



Junos[®] OS

Chassis-Level Feature Guide

Modified: 2019-06-27



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Junos® OS Chassis-Level Feature Guide

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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.

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

Using the Examples in This Manual

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

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

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

Merging a Full Example

To merge a full example, follow these steps:

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

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

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

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

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

Merging a Snippet

To merge a snippet, follow these steps:

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

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

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

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

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

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

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

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

Documentation Conventions

Table 1 on page xxv 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 xxvi defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

| Convention | Description | Examples |
|--------------------------------|---|--|
| Bold text like this | Represents text that you type. | To enter configuration mode, type the configure command: user@host> configure |
| Fixed-width text like this | Represents output that appears on the terminal screen. | user@host> show chassis alarms No alarms currently active |
| <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. | Configure the machine's domain name: [edit] root@# set system domain-name <i>domain-name</i> |
| Text like this | Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components. | <ul style="list-style-type: none"> To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level. The console port is labeled CONSOLE. |
| < > (angle brackets) | Encloses optional keywords or variables. | stub <default-metric <i>metric</i> >; |
| (pipe symbol) | Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity. | broadcast multicast (<i>string1</i> <i>string2</i> <i>string3</i>) |
| # (pound sign) | Indicates a comment specified on the same line as the configuration statement to which it applies. | rsvp { # Required for dynamic MPLS only |
| [] (square brackets) | 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. | [edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } } |
| ;(semicolon) | Identifies a leaf statement at a configuration hierarchy level. | |

GUI Conventions

Table 2: Text and Syntax Conventions (continued)

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

Documentation Feedback

We encourage you to provide feedback so that we can improve our documentation. You can use either of the following methods:

- 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).

Requesting Technical Support

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

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

Self-Help Online Tools and Resources

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

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

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

Creating a Service Request with JTAC

You can create a service request with JTAC on the Web or by telephone.

- Visit <https://myjuniper.juniper.net>.
- 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://support.juniper.net/support/requesting-support/>.

CHAPTER 1

Overview

- [Chassis-Level Features Overview on page 29](#)

Chassis-Level Features Overview

The Junos Software enables you to configure several properties of the router and many PIC-level features at the **[edit chassis]** hierarchy level. Some of the features are specific to M Series, MX Series, J Series, or T Series routers, while some others are common across all routers.

To configure router chassis properties, you can include the configuration statements available at the **[edit chassis]** hierarchy level.



NOTE: Statements at the **[edit chassis redundancy]** hierarchy level are described in the *JUNOS High Availability Configuration Guide*.



NOTE: The configuration statements at the **[edit chassis lcc]** hierarchy level apply only to a routing matrix based on a TX Matrix router or a TX Matrix Plus router. For information about a routing matrix composed of a TX Matrix router and T640 routers, see *TX Matrix Router and T640 Router Configuration Overview* and the *TX Matrix Router Hardware Guide*. For information about a routing matrix composed of a TX Matrix Plus router and T1600 or T4000 routers, see *TX Matrix Plus Router Configuration Overview* and the *TX Matrix Plus Router Hardware Guide*.



NOTE: The sanity-poll configuration statements at the **[edit chassis fpc slot-number]** hierarchy level apply only to T Series routers. You can also configure sanity-poll for routing matrix based on a TX Matrix router or TX Matrix Plus router at the hierarchy level **[edit chassis lcc number fpc number]**.

