IEEE 802.3at (PoE+) ports and 15.4 W for the IEEE 802.3af ports. • AT_MODE—Controller supports IEEE 802.3at (PoE+). The maximum power per PoE port is 30 W. • SW_DOWNLOAD (n%)—Software download to the controller is in progress.
Lldp Priority	Link Layer Discovery Protocol (LLDP) priority operating state. The state can be Enabled or Disabled . LLDP priority enables the PoE controller to assign interfaces the power priority provided by the connected powered device by using LLDP power negotiation rather than the power priority configured on the switch interface.

Sample Output

show poe controller (EX3200 Switch)

```

user@switch> show poe controller
Controller Maximum Power Guard Management Status Lldp
index      power  consumption band   ment      Status  Priority
0          130.00W  81.20W   10W    Static    AF_ENHANCE Disabled

```

show poe controller (EX8200 Switch)

```

user@switch> show poe controller
Controller Maximum Power Guard Management Status Lldp
index      power  consumption band   ment      Status  Priority
0          792.00W  603.50W   0W     Class    AT/AF COMBO Disabled
4          915.00W  781.00W   0W     Class    AT/AF COMBO Disabled
7          915.00W   0.00W     0W     Class    AT/AF COMBO Disabled

```

show poe controller (Controller Software Upgrade in Progress)

```

user@switch> show poe controller

```

Controller index	Maximum power	Power consumption	Guard band	Management	Status	Lldp Priority
0	130.00W	0.00W	0W	Static	AF_ENHANCE	Disabled
8**	130.00W	0.00W	0W	Static	SW_DOWNLOAD(10%)	Disabled

**New PoE software upgrade available.
 Use 'request system firmware upgrade poe fpc-slot <slot>'
 This procedure will take around 10 minutes (recommended to be performed during
 maintenance)

show poe controller (ACX2000 Router)

```

user@host> show poe controller

```

Controller index	Maximum power	Power consumption	Guard band	Management	Status	Lldp Priority
0	130.0 W	14.2 W	0 W	high-power	UP	

show poe interface

Syntax	show poe interface <fpc-slot number> <interface-name>
Release Information	Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 12.2 for ACX2000 routers. Statement introduced in Junos OS Release 17.2R1 for a Junos Fusion Provider Edge.
Description	Display the status of PoE interfaces.
Options	<p>none—Display status of all PoE interfaces on the switch or router.</p> <p>fpc-slot number—(Optional) (EX6200 or EX8200 switches only) Display the status of the PoE interfaces on the specified line card.</p> <p>interface-name—(Optional) Display the status of a specific PoE interface on the switch.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show poe controller on page 815 • <i>Verifying PoE Configuration and Status (CLI Procedure)</i> • <i>Monitoring PoE Power Consumption (CLI Procedure)</i> • <i>Troubleshooting PoE Interfaces</i>
List of Sample Output	show poe interface on page 820 show poe interface (EX2300 and EX3400) on page 820 show poe interface (with LLDP Negotiation) on page 820 show poe interface (Specific Interface) on page 820 show poe interface (Specific FPC Slot) on page 820 show poe interface (Specific Interface on ACX2000 Universal Metro Routers) on page 821
Output Fields	Table 36 on page 818 lists the output fields for the show poe interface command. Output fields are listed in the approximate order in which they appear.

Table 36: show poe interface Output Fields

Field Name (All Interfaces Output)	Field Name (Single Interface Output)	Field Description
Interface	PoE Interface	Interface name.

Table 36: show poe interface Output Fields (continued)

Field Name (All Interfaces Output)	Field Name (Single Interface Output)	Field Description
Admin status	Administrative status	Administrative state of the PoE interface: Enabled or Disabled . If the PoE interface is disabled, it can provide network connectivity, but it cannot provide power to connected devices.
Oper status	Operational status	Operational state of the PoE interface: <ul style="list-style-type: none"> • ON—The interface is currently supplying power to a powered device. • OFF—PoE is enabled on the interface, but the interface is not currently supplying power to a powered device. • FAULT—PoE interface is in the OFF state due to a fault condition. • Disabled—PoE is disabled on the interface.
	Operational status detail	Additional information for troubleshooting the operational state of the PoE interface: <ul style="list-style-type: none"> • Admin up but disabled on hardware—The interface is disabled due to power budget unavailability. • Overload—Interface is in the fault condition. • IEEE PD Detected—The interface is providing power to the powered device. • Detection In Progress—Detection of the powered device is ongoing.
	FourPair status	Status of high-power mode of power delivery over all four pairs of the Ethernet cable: <ul style="list-style-type: none"> • Enabled—High power mode is enabled. • Disabled—High power mode is disabled.
Pair/Mode status		Shows the mode of power delivery configured on the interface. <ul style="list-style-type: none"> • 4P/AT—Interface is configured for high power mode. • 4P/POH—Interface is configured for ultra-high power mode.
Max power	Power limit on the interface	Maximum power that can be provided by the interface. An (L) next to the value indicates that the value on the port was negotiated by LLDP.
Priority	Priority	Interface power priority: either High or Low . An (L) next to the value indicates that the value on the port was negotiated by LLDP.
Power consumption	Power consumed	Amount of power being used by the interface at the time the command is executed.
Class	Class of power device	IEEE 802.3af (PoE) or IEEE 802.3at (PoE+) class of the powered device. Class 0 is the default class and is used when the class of the powered device is unknown. If no powered device is connected, this field contains not applicable .
	PoE Mode	IEEE PoE standard supported by the interface—either 802.3af , or 802.3at , or ultra-poe .

Sample Output

show poe interface

```

user@switch> show poe interface
Interface Admin Oper Max Priority Power Class
          status status power consumption
ge-0/0/0 Enabled ON 15.4W Low 7.9W 0
ge-0/0/1 Enabled ON 15.4W Low 3.2W 2
ge-0/0/2 Enabled ON 15.4W Low 3.2W 2
ge-0/0/3 Enabled ON 15.4W Low 3.2W 2
ge-0/0/4 Enabled ON 15.4W Low 3.2W 2
ge-0/0/5 Enabled ON 15.4W Low 3.2W 2
ge-0/0/6 Enabled ON 15.4W Low 3.2W 2
ge-0/0/7 Enabled ON 15.4W Low 3.2W 2

```

show poe interface (EX2300 and EX3400)

```

user@switch> show poe interface
Interface Admin Oper Pair/Mode Max Priority Power Class
          status status status power consumption
ge-0/0/0 Enabled OFF 4P/AT 60.0W Low 4.5W 2
ge-0/0/1 Enabled OFF 4P/AT 60.0W Low 4.5W 2
ge-0/0/2 Enabled OFF 4P/AT 60.0W Low 4.5W 2
ge-0/0/3 Enabled OFF 4P/AT 60.0W Low 4.5W 2
ge-0/0/4 Enabled OFF 4P/AT 60.0W Low 4.5W 2

```

show poe interface (with LLDP Negotiation)

```

user@switch> show poe interface
Interface Admin Oper Max Priority Power Class
          status status power consumption
ge-0/0/0 Enabled ON 17.5W(L) Low(L) 16.2W 4
ge-0/0/1 Enabled ON 17.5W(L) Low(L) 16.0W 4
ge-0/0/2 Enabled ON 17.5W(L) High(L) 16.0W 4
ge-0/0/3 Enabled ON 17.5W(L) Low(L) 16.0W 4
ge-0/0/4 Enabled ON 10.1W(L) Low(L) 10.0W 3
ge-0/0/5 Enabled ON 3.5W(L) High(L) 3.0W 2
(L) LLDP-negotiated value on the port.

```

show poe interface (Specific Interface)

```

user@switch> show poe interface ge-0/0/3
PoE interface status:
PoE interface       : ge-0/0/3
Administrative status : Enabled
Operational status   : ON
Operational status detail : IEEE PD Detected
Power limit on the interface : 7.0W
Priority              : Low
Power consumed        : 5.3W
Class of power device : 2
PoE Mode              : 802.3af

```

show poe interface (Specific FPC Slot)

```

user@switch> show poe interface fpc-slot 3
Interface Admin Oper Max Priority Power Class
          status status power consumption

```


ge-3/0/0	Enabled	ON	30.0W	Low	20.3W	4
ge-3/0/1	Enabled	ON	30.0W	Low	17.8W	4
ge-3/0/2	Enabled	ON	30.0W	High	16.3W	4
ge-3/0/3	Enabled	ON	30.0W	High	16.2W	4
ge-3/0/4	Enabled	ON	30.0W	Low	25.9W	4
ge-3/0/5	Enabled	ON	30.0W	Low	10.1W	4
ge-3/0/6	Enabled	ON	30.0W	Low	16.2W	4
ge-3/0/7	Enabled	ON	30.0W	Low	6.4W	4
ge-3/0/8	Enabled	ON	30.0W	Low	5.2W	4
ge-3/0/9	Enabled	ON	30.0W	Low	5.2W	4
ge-3/0/10	Enabled	ON	30.0W	Low	21.5W	4
ge-3/0/11	Enabled	ON	30.0W	Low	21.7W	4
ge-3/0/12	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/13	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/14	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/15	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/16	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/17	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/18	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/19	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/20	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/21	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/22	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/23	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/24	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/25	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/26	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/27	Enabled	ON	15.4W	Low	9.4W	0
ge-3/0/28	Enabled	ON	15.4W	Low	7.0W	0
ge-3/0/29	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/30	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/31	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/32	Enabled	ON	15.4W	Low	2.0W	1
ge-3/0/33	Enabled	ON	15.4W	Low	2.0W	1
ge-3/0/34	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/35	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/36	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/37	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/38	Enabled	ON	15.4W	Low	2.2W	1
ge-3/0/39	Enabled	ON	15.4W	Low	2.2W	1

show poe interface (Specific Interface on ACX2000 Universal Metro Routers)

```

user@host> show poe interface ge-0/1/7
PoE interface status:
PoE interface           : ge-0/1/7
Administrative status    : Enabled
Operational status      : Powered-up
Power limit on the interface : 9.0 W
Priority                  : Low
Power consumed           : 14.2 W
Class of power device    : 4

```


CHAPTER 9

SNMP MIB Support on Junos Fusion Provider Edge

- [Chassis MIB Support \(Junos Fusion\) on page 823](#)

Chassis MIB Support (Junos Fusion)

The Chassis MIB has been enhanced to enable satellite devices to be represented in the chassis MIB. Satellite devices are represented as FPCs/slots (100, 101, 102,...) in the aggregation device. The support is enabled using a separate range of container indices (CIDX), which allows the SNMP process to redirect relevant SNMP requests to the satellite device management process.

The CIDX for representing satellite device hardware components in Junos Fusion are offset by 100 from indices for hardware components on Junos devices; for example a regular CIDX 2 (Power Supply) is 102 for the power supply of the satellite device. Using these indices you can distinguish the satellite device hardware from the aggregate device. The L1 index for satellite device entries refers to their FPC slot identifiers. As per the chassis MIB convention, identifiers are 1-based. For example, satellite device 100 will have an L1 index of 101, satellite device 101 will have an L1 index of 102, and so on.

[Table 37 on page 823](#) shows the CIDXs used for satellite devices.

Table 37: CIDX's for Satellite Devices

CIDX	Component Type
102	Power Supply
104	Fan
107	FPC
108	PIC

The following tables have been enhanced to include object IDs for satellite devices:

- `jnxContainersTable`
- `jnxContentsTable`

- jnxFilledTable
- jnxOperatingTable
- jnxFRUTable

Examples of new object IDs in the jnxContainersTable:

```
jnxContainersType.102 = jnxSatelliteDeviceSlotPower.0
jnxContainersType.104 = jnxSatelliteDeviceSlotFan.0
jnxContainersType.107 = jnxSatelliteDeviceSlotFPC.0
jnxContainersType.108 = jnxSatelliteDeviceMediaCardSpacePIC.0
...
jnxContainersDescr.102 = SD PEM slot
jnxContainersDescr.104 = SD FAN slot
jnxContainersDescr.107 = SD FPC slot
jnxContainersDescr.108 = SD PIC slot
```

Examples of new object IDs in the jnxContentsTable:

```
jnxContentsType.102.102.1.0 = jnxSatelliteDeviceSlotPower
jnxContentsType.102.102.2.0 = jnxSatelliteDeviceSlotPower
jnxContentsType.104.102.1.0 = jnxSatelliteDeviceSlotFan
jnxContentsType.104.102.2.0 = jnxSatelliteDeviceSlotFan
jnxContentsType.104.102.3.0 = jnxSatelliteDeviceSlotFan
jnxContentsType.104.102.4.0 = jnxSatelliteDeviceSlotFan
jnxContentsType.104.102.5.0 = jnxSatelliteDeviceSlotFan
jnxContentsType.107.102.0.0 = jnxSatelliteDeviceSlotFPC
jnxContentsType.108.102.1.0 = jnxSatelliteDeviceMediaCardSpacePIC
...
jnxContentsDescr.102.102.1.0 = SD101 PEM 0
jnxContentsDescr.102.102.2.0 = SD101 PEM 1
jnxContentsDescr.104.102.1.0 = SD101 Fan Tray 0
jnxContentsDescr.104.102.2.0 = SD101 Fan Tray 1
jnxContentsDescr.104.102.3.0 = SD101 Fan Tray 2
jnxContentsDescr.104.102.4.0 = SD101 Fan Tray 3
jnxContentsDescr.104.102.5.0 = SD101 Fan Tray 4
jnxContentsDescr.107.102.0.0 = SD101 FPC: QFX5100-48S-6Q @ 101/*/*
jnxContentsDescr.108.102.1.0 = SD101 PIC: 48x10G-6x40G @ 101/0/*
```

The following SNMP traps are generated for Satellite Devices, which are also logged as syslog messages:

- Satellite Device (as FPC) add (online) or remove
- Satellite Device Fan add (online) or remove
- Satellite Device PSU add (online) or remove
- Satellite Device PIC add (online) or remove
- Satellite Device FAN failure or status
- Satellite Device PSU failure or status

[Table 38 on page 825](#) shows the SNMP traps that can be generated for satellite devices.

Table 38: SNMP Traps Generated for Satellite Devices

Trap	Condition
jnxFruRemoval	Sent when the specified FRU (FAN/PSU) has been removed from the chassis, or the satellite device has been removed from the aggregation device's database
jnxFruInsertion	Sent when the specified FRU (FAN/PSU) has been inserted into the satellite device
jnxFruPowerOff	Sent when the specified FRU (FAN/PSU) has been powered off in the satellite device
jnxFruPowerOn	Sent when the specified FRU (FAN/PSU) has been powered on in the satellite device
jnxFruFailed	Sent when the specified FRU (FAN/PSU) has failed in the satellite device. Typically, this is due to the FRU not powering up or being unable to load software. FRU replacement might be required
jnxFruOK	
jnxFruOffline	Sent when FPC's new reported state is not online or PSU/FAN/PIC is not present due to satellite device removal
jnxFruOnline	Sent when specified FRU (FPC,PIC,PSU,FAN) gets added in the aggregation device database
jnxFruCheck	Sent when the specified FRU (FAN/PSU) has encountered operational errors

Given below are examples of the system log messages generated:

```
messages:Apr 15 21:28:36 card spmd[6706]: SPMD_SNMP_TRAP10: SNMP trap generated:
  Fru Offline (jnxFruContentsIndex 102, jnxFruL1Index 109, jnxFruL2Index 1,
jnxFruL3Index 0, jnxFruName SD108 PEM 0, jnxFruType 7, jnxFruSlot 0,
jnxFruOfflineReason 1, jnxFruLastPowerOff 0, jnxFruLastPowerOn 0)
```

```
messages:Apr 15 21:28:36 card spmd[6706]: SPMD_SNMP_TRAP10: SNMP trap generated:
  Fru Offline (jnxFruContentsIndex 104, jnxFruL1Index 109, jnxFruL2Index 1,
jnxFruL3Index 1, jnxFruName SD108 Fan Tray 0, jnxFruType 13, jnxFruSlot 0,
jnxFruOfflineReason 1, jnxFruLastPowerOff 0, jnxFruLastPowerOn 0)
```

```
messages:Apr 15 21:28:57 card spmd[8847]: SPMD_SNMP_TRAP7: SNMP trap generated:
  Fru Online (jnxFruContentsIndex 107, jnxFruL1Index 103, jnxFruL2Index 0,
jnxFruL3Index 0, jnxFruName SD102 FPC: @ 102/*/*, jnxFruType 3, jnxFruSlot 102)
```

```
messages:Apr 15 21:28:36 card spmd[6706]: SPMD_SNMP_TRAP10: SNMP trap generated:
  Fru Offline (jnxFruContentsIndex 108, jnxFruL1Index 109, jnxFruL2Index 1,
jnxFruL3Index 0, jnxFruName SD108 PIC: 48x 10/100/1000 Base-T @ 108/0/*, jnxFruType
11, jnxFruSlot 0, jnxFruOfflineReason 1, jnxFruLastPowerOff 0, jnxFruLastPowerOn
0)
```


CHAPTER 10

Link Aggregation and Link Aggregation Control Protocol on Junos Fusion Provider Edge

- [Understanding Link Aggregation and Link Aggregation Control Protocol in a Junos Fusion on page 827](#)
- [Configuring an Aggregated Ethernet Interface on page 829](#)
- [Configuring Junos OS for Supporting Aggregated Devices on page 830](#)

Understanding Link Aggregation and Link Aggregation Control Protocol in a Junos Fusion

- [Link Aggregation in Junos Fusion on page 827](#)
- [Link Aggregation Control Protocol in Junos Fusion on page 827](#)
- [Configuring Link Aggregation and LACP in Junos Fusion on page 828](#)
- [Software and Hardware Guidelines when Configuring Link Aggregation and LACP in Junos Fusion on page 829](#)

Link Aggregation in Junos Fusion

Link aggregation is used to aggregate Ethernet interfaces between two devices. The aggregated Ethernet interfaces that participate in a *link aggregation group (LAG)* are called *member links*. Because a LAG is composed of multiple member links, even if one member link fails, the LAG continues to carry traffic over the remaining links.

Link Aggregation Control Protocol in Junos Fusion

Link Aggregation Control Protocol (LACP) is one method of bundling several physical interfaces to form one logical aggregated Ethernet interface. LACP is a subcomponent of the IEEE 802.3ad standard and is used as a discovery protocol. The LACP mode can be active or passive. The transmitting link is known as the *actor*, and the receiving link is known as the *partner*. If the actor and partner are both in passive mode, they do not exchange LACP packets, and the aggregated Ethernet links do not come up. If either the actor or partner is active, they do exchange LACP packets. By default, LACP is in passive mode on aggregated Ethernet interfaces. To initiate transmission of LACP packets and response to LACP packets, you must enable LACP active mode. You can configure

Ethernet links to actively transmit protocol data units (PDUs), or you can configure the links to passively transmit them, sending out LACP PDUs only when they receive them from another link. You can configure both VLAN-tagged and untagged aggregated Ethernet interfaces without LACP enabled. LACP is defined in IEEE 802.3ad, *Aggregation of Multiple Link Segments*.

LACP was designed to achieve the following:

- Automatic addition and deletion of individual links to the LAG without user intervention.
- Link monitoring to check whether both ends of the bundle are connected to the correct group.

The satellite devices provide network interfaces that send and receive network traffic and process the periodic transmission of LACP packets. You can include extended ports (physical interface on a satellite device that provides a connection to servers or endpoints) or local ports in LAGs and MC-LAGs, but not both.

When a dual-homed end device is deployed with Junos Fusion, the network interface cards form a LAG with the Junos Fusion. During a Junos Fusion upgrade, the end device may not be able to exchange LACP PDUs. In such a situation you can configure an interface to be in the **up** state even if no PDUs are exchanged. Use the **force-up** statement to configure an interface when the peer has limited LACP capability. The interface selects the associated LAG by default, whether the LACP mode is active or passive. When there are no received PDUs, the partner is considered to be working in the passive mode. Therefore, LACP PDU transmissions are controlled by the transmitting link.

In Junos Fusion with EVPN, all aggregation devices have knowledge of any extended ports in a LAG because each LAG is assigned a unique Ethernet Segment Identifier (ESI). The ESI is based on the redundancy group configuration and global LAG interface ID.

Configuring Link Aggregation and LACP in Junos Fusion

1. Create a logical aggregated Ethernet interface.
2. Define the parameters associated with the logical aggregated Ethernet interface, such as a logical unit, interface properties, and Link Aggregation Control Protocol (LACP).
3. Define the member links to be contained within the aggregated Ethernet interface—for example, two local 10-Gigabit Ethernet interfaces on the aggregation device or two extended ports on the aggregation device.
 - LAGs and MC-LAGs cannot include a mix of extended ports and local ports on the aggregation device.
 - LAGs can span across multiple satellite devices in Junos Fusion Provider Edge and Junos Fusion Data Center.
 - LAGs cannot contain both single-homed and multihomed members.
 - Existing restrictions that apply to LAGs and MC-LAGs also apply to LAGs and MC-LAGs that include extended ports.
4. Configure LACP for link detection.

Software and Hardware Guidelines when Configuring Link Aggregation and LACP in Junos Fusion

Keep in mind these hardware and software guidelines:

- Up to 1750 LAGs are supported in Junos Fusion Provider Edge, Junos Fusion Enterprise, and Junos Fusion Data Center, and the LAGs are numbered from ae0 through ae4091.
- Up to 16 members are supported in a LAG in Junos Fusion Provider Edge, Junos Fusion Enterprise, and Junos Fusion Data Center.
- Configure the LAG on both sides of the link.
- The interfaces on either side of the link must be set to the same speed and be in full-duplex mode.
- Configure LACP for dual-homed extended ports identically on both of the aggregation devices; otherwise LACP will not be in a forwarding state.

Related Documentation

- [Junos Fusion Provider Edge Overview on page 3](#)
- [Understanding Junos Fusion Ports on page 13](#)
- [Configuring Junos OS for Supporting Aggregated Devices on page 830](#)

Configuring an Aggregated Ethernet Interface

On Fast Ethernet, Tri-Rate Ethernet copper, Gigabit Ethernet, and 10-Gigabit Ethernet interfaces on M Series and T Series routers, you can associate a physical interface with an aggregated Ethernet interface.



NOTE: On a Junos Fusion, you can include extended ports (physical interface on a satellite device that provides a connection to servers or endpoints) or local ports in link aggregation groups (LAGs) and MC-LAGs, but not both. For information on extended ports, see [“Understanding Junos Fusion Ports” on page 13](#).

To configure an aggregated Ethernet interface:

1. Specify that you want to configure the link aggregation group interface.

```
user@host# edit interfaces interface-name
```

2. Configure the aggregated Ethernet interface.

```
[edit interfaces interface-name]  
user@host# set (fastether-options | gigether-options) 802.3ad aex
```

You specify the interface instance number *x* to complete the link association; *x* can be from 0 through 127, for a total of 128 aggregated interfaces on M Series and T Series

routers and can be from 1 through 480, for a total of 480 aggregated interfaces on MX Series routers. For MX Series routers running Junos release 14.2R3 and later you can configure a maximum of 1000 aggregated interfaces. Aggregated interfaces are numbered from **ae0** through **ae4092**.



NOTE: On MX2010 and MX2020 routers you can configure a maximum of 800 aggregated interfaces.

You must also include a statement defining **aex** at the **[edit interfaces]** hierarchy level. You can optionally specify other physical properties that apply specifically to the aggregated Ethernet interfaces; for details, see *Ethernet Interfaces Overview*, and for a sample configuration, see *Example: Configuring Aggregated Ethernet Interfaces*.



NOTE: In general, aggregated Ethernet bundles support the features available on all supported interfaces that can become a member link within the bundle. As an exception, Gigabit Ethernet IQ features and some newer Gigabit Ethernet features are not supported in aggregated Ethernet bundles.

Gigabit Ethernet IQ and SFP interfaces can be member links, but IQ- and SFP-specific features are not supported on the aggregated Ethernet bundle even if all the member links individually support those features.

You need to configure the correct link speed for the aggregated Ethernet interface to eliminate any warning message.



NOTE: Before you commit an aggregated Ethernet configuration, ensure that link mode is not configured on any member interface of the aggregated Ethernet bundle; otherwise, the configuration commit check fails.

Related Documentation

- [Configuring the Number of Aggregated Ethernet Interfaces on the Device](#)
- [Deleting an Aggregated Ethernet Interface](#)
- [Aggregated Ethernet Interfaces Overview](#)
- [Ethernet Interfaces Feature Guide for Routing Devices](#)

Configuring Junos OS for Supporting Aggregated Devices

Junos OS supports the aggregation of physical devices into defined virtual links, such as the link aggregation of Ethernet interfaces defined by the IEEE 802.3ad standard.

Tasks for configuring aggregated devices are:

- [Configuring Virtual Links for Aggregated Devices on page 831](#)
- [Configuring LACP Link Protection at the Chassis Level on page 831](#)

- [Enabling LACP Link Protection on page 832](#)
- [Configuring System Priority on page 833](#)
- [Configuring the Maximum Links Limit on page 833](#)
- [Configuring PPM on Junos Fusion on page 833](#)

Configuring Virtual Links for Aggregated Devices

To define virtual links, you need to specify the associations between physical and logical devices within the **[edit interfaces]** hierarchy, and assign the correct number of logical devices by including the **device-count** statement at the **[edit chassis aggregated-devices ethernet]** and **[edit chassis aggregated-devices sonet]** hierarchy levels:

```
[edit chassis]
aggregated-devices {
  ethernet {
    device-count number;
  }
  sonet {
    device-count number;
  }
}
```

The aggregated interfaces are numbered from **ae0** through **ae4091**. The maximum number of aggregated interfaces supported by different routers is listed below:

- For PTX Series routers, you can configure a maximum of 128 aggregated interfaces.
- For M Series and T Series routers, you can configure a maximum of 128 aggregated interfaces (LAG bundles).
- In Junos release 14.2R2 and earlier, you can configure a maximum of 480 aggregated interfaces on MX Series routers.
- In Junos release 14.2R3 and later, you can configure a maximum of 1000 aggregated interfaces on MX240, MX480, and MX960 routers.
- In Junos release 14.2R3 and later, you can configure a maximum of 800 aggregated interfaces on MX2010 and MX2020 routers.
- In Junos OS 15.1F5 and 15.1F6 releases, you can configure a maximum of 480 aggregated interfaces on MX240, MX480, and MX960 routers.
- In Junos OS 15.1F5 and 15.1F6 releases, you can configure a maximum of 800 aggregated interfaces on MX2010 and MX2020 routers.

For SONET/SDH, starting with Junos OS Release 13.2, the maximum number of logical interfaces is 64, numbered from **as0** through **as63**. In releases before Junos OS Release 13.2, the maximum was 16.

Configuring LACP Link Protection at the Chassis Level

Link Aggregation Control Protocol (LACP) is one method of bundling several physical interfaces to form one logical interface. You can configure both VLAN-tagged and untagged aggregated Ethernet with or without LACP enabled. LACP exchanges are made

between actors and partners. An actor is the local interface in an LACP exchange. A partner is the remote interface in an LACP exchange.

LACP link protection enables you to force active and standby links within an aggregated Ethernet. You configure LACP link protection by using the **link-protection** and **system-priority** statements at either the chassis or interface level and by configuring port priority at the interface level using the **system-priority** statement. Configuring LACP parameters at the chassis level results in all aggregated Ethernet interfaces using the defined values unless overridden by the LACP configuration on a specific interface.

```
[edit chassis]
aggregated-devices {
  ethernet {
    lacp {
      link-protection {
        non-revertive;
      }
      system-priority priority;
    }
  }
}
```



NOTE: LACP link protection also uses port priority. You can configure port priority at the Ethernet interface **[gigether-options]** hierarchy level using the **port-priority** statement. If you choose not to configure port priority, LACP link protection uses the default value for port priority (127).

See Also

Enabling LACP Link Protection

To enable LACP link protection for aggregated Ethernet interfaces on the chassis, use the **link-protection** statement at the **[edit chassis aggregated-devices ethernet lacp]** hierarchy level:

```
[edit chassis aggregated-devices ethernet lacp]
link-protection {
  non-revertive;
}
```

By default, LACP link protection reverts to a higher-priority (lower-numbered) link when that higher-priority link becomes operational or a link is added to the aggregator that is determined to be higher in priority. However, you can suppress link calculation by adding the **non-revertive** statement to the LACP link protection configuration. In nonrevertive mode, after a link is active and collecting and distributing packets, the subsequent addition of a higher-priority (better) link does not result in a switch, and the current link remains active.



BEST PRACTICE: (MX Series) In a highly scaled configuration over aggregated Ethernet, we recommend that you prevent the router from performing such a switch by including the `non-revertive` statement. Failure to do so may result in some traffic loss if a MIC on which a member interface is located reboots. Using the `non-revertive` statement for this purpose is not effective if both the primary and secondary interfaces are on the MIC that reboots.



CAUTION: If both ends of an aggregator have LACP link protection enabled, make sure to configure both ends of the aggregator to use the same mode. Mismatching LACP link protection modes can result in lost traffic.

Configuring System Priority

To configure LACP system priority for aggregated Ethernet interfaces on the chassis, use the `system-priority` statement at the `[edit chassis aggregated-devices ethernet lacp]` hierarchy level:

```
[edit chassis aggregated-devices ethernet lacp]
system-priority priority;
```

The system priority is a 2-octet binary value that is part of the LACP system ID. The LACP system ID consists of the system priority as the two most-significant octets and the interface MAC address as the six least-significant octets. The system with the numerically lower value for system priority has the higher priority. By default, system priority is 127, with a range of 0 through 65,535.

Configuring the Maximum Links Limit

To configure the maximum links limit, use the `maximum-links` statement at the `[edit chassis aggregated-devices]` hierarchy level:

```
[edit chassis aggregated-devices]
maximum-links maximum-links-limit;
```

Configuring PPM on Junos Fusion

If you use Junos Fusion with Junos OS Release 14.2R3, you need to ensure that link aggregation (and STP) work properly by configuring timers for the periodic packet management (PPM) daemons on the aggregation and satellite devices. We recommend using the following timer values:

```
[edit routing-options ppm]
redistribution-timer 120;
tcp-keepalive-interval 3000;
tcp-keepalive-idle 3000;
```

Starting in Junos OS Release 14.2R4, the timer values that ensure proper link aggregation and STP functions are configured by default if you use Junos Fusion with Junos OS.

Release History Table

Release	Description
15.1F5	In Junos OS 15.1F5 and 15.1F6 releases, you can configure a maximum of 480 aggregated interfaces on MX240, MX480, and MX960 routers.
15.1F5	In Junos OS 15.1F5 and 15.1F6 releases, you can configure a maximum of 800 aggregated interfaces on MX2010 and MX2020 routers.
14.2R4	Starting in Junos OS Release 14.2R4, the timer values that ensure proper link aggregation and STP functions are configured by default if you use Junos Fusion with Junos OS.
14.2R3	In Junos release 14.2R3 and later, you can configure a maximum of 1000 aggregated interfaces on MX240, MX480, and MX960 routers.
14.2R3	In Junos release 14.2R3 and later, you can configure a maximum of 800 aggregated interfaces on MX2010 and MX2020 routers.
14.2R3	If you use Junos Fusion with Junos OS Release 14.2R3, you need to ensure that link aggregation (and STP) work properly by configuring timers for the periodic packet management (PPM) daemons on the aggregation and satellite devices.
14.2R2	In Junos release 14.2R2 and earlier, you can configure a maximum of 480 aggregated interfaces on MX Series routers.
13.2	For SONET/SDH, starting with Junos OS Release 13.2, the maximum number of logical interfaces is 64, numbered from as0 through as63 .

**Related
Documentation**

- [Configuring an Aggregated Ethernet Interface on page 829](#)
- *Ethernet Interfaces Feature Guide for Routing Devices*
- *Configuring Aggregated Ethernet Interfaces on PTX Series Packet Transport Routers*
- *Configuring Aggregated SONET/SDH Interfaces*

Uplink Failure Detection on Junos Fusion Provider Edge

- [Overview of Uplink Failure Detection on a Junos Fusion on page 835](#)
- [Configuring Uplink Failure Detection on a Junos Fusion on page 836](#)

Overview of Uplink Failure Detection on a Junos Fusion

The uplink failure detection feature on a Junos Fusion enables satellite devices to detect link failures on the uplink interfaces used to connect to aggregation devices. When uplink failure detection detects uplink failure on a satellite device, all of the device's extended ports (which connect to host devices) are shut down. Shutting down the extended ports allows downstream host devices to more quickly identify and adapt to the outage. For example, when a host device is connected to two satellite devices, and uplink failure detection shuts down the extended ports on one satellite device, the host device can more quickly recognize the uplink failure and redirect traffic through the other, active satellite device.

You can configure uplink failure detection globally, for all satellite devices of a Junos Fusion, and for individual satellite devices. Uplink failure detection configuration at the satellite device level overrides the global uplink failure detection configuration.

Uplink failure detection configuration allows you to configure these options:

- The minimum number of active uplink ports a satellite device must have to remain active. The default is one active uplink port. You can use this option to specify more minimum active ports.
- The amount of time uplink failure detection waits to try to re-enable disabled extended ports. This wait time is called a hold-down period. It is intended to avoid port flapping on the extended ports when uplink port connectivity is unstable. The default hold-down period is six seconds.

Uplink failure detection must know which ports on a satellite device can be used as uplink ports. These are called candidate uplink ports. [Table 39 on page 836](#) shows the default set of candidate uplink ports that uplink failure detection selects for failure detection. If you choose not to use the default uplink ports for your satellite devices, you need to specify which uplink ports you want to use for uplink failure detection by creating a

candidate uplink port profile and applying it to the satellite device's uplink failure detection configuration.



CAUTION: The physically connected uplink ports on a satellite device must be defined as candidate uplink ports in the Junos Fusion configuration. If the uplink ports on a satellite device are not configured as candidate uplink ports, uplink failure detection cannot be enabled on the device, and a system log message is generated.

Table 39: UFD Default Uplink Interfaces for Satellite Devices

Device Type	Default Uplink Interfaces
EX4300-24T (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
EX4300-32F (4 ports on PIC 0, 2 ports on PIC 1 and 8 ports on PIC 2)	0/32 through 0/35 1/0 through 1/1 2/0 through 2/7
EX4300-48T (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
EX4300-48T-BF (4 ports each on PIC1 and PIC2)	1/0 through 1/3 and 2/0 through 2/3
QFX5100-24Q-2P (4 ports on PIC 0)	0/20 through 0/23
QFX5100-48S-6Q (6 QSFP+ ports)	0/48 through 0/53
QFX5100-48T-6Q (6 QSFP+ ports)	0/48 through 0/53
QFX5100-96S-8Q (8 QSFP+ ports)	0/96 through 0/103

Related Documentation

- [Configuring Uplink Failure Detection on a Junos Fusion on page 836](#)

Configuring Uplink Failure Detection on a Junos Fusion

The uplink failure detection feature on a Junos Fusion enables satellite devices to detect link failures on the uplink interfaces used to connect to aggregation devices. When uplink failure detection detects uplink failure on a satellite device, all of the device's extended ports (which connect to host devices) are shut down.

The following topics describe how to configure uplink failure detection on a Junos Fusion:

- [Enabling Uplink Failure Detection on a Junos Fusion on page 837](#)
- [Configuring a Candidate Uplink Port Policy on page 838](#)
- [Configuring an Uplink Port Group on page 840](#)

Enabling Uplink Failure Detection on a Junos Fusion

You can enable uplink failure detection on a Junos Fusion at the following levels in the configuration hierarchy:

- To enable uplink failure detection globally, for all satellite devices in the Junos Fusion, include the uplink failure detection configuration at the **[edit chassis satellite-management]** level.
- To enable uplink failure detection on a specific satellite device, include the uplink failure detection configuration at the **[edit chassis satellite-management fpc slot-id]** level. Uplink failure detection configuration applied to a satellite device overrides the global uplink failure detection configuration.

Uplink failure detection configuration syntax is the same at all hierarchy levels. This topic shows how to configure uplink failure detection at the global level, but you can also apply uplink failure detection configuration at the satellite device level.

To enable uplink failure detection on a Junos Fusion, do the following on the fabric's aggregation device:

1. Enable uplink failure detection with default settings:

```
[edit chassis satellite-management]
user@switch# set uplink-failure-detection
```

The default configuration parameters are described in [Table 40 on page 837](#).

2. (Optional) Apply custom uplink failure detection settings by specifying a candidate uplink port policy:

```
[edit chassis satellite-management uplink-failure-detection]
user@switch# candidate-uplink-policy policy-name
```

For information about configuring candidate uplink policies, see [“Configuring a Candidate Uplink Port Policy” on page 838](#).

Table 40: Junos Fusion Uplink Failure Detection Default Configuration

Configuration Parameter	Description	Default
holddown	Configures the interval of time uplink failure detection waits before trying to re-enable a satellite device's extended ports after shutting them down due to an uplink port failure.	6 seconds
minimum-links	Configures the minimum number of active uplink ports a satellite device must have. If a satellite device has fewer than this number of active uplink ports, uplink failure detection shuts down its extended ports.	1 link

Table 40: Junos Fusion Uplink Failure Detection Default Configuration (continued)

Configuration Parameter	Description	Default
uplink-port-group	Defines a set of candidate uplink ports to assign to satellite devices.	Each satellite device model has a set of default uplink ports. You only need to assign uplink ports if you do not want to use the default ports. See Table 39 on page 836 for the default uplink ports by device.

Configuring a Candidate Uplink Port Policy

A candidate uplink port policy contains uplink failure detection uplink port configuration that you can apply to satellite devices to override the default uplink failure detection behavior.

You can enter configuration statements in a candidate uplink port policy at these levels of the hierarchy:

- Enter configuration statements at the level **[edit policy-options satellite-policies candidate-uplink-port-policy policy-name]** to override the default uplink failure detection behavior. Statements configured at this level are applied if the policy is applied to a satellite device that does not match a **product-model** statement in any term in the policy. If the policy contains no terms, the statements at this level are applied to every satellite device to which the policy is applied.
- Create terms within the candidate uplink port policy at the level **[edit policy-options satellite-policies candidate-uplink-port-policy policy-name term term-name]**. Use terms to apply different uplink failure detection configurations to certain satellite devices, based on their product model. Each term contains match criteria that is compared against the model name of each satellite device to which the policy is applied. If the criteria matches the device model, the configuration specified in the term is applied to the device. Terms are evaluated in the order they appear in the configuration. The first term that matches a satellite device is applied to the device.

Configuring a candidate uplink port policy is described in the following sections:

- [Configuring Candidate Uplink Port Policy Default Configuration on page 838](#)
- [Configuring Candidate Uplink Port Policy Terms on page 839](#)

Configuring Candidate Uplink Port Policy Default Configuration

Uplink failure detection has the following default configuration parameters that apply if you enable uplink failure detection with no additional configuration:

- The default configuration settings are described in [Table 40 on page 837](#).
- The default uplink ports that are assigned to each satellite device type are described in [“Overview of Uplink Failure Detection on a Junos Fusion” on page 835](#).

A candidate uplink port policy can contain configuration statements that override the defaults if the policy is applied to a satellite device that does not match a **product-model** statement in any term in the policy.

To configure a candidate uplink port policy default configuration:

1. (Optional) Specify the interval of time uplink failure detection waits before trying to re-enable a satellite device's extended ports after shutting them down due to an uplink port failure:

```
[edit policy-options satellite-policies candidate-uplink-port-policy
policy-name]
user@switch# set holddown interval
```

2. (Optional) Specify the minimum number of active uplink ports a satellite device must have. If a satellite device has fewer than this number of active uplink ports, uplink failure detection shuts down its extended ports:

```
[edit policy-options satellite-policies candidate-uplink-port-policy
policy-name]
user@switch# set minimum-links link-count
```

3. (Optional) Specify an uplink port group to assign to satellite devices:

```
[edit policy-options satellite-policies candidate-uplink-port-policy
policy-name]
user@switch# set uplink-port-group group-name
```

For information about configuring an uplink port group, see [“Configuring an Uplink Port Group” on page 840](#).

Configuring Candidate Uplink Port Policy Terms

You can configure terms in a candidate uplink port policy to apply uplink failure detection configuration to certain satellite devices, based on their device model. For example, you can create a term that matches all QFX 5100 Series switches. When the policy is applied to a QFX 5100 Series switch, the other configuration statements in the term are applied to the switch. If the policy is applied to satellite devices that are not QFX 5100 Series switches, the configuration statements in the term are not applied. When a candidate uplink port policy has multiple terms, the terms are evaluated in the order they appear in the configuration. The first term that matches a satellite device is applied to that satellite device.

To configure a candidate uplink port policy term:

1. Specify which device models the term will apply to:

```
[edit policy-options satellite-policies candidate-uplink-port-policy policy-name
term term-name from]
user@switch# set product-model model-name
```

The other configuration statements in the term are only applied to satellite devices whose device model matches the match term *model-name*.

The match term *model-name* can be a complete device model name, to match that device model exactly. You can also use the wildcard character (*) in the match term to match zero or more of any character.