CHAPTER 2

MX Series MPCs

- [Understanding MX Series MPCs on page 31](#)

Understanding MX Series MPCs

- [MPC1 on MX Series Routers Overview on page 31](#)
- [MPC2 on MX Series Routers Overview on page 32](#)
- [16-Port 10-Gigabit Ethernet MPC on MX Series Routers \(16x10GE 3D MPC\) Overview on page 34](#)
- [Configuring the Number of Active Ports on 16-Port MPCs of MX Series Routers on page 34](#)
- [MPC3E on MX Series Routers Overview on page 35](#)
- [MPC4E on MX Series Routers Overview on page 39](#)
- [MPC5E on MX Series Routers Overview on page 40](#)
- [Guidelines for Identifying Active PICs on MPC5E \(MPC5E-40G10G\) on page 42](#)
- [MPC6E on MX Series Routers Overview on page 44](#)
- [MPC7E \(Multi-Rate\) on MX Series Routers Overview on page 45](#)
- [MPC7E 10G on MX Series Routers Overview on page 47](#)
- [MPC8E on MX Series Routers Overview on page 49](#)
- [MPC9E on MX Series Routers Overview on page 51](#)
- [MX10003 MPC on MX10003 Router Overview on page 52](#)
- [MPC and MIC Lane LED Scheme Overview on page 53](#)
- [JNP10K-LC2101 MPC on MX10008 Routers Overview on page 56](#)
- [MX204 Router Overview on page 57](#)
- [MX204 LED Scheme Overview on page 57](#)
- [MPC10E-15C-MRATE Overview on page 58](#)

MPC1 on MX Series Routers Overview

In Junos OS Release 10.2 and later, MX960, MX480, MX240, MX2008, MX2010, and MX2020 routers support the Modular Port Concentrator (MPC) MPC1. This MPC provides scalability in bandwidth, subscribers, and services capabilities of the routers.

The MPC interoperates with existing MX Series line cards, including Dense Port Concentrators (DPCs) and Modular Port Concentrators (MPCs).

Starting in JunosOS Release 18.3R1, on MX240, MX480, and MX960 routers, the MIC-MACSEC-20GE with SFP/SFP+ ports are supported on MPC1 line card.

The MIC-MACSEC-20GE includes MACSEC-enabled ports with 256-bit encryption (GCM-AES-256 and GCM-AES-XPB-256). For more information, refer to *Understanding Interface Naming Conventions for MIC-MACSEC-20GE*.

| MPC Name | MPC Model Number | First Junos OS Release on MX240, MX480, and MX960 Routers | First Junos OS Release on MX2008 Routers | First Junos OS Release on MX2010 Routers | First Junos OS Release on MX2020 Routers |
|----------------|------------------|---|--|--|--|
| <i>MPC1</i> | MX-MPC1-3D | 10.2 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC1E</i> | MX-MPC1E-3D | 11.2R4 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC1 Q</i> | MX-MPC1-3D-Q | 10.2 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC1E Q</i> | MX-MPC1E-3D-Q | 11.2R4 | 15.1F7 | 12.3 | 12.3 |

The following are some of the key features of the MPC:

- Contains two slots for Modular Interface Cards (MICs) labeled PIC0/1 and PIC2/3 .
- Supports LAN-PHY mode with the throughput of 10.31 Gbps and WAN-PHY mode with the throughput of 9.95 Gbps
- Supports small form-factor pluggable plus (SFP+) transceivers. For a list of supported transceivers, see the [MX Series Interface Module Reference](#).
- Supports intelligent oversubscription services.
- Supports one full-duplex, 16-Gigabit Ethernet tunnel interface for each Packet Forwarding Engine.

For information about the supported and unsupported Junos OS features for this MPC, see “Protocols and Applications Supported by MX Series MPCs” in the [MX Series Interface Module Reference](#).

MPC2 on MX Series Routers Overview

In Junos OS Release 10.2 and later, MX240, MX480, MX960, MX2008, MX2010, and MX2020 routers support a new Modular Port Concentrator (MPC), MPC2. This MPC is a fixed-port MPC. On MX2020 and MX2010 routers, MPC2 is housed in an adapter card (ADC). MPC2 is available in the following models: MX-MPC2-3D(MPC2), MX-MPC2-3D-Q(MPC2 Q), and MX-MPC2-3D-EQ(MPC2 EQ). This MPC provides scalability in bandwidth, subscribers, and services capabilities of the routers.