Some examples of using the wildcard character in the match term:

- To apply the satellite policy to all EX 4300 Series switches in the satellite device role, enter **EX4300*** as the *model-name*.
 - To apply the satellite policy to all QFX 5100 Series switches in the satellite device role, enter **QFX5100*** as the *model-name*.
 - To apply the satellite policy to QFX 5100 Series switches with model names that start with QFX5100-96, enter **QFX5100-96*** as the *model-name*.
2. (Optional) Specify the interval of time uplink failure detection waits to re-enable a satellite device's extended ports after shutting them down due to an uplink port failure:

```
[edit policy-options satellite-policies candidate-uplink-port-policy policy-name
term term-name from]
user@switch# set holddown interval
```

3. (Optional) Specify the minimum number of active uplink ports a satellite device must have. If a satellite device has fewer than this number of active uplink ports, uplink failure detection shuts down its extended ports:

```
[edit policy-options satellite-policies candidate-uplink-port-policy
policy-name]
user@switch# set minimum-links link-count
```

4. (Optional) Specify an uplink port group to assign to satellite devices:

```
[edit policy-options satellite-policies candidate-uplink-port-policy policy-name
term term-name from]
user@switch# set uplink-port-group group-name
```

For information about configuring an uplink port group, see [“Configuring an Uplink Port Group” on page 840](#).

Configuring an Uplink Port Group

An uplink port group defines a set of candidate uplink ports on a satellite device. Uplink port groups are assigned to candidate uplink port policies, which are assigned to satellite devices. Every satellite device type has default candidate uplink ports, which are described

in [“Overview of Uplink Failure Detection on a Junos Fusion” on page 835](#). You do not need to create uplink ports groups if you want to use the default candidate uplink ports on satellite devices.



CAUTION: The physically connected uplink ports on a satellite device must be defined as candidate uplink ports in the Junos Fusion configuration. If the uplink ports on a satellite device are not configured as candidate uplink ports, uplink failure detection cannot be enabled on the device, and a system log message is generated.

To create an uplink port group:

1. Specify the uplink port group name:

```
[edit policy-options satellite-policies]
user@switch# set port-group-alias port-group-alias-name
```

2. Configure the PICs that will contain ports to be identified as candidate uplink ports:

```
[edit policy-options satellite-policies port-group-alias port-group-alias-name]
user@switch# set pic pic-number
```

3. Configure the ports on the PICs that will be identified as candidate uplink ports:

```
[edit policy-options satellite-policies port-group-alias port-group-alias-name
pic pic-number]
user@switch# set port [port-number | port-number-range | all]
```

Related Documentation

- [Overview of Uplink Failure Detection on a Junos Fusion on page 835](#)

CHAPTER 12

Configuration Statements for Uplink Failure Detection on Junos Fusion Provider Edge

- `candidate-uplink-port-policy` (`satellite-policies`) on page 844
- `holddown` (`candidate-uplink-port-profile`) on page 845
- `minimum-links` (`candidate-uplink-port-profile`) on page 846
- `pic` (`satellite-policies port-group-alias`) on page 847
- `port` (`satellite-policies port-group-alias`) on page 848
- `port-group-alias` (`satellite-policies`) on page 849
- `product-model` (Junos Fusion) on page 850
- `satellite-policies` on page 851
- `term` (`candidate-uplink-policy`) on page 853
- `uplink-failure-detection` (Junos Fusion) on page 854
- `uplink-port-group` (Junos Fusion) on page 855

candidate-uplink-port-policy (satellite-policies)

Syntax `candidate-uplink-port-policy policy-name{
 <holddown holddown-time>;
 <minimum-links number-of-links>;
 <uplink-port-group uplink-port-group-name>;
 term term-name {
 from {
 product-model model-name;
 <holddown holddown-time>;
 <minimum-links number-of-links>;
 <uplink-port-group uplink-port-group-name>;
 }
 }
 }`

Hierarchy Level [edit policy-options [satellite-policies](#)]

Release Information Statement introduced in Junos OS Release 14.2R3.

Description Configures a candidate uplink port profile, which contains uplink failure detection feature configuration that can be applied to satellite devices in a Junos Fusion.

Default There is no configured candidate uplink port profile, by default.

Options *policy-name*—User-defined name for the policy.

 The remaining statements are explained separately.

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

Related Documentation

- [Configuring Junos Fusion Provider Edge on page 39](#)
- [Configuring or Expanding a Junos Fusion Enterprise](#)

holddown (candidate-uplink-port-profile)

Syntax	<code>holddown interval;</code>
Hierarchy Level	[edit policy-options satellite-policies candidate-uplink-port-profile <i>profile-name</i>] [edit policy-options satellite-policies candidate-uplink-port-profile <i>profile-name</i> term <i>term-name</i> from]
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	Configures the interval of time uplink failure detection waits before trying to try re-enable a satellite device's extended ports after shutting them down due to an uplink port failure. It is intended to avoid port flapping on the extended ports when uplink port connectivity is unstable.
Default	The default holddown interval is 6 seconds.
Options	<i>interval</i> —The holddown interval, in seconds. Valid values are 1-600 seconds.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• <i>Configuring or Expanding a Junos Fusion Enterprise</i>

minimum-links (candidate-uplink-port-profile)

Syntax	minimum-links <i>link-count</i> ;
Hierarchy Level	[edit policy-options satellite-policies candidate-uplink-port-profile <i>profile-name</i>] [edit policy-options satellite-policies candidate-uplink-port-profile <i>profile-name</i> term <i>term-name</i> from]
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	Configures the minimum number of active uplink ports a satellite device must have. If a satellite device has fewer than this number of active uplink ports, uplink failure detection shuts down its extended ports.
Default	The default number of minimum links is 1.
Options	<i>link-count</i> —Specifies the minimum number of active uplink ports a satellite device must have. Valid values are 1-32 links.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• <i>Configuring or Expanding a Junos Fusion Enterprise</i>

pic (satellite-policies port-group-alias)

Syntax	<code>pic <i>pic-number</i> { port [<i>port-number</i> <i>port-number-range</i> all]; }</code>
Hierarchy Level	[edit policy-options satellite-policies port-group-alias <i>port-group-alias-name</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	<p>Specify the PIC number to apply a port group alias for satellite policies in a Junos Fusion.</p> <p>You must also specify the ports on the PIC when you use this statement.</p>
Options	<p><i>pic-number</i>—The PIC number on the satellite device.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• <i>Configuring or Expanding a Junos Fusion Enterprise</i>

port (satellite-policies port-group-alias)

Syntax	<code>port [<i>port-number</i> <i>port-number-range</i> all];</code>
Hierarchy Level	[edit policy-options satellite-policies port-group-alias <i>port-group-alias-name</i> pic <i>pic-number</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	<p>Specify the port or ports to apply a port group alias for satellite policies in a Junos Fusion.</p> <p>You must also specify the PIC when you use this statement.</p>
Options	<p><i>port-number</i>—The port number on the PIC on the satellite device.</p> <p><i>port-number-range</i>—A range of port numbers on the PIC.</p> <p>all—All ports on the PIC.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• <i>Configuring or Expanding a Junos Fusion Enterprise</i>

port-group-alias (satellite-policies)

Syntax `port-group-alias port-group-alias-name {
 pic pic-number {
 port [port-number | port-number-range | all];
 }
 }`

Hierarchy Level [edit policy-options [satellite-policies](#)]

Release Information Statement introduced in Junos OS Release 14.2R3.

Description Configure a port group alias for satellite policies in a Junos Fusion.

A port group alias is used to define the candidate uplink ports on satellite devices that use the satellite policy.



CAUTION: The physically connected uplink ports on a satellite device must be defined as candidate uplink ports in the Junos Fusion configuration. If the uplink ports on a satellite device are not configured as candidate uplink ports, uplink failure detection cannot be enabled on the device, and a system log message is generated.

A port group alias is associated with a satellite policy using the **set uplink-port-group uplink-port-group-name** statement in the [edit policy-options satellite-policies candidate-uplink-policy *policy-name*] hierarchy.

Default Each satellite device model has a set of default uplink ports (see [“Overview of Uplink Failure Detection on a Junos Fusion” on page 835](#)). You only need to assign an uplink port group to a satellite device if you do not want to use the default uplink ports.

Options ***port-group-alias-name***—The user-defined name of the port group alias.

The remaining statements are explained separately.

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

Related Documentation

- [Configuring Junos Fusion Provider Edge on page 39](#)
- [Configuring or Expanding a Junos Fusion Enterprise](#)

product-model (Junos Fusion)

Syntax	<code>product-model <i>model-name</i>;</code>
Hierarchy Level	<code>[edit policy-options satellite-policies candidate-uplink-port-policy <i>policy-name</i> term <i>term-name</i> from]</code> <code>[edit policy-options satellite-policies candidate-uplink-port-policy <i>policy-name</i> term <i>term-name</i> from]</code> <code>[edit policy-options satellite-policies forwarding-policy <i>policy-name</i> term <i>term-name</i> from]</code>
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	<p>Define the satellite device product models that will use the candidate uplink port policy defined in the from statement.</p> <p>The other statements in the same from statement are applied to satellite devices that match the product-model <i>model-name</i> definition. Those configuration statements are not applied to satellite devices that do not match the definition.</p>
Options	<p><i>model-name</i>—Defines the satellite device product models that will use the candidate uplink port policy. It can be a complete device model name, to match that device model exactly. You can also use the wildcard character (*) in the match term to match zero or more of any character.</p> <p>Some examples of using the wildcard character in the match term:</p> <ul style="list-style-type: none">• To apply the satellite policy to all EX4300 switches in the satellite device role, enter EX4300* as the <i>model-name</i>.• To apply the satellite policy to all QFX5100 switches in the satellite device role, enter QFX5100* as the <i>model-name</i>.• To apply the satellite policy to QFX5100 switches with model names that start with QFX5100-96, enter QFX5100-96* as the <i>model-name</i>.
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• Configuring or Expanding a Junos Fusion Enterprise

satellite-policies

```
Syntax  satellite-policies {
    <candidate-uplink-port-profile policy-name> {
        <holddown holddown-time>;
        <minimum-links number-of-links>;
        <uplink-port-group uplink-port-group-name>;
        term term-name {
            from {
                product-model model-name;
                <holddown holddown-time>;
                <minimum-links number-of-links>;
                <uplink-port-group uplink-port-group-name>;
            }
        }
    }
    environment-monitoring-policy policy-name {
        <alarm <linkdown>
        term term-name {
            from {
                product-model model-name;
            }
        }
    }
    forwarding-policy {
        policy-name {
            port-group-extended name;
            filter filter-name;
            mirror-egress port-group-mirror port-group-mirror;
            mirror-ingress port-group-mirror port-group-mirror,
            port-group-uplink port-group-uplink-name
            holddowntime;
            minimum-links number;
            term term-name {
                from {
                    port-group-extended name;
                    filter filter-name;
                    mirror-egress port-group-mirror port-group-mirror;
                    mirror-ingress port-group-mirror port-group-mirror,
                    port-group-uplink port-group-uplink-name
                    holddowntime;
                    minimum-links number;
                    product-model model-name;
                    port-group-extended port-group-alias-name {
                        port-group-uplink port-group-alias-name;
                    }
                }
            }
        }
    }
    port-group-alias port-group-alias-name {
        pic pic-number {
            port [port-number | port-number-range | all];
        }
    }
}
```

}

Hierarchy Level [edit policy-options]

Release Information Statement introduced in Junos OS Release 14.2R3 for Junos Fusion.

Description Configure satellite policies for a Junos Fusion.

Options The remaining statements are explained separately.

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

Related Documentation

- [Configuring Junos Fusion Provider Edge on page 39](#)
- *Configuring or Expanding a Junos Fusion Enterprise*


term (candidate-uplink-policy)

Syntax	<pre>term <i>term-name</i>{ from { product-model <i>model-name</i>; <holddown <i>holddown-time</i>>; <minimum-links <i>number-of-links</i>>; <uplink-port-group <i>uplink-port-group-name</i>>; } }</pre>
Hierarchy Level	[edit policy-options satellite-policies candidate-uplink-port-profile <i>policy-name</i>]
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	<p>Create and configure a term in a candidate uplink satellite policy within a Junos Fusion.</p> <p>A term in a candidate uplink port policy in a Junos Fusion is used to apply an uplink failure detection configuration to certain satellite devices, based on their product model only. The more complex options that are available for other policies in Junos OS—such as the terms available for routing policies—are not available for candidate uplink port policies.</p>
Options	<p>term-name—The user-defined name of the term.</p> <p>A <i>term</i> is a named structure in which match conditions and configuration statements are defined. A candidate uplink policy can contain multiple terms. The terms are evaluated in the order they appear in the configuration. The first term that matches a satellite device is applied to that satellite device.</p> <p>from—The statements under the from statement define the satellite device model match criteria and uplink failure detection configuration for the term. Each term can contain only one from statement.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • Configuring Junos Fusion Provider Edge on page 39 • Configuring or Expanding a Junos Fusion Enterprise

uplink-failure-detection (Junos Fusion)

Syntax	<pre>uplink-failure-detection { <candidate-uplink-policy <i>policy-name</i>>; }</pre>
Hierarchy Level	[edit chassis satellite-management] [edit chassis satellite-management fpc slot-id]
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	<p>Enables uplink failure detection in a Junos Fusion.</p> <p>The uplink failure detection feature on a Junos Fusion enables satellite devices to detect link failures on the uplink interfaces used to connect to aggregation devices. When uplink failure detection detects uplink failure on a satellite device, all of the device's extended ports (which connect to host devices) are shut down. Shutting down the extended ports allows downstream host devices to more quickly identify and adapt to the outage. For example, when a host device is connected to two satellite devices, and uplink failure detection shuts down the extended ports on one satellite device, the host device can more quickly recognize the uplink failure and redirect traffic through the other, active satellite device.</p> <p>You can configure uplink failure detection in a Junos Fusion for a single satellite device using the fpc slot-id option. If uplink failure detection is enabled without specifying the fpc slot-id option, uplink failure detection is enabled for all cascade ports on the aggregation device.</p> <p>If you enable uplink failure detection without the candidate-uplink-policy substatement, the default uplink failure detection settings are applied. To configure non-default uplink failure detection settings, include the candidate-uplink-policy substatement. Candidate uplink policies are configured under [edit policy-options satellite-policies candidate-uplink-port-policy].</p>
Default	Uplink failure detection is disabled.
Options	The remaining statements are explained separately.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Junos Fusion Provider Edge on page 39• Configuring or Expanding a Junos Fusion Enterprise

uplink-port-group (Junos Fusion)

Syntax	<code>uplink-port-group <i>group-name</i>;</code>
Hierarchy Level	<code>[edit policy-options satellite-policies candidate-uplink-port-profile <i>profile-name</i>]</code> <code>[edit policy-options satellite-policies candidate-uplink-port-profile <i>profile-name</i> term <i>term-name</i> from]</code>
Release Information	Statement introduced in Junos OS Release 14.2R3.
Description	<p>In Junos Fusion configuration, assign an uplink port group to a candidate uplink port policy.</p> <p>An uplink port group defines a set of candidate uplink ports that are assigned to satellite devices to which the candidate uplink port group is assigned.</p>
	<div>  <p>CAUTION: The physically connected uplink ports on a satellite device must be defined as candidate uplink ports in the Junos Fusion configuration. If the uplink ports on a satellite device are not configured as candidate uplink ports, uplink failure detection cannot be enabled on the device, and a system log message is generated.</p> </div>
	<p>Uplink port groups are defined under <code>[edit policy-options satellite-policies port-group-alias]</code>.</p>
Default	Each satellite device model has a set of default uplink ports (see “ Overview of Uplink Failure Detection on a Junos Fusion ” on page 835). You only need to assign an uplink port group to a satellite device if you do not want to use the default uplink ports.
Options	<i>group-name</i> —The name of the port group to assign.
Required Privilege Level	admin—To view this statement in the configuration. admin-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none"> • Configuring Junos Fusion Provider Edge on page 39 • Configuring or Expanding a Junos Fusion Enterprise

CHAPTER 13

Operational Commands for Uplink Failure Detection on Junos Fusion Provider Edge

- `show chassis satellite`

show chassis satellite

Syntax	<code>show chassis satellite</code> <code>[device-alias <i>device-alias</i> fpc-slot <i>fpc-slot</i> cluster <i>cluster-name</i>]</code> <code>[brief detail extensive terse]</code> <code><since <i>time</i>></code>
Release Information	Command introduced in Junos OS Release 14.2R3 for Junos Fusion Provider Edge. Command introduced in Junos OS Release 16.1R1 for Junos Fusion Enterprise. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display the status of the satellite device connections in a Junos Fusion.
Options	<p>none—(Same as brief) Display satellite device connection information</p> <p>device-alias <i>device-alias</i>—(Optional) Display satellite device connection information for the satellite device using the specified device alias only.</p> <p>fpc-slot <i>fpc-slot</i>—(Optional) Display satellite device connection information for the satellite device using the specified FPC slot number only.</p> <p>cluster <i>cluster-name</i>—(Optional) Display satellite device connection information for the satellite devices in the specified satellite device cluster only.</p> <p>brief detail extensive terse—(Optional) Display the specified level of output.</p> <p>since <i>time</i>—(Optional) Display the satellite devices that have been added to the Junos Fusion on or after a certain date or time, in <i>YYYY-MM-DD.HH:MM:SS</i> format.</p> <p>To display all satellite devices added since a specified date, enter the specific date. For instance, to display all satellite devices added on or after December 22nd, 2015, enter 2015-12-22 as the <i>time</i>.</p> <p>To display all satellite devices added since a specified time, enter the specific date and time. For instance, to display all satellite devices added on or after 11:01AM on December 22nd, 2015, enter 2015-12-22.11:01:00 as the <i>time</i>.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• Configuring or Expanding a Junos Fusion Enterprise• Configuring Junos Fusion Provider Edge on page 39
List of Sample Output	show chassis satellite on page 864 show chassis satellite device-alias on page 865 show chassis satellite fpc-slot 130 on page 865 show chassis satellite terse on page 865

[show chassis satellite detail on page 865](#)

Output Fields [Table 19 on page 651](#) lists the output fields for the **show chassis satellite** command. Output fields are listed in the approximate order in which they appear.

Table 41: show chassis satellite Output Fields

Field Name	Field Description	Level of Output
Fields for Interface		
Alias	The satellite device's alias.	brief
	The satellite device's alias is configured using the set chassis satellite-management fpc slot-id alias alias statement.	extensive none
Slot	The slot number of the satellite device.	brief
	The slot number can be configured using the set chassis satellite-management fpc slot-id statement..	terse extensive none

Table 41: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Device State	<p>The state of the satellite device within the Junos Fusion.</p> <p>The most common device states:</p> <ul style="list-style-type: none"> • Online—the satellite device is online and active. This is the satellite device state during normal operating procedure. • Offline—the satellite device is offline and not detected. This state is typically seen when the satellite device has been disconnected from the aggregation device, or when all cascade or uplink ports connecting the satellite device to the aggregation device are down. • Present—the satellite device is recognized by the aggregation device, but is not online. This state is typically seen before a satellite device goes online, or while satellite device configuration is in progress or finalizing. • Rebooting—the satellite device is rebooting. • Disable—the satellite device has been disabled. • Misconfig—the satellite device is not properly configured. This state is typically seen when the system ID, cascade port, or FPC slot ID defined for the satellite device has a misconfiguration. • Miswire—the satellite device is miswired. This state is typically seen when a satellite device is wired to two aggregation devices but is not configured for multihoming. Use show chassis satellite detail to gather more information on the issue when the device state is Miswire. <p>Other less common device states include:</p> <ul style="list-style-type: none"> • ModeChanging—the device is converting from a standalone device to a satellite device, or from a satellite device to a standalone device. • ModeChangeFail—the mode change operation failed. • MinorUpgradeOn—A minor satellite software upgrade is in progress. • MajorUpgradeOn—A major satellite software upgrade is in progress. • Upgrade-pending—the satellite device is waiting for a satellite software upgrade. • ProvSessionDn—the provisioning session is down. • ReconcileState—the satellite provisioning daemon has restarted and is reconciling the satellite device state. 	<p>brief terse extensive none</p>
Cascade Ports	<p>The cascade port or ports.</p> <p>A cascade port is a port on the aggregation device that connects to a satellite device in a Junos Fusion.</p>	<p>brief extensive none</p>

Table 41: *show chassis satellite Output Fields (continued)*

Field Name	Field Description	Level of Output
Port State	<p>The state of the cascade port on the aggregation device.</p> <p>Port states include:</p> <ul style="list-style-type: none"> • online—the cascade port is online and active. This is the port state during normal operating procedure. • txUpRxDn—Tx or Rx forwarding is disabled on the cascade port. This state is often seen when a second aggregation device is added to a Junos Fusion topology, and the devices in the Junos Fusion are synchronizing to the new topology. • miswire—the cascade port is miswired. This state is typically seen when a satellite device is interconnected to two aggregation devices but multihoming is not configured. Use show chassis satellite detail to gather more information on the issue when the device state is Miswire. • present—The cascade port recognized the satellite device and is up. • misconfig—the cascade port is assigned, but this interface is not working correctly due to a misconfiguration. • down—the cascade port is down. • offline—the satellite device was previously recognized from this interface, but is no longer present. • absent—the cascade port is configured but no satellite device is detected on the interface. 	<p>brief</p> <p>extensive</p> <p>none</p>
Extended Ports Total	<p>The total number of extended ports on the satellite device.</p> <p>An extended port is a network-facing port on the satellite device that sends and receives network traffic for the Junos Fusion.</p>	<p>brief</p> <p>none</p> <p>terse</p>
Extended Ports Up	The number of active extended ports.	<p>brief</p> <p>none</p> <p>terse</p>
Model	The hardware model of the satellite device.	terse
Version	The version of satellite device software running on the satellite device.	terse
Satellite Alias	<p>The satellite device's alias.</p> <p>The satellite device's alias is configured using the set chassis satellite-management fpc slot-id alias alias statement.</p>	detail
FPC slot	<p>The FPC slot number of the satellite device.</p> <p>The slot number can be configured using the set chassis satellite-management fpc slot-id statement.</p>	detail

Table 41: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Operational State	<p>The operational state of the satellite device.</p> <p>The state UFDDown indicates that uplink failure detection disabled the satellite device's extended ports due to an uplink port failure.</p>	detail
Product Model	The hardware model of the satellite device.	detail
Product Family	The product family of the satellite device.	detail
Serial number	The serial number of the satellite device.	detail
System ID	The system ID of the satellite device. The system ID is also the satellite device's MAC address.	detail
Software package version	The satellite software version running on the satellite device.	detail
Host software version	The host operating system software version running on the satellite device.	detail
Management Address	<p>The management IP address of the satellite device.</p> <p>This management IP address belongs to an internal routing instance. This management address is assigned by the control plane internally based on FPC slot ID and is used for the control plane traffic between the aggregation device and satellite device.</p> <p>All management in a Junos Fusion should be done through the aggregation device. The management IP address of the satellite device is useful for debugging purposes by expert users only.</p>	detail
UFD config state	Uplink failure detection configuration state.	detail
Minimum link	Uplink failure detection minimum active uplink port setting.	detail
Holdddown timer (seconds)	Uplink failure detection holdddown timer setting, in seconds.	detail
UFD operational state	Uplink failure detection operational state.	detail

Table 41: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Candidate uplink interfaces (pic/port)	Uplink failure detection candidate uplink interfaces.	detail
Extended Ports	The number of extended ports for the satellite device. The number on the left is the total number of extended ports, and the number on the right is the total number of extended ports currently in the up state.	extensive
When	The date and time of the event.	extensive
Event	The event.	extensive
Action	The actions that resulted from the event.	extensive
Fields for Cascade interfaces		
Interface Name	The name of the cascade interface on the aggregation device.	detail
State	The state of the cascade interface.	detail
Uplink Interface	The name of the uplink interface on the satellite device.	detail
Adjacency state	The adjacency state of the cascade to uplink interface link.	detail
Last transition	The amount of time that has passed since the last transition of the cascade to uplink interface link.	detail
Adjacency down count (Interface Name)	The number of times the cascade to uplink interface link has gone into the down state.	detail
RX Packet	The number of packets received on the cascade interface.	detail
Last received packet	The amount of time that has passed since the last packet was received on the cascade interface.	detail
Peer adjacency information	The amount of time that has passed since the last peer adjacency transition.	detail
Adjacency down count (Peer adjacency information)	The number of times the cascade to uplink interface link has gone into the down state.	detail

Table 41: show chassis satellite Output Fields (continued)

Field Name	Field Description	Level of Output
Last down cause	The cause of the last adjacency failure.	detail
SDPD restart detected	The number of times that the satellite device protocol process has restarted.	detail
Fields for Process information		
Process Name	The name of the process.	detail
PID	The process identification number of the process.	detail
State	The current state of the process.	detail
Number of restart detected	The number of times the process has restarted.	detail
Uptime	The amount of time that the process has been running.	detail

Sample Output

show chassis satellite

```

user@aggregation-device> show chassis satellite

```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
qfx5100-24q-01	100	Online	xe-0/0/1 xe-0/3/0	online online	9/2
qfx5100-24q-02	101	Online	xe-0/0/2 xe-0/3/1	online online	20/12
qfx5100-24q-03	102	Online	xe-0/0/3 xe-0/3/2	online online	16/6
qfx5100-24q-04	103	Online	xe-0/0/4 xe-0/3/3	online online	16/4
qfx5100-24q-05	104	Online	xe-0/0/5 xe-0/3/4	online online	13/3
qfx5100-24q-06	105	Online	xe-0/0/6 xe-0/3/5	online online	24/15
qfx5100-24q-07	106	Online	xe-0/0/7 xe-0/3/6	online online	24/15
qfx5100-24q-08	107	Online	xe-0/0/8 xe-0/3/7	online online	21/12
ex4300-01	109	Online	xe-1/0/1	online	49/2
ex4300-02	110	Online	xe-1/0/2	online	49/2
ex4300-03	111	Online	xe-1/0/3	online	49/2
ex4300-04	112	Online	xe-1/0/4	online	49/11
ex4300-05	113	Online	xe-1/0/5	online	49/11
ex4300-06	114	Online	xe-1/0/6	online	49/11
ex4300-07	115	Online	xe-1/0/7	online	49/11
ex4300-08	116	Online	xe-1/1/0	online	49/11
ex4300-09	117	Online	xe-1/1/1	online	49/11
ex4300-10	118	Online	xe-1/1/2	online	49/11

ex4300-11	119	Online	xe-1/1/3	online	49/11
ex4300-12	120	Online	xe-1/1/4	online	49/11
ex4300-13	121	Online	xe-1/1/5	online	49/11
ex4300-14	122	Online	xe-1/1/6	online	49/11
ex4300-15	123	Online	xe-1/1/7	online	49/11
ex4300-16	124	Online	xe-1/2/1	online	49/11
ex4300-17	125	Online	xe-1/2/2	online	49/11
ex4300-18	126	Online	xe-1/2/3	online	49/2
ex4300-19	127	Online	xe-1/2/4	online	49/1
ex4300-20	128	Online	xe-1/2/5	online	49/1
ex4300-21	129	Online	xe-1/2/6	online	49/1
ex4300-22	130	Online	xe-1/2/7	online	49/1

Sample Output

show chassis satellite device-alias

```
user@aggregation-device> show chassis satellite device-alias ex4300-22
```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
ex4300-22	130	Online	xe-0/2/7	online	49/1

Sample Output

show chassis satellite fpc-slot 130

```
user@aggregation-device> show chassis satellite fpc-slot 130
```

Alias	Slot	Device State	Cascade Ports	Port State	Extended Ports Total/Up
ex4300-22	101	Online	xe-0/0/2 xe-0/3/1	online online	20/12

Sample Output

show chassis satellite terse

```
user@aggregation-device> show chassis satellite terse
```

Slot	Device State	Model	Extended Ports Total/Up	Version
101	Online	QFX5100-48S-6Q	7/7	3.0R1.1
102	Online	QFX5100-48S-6Q	7/7	3.0R1.1
103	Online	QFX5100-48S-6Q	6/5	3.0R1.1
104	Online	QFX5100-48S-6Q	14/14	3.0R1.1
105	Online	QFX5100-48S-6Q	18/18	3.0R1.1
106	Online	QFX5100-48S-6Q	17/16	3.0R1.1
107	Online	EX4300-48T	52/6	3.0R1.1
108	Online	EX4300-48T	52/15	3.0R1.1
109	Online	EX4300-48T	51/14	3.0R1.1
110	Online	EX4300-48T	51/14	3.0R1.1
111	Online	EX4300-48T	51/13	3.0R1.1
112	Online	EX4300-48T	51/12	3.0R1.1
113	Online	EX4300-48T	51/13	3.0R1.1
114	Online	QFX5100-24Q-2P	17/13	3.0R1.1

show chassis satellite detail

```
user@aggregation-device> show chassis satellite detail
Satellite Alias: qfx5100-48s-02
FPC Slot: 101
```

```
Operational State: Online
Product Model: QFX5100-48S-6Q
Product Family: i386
Serial number: ABC123DEF456
System id: 00:11:22:aa:bb:cc
Software package version: 3.0R1.1
Host software version: 1.0.0
Management Address: 172.16.0.101/32
Cascade interfaces:
  Interface Name: xe-0/0/2 State: online
    Uplink Interface: xe-001/0/48:0
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 65 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Interface Down
      SDPD restart detected: 3
  Interface Name: xe-0/2/1 State: online
    Uplink Interface: xe-001/0/48:1
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 64 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Interface Down
      SDPD restart detected: 3
  Interface Name: xe-2/0/0 State: online
    Uplink Interface: xe-001/0/48:2
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 65 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Interface Down
      SDPD restart detected: 3
  Interface Name: xe-2/1/6 State: online
    Uplink Interface: xe-001/0/48:3
    Adjacency state: Two-Way
    Last transition: 00:10:22
    Adjacency down count: 0
    Rx Packet: 65 Last received packet: 00:00:02
    Peer adjacency information: 00:10:22
      Adjacency down count: 3
      Last down cause: Hold timer expire
      SDPD restart detected: 3
Process information:
  Process Name: Provisioning PID: 6716 State: Running
    Number of restart detected: 0
    Uptime: 00:10:22
  Process Name: PFE PID: 3194 State: Running
    Number of restart detected: 0
    Uptime: 00:10:22
UFD config state: Enable (persist), Minimum link: 1,
Holdddown timer (seconds): 6
UFD operational state: Enable
Candidate uplink interfaces (pic/port):
  1/0
```

1/1
1/2
1/3
2/0
2/1
2/2
2/3

Satellite Alias: qfx5100-48s-03
FPC Slot: 102
Operational State: Online
Product Model: QFX5100-48S-6Q
Product Family: i386
Serial number: ABCDEFG12345
System id: 00:11:22:aa:ba:cc
Software package version: 3.0R1.1
Host software version: 1.0.0
Management Address: 172.16.0.102/32
Cascade interfaces:
 Interface Name: xe-0/0/3 State: online
 Uplink Interface: xe-002/0/48:0
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
 Interface Name: xe-0/2/2 State: online
 Uplink Interface: xe-002/0/48:1
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
 Interface Name: xe-2/0/1 State: online
 Uplink Interface: xe-002/0/48:2
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
 Interface Name: xe-2/1/7 State: online
 Uplink Interface: xe-002/0/48:3
 Adjacency state: Two-Way
 Last transition: 00:10:22
 Adjacency down count: 0
 Rx Packet: 65 Last received packet: 00:00:02
 Peer adjacency information: 00:10:22
 Adjacency down count: 3
 Last down cause: Interface Down
 SDPD restart detected: 3
Process information:
 Process Name: Provisioning PID: 6667 State: Running

```
Number of restart detected: 0
Uptime: 00:10:22
Process Name: PFE PID: 3155 State: Running
Number of restart detected: 0
Uptime: 00:10:22
<additional output removed for brevity>
```


CHAPTER 14

Multicast Replication on Junos Fusion Provider Edge

- [Understanding Multicast Replication in a Junos Fusion on page 869](#)
- [Ingress Multicast Replication at the Aggregation Device on page 873](#)
- [Egress Multicast Replication on the Satellite Devices on page 875](#)
- [Configuring Egress Replication on a Junos Fusion on page 879](#)

Understanding Multicast Replication in a Junos Fusion

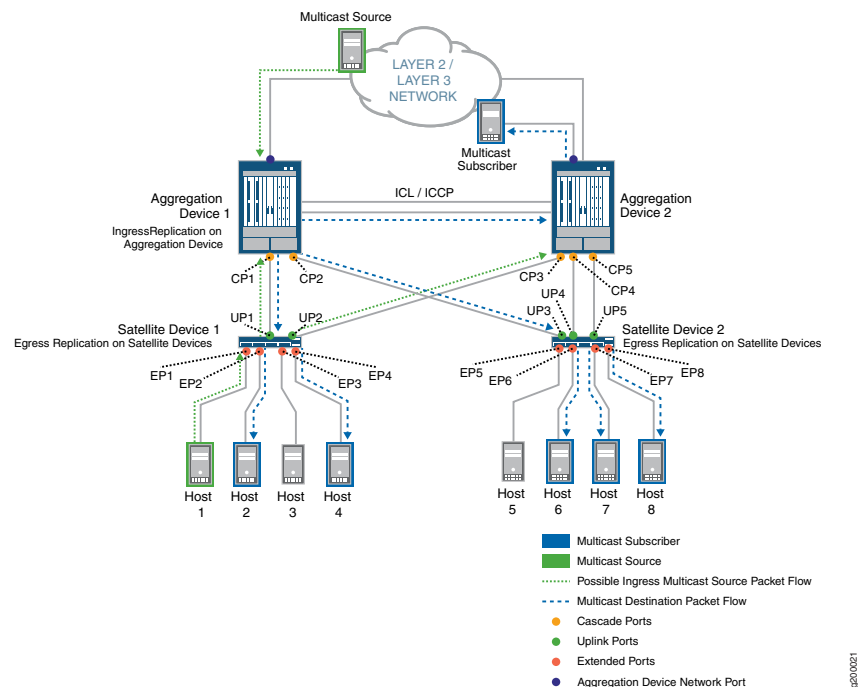
This topic introduces how multicast packets are replicated in a Junos Fusion and forwarded to multicast subscribers on satellite device extended ports. This topic covers:

- [Multicast Replication Overview on page 869](#)
- [ECIDs for Multicast Traffic on page 871](#)
- [Multicast Replication Limitations in a Junos Fusion on page 872](#)

Multicast Replication Overview

Aggregation devices manage the traffic flow from multicast sources to multicast destination ports in a Junos Fusion as illustrated in Figure 1. Multicast traffic flow management is similar to the way Junos Fusion unicast traffic is managed, except the aggregation device resolves the source packet forwarding path to multiple destination ports.

Figure 9: Multicast Replication in a Junos Fusion



As shown in the diagram, multicast source packets might be received through a network port on the aggregation device or an extended port on a satellite device. When a multicast source packet ingresses at a satellite device, the satellite device sends the source packet on an uplink port to the aggregation device, load-balancing forwarded source traffic over the available uplink ports (including uplink ports to either available aggregation device in Junos Fusion environments with dual aggregation devices).

All multicast destination resolution is done on the ingress aggregation device. When the multicast destination ports are extended ports on satellite devices, the aggregation device uses E-channel Identifier (ECID) mappings to determine the forwarding paths to the destination extended ports, including which cascade ports link to the corresponding satellite devices. Multicast traffic flow to destination satellite devices is load-balanced over the available cascade ports to each destination satellite device. Satellite devices use the ECID in the multicast packets from the aggregation device to determine which local port or ports should receive the multicast traffic.



NOTE: This behavior applies similarly to flooding unknown unicast traffic within a VLAN in a Junos Fusion.

By default, the ingress aggregation device replicates multicast and broadcast packets to forward to each destination extended port. This behavior is referred to as *ingress multicast replication*. The aggregation device sends multiple copies of the packet to each satellite device, one copy for each destination extended port on that satellite device. See [“Ingress Multicast Replication at the Aggregation Device” on page 873](#) for more information.

Starting in Junos OS 16.1, Junos Fusion supports enabling *egress multicast replication*, also referred to as *local replication*, where satellite devices replicate the multicast and broadcast packets destined for their local ports. Starting in Junos OS 17.2R1, local replication is supported on Junos Fusion topologies with dual aggregation devices. Local replication helps to distribute most of the replication load from aggregation devices to the satellite devices where the traffic egresses, and reduces traffic on cascade ports. When enabled, local replication applies to all satellite devices in the Junos Fusion; you cannot enable it only for individual satellite devices.

Egress replication behavior differs slightly for different types of multicast and broadcast traffic. See [“Egress Multicast Replication on the Satellite Devices” on page 875](#) for details.

To avoid creating loops and broadcast storms, for both ingress and egress multicast replication, both the aggregation devices and satellite devices maintain split-horizon next-hop information to prevent resending multicast or broadcast packets back out of the ingress port.

ECIDs for Multicast Traffic

Traffic sent between aggregation devices and satellite devices is sent over a logical path, called an *e-channel*. The packets sent between the aggregation device and satellite device include the IEEE 802.1BR E-channel tag (ETAG) header with an E-channel identifier (ECID). The ECID identifies the path that will be used in forwarding traffic packets. Each extended port is identified by a unique ECID value. Junos Fusion reserves ECID values 1 through 4095 for unicast data packets. ECID values from 4096 through 16382, also called *multicast ECIDs*, are reserved for multicast and broadcast data packets. Multicast ECIDs correspond to one or more destination extended ports on a satellite device.

The aggregation device automatically creates virtual interfaces named **sd-fpc-id/0/0** (where *fpc-id* is the satellite device ID) to represent satellite devices, and uses these virtual interfaces as the next-hop interface when forwarding traffic to a satellite device.

When local replication is disabled, similar to unicast packet flow (see [“Understanding the Flow of Data Packets in a Junos Fusion Topology” on page 26](#)), the aggregation device assigns a unicast ECID value for each destination extended port on a satellite device for unicast traffic and multicast traffic. The aggregation device replicates multicast packets, tags them with the assigned ECID for the destination, and sends a copy to each destination extended port by way of the corresponding satellite device interface.

When local replication is enabled, Junos Fusion uses ECID values greater than 4095 to identify multicast traffic and associate one or more extended ports on a satellite device as the multicast destination. Junos Fusion dynamically assigns multicast ECID values. When the aggregation device requires a new multicast ECID value for a group of ports or if it needs to add a port to an existing ECID, the process is as follows:

1. The aggregation device sends a request to the satellite device to assign an ECID value (or update an existing ECID mapping when multicast group or VLAN membership changes).
2. The satellite device assigns an ECID value and adds an entry to its ECID table to map the ECID value to the corresponding extended ports.

3. The satellite device sends a message back to the aggregation device with the ECID value that satisfies the request for the corresponding extended ports.
4. The aggregation device adds this information to its ECID table. It uses the **sd** virtual interface as the next-hop interface to send multicast traffic for those extended ports on the satellite device.

When the satellite device receives a data packet from the aggregation device with a multicast ECID value, the satellite device begins to replicate and forward packets to the extended ports associated with that ECID. Satellite devices do not do multicast lookups; they only maintain ECID tables to determine the port or ports corresponding to an ECID in a packet received from the aggregation device. The aggregation devices perform all multicast route maintenance and forwarding path resolution.



NOTE: An ECID value is only unique locally on the satellite device. Another satellite device can use the same ECID value for its own extended ports. The aggregation device maintains a composite mapping of ECID values to the different satellite devices and the corresponding extended ports on those satellite devices.

Multicast Replication Limitations in a Junos Fusion

Junos Fusion strives to optimize data replication on satellite devices when local replication is enabled. However, for the following features, although local replication might be enabled, Junos Fusion does not trigger egress replication optimization, and instead defaults to using ingress replication:

- Multicast traffic on pure Layer 3 extended ports
- Multicast Listener Discovery (MLD) snooping on an IPv6 network

You might choose not to enable local replication because egress multicast replication is incompatible with some Junos OS protocol and traffic management features programmed on individual extended ports. The following features do not work when egress multicast replication is enabled; if you want to use these features, you cannot take advantage of egress replication optimizations:

- VLAN tag manipulations, such as VLAN tag translations, VLAN tag stacking, and VLAN per-port policies. Using egress multicast replication with this feature can cause dropped packets due to unexpected VLAN tags.
- Multicast support for the extended ports on the edge side of Pseudowire connection in a VPLS network.
- Multicast support for the extended ports on the edge side of EVPNs.
- Multicast VPN deployments.
- Features that perform egress actions on individual extended ports, such as egress local-port mirroring (port mirroring on endpoints connected to satellite device extended ports).

Release History Table

Release	Description
17.2R1	Starting in Junos OS 17.2R1, local replication is supported on Junos Fusion topologies with dual aggregation devices.
16.1	Starting in Junos OS 16.1, Junos Fusion supports enabling <i>egress multicast replication</i> , also referred to as <i>local replication</i> , where satellite devices replicate the multicast and broadcast packets destined for their local ports.

Related Documentation

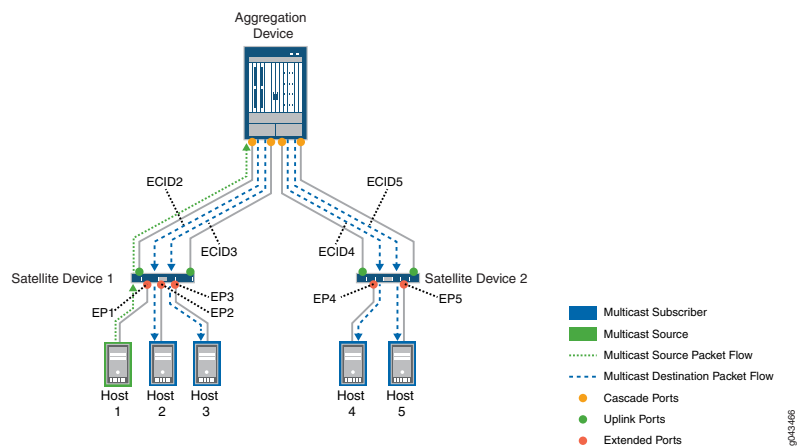
- [Understanding the Flow of Data Packets in a Junos Fusion Topology on page 26](#)
- [Ingress Multicast Replication at the Aggregation Device on page 873](#)
- [Egress Multicast Replication on the Satellite Devices on page 875](#)
- [Configuring Egress Replication on a Junos Fusion on page 879](#)

Ingress Multicast Replication at the Aggregation Device

By default, Junos Fusion uses ingress replication to create and forward copies of packets to multicast destinations.