Starting in JunosOS Release 18.3R1, on MX240, MX480, and MX960 routers, the MIC-MACSEC-20GE with SFP/SFP+ ports are supported on MPC2 and MPC2E line cards.

The MIC-MACSEC-20GE includes MACSEC-enabled ports with 256-bit encryption (GCM-AES-256 and GCM-AES-XPB-256). For more information, refer to *Understanding Interface Naming Conventions for MIC-MACSEC-20GE*.

| MPC Name | MPC Model Number | First Junos OS Release on MX240, MX480, and MX960 Routers | First Junos OS Release on MX2008 Routers | First Junos OS Release on MX2010 Routers | First Junos OS Release on MX2020 Routers |
|-------------------|------------------|---|--|--|--|
| <i>MPC2</i> | MX-MPC2-3D | 10.1 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC2E</i> | MX-MPC2E-3D | 11.2R4 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC2 Q</i> | MX-MPC2-3D-Q | 10.1 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC2E Q</i> | MX-MPC2E-3D-Q | 11.2R4 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC2 EQ</i> | MX-MPC2-3D-EQ | 10.1 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC2E EQ</i> | MX-MPC2E-3D-EQ | 11.2R4 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC2E P</i> | MX-MPC2E-3D-P | 12.2 | 15.1F7 | 12.3 | 12.3 |
| <i>MPC2E NG</i> | MX-MPC2E-3D-NG | 14.1R4, 14.2R3 and Junos Continuity | 15.1F7 | 14.1R4, 14.2R3 and Junos Continuity | 14.1R4, 14.2R3 and Junos Continuity |
| | | 15.1 | | 15.1 | 15.1 |
| <i>MPC2E NG Q</i> | MX-MPC2E-3D-NG-Q | 14.1R4, 14.2R3 and Junos Continuity | 15.1F7 | 14.1R4, 14.2R3 and Junos Continuity | 14.1R4, 14.2R3 and Junos Continuity |
| | | 15.1 | | 15.1 | 15.1 |

The following are some of the key features of the MPC:

- Contains two slots for Modular Interface Cards (MICs) labelled PIC0/1 and PIC2/3 .
- Supports line-rate throughput of up to 80 Gbps
- Supports LAN-PHY mode with the throughput of 10.3125 Gbps and WAN-PHY mode with the throughput of 9.953 Gbps
- Supports small form-factor pluggable plus (SFP+) transceivers. For a list of supported transceivers, see the [MX Series Interface Module Reference](#).
- Supports intelligent oversubscription services.

For information about the supported and unsupported Junos OS features for this MPC, see *Protocols and Applications Supported on MPCs for MX Series Routers*.

16-Port 10-Gigabit Ethernet MPC on MX Series Routers (16x10GE 3D MPC) Overview

In Junos OS Release 10.1 and later, MX960, MX480, and MX240 routers support the 16-port 10-Gigabit Ethernet MPC (16x10GE 3D MPC) with model numbers MPC-3D-16XGE-SFPP-R-B and MPC-3D-16XGE-SFPP. This MPC provides scalability in bandwidth, subscribers, and services capabilities of the routers.

The following are some of the key features of the 16x10GE 3D MPC:

- Contains 16 built-in 10-Gigabit Ethernet ports in groups of four each. It does not contain separate slots for Modular Interface Cards (MICs).
- Supports LAN-PHY mode with the following throughput:
 - 120 Gbps on Junos release 11.3 and earlier (SCB)
 - 160 Gbps on Junos release 11.4 and later (SCBE)
 - 160 Gbps on Junos release 13.3 and later (SCBE2)



NOTE: The 16x10GE 3D MPC does not support WAN-PHY mode.