Figure 10 on page 873 illustrates ingress replication mode, where the ingress aggregation device replicates the multicast packets for all destination extended ports. The data packet flow is similar to unicast data packet flow from the multicast source to each destination.

Figure 10: Ingress Replication at the Aggregation Device



The figure shows multicast source data packets are received from a multicast source on an extended port, EP1, with traffic destined for endpoints connected to extended ports EP2 through EP5. Each extended port has an associated E-channel Identifier (ECID) value that the aggregation device uses to forward the data packet to each destination extended

port. The aggregation device replicates the data packets for all multicast destination extended ports on all attached satellite devices, as follows:

- Two packets for satellite device 1 (EP2 and EP3)
- Two packets for satellite device 2 (EP4 and EP5)

The aggregation device sends each packet on the respective cascade ports to the satellite devices with destination extended ports. Multicast traffic destined for EP2 is tagged with ECID2, traffic destined for EP3 is tagged with ECID3, and so on for all the destination extended ports on both satellite devices. The satellite devices receive and forward the packets to their respective extended ports.

The aggregation device maintains multicast routing information and next-hop tables, including ECID label mappings to satellite devices and the corresponding extended ports. For a multicast destination on a satellite device, the aggregation device resolves the next-hop path through a corresponding cascade port that reaches the satellite device. When there are multiple cascade port links to a satellite device, the aggregation device load-balances the traffic to choose which cascade port to use.

Each receiving satellite device maintains tables that map the assigned ECIDs to the corresponding extended ports, and simply forwards outgoing multicast packets to the target extended ports. The satellite devices do not maintain multicast routing information.

Other multicast destinations might be reached through ports on the aggregation devices, rather than through extended ports. For these destinations, the aggregation device creates and sends copies to those local ports directly. In Junos Fusion topologies with dual aggregations devices, for multicast subscribers on ports on the other aggregation device, the ingress aggregation device creates copies for those ports, and sends them over the ICL link to the other aggregation device to forward to its local destination ports.

Multicast support using ingress replication does not scale well for a large number of multicast destinations or higher bandwidth multicast traffic. Ingress replication increases aggregation device Packet Forwarding Engine processing load, and consumes bandwidth on the links between cascade ports and uplink ports, potentially resulting in link oversubscription and latency among multicast recipients.

You can alternatively enable *egress multicast replication*, also referred to as *local replication*. Local replication optimizes multicast replication by distributing the replication load between the aggregation devices and the satellite devices that have multicast destination ports. However, local replication requires more control plane processing than ingress replication, which results in a slight increase in multicast group join and leave latency. See [“Egress Multicast Replication on the Satellite Devices” on page 875](#) for more information on how local replication works for different types of multicast or broadcast traffic.

Related Documentation

- [Understanding Multicast Replication in a Junos Fusion on page 869](#)
- [Egress Multicast Replication on the Satellite Devices on page 875](#)
- [Understanding the Flow of Data Packets in a Junos Fusion Topology on page 26](#)

Egress Multicast Replication on the Satellite Devices

Egress multicast replication is also referred to as *local replication*. In egress or local replication mode, the aggregation device optimizes replication by off-loading replication whenever possible to satellite devices that have destination extended ports. From the point of view of the aggregation device, replication is supported at an egress port, and from the point of view of the satellite device, replication is managed locally. Local replication alleviates some of the problems associated with ingress replication, reducing the potential for bandwidth oversubscription and replication latency when there are a large number of receivers.

Local replication is performed at Layer 2. Each receiving satellite device maintains tables that map the assigned ECIDs to corresponding destination extended ports, and simply forward outgoing multicast or broadcast packets to local extended ports. For Layer 3 multicast traffic, such as when forwarding packets on VLANs, the aggregation device performs replication to resolve Layer 3 information not maintained by satellite devices.

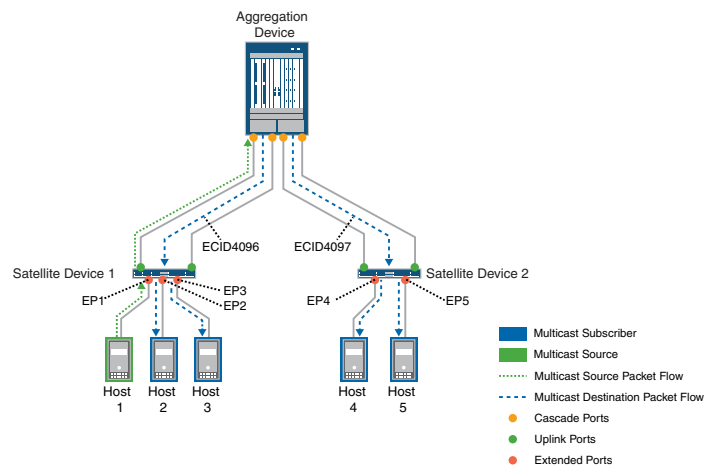
This topic describes local replication behavior with the following types of multicast or broadcast traffic:

- [Local Replication for Layer 2 Multicast Traffic with IGMP Snooping on page 875](#)
- [Local Replication for VLAN Flooding on page 876](#)
- [Local Replication for Layer 3 Multicast Traffic Over IRB Interfaces on page 878](#)

Local Replication for Layer 2 Multicast Traffic with IGMP Snooping

Figure 11 on page 875 illustrates Layer 2 multicast traffic flow with IGMP snooping when local replication is enabled.

Figure 11: Local Replication with Layer 2 Multicast and IGMP Snooping



A data packet is received from a multicast source on an extended port, EP1, with traffic destined for endpoints connected to extended ports EP2 through EP5. The aggregation device acquires *multicast* ECIDs from the satellite devices, which represent a set of

multicast destination extended ports on each satellite device. The diagram shows ECID value ECID4096 is assigned to the multicast subscribers behind extended ports EP2 and EP3 on satellite device 1, and ECID4097 is assigned to the multicast subscribers behind extended ports EP4 and EP5 on satellite device 2. The aggregation device creates only one copy of the source packet for each satellite device that has multicast destination extended ports, inserts the corresponding satellite device multicast ECID value in the IEEE 802.1BR ETAG header of each copy, and forwards the copies to those satellite devices. In this case, the aggregation device creates two copies, forwards one with ECID4096 to satellite device 1, and forwards the other with ECID4097 to satellite device 2. Each satellite device receives its copy and uses the multicast ECID value to determine which of its extended ports should receive the multicast traffic. Satellite device 1 replicates the packet and forwards copies to EP2 and EP3; satellite device 2 replicates the packet and forwards copies to EP4 and EP5.

When forwarding replicated multicast packets to satellite devices, the aggregation device resolves the next-hop path through a corresponding cascade port that reaches the satellite device. When there are multiple cascade port links to a satellite device, the aggregation device load-balances the traffic when choosing which cascade port to use.

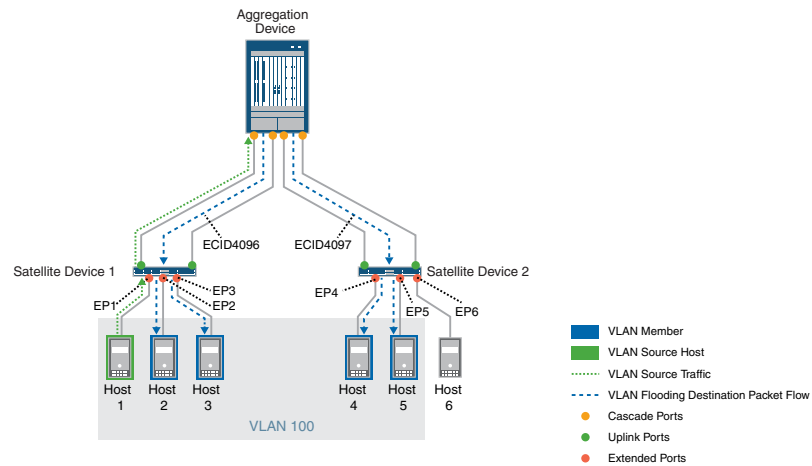
Other multicast destinations might be reached through ports on the aggregation devices, rather than through extended ports. For these destinations, the aggregation device creates and sends copies to those local ports directly. In Junos Fusion topologies with dual aggregations devices, for multicast subscribers behind ports on the other aggregation device, the ingress aggregation device creates copies for those ports, and sends them over the ICL link to the other aggregation device to forward to its local destination ports. This behavior is the same for ingress or egress multicast replication.

Local Replication for VLAN Flooding

An aggregation device might initiate VLAN flooding (broadcasting or flooding the packet out to all interfaces in the VLAN) to learn the MAC address for a destination that is not already in its Ethernet switching tables. When local replication is not enabled, the aggregation device uses ingress replication, creating and sending copies to each destination extended port on each satellite device that has destination extended ports in the VLAN. With local replication enabled, the aggregation device requests multicast ECIDs to represent the extended ports in the VLAN on each satellite device. The aggregation device sends a copy of the source packet tagged with each ECID in the IEEE 802.1BR header to the corresponding satellite device. Each receiving satellite device does the replication locally for its extended ports in the VLAN.

[Figure 12 on page 877](#) illustrates the packet flow for VLAN flooding when local replication is enabled.

Figure 12: Local Replication with VLAN Flooding



In this example, a multicast source packet for VLAN 100 ingresses on EP1, and satellite device 1 forwards the packet to the aggregation device. The aggregation device cannot resolve the destination MAC address, and decides to flood the packet to all extended port destinations in VLAN 100.



NOTE: When a source packet ingresses at a satellite device with uplink ports to dual aggregation devices, the satellite device load-balances forwarding the ingress traffic among the available uplink ports, so either aggregation device might receive the source packet and manage flooding the packet to destination VLAN members.

Multicast ECID4096 is allocated to represent extended ports on satellite device 1 that are members of VLAN 100—EP1, EP2 and EP3, and multicast ECID4097 represents extended ports on satellite device 2 that are also members of VLAN 100—EP4 and EP5. Host 6 behind extended port EP6 is not a member of VLAN 100 and is not a destination for the flooded traffic. The aggregation device creates one copy of the packet tagged with ECID4096 and sends it to satellite device 1, and sends one copy tagged with ECID4097 to satellite device 2. Satellite device 1 replicates and forwards the packet for its own destination ports in VLAN 100, EP2 and EP3. (The ingress ECID split-horizon mechanism prevents forwarding traffic to the ingress port, EP1.) Satellite device 2 replicates and forwards the packet for EP4 and EP5, its local destination ports in VLAN 100. The extended port mapping for ECID4097 does not include EP6, so satellite device 2 does not forward the packet to that port.

When there are multiple cascade port links to a satellite device, the aggregation device load-balances the traffic when choosing which cascade port to use.

For destination VLAN members reachable through aggregation device ports (rather than extended ports), the aggregation device creates and sends copies to those local ports directly. In Junos Fusion topologies with dual aggregation devices, when there are VLAN members behind ports on the other aggregation device, the ingress aggregation device

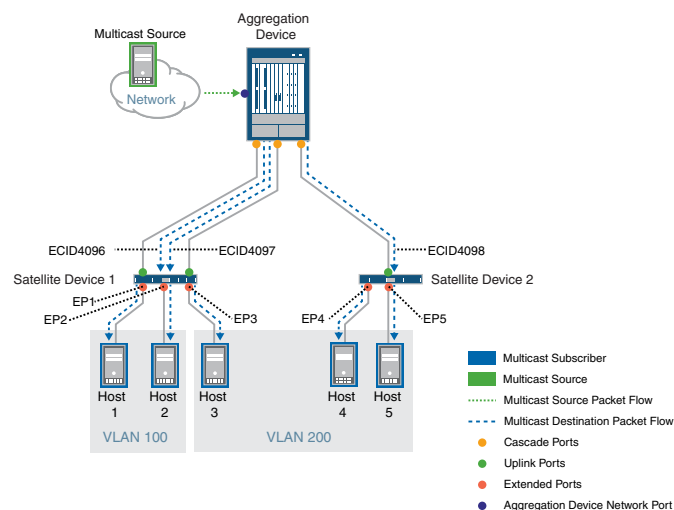
creates copies for those ports, and sends them over the ICL link to the other aggregation device to forward to its local destination ports. This behavior is the same for ingress or egress multicast replication.

Local Replication for Layer 3 Multicast Traffic Over IRB Interfaces

Integrated Routing and Bridging (IRB) provides support for Layer 2 bridging and Layer 3 routing on the same interface, and IRB interfaces are used to route traffic between VLANs. Because satellite devices do not maintain Layer 3 routing information, local replication on the satellite devices only occurs for Layer 2 traffic, and the aggregation device manages the replication of multicast destination packets at Layer 3. The aggregation device replicates the multicast source packet for each IRB interface in the Layer 3 replication list for a multicast group, and performs a VLAN tag rewrite for each corresponding VLAN. When there are extended ports in multiple VLANs on a satellite device that are receivers in the same multicast group, the aggregation device sends copies to each IRB with its corresponding VLAN ID to that satellite device. If an IRB interface (VLAN membership) spans multiple satellite devices, the aggregation device creates and sends one copy to each satellite device that has multicast receivers that are members of that VLAN. Each satellite device then replicates and forwards copies of the received packet for its local multicast destination extended ports.

Figure 13 on page 878 shows an example of Layer 3 multicast replication for VLANs over IRB interfaces in a Junos Fusion. In this case, two VLANs with corresponding IRB interfaces are configured on the aggregation device. In this case, multicast source packets ingress on an aggregation device port, and multicast subscribers are connected to extended ports EP1 through EP5, where extended ports EP1 and EP2 are in VLAN 100 and EP3 through EP5 are in VLAN 200.

Figure 13: Local Replication with Layer 3 Multicast



When the aggregation device receives a packet from the multicast source, it manages the Layer 3 replication by acquiring multicast ECIDs representing the destination extended ports in each VLAN on each satellite device, and creating, tagging, and forwarding copies on each VLAN's IRB interface to the satellite devices that have destination extended

ports. As the figure shows, the aggregation device creates 3 copies of the source packet, as follows:

- Multicast ECID4096 represents EP1 and EP 2 in VLAN 100 on satellite device 1. The aggregation device forwards one copy tagged with ECID4096 to satellite device 1 for the VLAN 100 IRB interface.
- Multicast ECID4097 represents EP3 in VLAN 200 on satellite device 1. The aggregation device forwards a second copy tagged with ECID4097 to satellite device 1 for the VLAN 200 IRB interface.
- Multicast ECID4098 represents EP4 and EP5 in VLAN 200 on satellite device 2. The aggregation device forwards a third copy tagged with ECID4098 for the VLAN 200 IRB interface to satellite device 2.

Each satellite device manages the Layer 2 processing by replicating the packets received from the aggregation device for the multicast subscribers behind its extended ports in each VLAN, as follows:

- Satellite device 1 replicates and forwards packets tagged with ECID4096 to extended ports EP1 and EP2, and forwards packets tagged with ECID4097 to EP3.
- Satellite device 2 replicates and forwards the packets tagged with ECID4096 to extended ports EP4 and EP5.

When there are multiple cascade port links to a satellite device, the aggregation device load-balances the traffic when choosing which cascade port to use.

For multicast destination VLAN members reachable through aggregation device ports (rather than extended ports), the aggregation device creates and sends copies to those local ports using the corresponding IRB interfaces. In Junos Fusion topologies with dual aggregation devices, when there are multicast subscribers behind ports on the other aggregation device, the ingress aggregation device creates copies for those ports, and sends them over the ICL link to the other aggregation device to forward to its local destination ports. This behavior is the same for ingress or egress multicast replication.

Related Documentation

- [Understanding Multicast Replication in a Junos Fusion on page 869](#)
- [Ingress Multicast Replication at the Aggregation Device on page 873](#)
- [Configuring Egress Replication on a Junos Fusion on page 879](#)

Configuring Egress Replication on a Junos Fusion

By default, egress multicast replication (also called *local replication*) is disabled, and Junos Fusion uses ingress replication. When you enable local replication, egress multicast replication is activated for all satellite devices that are connected to the aggregation device. You cannot enable local replication for just a few selected satellite devices, specific bridge domains, or specific route prefixes.

To enable egress multicast replication on satellite devices, configure the [local-replication](#) statement at the `[edit forwarding-options satellite]` hierarchy level.

```
[edit forwarding-options satellite]
user@router1# set local-replication
```

The [show multicast summary satellite](#) operational command displays **Egress replication: Enabled** when this feature is configured.

See “[Understanding Multicast Replication in a Junos Fusion](#)” on [page 869](#) for an overview of Junos Fusion multicast replication and the limitations to enabling this feature. Some Junos OS protocol and traffic management features are not supported with egress replication, and you should not plan to configure local replication if you want to use those features.

**Related
Documentation**

- [Ingress Multicast Replication at the Aggregation Device on page 873](#)
- [Egress Multicast Replication on the Satellite Devices on page 875](#)

CHAPTER 15

Configuration Statements and Operational Commands for Multicast Support

- [local-replication on page 882](#)
- [show bridge flood nexthops satellite](#)
- [show bridge flood satellite](#)
- [show bridge satellite device](#)
- [show multicast ecid-mapping satellite](#)
- [show multicast next-hops satellite](#)
- [show multicast snooping next-hops satellite](#)
- [show multicast snooping route satellite](#)
- [show multicast statistics satellite](#)
- [show multicast summary satellite](#)

local-replication

Syntax	local-replication
Hierarchy Level	[edit forwarding-options satellite]
Release Information	Statement introduced in Junos OS Release 16.1. Statement introduced in Junos OS Release 17.1R1 for Junos Fusion Data Center.
Description	Enables multicast replication on all the satellite devices that are connected to the aggregation device. You cannot selectively enable local replication for specific satellite devices, bridge domains, or route prefixes.
Required Privilege Level	routing—To view this statement in the configuration. routing-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• Configuring Egress Replication on a Junos Fusion on page 879

show bridge flood nexthops satellite

Syntax `show bridge flood nexthops satellite`
`<brief | detail | extensive>`
`<nexthop-id nexthop-id>`

Release Information Command introduced in Junos OS Release 16.1.

Description Display bridge domain flood next hop information for satellite device destinations.

You can use this command to:

- View the current list of all flood traffic composite next hops.
- See details about a specified composite next hop.
- Follow aggregation device composite next-hop processing as the aggregation device resolves and updates composite next-hop table entries for extended port destinations.

The aggregation device allocates ECID tags that represent multicast or broadcast destinations behind satellite device extended ports, associates them with the corresponding satellite device virtual interfaces (*sd-fpc-id/0/0*), and updates flood next-hop table entries accordingly. More detailed output from this command shows events that result in next-hop table updates.

Options **brief | detail | extensive**—(Optional) Display the specified level of output. The default output level is **brief**.

nexthop-id *nexthop-id*—Display more detailed bridge flooding next hop information only for the specified next hop.

Required Privilege Level view

Related Documentation

- [Understanding Multicast Replication in a Junos Fusion on page 869](#)
- [Egress Multicast Replication on the Satellite Devices on page 875](#)

List of Sample Output [show bridge flood next hops on page 884](#)

Output Fields [Table 42 on page 883](#) lists the output fields for the **show bridge flood next-hops satellite** command. Output fields are listed in the approximate order in which they appear.