- Supports small form-factor pluggable transceivers of the SFP+ standard. For a list of supported SFPs, see the [MX Series Interface Module Reference](#).
- Supports an effective line rate of twelve 10-Gigabit Ethernet ports. If all sixteen 10-Gigabit Ethernet ports are used, the line card is oversubscribed in the ratio of 4:3.
- Supports intelligent oversubscription services.
- Supports one full-duplex 10-Gigabit Ethernet tunnel interface for each Packet Forwarding Engine.

For information about the supported and unsupported Junos OS features for this MPC, see “Protocols and Applications Supported by MX Series MPCs” in the [MX Series Interface Module Reference](#).

Configuring the Number of Active Ports on 16-Port MPCs of MX Series Routers

You can disable a sub-set of the physical ports available on the Packet Forwarding Engines of the 16x10GE 3D MPC, and for PICs installed in MPC3, MPC4, MPC5, and MPC6.

Two of the most common reasons for disabling ports are explained below.

- **Ensure guaranteed bandwidth by preventing oversubscription**—The 16x10GE 3D MPC supports one 10-Gigabit Ethernet tunnel interface for each Packet Forwarding Engine. The effective line-rate bandwidth of the MPC is 12 ports because of an oversubscription ratio of 4:3. Therefore, configuring a tunnel interface might further result in the Packet Forwarding Engines being oversubscribed. To prevent such oversubscription and to ensure a guaranteed bandwidth, include the **number-of-ports** configuration statement to disable one or two ports per Packet Forwarding Engine.

- **Enable Switch Control Board (SCB) redundancy**—For maximum bandwidth capabilities (12-port line-rate bandwidth), the 16x10GE 3D MPC uses all the available SCBs (three SCBs for an MX960 router, two SCBs for an MX480 or MX240 router) actively in the chassis.

If SCB redundancy (2+1 SCBs on an MX960 router or 1+1 SCB on an MX480 or MX240 router) is required, ports on the line card can be disabled by setting the number of usable ports per line card to 8. In such a case, the third and fourth ports (ports 0/2-3, 1/2-3, 2/2-3, 3/2-3) on every Packet Forwarding Engine are disabled.

To configure the number of active ports on the 16x10GE 3D MPC, include the **number-of-ports active-ports** configuration statement at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis fpc slot-number]
number-of-ports (8 | 12);
```

To configure the number of active ports on a PIC in an MPC3, MPC4, MPC5, or MPC6, include the **number-of-ports active-ports** configuration statement at the **[edit chassis fpc slot-number pic pic-number]** hierarchy level:

```
[edit chassis fpc slot-number pic pic-number]
number-of-ports (8 | 12);
```

Specify either 8 or 12 ports using this statement. When eight active ports are configured, two ports per Packet Forwarding Engine are disabled, and the LEDs on the MPC are set to **yellow**. When you specify 12 active ports, one port per Packet Forwarding Engine is disabled and the corresponding LED is set to **yellow**. When you do not include this statement in the configuration, all 16 default ports on the MPC are active.



NOTE:

- Committing the configuration after including the **number-of-ports active-ports** configuration statement brings down the Ethernet interfaces for all the ports on the MPC before the ports configuration becomes active.
- A minimum of one high-capacity fan tray is necessary for meeting the cooling requirements of the MPC. The Junos OS generates a chassis yellow alarm recommending fan tray upgrade for optimal performance, if the MX router chassis contains an old fan tray.

For more information about the 16x10GE 3D MPC, see the [MX Series Interface Module Reference](#).

MPC3E on MX Series Routers Overview

MX960, MX480, MX240, and MX2020 routers support the MPC3E (MX-MPC3E-3D) with two MIC slots. The MPC provides the connection between the customer's Ethernet interfaces and the routing fabric of the MX Series chassis.

The MPC3E supports these MICs as field-replaceable units (FRUs):

- 100-Gigabit Ethernet MIC with CFP (model number MIC3-3D-1X100GE-CFP)
- 100-Gigabit Ethernet MIC with CXP (model number MIC3-3D-1X100GE-CXP)
- 10-Gigabit Ethernet MIC with SFP+ (10 Ports) (model number MIC3-3D-10XGE-SFPP)
- 2-port 40-Gigabit Ethernet MIC with QSFP+ (model number MIC3-3D-2X40GE-QSFPP)
- 20-port Enhanced Gigabit Ethernet MIC with SFP (E) (model number MIC-3D-20GE-SFP-E)

The MPC3E also supports these legacy MICs:

- 20-port Gigabit Ethernet MIC with SFP (model number MIC-3D-20GE-SFP)
- 2-port 10-Gigabit Ethernet MICs with XFP (model number MIC-3D-2XGE-XFP)
- 20-port Gigabit Ethernet MIC with SFP/SFP+ (model number MIC-MACSEC-20GE)

Starting in JunosOS Release 18.3R1, on MX240, MX480, and MX960 routers, the MIC-MACSEC-20GE with SFP/SFP+ ports are supported on MPC3 and MPC3E line cards.

The MIC-MACSEC-20GE includes MACSEC-enabled ports with 256-bit encryption (GCM-AES-256 and GCM-AES-XPB-256). For more information, refer to *Understanding Interface Naming Conventions for MIC-MACSEC-20GE*.

The MPC3E requires the Enhanced MX Switch Control Board (SCBE) for fabric redundancy. You can also continue to use existing SCBs without fabric redundancy. The MPC interoperates with existing MX Series line cards, including Dense Port Concentrators (DPCs) and Modular Port Concentrators (MPCs).

You can also configure the 100-Gigabit Ethernet MIC (MIC3-3D-1X100GE-CFP) to interoperate with routers using the 100-Gigabit Ethernet PIC (Type 4 1X100GE PIC for STFC4 FPC) by using the **forwarding-mode** statement with the **sa-multicast** option at the **[edit chassis fpc slot pic slot]** hierarchy level. For more information, see [“Configuring 100-Gigabit Ethernet MICs to Interoperate with Type 4 100-Gigabit Ethernet PICs \(PD-ICE-CFP-FPC4\) Using SA Multicast Mode” on page 64](#).

The MPC3E is based on a new Juniper Networks chipset for increased scalability for bandwidth, subscribers, and service capabilities of the routers.

The MPC3E supports these key features:

- 100-Gigabit Ethernet interfaces
- Two separate slots for MICs
- The following MICs:
 - MIC3-3D-1X100GE-CFP
 - MIC3-3D-1X100GE-CXP
 - MIC3-3D-10XGE-SFPP
 - MIC3-3D-2X40GE-QSFPP

- MIC-3D-20GE-SFP
- MIC-3D-20GE-SFP-E
- MIC-3D-2XGE-XFP
- MIC-3D-8OC3OC12-4OC48
- MIC-3D-4OC3OC12-1OC48
- MIC-3D-1OC192-XFP
- MIC-3D-8DS3-E3
- Up to 100 Gbps per MIC slot
- Up to 200 Gbps aggregate WAN bandwidth connectivity for the two MIC slots; the line card is oversubscribed in the ratio of 1.5:1.
- Up to four full-duplex tunnel interfaces on the line card
- Intelligent oversubscription services