Table 42: show bridge flood next-hops satellite Command Output Fields

Field Name	Field Description	Level of Output
Next-hop ID	Next-hop ID for each next- hop entry displayed.	All

Table 42: show bridge flood next-hops satellite Command Output Fields (continued)

Field Name	Field Description	Level of Output
Composite function	Purpose of a composite next-hop entry. Values include: <ul style="list-style-type: none"> FLOOD_ALL—Flood next hop. FLOOD_ALL_SPLIT_HZ—Flood next hop including split-horizon information. 	All
Table	Name of next-hop routing or forwarding table for the listed entry.	All
Flags	Flags giving additional information about a next-hop entry. Values include: <ul style="list-style-type: none"> SAT—The entry is a satellite destination composite next hop for an extended port destination that has been resolved and updated with the corresponding satellite device interface, sd-fpc-id/0/0, and the associated ECID shown in the label field. ST—The entry is stale and waiting to be refreshed. RU—The entry is stale, but is marked to be reused. 	All
aggregation-device	Next-hop IDs and corresponding interfaces to reach local flood destination ports on the aggregation device.	detail extensive
satellite-device-id id	Satellite device ID with the next-hop IDs and interface names to reach extended ports that are flood destinations on the listed satellite device. When an ECID has been assigned to destination extended ports on a satellite device, this field lists the satellite next-hop ID, the corresponding virtual satellite device interface (sd-fpc-id/0/0), and the allocated ECID (label field).	detail extensive
label	ECID associated with a group of flood destination extended ports on the satellite device specified in the satellite-device-id field.	detail extensive
When	Elapsed time since an event related to a flood next-hop entry change.	extensive
Event	Brief description of the event related to a flood next-hop entry change.	extensive
Action	Brief description of actions that resulted from the event.	extensive

Sample Output

show bridge flood next hops

```
user@host> > show bridge flood next-hops satellite nexthop-id 962 detail
```


Next-hop ID	Composite function	Table	Flags
962	FLOOD_ALL_SPLIT_HZ	default-switch	
	satellite-device-id 100:		
	->610 xe-100/0/6.0		
	->611 xe-100/0/7.0		
	satellite-device-id 103:		
	->682 xe-103/0/30.0		
	->683 xe-103/0/31.0		
	->684 xe-103/0/32.0		
	->685 xe-103/0/33.0		
	->686 xe-103/0/34.0		
	->687 xe-103/0/35.0		

show bridge flood satellite

Syntax `show bridge flood satellite`
 `<brief | detail | extensive>`
 `<bridge-domain-name bridge-domain-name>`
 `<vswitch-name vswitch-name>`

Release Information Command introduced in Junos OS Release 16.1.

Description Display bridge flood routing information for the satellite devices in Junos Fusion Provider Edge.

This command lists flood routes by route prefix for each bridge domain. Each flood route prefix entry lists the ingress replication next-hop ID (**Nhindex**). When egress (local) replication is enabled and the bridge domain has multiple destination extended ports on a satellite device, the aggregation device:

- Creates a satellite device next-hop chain to reach those destinations through their corresponding satellite devices.
- Updates the flood route entry with a satellite next-hop chain ID (**Satellite-Nh**).

When a flood route does not have a satellite next-hop chain, the value **0** is displayed in the **Satellite-Nh** column. When the **Satellite-Nh** value is non-zero, the aggregation device uses the satellite next-hop chain instead of the original ingress replication next-hop (**Nhindex**). You can see satellite device flood next-hop chain details, including the ECIDs assigned to satellite device flood destination extended ports, using the **detail** option and the **bridge-domain-name** option for a specific bridge domain.

Options **brief | detail | extensive**—(Optional) Display the specified level of output.

bridge-domain-name *bridge-domain-name*—Display bridge flooding information for the specified bridge domain.

vswitch-name *vswitch-name*—Display bridge flood information for the specified virtual satellite device.

Required Privilege Level view

Related Documentation

- [Understanding Multicast Replication in a Junos Fusion on page 869](#)
- [Egress Multicast Replication on the Satellite Devices on page 875](#)

List of Sample Output [show bridge flood satellite on page 887](#)

Output Fields Table 43 on page 887 lists the output fields for the **show bridge flood satellite** command. Output fields are listed in the approximate order in which they appear, although the display order varies between the different levels of output.

Table 43: show bridge flood satellite Command Output Fields

Field Name	Field Description	Level of Output
Bridging domain	Bridge domain name.	All
Flood Routes	Flood route information listed by route prefix.	All
Prefix	Flood route prefix.	All
Token	Internal ID for flood route prefix.	All
NhIndex	The ingress replication next-hop for the flood route.	All
Satellite-Nh	Satellite device next-hop ID when local replication is enabled and there are multiple flood destination extended ports.	All
Next-hop information	Details for each next hop, listed by next-hop or satellite next-hop IID.	detail extensive
aggregation-device	Next-hop interfaces for ports that are flood destinations on the aggregation device, listed by next-hop ID.	detail extensive
satellite-device-id id	Next-hop interfaces for extended ports that are flood destinations on satellite devices, listed by satellite next-hop ID.	detail extensive
label	ECID assigned to a satellite device interface.	detail extensive
When	Elapsed time since an event related to a flood route entry change.	extensive
Event	Brief description of the event related to a flood route entry change.	extensive
Action	Brief description of actions that resulted from the event.	extensive

Sample Output

show bridge flood satellite

```

user@host> show bridge flood satellite
Paste router command output hereVSwitch instance: default-switch
----- Bridging domain: bd100 -----

```

```

Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.02.00.01.60.03.e0/51  0x3001F    797      1186
00.02.ff.fe.60.00.20/51  0x30001    794      1183
----- Bridging domain: bd1000 -----
Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.03.00.01.60.04.00/51  0x30020    806      0
00.03.ff.fe.60.00.40/51  0x30002    803      0
----- Bridging domain: bd1500 -----
Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.08.00.01.60.04.a0/51  0x30025    851      1475
00.08.ff.fe.60.00.e0/51  0x30007    848      1472
----- Bridging domain: bd1600 -----
Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.09.00.01.60.04.c0/51  0x30026    860      1481
00.09.ff.fe.60.01.00/51  0x30008    857      1478
----- Bridging domain: bd1700 -----
Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.0a.00.01.60.04.e0/51  0x30027    869      1487
00.0a.ff.fe.60.01.20/51  0x30009    866      1484
----- Bridging domain: bd1800 -----
Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.0b.00.01.60.05.00/51  0x30028    878      1493
00.0b.ff.fe.60.01.40/51  0x3000A    875      1490
----- Bridging domain: bd1900 -----
Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.0c.00.01.60.05.20/51  0x30029    887      1499
00.0c.ff.fe.60.01.60/51  0x3000B    884      1496
----- Bridging domain: bd2000 -----
Flood Routes:
Prefix          Token      NhIndex  Satellite-Nh
00.0e.00.01.60.05.60/51  0x3002B    905      1511
00.0e.ff.fe.60.01.a0/51  0x3000D    902      1508

```

show bridge satellite device

Syntax	show bridge satellite device <brief detail> < device-id <i>device-id</i> >
Release Information	Command introduced in Junos OS Release 16.1.
Description	Display status and control information for all satellite devices or a specified satellite device.
Options	brief detail —(Optional) Display the specified level of output. The default output level is brief . device-id <i>device-id</i> —(Optional) Display information for the specified satellite device.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Multicast Replication in a Junos Fusion on page 869
List of Sample Output	show bridge satellite device on page 890
Output Fields	Table 44 on page 889 lists the output fields for the show bridge satellite device command. Output fields are listed in the approximate order in which they appear, although the display order varies between the different levels of output.

Table 44: show bridge satellite device Command Output Fields

Field Name	Field Description	Level of Output
Device ID	Satellite device ID.	All
Device (detail view)		
Interface Index	Internal ID for the satellite device virtual interface.	All
Device Interface Index (detail view)		
Interface Name	Satellite device virtual interface name (sd-fpc-id/0/0 , where <i>fpc-id</i> is the satellite device ID).	All
Device Interface Name (detail view)		

Table 44: show bridge satellite device Command Output Fields (continued)

Field Name	Field Description	Level of Output
State Device Interface State (detail view)	State of the satellite device virtual interface. If the interface is created and active, possible values include Up or Down .	All
Connection State Device connection Status (detail view)	State of the satellite device interface connection to the aggregation device. The connection state is monitored using keep-alive messages between satellite and aggregation device control processes. Possible values include Up or Down .	All
Requests	Number of request messages sent to the listed satellite device aggregation device to allocate or update ECID mappings.	All
Responses	Number of response messages returned from the listed satellite device to the aggregation device for granting ECID requests.	All
Device connection uptime	Duration of the connection between the aggregation device and the specified satellite device.	detail
Device heartbeat status	Status of keep-alive message exchange between satellite device and aggregation device control processes.	detail
Echo packets sent	Number of keep-alive packets sent to the satellite device from the aggregation device.	detail
Echo packets received	Number of keep-alive response packets sent to the aggregation device from the satellite device.	detail
Multicast IPC stats	Number of inter-process control (IPC) messages sent from the aggregation device to the satellite device related to multicast functions on the satellite device. This value is displayed for active satellite device connections.	detail
Bridge IPC stats	Number of IPC messages sent from the aggregation device to the satellite device related to Layer 2 bridging functions on the satellite device. This value is displayed for active satellite device connections.	detail

Sample Output

show bridge satellite device

```
user@host> show bridge satellite device
```

Device ID	Interface index	Interface Name	State	Connection State	Requests	Responses
100	370	sd-100/0/0.32770	Up	Up	5	5
101	342	sd-101/0/0.32770	Up	Up	4	4
102	365	sd-102/0/0.32770	Up	Up	3	3
105	364	sd-105/0/0.32770	Up	Up	2	2

show multicast ecid-mapping satellite

Syntax	<pre>show multicast ecid-mapping satellite <brief detail extensive> <device-id device-id> <ecid ecid> <reference-id reference-id></pre>
Release Information	<p>Command introduced in Junos OS Release 16.1.</p> <p>Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.</p>
Description	<p>Displays entries in the satellite multicast ECID mapping database.</p> <p>ECID database entries map a group of extended ports to an ECID value for the satellite devices in a Junos Fusion. Each entry also records the next hop to reach the corresponding destination extended ports.</p>
Options	<p>brief detail extensive—(Optional) Display the specified level of output.</p> <p>device-id device-ID—Display information from the ECID database for a specified satellite device ID.</p> <p>ecid ecid—Display information from the ECID database for a specified ECID.</p> <p>reference-id reference ID—Display information from the ECID database for a specified internally-assigned reference ID related to the ECID request messages exchanged during ECID allocation (used for troubleshooting issues with ECID allocation).</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Multicast Replication in a Junos Fusion on page 869 • Egress Multicast Replication on the Satellite Devices on page 875
List of Sample Output	<p>show multicast ecid-mapping satellite on page 893</p> <p>show multicast ecid-mapping satellite (for specified satellite device-id and ECID) on page 894</p>
Output Fields	<p>Table 45 on page 892 lists the output fields for the show multicast ecid-mapping satellite command. Output fields are listed in the approximate order in which they appear.</p>

Table 45: show multicast ecid-mapping satellite Command Output Fields

Field Name	Field Description	Level of Output
Satellite Device ID	Satellite device ID.	All

Table 45: show multicast ecid-mapping satellite Command Output Fields (continued)

Field Name	Field Description	Level of Output
ECID	ECID assigned to a grouping of extended ports on the satellite device. Satellite devices have multiple ECIDs assigned that represent different groups of extended ports.	All
State	Status of requesting and allocating the ECID. Values include: <ul style="list-style-type: none"> • Init—An ECID mapping entry for a group of ports has been created. • Request Scheduled—An ECID mapping entry has been queued for an ECID value request. • Request Sent—The ECID request has been sent to the corresponding satellite device. • Response Received—An ECID value has been received from the satellite device. • Sync—An ECID mapping with an ECID value is to be synchronized with a satellite device. • Ready—An ECID next hop has been created and is ready to be referenced for forwarding. 	All
Flags	Internal flag values for troubleshooting.	All
nhid	Satellite device next-hop ID associated with the ECID.	All
Reference ID	Internal reference ID assigned to an ECID request message, used for troubleshooting ECID communication with satellite devices.	All (with specified device-id or ecid)

Sample Output

show multicast ecid-mapping satellite

```

user@host> show multicast ecid-mapping satellite
Satellite  ECID      State      Flags
Device ID
100        4129      Ready [nhid=612]  0x0
           xe-100/0/6.0
           xe-100/0/7.0
100        4097      Ready [nhid=1061] 0x0
           xe-100/0/0.0
           xe-100/0/1.0
100        4122      Ready [nhid=1190] 0x0
           xe-100/0/2.0
           xe-100/0/3.0
           xe-100/0/4.0
           xe-100/0/5.0
103        4103      Ready [nhid=1062] 0x0
           xe-103/0/5.0
           xe-103/0/6.0
103        4104      Ready [nhid=1068] 0x0
           xe-103/0/7.0

```

```

xe-103/0/8.0
103      4105      Ready [nhid=1069]      0x0
xe-103/0/10.0
xe-103/0/9.0
103      4106      Ready [nhid=1070]      0x0
xe-103/0/11.0
xe-103/0/12.0
103      4107      Ready [nhid=1071]      0x0
xe-103/0/13.0
xe-103/0/14.0
103      4109      Ready [nhid=1097]      0x0
xe-103/0/15.0
xe-103/0/16.0
103      4110      Ready [nhid=1074]      0x0
xe-103/0/17.0
xe-103/0/18.0
103      4111      Ready [nhid=1075]      0x0
xe-103/0/19.0
xe-103/0/20.0
103      4112      Ready [nhid=1076]      0x0
xe-103/0/21.0
xe-103/0/22.0

```

show multicast ecid-mapping satellite (for specified satellite device-id and ECID)

```

user@host> show multicast ecid-mapping satellite device-id 100 ecid 4101
Satellite  ECID      State      Reference ID
Device ID
100        4101      Ready [nhid=1845]      14

```

show multicast next-hops satellite

Syntax	show multicast next-hops satellite
Release Information	Command introduced in Junos OS Release 16.1. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display satellite multicast next-hop table information. The output lists next-hops for all interfaces in the VPLS address family used in multicast replication.
Options	brief detail —(Optional) Output level is the same when either option or no option is specified.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Multicast Replication in a Junos Fusion on page 869 • show multicast snooping next-hops satellite on page 898
List of Sample Output	show multicast next-hops satellite on page 896
Output Fields	Table 46 on page 895 lists the output fields for the show multicast next-hops satellite command. Output fields are listed in the approximate order in which they appear, although the display order varies between the different levels of output.

Table 46: show multicast next-hops satellite Command Output Fields

Field Name	Field Description	Level of Output
Next-hop ID	Next-hop ID in the database.	All
Interface Index	Internal ID for a satellite device virtual interface.	All
Interface Name	Interface name for configured interfaces in the Junos Fusion. A satellite device virtual interface named sd-fpc-id/0/0 is used to send traffic to extended ports on satellite device <i>fpc-id</i> .	All
Label	A multicast ECID assigned to the satellite device interface next hop. If no ECIDs are assigned for the interface, the value displayed in this field is 0. Satellite device interfaces might have multiple ECIDs listed that represent different groups of multicast destination extended ports on that satellite device.	All

Table 46: show multicast next-hops satellite Command Output Fields (continued)

Field Name	Field Description	Level of Output
Flags	Flags giving additional information about a next-hop entry. Values include: <ul style="list-style-type: none"> SAT—The entry is a satellite composite next hop for extended port destinations that has been resolved and updated with the corresponding satellite device interface, sd-fpc-id/0/0, and the associated ECID shown in the Label field. 	All

Sample Output

show multicast next-hops satellite

```

user@host> show multicast next-hops satellite
Next-hop   Interface   Interface   Label   Flags
ID          index      Name
186         1          unknown     0
530         323        unknown     0
574         331        1c-0/0/0.32769 0
578         335        ge-0/0/4.32770 0
583         341        ge-0/0/7.32770 0
584         343        ge-0/0/8.32770 0
585         345        ge-0/0/9.32770 0
586         337        ge-0/0/5.32770 0
587         339        ge-0/0/6.32770 0
610         347        xe-100/0/6.0    0
611         349        xe-100/0/7.0    0
612         348        sd-100/0/0.32770 4129 SAT
618         350        xe-100/0/0.0    0
619         351        xe-100/0/1.0    0
620         352        xe-100/0/2.0    0
621         353        xe-100/0/3.0    0
622         354        xe-100/0/4.0    0
...
1061        348        sd-100/0/0.32770 4097 SAT
1062        346        sd-103/0/0.32770 4103 SAT
1068        346        sd-103/0/0.32770 4104 SAT
1069        346        sd-103/0/0.32770 4105 SAT
1070        346        sd-103/0/0.32770 4106 SAT
1071        346        sd-103/0/0.32770 4107 SAT
1074        346        sd-103/0/0.32770 4110 SAT
1075        346        sd-103/0/0.32770 4111 SAT
1076        346        sd-103/0/0.32770 4112 SAT
1077        346        sd-103/0/0.32770 4113 SAT
1078        346        sd-103/0/0.32770 4114 SAT
1079        346        sd-103/0/0.32770 4115 SAT
1080        346        sd-103/0/0.32770 4116 SAT
1081        346        sd-103/0/0.32770 4117 SAT
1082        346        sd-103/0/0.32770 4118 SAT
1085        346        sd-103/0/0.32770 4121 SAT
1097        346        sd-103/0/0.32770 4109 SAT
1189        346        sd-103/0/0.32770 4120 SAT
1190        348        sd-100/0/0.32770 4122 SAT
1363        433        ge-0/0/1.0      0
1364        434        ge-0/0/2.0      0

```


show multicast snooping next-hops satellite

Syntax	<code>show multicast snooping next-hops satellite</code> <code><brief detail extensive></code> <code><nexthop-id <i>nexthop-id</i>></code>
Release Information	Command introduced in Junos OS Release 16.1. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Display detailed multicast next-hop information for satellite device destinations.</p> <p>You can use this command to:</p> <ul style="list-style-type: none">• View the current list of all multicast traffic next hops.• See details about a specified multicast next hop.• Follow aggregation device composite next-hop processing as the aggregation device resolves and updates multicast next-hop table entries for extended port destinations. <p>The aggregation device allocates ECID tags that represent multicast or broadcast destinations behind satellite device extended ports, associates them with the corresponding satellite device virtual interfaces (<code>sd-fpc-id/0/0</code>), and updates multicast next-hop table entries accordingly. More detailed output from this command shows events that result in next-hop table updates.</p>
Options	<p>brief detail extensive—(Optional) Display the specified level of output. The default output level is brief.</p> <p>nexthop-id <i>nexthop-id</i>—Display more detailed multicast satellite next-hop information only for the specified next-hop ID.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• Understanding Multicast Replication in a Junos Fusion on page 869• Egress Multicast Replication on the Satellite Devices on page 875• show multicast snooping route satellite on page 902
List of Sample Output	<p>show multicast snooping next-hops satellite on page 900</p> <p>show multicast snooping next-hops satellite nexthop-id (detail view for a specified next-hop ID) on page 900</p> <p>show multicast snooping next-hops satellite nexthop-id (extensive view for a specified next-hop ID) on page 900</p>
Output Fields	Table 47 on page 899 lists the output fields for the show ethernet-switching flood next-hops satellite command. Output fields are listed in the approximate order in which they appear.

Table 47: *show multicast snooping next-hops satellite Command Output Fields*

Field Name	Field Description	Level of Output
Next-hop ID	Multicast next-hop ID (original multicast next hop used with ingress multicast replication).	All
Forwarding Next-Hop Type	Type of next-hop entry. Values include: <ul style="list-style-type: none"> • COMPOSITE—Composite next hop. 	All
Table	Name of routing or forwarding table for the listed entry.	All
Flags	Flags giving additional information about a next-hop entry. Values include: <ul style="list-style-type: none"> • SAT—The entry is a satellite destination composite next hop for an extended port destination that has been resolved and updated with the corresponding satellite device interface, sd-fpc/0/0, and the associated ECID shown in the label field. • ST—The entry is stale and waiting to be refreshed. • RU—The entry is stale, but is marked to be reused. 	All
Mrouter	Next-hop list for multicast routers connected to the bridge domain or VLAN.	detail extensive
aggregation-device	Next-hop IDs and corresponding interfaces for the composite next hop to reach local multicast destination ports on the aggregation device.	detail extensive
satellite-device-id id	Satellite device ID with the next-hop IDs and corresponding interface names for the composite next-hop chain to reach extended ports that are multicast destinations on that satellite device. When an ECID has been assigned to destination extended ports on a satellite device, this field lists the satellite next-hop ID, the corresponding virtual satellite device interface (sd-fpc-id/0/0), and the allocated ECID (label field).	detail extensive
AE	Link aggregation group interface next-hop IDs and interface names for multicast destination composite next hops.	detail extensive
label	ECID associated with one or more multicast destination extended ports on the satellite device in the satellite-device-id field.	detail extensive
Linked Next-hop	Multicast satellite next-hop ID (next hop used with egress multicast replication).	detail extensive
When	Elapsed time since an event related to a multicast next-hop entry change.	extensive

Table 47: show multicast snooping next-hops satellite Command Output Fields (continued)

Field Name	Field Description	Level of Output
Event	Brief description of the event related to a multicast next-hop entry change.	extensive
Action	Brief description of actions that resulted from the event.	extensive

Sample Output

show multicast snooping next-hops satellite

```
user@host> show multicast snooping next-hops satellite
```

Next-hop ID	Forwarding Next-Hop Type	Table	Flags
2097265	COMPOSITE	inet.0	
2097267	COMPOSITE	inet.0	
2097270	COMPOSITE	inet.0	
2097271	COMPOSITE	inet.0	
2094267	COMPOSITE	inet.0	SAT

show multicast snooping next-hops satellite nexthop-id (detail view for a specified next-hop ID)

```
user@host> show multicast snooping next-hops satellite nexthop-id 524296 detail
```

Next-hop ID	Forwarding Next-Hop Type	Table	Flags
524296	COMPOSITE	inet.0	SAT

```

satellite-device-id 106:
->1839 sd-106/0/0.32770 label=4104
MRouter:
524293
aggregation-device:
->1708 et-0/0/30.0
->1826 xe-0/0/28:1.0
satellite-device-id 100:
->1845 sd-100/0/0.32770 label=4101
satellite-device-id 106:
->1847 sd-106/0/0.32770 label=4103
Linked Next-hop: 524295

```

show multicast snooping next-hops satellite nexthop-id (extensive view for a specified next-hop ID)

```
user@host> show multicast snooping next-hops satellite nexthop-id 1048576 extensive
```

Next-hop ID	Forwarding Next-Hop Type	Table	Flags
1048576	COMPOSITE	default	

```

satellite-device-id 100:
->54297 xe-100/0/12.0
->54299 xe-100/0/13.0
satellite-device-id 101:
->54303 xe-101/0/12.0

```


->54339 xe-101/0/13.0
Linked Next-hop: 1048578

When	Event	Action
1w0d 21:07:51.281	Next-hop linking	Linked with satellite nhid:1048578
1w0d 21:07:51.260	Adding satellite Indirect	DB add
1w0d 21:07:51.260	Processing translate Q	Translating Multicast composite INH sd-100/0/0.32770 ECID:4105 [nhid=627] sd-101/0/0.32770 ECID:4104 [nhid=626] [ECID 4105] nhid:627 --> inhid:1048576 [ECID 4104] nhid:626 --> inhid:1048576 [ECID 4105] nhid:627 --> inhid:1048576 inhid:1048576 added
1w0d 21:07:51.260	inh dependency	[ECID 4105] nhid:627 --> inhid:1048576
1w0d 21:07:51.260	inh dependency	[ECID 4104] nhid:626 --> inhid:1048576
1w0d 21:07:51.254	inh dependency	[ECID 4105] nhid:627 --> inhid:1048576
1w0d 21:07:51.254	Add to translate Q	inhid:1048576 added
1w0d 21:07:51.254	inh dependency	[ECID 4104] nhid:626 --> inhid:1048576
1w0d 21:07:51.241	Translate Q Skip	inhid:1048576: [ECID=0] Next-hop not ready
1w0d 21:07:51.241	Translate Q Skip	inhid:1048576: [ECID=0] Next-hop not ready
1w0d 21:07:51.241	Processing translate Q	Translating Multicast composite INH
1w0d 21:07:51.241	Add to translate Q	inhid:1048576 added
1w0d 21:07:51.241	Add to translate Q	Original INH decoded - Adding to Translate Q
1w0d 21:07:51.241	ECID reference	Added ECID reference-ID:2
1w0d 21:07:51.241	ECID reference	Added ECID reference-ID:1
1w0d 21:07:51.241	Next-hop add	Linked to fwd CNH extension: 0xa67a200 list[4]: {54297 54299 54303 54339 } nhid:1048576 from kernel fwd nhid[619]:

show multicast snooping route satellite

Syntax show multicast snooping route satellite
<brief | detail | extensive>
<bridge-domain-name *bridge-domain-name* | <vlan-name *vlan-name*>
<group *group-address*>
<source *source-address*>
<vswitch-name *virtual-switch-name*>

Release Information Command introduced in Junos OS Release 16.1.
Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.

Description Display Layer 2 multicast routing information (with IGMP snooping) for destination ports on satellite devices.

This command lists multicast routing entries by route prefix and bridge domain name (Junos Fusion Provider Edge) or VLAN name (Junos Fusion Data Center). Each route entry lists the next-hop ID (**NH Index**) used when the aggregation device performs ingress multicast replication. When local replication is enabled and the VLAN has multicast destination extended ports on a satellite device, the aggregation device:

- Creates a satellite device next-hop chain to those multicast destinations through their corresponding satellite device.
- Updates the multicast route entry with a link to the satellite next-hop chain (**Linked NH Index**).

If a multicast route does not have a satellite next-hop chain, **Linked NH Index** is **0**. When the **Linked NH Index** value is non-zero, **NH Index** refers to the *original* next-hop information, but the aggregation device uses the satellite next-hop chain (**Linked NH Index**) for routing multicast traffic to satellite device extended ports. Use the **detail** or **extensive** option to expand the output to include details about the original next-hop and satellite next-hop chains.

Options **brief | detail | extensive**—(Optional) Display the specified level of output. The default output level is **brief**. The **detail** output level expands the original and satellite device next-hop chains for each route displayed. The **extensive** output level includes details about multicast next-hop entry update events used mainly for troubleshooting.

bridge-domain-name *bridge-domain-name*—(Junos Fusion Provider Edge only) Filter output to display bridge domain flooding information only for the specified bridge domain name.

vlan-name *vlan-name*—(Junos Fusion Data Center only) Filter output to display VLAN flooding information only for the specified VLAN name.

group *group-address*—Filter output to display flooding information only for the specified multicast group.

source *source-address*—Filter output to display flooding information only for the specified multicast source.

vswitch-name *virtual-switch-name*—Filter output to display flooding information only for the specified Layer 2 virtual switch.

Required Privilege Level view

Related Documentation

- [Understanding Multicast Replication in a Junos Fusion on page 869](#)
- [Egress Multicast Replication on the Satellite Devices on page 875](#)
- [show multicast snooping next-hops satellite on page 898](#)

List of Sample Output

[show multicast snooping route satellite on page 904](#)
[show multicast snooping route satellite detail on page 905](#)
[show multicast snooping route satellite group on page 906](#)
[show multicast snooping route satellite vlan-name \(for specific VLAN on Junos Fusion Data Center\) on page 906](#)
[show multicast snooping route satellite bridge-domain-name \(for specific bridge domain with detail view on Junos Fusion Provider Edge\) on page 906](#)

Output Fields [Table 48 on page 903](#) lists the output fields for the **show multicast snooping route satellite** command. Output fields are listed in the approximate order in which they appear.

Table 48: show multicast snooping route satellite Command Output Fields

Field Name	Field Description	Level of Output
Route	Multicast route information listed by route prefix under this heading.	All
(S, G/m)	Multicast entry state.	All
Bridge Domain	Bridge domain or VLAN name.	All
NH Index	Multicast next-hop ID (original multicast next hop used with ingress multicast replication).	brief
Linked NH Index	Multicast satellite next-hop ID (next hop used with egress multicast replication).	brief
Next-hop information	Detailed list of next-hop chain information for the original and satellite next-hop chains, listed by original next-hop index (NH Index) and satellite next-hop chain index (Linked NH Index) output field values.	detail extensive
Mrouter	Next-hop chain list for multicast routers connected to the bridge domain or VLAN.	detail extensive

Table 48: show multicast snooping route satellite Command Output Fields (continued)

Field Name	Field Description	Level of Output
aggregation-device	Next-hop IDs and corresponding interfaces for the composite next hop to reach local multicast destination ports on the aggregation device.	detail extensive
satellite-device-id id	Satellite device ID with the next-hop IDs and corresponding interface names for the composite next-hop chain to reach extended ports that are multicast destinations on that satellite device. When an ECID has been assigned to destination extended ports on a satellite device, this field lists the satellite next-hop ID, the corresponding virtual satellite device interface (sd-fpc-id/0/0), and the allocated ECID (label field).	detail extensive
AE	Link aggregation group interface next-hop IDs and interface names multicast destination composite next hops.	detail extensive
label	ECID associated with one or more multicast destination extended ports on the satellite device in the satellite-device-id field.	
When	Elapsed time since an event related to a multicast next-hop entry addition or update.	extensive
Event	Brief description of the event related to a multicast next-hop entry addition or update.	extensive
Action	Brief description of actions that resulted from the event.	extensive

Sample Output

show multicast snooping route satellite

```

user@host> show multicast snooping route satellite

-----VSwitch Instance: default-switch-----
Route: 00.04.00.01.00.00.224.0.0.0.0.0.0.0.00.00/72
  (S, G/m): (*, 224.0.0.0/24)
    Bridge Domain:  bd100
    NH Index:       1048582
    Linked NH Index: 1048620
Route: 00.05.00.01.00.00.224.0.0.0.0.0.0.0.00.00/72
  (S, G/m): (*, 224.0.0.0/24)
    Bridge Domain:  bd1
    NH Index:       1048582
    Linked NH Index: 1048620
Route: 00.06.00.01.00.00.224.0.0.0.0.0.0.0.00.00/72
  (S, G/m): (*, 224.0.0.0/24)
    Bridge Domain:  bd10
    NH Index:       1048582
    Linked NH Index: 1048620

```

show multicast snooping route satellite detail

```

user@host> show multicast snooping route satellite detail

-----VSwitch Instance: default-switch-----
Route: 00.03.00.01.00.00.224.0.0.0.0.0.0.0.00.00/52
(S, G/m): (*, 224.0.0.0/4)
Bridge Domain: VLAN800
Next-hop information:
  524287
    MRouter:
      524286
        aggregation-device:
          ->1708 et-0/0/30.0
          ->1826 xe-0/0/28:1.0
        satellite-device-id 100:
          ->1838 xe-100/0/49:3.0
        satellite-device-id 106:
          ->1834 xe-106/0/11.0
  524294
    MRouter:
      524293
        aggregation-device:
          ->1708 et-0/0/30.0
          ->1826 xe-0/0/28:1.0
        satellite-device-id 100:
          ->1845 sd-100/0/0.32770 label=4101
        satellite-device-id 106:
          ->1847 sd-106/0/0.32770 label=4103
Route: 00.03.00.01.00.00.232.1.1.1.0.0.0.0.00.00/80
(S, G/m): (*, 232.1.1.1/32)
Bridge Domain: VLAN800
Next-hop information:
  524295
    satellite-device-id 106:
      ->1804 xe-106/0/13.0
    MRouter:
      524286
        aggregation-device:
          ->1708 et-0/0/30.0
          ->1826 xe-0/0/28:1.0
        satellite-device-id 100:
          ->1838 xe-100/0/49:3.0
        satellite-device-id 106:
          ->1834 xe-106/0/11.0
  524296
    satellite-device-id 106:
      ->1839 sd-106/0/0.32770 label=4104
    MRouter:
      524293
        aggregation-device:
          ->1708 et-0/0/30.0
          ->1826 xe-0/0/28:1.0
        satellite-device-id 100:
          ->1845 sd-100/0/0.32770 label=4101
        satellite-device-id 106:
          ->1847 sd-106/0/0.32770 label=4103

```

show multicast snooping route satellite group

```
user@host> show multicast snooping route satellite group 225.0.0.1
-----VSwitch Instance: default-switch-----
Route: 00.04.00.01.00.00.225.0.0.1.0.0.0.0.00.00/80
(S, G/m): (*, 225.0.0.1/32)
  Bridge Domain:   bd100
  NH Index:        1048585
  Linked NH Index: 1048621
```

show multicast snooping route satellite vlan-name (for specific VLAN on Junos Fusion Data Center)

```
user@host> show multicast snooping route satellite vlan-name VLAN800 group 232.1.1.1
-----VSwitch Instance: default-switch-----
Route: 00.03.00.01.00.00.232.1.1.1.0.0.0.0.00.00/80
(S, G/m): (*, 232.1.1.1/32)
  Bridge Domain:   VLAN800
  NH Index:        524295
  Linked NH Index: 524296
```

show multicast snooping route satellite bridge-domain-name (for specific bridge domain with detail view on Junos Fusion Provider Edge)

```
user@host> show multicast snooping route satellite bridge-domain-name bd100 group 225.0.0.1
detail
-----VSwitch Instance: default-switch-----
Route: 00.04.00.01.00.00.225.0.0.1.0.0.0.0.00.00/80
(S, G/m): (*, 225.0.0.1/32)
  Bridge Domain: bd100
  Next-hop information:
    1048576
      satellite-device-id 100:
        ->54297 xe-100/0/12.0
        ->54299 xe-100/0/13.0
      satellite-device-id 101:
        ->54303 xe-101/0/12.0
        ->54339 xe-101/0/13.0
    1048578
      satellite-device-id 100:
        ->627 sd-100/0/0.32770 label=4105
      satellite-device-id 101:
        ->626 sd-101/0/0.32770 label=4104
```

show multicast statistics satellite

Syntax	<code>show multicast statistics satellite</code> <code><brief detail ></code>
Release Information	Command introduced in Junos OS Release 16.1. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	Display statistics about multicast satellite routing tables and ECID management.
Options	brief detail —(Optional) Display the specified level of output. The default output level is brief .
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Multicast Replication in a Junos Fusion on page 869
List of Sample Output	show multicast statistics satellite on page 907

Sample Output

show multicast statistics satellite

```

user@host> show multicast statistics satellite
Multicast Statistics:
  Number of flood route entries:      8000
  Number of satellite flood route entries: 8000
  Number of MCINET route entries:    44000
  Number of satellite MCINET route entries: 36000
  Unicast VPLS next-hops(non-satellite): 32
  Number of satellite ECID next-hops: 12
  Number of VPLS composite next-hops: 12000
  Number of satellite composite next-hops: 12000
  Number of Indirect next-hops:      28002
  Number of Satellite Indirect next-hops: 28001
  Number of ECIDs requested:         14
  Number of ECID responses received: 14
  Number of ECID delete messages:    2
  Number of ECID mapping entries in DB: 12
  Number of ECID mapping entries ready: 12

```

show multicast summary satellite

Syntax	show multicast summary satellite
Release Information	Command introduced in Junos OS Release 16.1. Command introduced in Junos OS Release 17.2R1 for Junos Fusion Data Center.
Description	<p>Display summary status of multicast replication features in a Junos Fusion.</p> <p>This command displays whether or not egress multicast replication (also called local replication) is enabled. When local replication is configured, this command displays Egress replication: Enabled, and Egress replication: Disabled otherwise.</p> <p>This command also displays the graceful restart state of the satellite management control plane processes for local replication when these processes are first activated or have been restarted. The Restart phase output field value indicates the phase where the restart process stalled or failed, or displays a Complete message if the restart process completed successfully.</p>
Options	This command has no options.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• Understanding Multicast Replication in a Junos Fusion on page 869• Configuring Egress Replication on a Junos Fusion on page 879• show multicast statistics satellite on page 907
List of Sample Output	show multicast summary satellite on page 908

Sample Output

show multicast summary satellite

```
user@host>show multicast summary satellite
Multicast:
  Restart phase:      Complete (11/11)
  Egress replication: Enabled
```


Class of Service on Junos Fusion Provider Edge

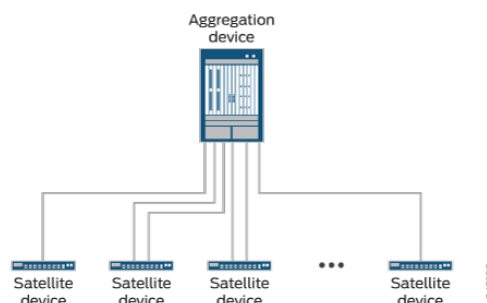
- [Understanding CoS on an MX Series Aggregation Device in Junos Fusion on page 909](#)
- [Configuring CoS on an MX Series Aggregation Device in Junos Fusion on page 914](#)

Understanding CoS on an MX Series Aggregation Device in Junos Fusion

Junos Fusion provides a method of significantly expanding the number of available network interfaces on an *aggregation device* by allowing the aggregation device to add interfaces through interconnections with *satellite devices*. The entire system—the interconnected aggregation device and satellite devices—is called Junos Fusion. Junos Fusion simplifies network administration by appearing in the network topology as a single device, and the single device is managed from a single IP address.

See [Figure 14 on page 909](#) for an illustration of the Junos Fusion topology.

Figure 14: Junos Fusion Topology



An aggregation device can be an MX240, MX480, MX960, or MX2020 Universal Routing Platform that is running Junos OS Release 14.2R3 or later.

This topic describes class of service (CoS) on the different types of ports in Junos Fusion.

This topic covers:

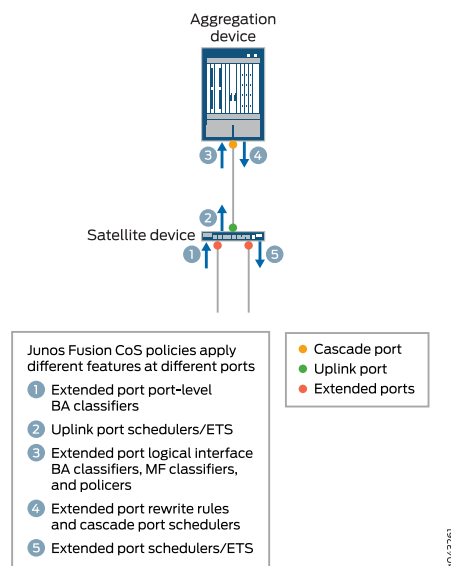
- [Overview of CoS on Different Types of Ports in Junos Fusion on page 910](#)
- [CoS on Extended Ports and Uplink Ports in Junos Fusion on page 911](#)

- [Per-unit and Hierarchical Scheduling on Extended Ports on page 912](#)
- [CoS Hierarchical Port Scheduling with Enhanced Transmission Selection in Junos Fusion on page 913](#)
- [CoS on Cascade Ports in Junos Fusion on page 913](#)

Overview of CoS on Different Types of Ports in Junos Fusion

Figure 15 on page 910 provides an overview of packet flow through Junos Fusion and how CoS features are applied at the different ports.

Figure 15: Junos Fusion CoS Feature Application



All configuration for CoS policies for Junos Fusion is done on the aggregation device. For CoS policies that you define for extended ports, however, different portions of that policy are applied at different points in a packet's path through Junos Fusion. From [Figure 15 on page 910](#):

1. As a packet enters an extended port, any port-level (physical interface-level) behavior aggregate (BA) classifier you define for that port is applied to derive a forwarding class and packet loss priority.
2. As that packet exits the uplink port, you can apply schedulers or enhanced transmission selection (ETS) based on the port-level BA classifier assigned at the ingress extended port.
3. As the packet enters the aggregation device at the cascade port, any multifield classifiers, policers, or logical interface-level BA classifiers you define for the ingress extended port are applied.
4. As the packet exits the aggregation device at the cascade port, any rewrite rules you define for the egress extended port, as well as any schedulers you define for the cascade port, are applied, unless the rewrite rule is associated with an extended port logical interface. Also, the forwarding class determined in the previous step is carried

in the 801.2BR header to the satellite device and used to select the output queue at the egress extended port.

5. Finally, as the packet exits an extended port, any schedulers or ETS you define for that port are applied based on the forwarding class determined by the multifield classifiers, policers, or logical interface-level BA classifiers defined for the ingress extended port.

The following sections provide further information about implementing CoS on each port type in Junos Fusion.

CoS on Extended Ports and Uplink Ports in Junos Fusion

All class of service (CoS) scheduling policies for extended ports and uplink ports on the satellite devices are provisioned on the MX Series aggregation device. Similarly, standard Junos OS CoS commands are issued on the MX Series aggregation device for retrieving extended port and uplink port CoS states and queue statistics. The MX Series aggregation device supports configuring the following CoS features for each extended port and uplink port on each satellite device:

- Behavior aggregate classifiers
- Multifield classifiers
- Input and output policers
- Forwarding classes
- Traffic control profiles
- Schedulers and scheduler maps
- Per-unit and hierarchical schedulers (extended ports only)
- Egress rewrite rules



NOTE: Configuring CoS policies on *satellite devices* (on both extended and uplink ports) has the following restrictions:

- Fixed classifiers are not supported.
- IP precedence classifiers are not supported. DSCP classifiers are supported, however.
- Interpolated drop profiles are not supported.
- The **transmit-rate** option is supported for schedulers. However, the **remainder**, **rate-limit**, and **exact** options are not supported under **transmit-rate**.

While CoS features for satellite device ports are configured on the aggregation device, the actual classification, queueing, and scheduling is performed on the satellite devices. Information on actual traffic shaping is not passed back to the aggregation device. Logical interface statistics for the **show interfaces** command are collected on the aggregate

device and do not include shaping rate data. For actual traffic statistics gathered on satellite device interfaces, use the statistics for the physical interface and not the logical interface.



NOTE: You cannot retrieve CoS statistics on extended ports through an SNMP query. To see CoS statistics on an extended port, use the `show interfaces queue interface-name extended-port-interface-name` and `show interfaces extended-port-interface-name extensive` commands.

Per-unit and Hierarchical Scheduling on Extended Ports

Beginning with Junos OS 17.2R1, Junos Fusion Provider Edge supports per-unit and hierarchical schedulers on extended ports. To support per-unit or hierarchical scheduling on an extended port, all cascade ports on the aggregation device for that extended port must have a queueing chip.



NOTE: Multihomed satellite devices do not support per-unit and hierarchical scheduling.

To enable per-unit scheduling on an extended port, enable the **per-unit-scheduler** option at the `[edit interfaces interface-name]` hierarchy level for the extended port.

To enable hierarchical scheduling on an extended port, enable the **hierarchical-scheduler** option at the `[edit interfaces interface-name]` hierarchy level for the extended port.



NOTE: If you enable hierarchical scheduling on an extended port, you must also explicitly configure schedulers at the interface set or VLAN level.

Junos Fusion treats the cascade ports connecting the aggregation device to the satellite device as aggregated Ethernet ports with aggregation done automatically without configuration. By default the Junos Fusion implementation of hierarchical CoS applies the scheduler parameters across all cascade ports in **scale** mode. Because **scale** mode divides the configured shaper equally across the cascade ports, traffic drops can start before a customer reaches its committed rate for a particular flow. Starting with Junos OS Release 18.1R1, you can set all cascade ports on an aggregation device to be in **replicate** mode, thereby copying scheduler parameters to each level of the aggregated interface member links, and automatically target all of an extended port's traffic to a specific cascade port. To do this, simply enable **target-mode** for the satellite device at the `[edit chassis satellite-management fpc fpc-number]` hierarchy level. For example:

```
[edit]
user@host# show chassis satellite-management
fpc 100 {
    target-mode;
    cascade-ports [ xe-0/0/1:0 xe-1/0/0:1 xe-1/0/0:2 xe-1/0/1:1 ];
}
```



CAUTION: Enabling or disabling **target-mode** disrupts traffic on the satellite device while extended ports are deleted and re-added and cascade ports are reconfigured on the aggregate device.

CoS Hierarchical Port Scheduling with Enhanced Transmission Selection in Junos Fusion

In Junos Fusion, the satellite device can be either a QFX5100 or an EX4300 device. The QFX5100 supports enhanced transmission selection (ETS), which is described in IEEE 802.1Qaz. Configuration support for ETS has been added to the MX Series device only for satellite device ports that support this feature. If ETS is configured on the MX Series aggregation device for a satellite device port that does not support ETS, the satellite device converts the ETS configuration to port scheduler.



NOTE: Local ports on the MX Series aggregation device do not support ETS.

Related Documentation

- *Understanding CoS Hierarchical Port Scheduling (ETS)*
- *CoS on Virtual Chassis Fabric (VCF) EX4300 Leaf Devices (Mixed Mode)*

CoS on Cascade Ports in Junos Fusion

When a cascade port is created, two logical interfaces are automatically created:

- One in-band management logical interface (assigned unit 32769) for traffic that only flows between the aggregation device and the satellite devices, such as keepalives, for provisioning information, and for software updates.
- One for data logical interface (assigned unit 32770) for regular traffic that flows into and out of Junos Fusion.

Per-unit scheduling is automatically enabled on the cascade port to support multiple queues on each of the logical interfaces.



NOTE: All cascade ports must be configured on Modular Port Concentrators (MPCs) that support per-unit scheduling.

50 Mbps of bandwidth is reserved for the management logical interface. The remaining bandwidth is available to the data logical interface. A shaping rate of 10 percent is also applied to the management logical interface, which means it can use up to 10 percent of the full interface bandwidth, if available.

The default scheduling policy is applied to the data logical interface. This reserves 95 percent of the available bandwidth and buffer space for the best effort forwarding class (mapped to queue 0) and 5 percent for the network control forwarding class (mapped

to queue 3). You can create custom forwarding classes and schedulers by applying a custom scheduler map to this logical interface.

Release History Table

Release	Description
18.1R1	Starting with Junos OS Release 18.1R1, you can set all cascade ports on an aggregation device to be in replicate mode, thereby copying scheduler parameters to each level of the aggregated interface member links, and automatically target all of an extended port's traffic to a specific cascade port.
17.2R1	Beginning with Junos OS 17.2R1, Junos Fusion Provider Edge supports per-unit and hierarchical schedulers on extended ports.

Related Documentation

- [Junos Fusion Provider Edge Overview on page 3](#)
- [Understanding Junos Fusion Provider Edge Components on page 5](#)
- [Configuring CoS on an MX Series Aggregation Device in Junos Fusion on page 914](#)

Configuring CoS on an MX Series Aggregation Device in Junos Fusion

Junos Fusion significantly expands the number of available network interfaces on an *aggregation device* by allowing the aggregation device to add interfaces through interconnections with *satellite devices*. The entire system—the interconnected aggregation device and satellite devices—is called Junos Fusion. Junos Fusion simplifies network administration by appearing in the network topology as a single device, and the single device is managed from a single IP address.

This topic describes how to configure CoS on the different types of ports in Junos Fusion.

This topic covers:

- [Configuring Behavior Aggregate Classifiers on Satellite Device Extended Ports on page 914](#)
- [Configuring Rewrite Rules on Satellite Device Extended Ports on page 916](#)
- [Configuring CoS Hierarchical Port Scheduling with Enhanced Transmission Selection on Satellite Device Ports on page 917](#)
- [Changing the Default Scheduling Policy on an Aggregated Device Cascade Port on page 919](#)

Configuring Behavior Aggregate Classifiers on Satellite Device Extended Ports

Normally, you apply a behavior aggregate (BA) classifier to a logical interface on an MX Series device at the `[edit class-of-service interfaces interface-name unit logical-unit-number]` hierarchy level. When traffic from a satellite device extended port reaches the aggregation device, the BA classifier configured for the logical interface level of the satellite device extended port is applied the same as it is for traffic from other non-extended ports to help determine the forwarding class of the traffic; policers and multifield classifiers can also factor in determining the forwarding class of the traffic. When the aggregation

devices sends the traffic out to the satellite device, the forwarding class is carried in the 801.2BR header. The satellite device then uses the forwarding class to select the output queue at the *egress extended port*.

You can also apply a BA classifier at the physical interface level of an extended port. This classifier is used to determine the output queue at the *uplink port* of the satellite device.



NOTE: IP precedence classifiers are not supported on extended ports at the physical interface level. DSCP classifiers are supported, however.



NOTE: You cannot apply a physical interface-level classifier on an MX Series local port.

To add a behavior aggregate classifier to the physical interface level of a satellite device extended port in Junos Fusion:

1. Define the classifier.

```
[edit class-of-service]
user@mx-agg-device#set classifiers dscp dscp-1 forwarding-class best-effort-3
loss-priority low code-points 001010
```

2. Apply the classifier to the physical extended port.

```
[edit class-of-service]
user@mx-agg-device#set interfaces xe-100/0/33 classifiers dscp dscp-1
```

3. Commit the changes and then confirm the configuration.

```
[edit class-of-service]
user@mx-agg-device# show
classifiers {
  dscp dscp-1 {
    forwarding-class best-effort-3 {
      loss-priority low code-points 001010;
    }
  }
}
interfaces {
  xe-100/0/33 {
    classifiers {
      dscp dscp-1;
    }
  }
}
```

In the above configuration example, packets entering port xe-100/0/33 with a DSCP value of **001010** will be assigned a forwarding class of **best-effort-3** to select the output queue at the uplink port as the packet travels from the satellite device to the aggregation device.

- See Also**
- [Understanding Junos Fusion Ports on page 13](#)
 - *Understanding How Behavior Aggregate Classifiers Prioritize Trusted Traffic*
 - *Overview of Assigning Service Levels to Packets Based on Multiple Packet Header Fields*

Configuring Rewrite Rules on Satellite Device Extended Ports

You apply rewrite rules to logical interfaces on satellite device extended ports.

To add a rewrite rule to a satellite device extended port in a Junos Fusion:

1. Define the rewrite rule.

```
[edit class-of-service]
user@mx-agg-device#set rewrite-rules ieee-802.1 rewrite1p forwarding-class
best-effort loss-priority low code-point 010
```

2. Apply the rewrite rule to a logical interface.

```
[edit class-of-service]
user@mx-agg-device#set interfaces xe-108/0/47 unit 0 rewrite-rules ieee-802.1
rewrite1p
```

3. Commit the changes and then confirm the configuration.

```
[edit class-of-service]
user@mx-agg-device# show
rewrite-rules {
    ieee-802.1 rewrite1p {
        forwarding-class best-effort {
            loss-priority low code-point 010;
        }
    }
}
interfaces {
    xe-108/0/47 {
        unit 0 {
            rewrite-rules {
                ieee-802.1 rewrite-1p;
            }
        }
    }
}
```

In Junos OS, rewrite rules only look at the forwarding class and packet loss priority of the packet (as assigned by a behavior aggregate or multifield classifier at ingress), not at the incoming CoS value, to determine the CoS value to write to the packet header at egress. The above configuration means that, for any packet exiting the xe-108/0/47.0 interface that has a forwarding class of **best-effort** and a packet loss priority of **low**, the ieee-802.1 CoS value will be rewritten to **010**.

- See Also**
- [Understanding Junos Fusion Ports on page 13](#)
 - *Rewriting Packet Headers to Ensure Forwarding Behavior*

Configuring CoS Hierarchical Port Scheduling with Enhanced Transmission Selection on Satellite Device Ports

You can configure enhanced transmission selection (ETS) for both extended ports and uplink ports on satellite devices. The configuration is done on the aggregation device. To configure ETS for a satellite device port in Junos Fusion:

1. Define the traffic control profiles.

```
[edit class-of-service]
user@mx-agg-device#set traffic-control-profiles be-tcp-1 scheduler-map be-map-1
user@mx-agg-device#set traffic-control-profiles be-tcp-1 shaping-rate percent 80
user@mx-agg-device#set traffic-control-profiles be-tcp-1 guaranteed-rate 4g
user@mx-agg-device#set traffic-control-profiles be-tcp-3 scheduler-map be-map-3
user@mx-agg-device#set traffic-control-profiles be-tcp-3 shaping-rate percent 80
user@mx-agg-device#set traffic-control-profiles be-tcp-3 guaranteed-rate 6g
```

2. Define the forwarding class sets.

```
[edit class-of-service]
user@mx-agg-device#set forwarding-class-sets FC-1 class best-effort-1
user@mx-agg-device#set forwarding-class-sets FC-1 class best-effort-2
user@mx-agg-device#set forwarding-class-sets FC-3 class best-effort-3
```

3. Apply the forwarding class sets to a satellite device port.

```
[edit class-of-service]
user@mx-agg-device#set interfaces xe-100/0/26 forwarding-class-set FC-1
output-traffic-control-profile be-tcp-1
user@mx-agg-device#set interfaces xe-100/0/26 forwarding-class-set FC-3
output-traffic-control-profile be-tcp-3
```

4. Commit the changes and then confirm the configuration.

```
[edit class-of-service]
user@mx-agg-device# show
traffic-control-profiles {
  be-tcp-1 {
    scheduler-map be-map-1;
    shaping-rate percent 80;
    guaranteed-rate 4g;
  }
  be-tcp-3 {
    scheduler-map be-map-3;
    shaping-rate percent 80;
    guaranteed-rate 6g;
  }
}
forwarding-class-sets {
  FC-1 {
    class best-effort-1;
    class best-effort-2;
  }
  FC-3 {
    class best-effort-3;
  }
}
```

```

}
interfaces {
  xe-100/0/26 {
    forwarding-class-set {
      FC-1 {
        output-traffic-control-profile be-tcp-1;
      }
      FC-3 {
        output-traffic-control-profile be-tcp-3;
      }
    }
  }
}

```

5. Run **show interfaces queue egress *interface name*** to show the statistics of transmitted and dropped packets for each queue on the satellite device port.

```

user@mx-agg-device> show interfaces queue egress xe-100/0/26:0
Physical interface: xe-100/0/26:0 (Extended Port, Enabled, Physical link is
Up
  Interface index: 3040, SNMP ifIndex: 1085
  Forwarding classes: 16 supported, 4 in use
  Egress queues: 8 supported, 4 in use
  Queue: 0, Forwarding classes: best-effort-1
    Queued:
      Packets          :                0                0 pps
      Bytes            :                0                0 bps
    Transmitted:
      Packets          :             7182746             24998 pps
      Bytes            :          4195267965          116853536 bps
      Tail-dropped packets :                0                0 pps
      RL-dropped packets :                0                0 pps
      RL-dropped bytes   :                0                0 bps
      RED-dropped packets :                0                0 pps
      RED-dropped bytes  :                0                0 bps
  Queue: 1, Forwarding classes: best-effort-2
    Queued:
      Packets          :                0                0 pps
      Bytes            :                0                0 bps
    Transmitted:
      Packets          :                0                0 pps
      Bytes            :                0                0 bps
      Tail-dropped packets :                0                0 pps
      RL-dropped packets :                0                0 pps
      RL-dropped bytes   :                0                0 bps
      RED-dropped packets :                0                0 pps
      RED-dropped bytes  :                0                0 bps
  Queue: 2, Forwarding classes: best-effort-3
    Queued:
      Packets          :                0                0 pps
      Bytes            :                0                0 bps
    Transmitted:
      Packets          :                0                0 pps
      Bytes            :                0                0 bps
      Tail-dropped packets :                0                0 pps
      RL-dropped packets :                0                0 pps
      RL-dropped bytes   :                0                0 bps
      RED-dropped packets :                0                0 pps
      RED-dropped bytes  :                0                0 bps
  Queue: 3, Forwarding classes: network-control
    Queued:

```

Packets	:	0	0 pps
Bytes	:	0	0 bps
Transmitted:			
Packets	:	14505	1 pps
Bytes	:	11746583	1448 bps
Tail-dropped packets	:	0	0 pps
RL-dropped packets	:	0	0 pps
RL-dropped bytes	:	0	0 bps
RED-dropped packets	:	0	0 pps
RED-dropped bytes	:	0	0 bps



NOTE: Queued statistics for each queue are not available for satellite device ports and will always show 0.

- See Also**
- *Understanding CoS Hierarchical Port Scheduling (ETS)*
 - *CoS on Virtual Chassis Fabric (VCF) EX4300 Leaf Devices (Mixed Mode)*
 - *Example: Configuring CoS Hierarchical Port Scheduling (ETS)*

Changing the Default Scheduling Policy on an Aggregated Device Cascade Port

When a cascade port is created, two logical interfaces are automatically created:

- One in-band management logical interface (assigned unit 32769) for traffic that only flows between the aggregation device and the satellite devices, such as keepalives, for provisioning information, and for software updates.
- One for data logical interface (assigned unit 32770) for regular traffic that flows into and out of Junos Fusion.

Let's say, for example, that interface xe-0/0/1 is configured as a cascade port. The command **show interfaces xe-0/0/1 terse** produces output similar to the following:

```
user@mx-agg-device# run show interfaces xe-0/0/1 terse
Interface      Admin Link Proto  Local          Remote
xe-0/0/1       up    up
xe-0/0/1.32769 up    up  inet   10.0.0.5/30
xe-0/0/1.32770 up    up  bridge
```

The control logical interface (unit 32769) is automatically assigned an internal traffic control profile (`__cp_control_tc_prof`) that guarantees 50 Mbps of bandwidth for the logical interface, a 10 percent shaping rate, and the default scheduling policy. The default scheduling policy is applied to the data logical interface. For example:

```
user@mx-agg-device# run show class-of-service interface xe-0/0/1
Physical interface: xe-0/0/1, Index: 144
Maximum usable queues: 8, Queues in use: 4
Scheduler map: <default>, Index: 2
Congestion-notification: Disabled

Logical interface: xe-0/0/1.32769, Index: 344
```

Object	Name	Type	Index
Traffic-control-profile	__cp_control_tc_prof	Output	17227
Classifier	ipprec-compatibility	ip	13

Logical interface: xe-0/0/1.32770, Index: 343

Object	Name	Type	Index
Scheduler-map	<default>	Output	2

and:

```
user@mx-agg-device# run show class-of-service scheduler-hierarchy interface
xe-0/0/1
```

Interface/ Resource name	Shaping rate kbits	Guaranteed rate kbits	Guaranteed/ Excess priority		Queue weight	Excess weight high/low	
xe-0/0/1.32770	10000000	0				1	1
BE	10000000	0	Low	Low	118		
NC	10000000	0	Low	Low	6		
xe-0/0/1.32769	1000000	50000				62	62
BE	1000000	47500	Low	Low	118		
NC	1000000	2500	Low	Low	6		

You can create custom forwarding classes and schedulers for the data logical interface by applying a customer scheduler map to that logical interface. For example, to apply a customer scheduler policy to the data logical interface:

1. Create customer schedulers.

```
[edit class-of-service]
user@mx-agg-device#set schedulers AF_SCH_CORE transmit-rate percent 40
user@mx-agg-device#set schedulers AF_SCH_CORE buffer-size percent 40
user@mx-agg-device#set schedulers AF_SCH_CORE priority medium-high
user@mx-agg-device#set schedulers BE_SCH_CORE transmit-rate percent 10
user@mx-agg-device#set schedulers BE_SCH_CORE buffer-size percent 10
user@mx-agg-device#set schedulers BE_SCH_CORE priority low
user@mx-agg-device#set schedulers EF_SCH_CORE transmit-rate percent 40
user@mx-agg-device#set schedulers EF_SCH_CORE buffer-size percent 40
user@mx-agg-device#set schedulers EF_SCH_CORE priority medium-low
user@mx-agg-device#set schedulers NC_SCH_CORE transmit-rate percent 10
user@mx-agg-device#set schedulers NC_SCH_CORE buffer-size percent 10
user@mx-agg-device#set schedulers NC_SCH_CORE priority high
```

2. Create a scheduler map.

```
[edit class-of-service]
user@mx-agg-device#set scheduler-maps CORE_SCHED_MAP forwarding-class BE
scheduler BE_SCH_CORE
user@mx-agg-device#set scheduler-maps CORE_SCHED_MAP forwarding-class EF
scheduler EF_SCH_CORE
user@mx-agg-device#set scheduler-maps CORE_SCHED_MAP forwarding-class AF
scheduler AF_SCH_CORE
user@mx-agg-device#set scheduler-maps CORE_SCHED_MAP forwarding-class NC
scheduler NC_SCH_CORE
```

3. Apply the scheduler map to the data logical interface.

```
[edit class-of-service]
user@mx-agg-device#set interfaces xe-0/0/1 unit 32770 scheduler-map
CORE_SCHED_MAP
```

4. Commit the changes and then confirm the configuration.

```
[edit class-of-service]
user@mx-agg-device# show
interfaces {
  xe-0/0/1 {
    unit 32770 {
      scheduler-map CORE_SCHED_MAP;
    }
  }
}
scheduler-maps {
  CORE_SCHED_MAP {
    forwarding-class BE scheduler BE_SCH_CORE;
    forwarding-class EF scheduler EF_SCH_CORE;
    forwarding-class AF scheduler AF_SCH_CORE;
    forwarding-class NC scheduler NC_SCH_CORE;
  }
}
schedulers {
  BE_SCH_CORE {
    transmit-rate percent 10;
    buffer-size percent 10;
    priority low;
  }
  EF_SCH_CORE {
    transmit-rate percent 40;
    buffer-size percent 40;
    priority medium-low;
  }
  AF_SCH_CORE {
    transmit-rate percent 40;
    buffer-size percent 40;
    priority medium-high;
  }
  NC_SCH_CORE {
    transmit-rate percent 10;
    buffer-size percent 10;
    priority high;
  }
}
```

5. Verify your changes.

```
user@mx-agg-device# run show class-of-service interface xe-0/0/1
Physical interface: xe-0/0/1, Index: 144
Maximum usable queues: 8, Queues in use: 4
Scheduler map: <default>, Index: 2
Congestion-notification: Disabled
```

```
Logical interface: xe-0/0/1.32769, Index: 344
```

Object	Name	Type	Index
Traffic-control-profile	__cp_control_tc_prof	Output	17227
Classifier	ipprec-compatibility	ip	13

```

Logical interface: xe-0/0/1.32770, Index: 343
Object      Name      Type      Index
Scheduler-map  CORE_SCHED_MAP  Output    23433

```

and:

```

user@mx-agg-device# run show class-of-service scheduler-hierarchy interface
xe-0/0/1
Interface/
Resource name      Shaping rate    Guaranteed rate  Guaranteed/Excess  Queue weight  Excess weight
                  kbits          kbits           priority           high/low
xe-0/0/1.32770    10000000        0
1
  BE              10000000        0      Low  Low      12
  EF              10000000        0  Medium  Low      50
  AF              10000000        0  Medium  Low      50
  NC              10000000        0    High  High      12
xe-0/0/1.32769    1000000         50000
62
  BE              1000000        47500     Low  Low     118
  NC              1000000         2500     Low  Low       6

```

- See Also**
- [How Schedulers Define Output Queue Properties](#)
 - [Default Schedulers Overview](#)

- Related Documentation**
- [Understanding CoS on an MX Series Aggregation Device in Junos Fusion on page 909](#)