- Configuration of Virtual Chassis ports in an MX Series Virtual Chassis member router

The MPC3E supports all MX Series Virtual Chassis features, including Layer 2 and IEEE 802.3ad link aggregation features. An MX Series Virtual Chassis configuration does not currently support the Spanning Tree Protocol (STP).



NOTE: On the MX960 router, FPC slot 0 and slot 11 are not NEBS compliant beyond 104°F (40°C) with MPC3E-3D-NG and MPC3E-3D-NG-Q. This is a cooling restriction.

For more information about supported Junos OS features on the MPC3E, see *Protocols and Applications Supported by the MPC3E on MX Series Routers* in the [MX Series Interface Module Reference](#).

The MPC3E supports feature parity with the following software features:

- Basic Layer 2 features and virtual private LAN service (VPLS) functionality
- Layer 3 routing protocols
- MPLS
- Multicast forwarding
- Firewall filters and policers
- Intelligent hierarchical policers
- Per unit scheduling
- Class-of-service (CoS) support
- Synchronous Ethernet
- Tunnel support

- Interoperability with existing DPCs and MPCs
- Unified in-service software upgrade (ISSU)

For information about the supported and unsupported Junos OS features for this MPC, see *Protocols and Applications Supported by the MPC3E on MX Series Routers* in the [MX Series Interface Module Reference](#).

Starting from Junos OS Release 13.3R1, the following encapsulations are supported on the MIC-3D-8OC3OC12-4OC48, MIC-3D-4OC3OC12-1OC48, MIC-3D-1OC192-XFP, and the MIC-3D-8DS3-E3 on MPC3E:

- Cisco High-Level Data Link Control (Cisco HDLC)
- Flexible Frame Relay
- Frame Relay
- Frame Relay for CCC
- Frame Relay for TCC
- MPLS fast reroute
- MPLS circuit cross-connect (CCC)
- MPLS translational cross-connect (TCC)
- Point-to-Point Protocol (PPP) (default encapsulation)
- PPP for CCC
- PPP for TCC
- PPP over Frame Relay

Note that the aggregated SONET is supported only for Cisco HDLC and PPP encapsulations.

MPC4E on MX Series Routers Overview

In Junos OS Release 12.3R2 and later, MX2020, MX2010, MX960, MX480, and MX240 routers support a new MPC, MPC4E. MPC4E is a fixed-configuration MPC that provides scalability in bandwidth and services capability of the routers. MPC4E is available in two models—MPC4E-3D-32XGE-SFPP and MPC4E-3D-2CGE-8XGE.

| Type of MPC4E | Ports | Interfaces | Optical Transceiver Support | Initial Release |
|---------------------|--|---|---|-----------------|
| MPC4E-3D-32XGE-SFPP | 32 built-in 10-Gigabit Ethernet ports | 10-Gigabit Ethernet interfaces | 10GBASE-LR, 10GBASE-SR, 10GBASE-ER, 10GBASE-ZR | 12.3R2 |
| MPC4E-3D-2CGE-8XGE | 2 built-in 100-Gigabit Ethernet ports and 8 built-in 10-Gigabit Ethernet ports | 10-Gigabit Ethernet and 100-Gigabit Ethernet interfaces | 100GBASE-LR4, 100GBASE-SR10, 10GBASE-LR, 10GBASE-SR, 10GBASE-ER, 10GBASE-ZR | 12.3R2 |



NOTE: Both models of MPC4E are supported on the MX2020, MX2010, MX960, MX480, and MX240 routers with both normal-capacity and high-capacity power supplies and fan trays.

MPC4E does not support legacy SCBs. It interoperates with existing MX Series line cards, including Dense Port Concentrators (DPCs) and Modular Port Concentrators (MPCs).

MPC4E is a fixed-configuration MPC and does not contain separate slots for Modular Interface Cards (MICs). It contains two Packet Forwarding Engines (PFEs)—PFE0 hosts PIC0 and PIC1 while PFE1 hosts PIC2 and PIC3.

You can also configure the MPC4E to interoperate with routers that use the 100-Gigabit Ethernet PIC (Type 4 PIC on Type 4 FPC) by using the **forwarding-mode** statement with the **sa-multicast** option at the **[edit chassis fpc slot pic slot]** hierarchy level. For more information, see [“Configuring MPC4E \(MPC4E-3D-2CGE-8XGE\) to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode”](#) on page 66.

MPC4E supports:

- Forwarding capability of up to 130 Gbps per Packet Forwarding Engine.
- Small form-factor pluggable (SFP) and C form-factor pluggable (CFP) transceivers for connectivity.
- Up to 260 Gbps of full-duplex traffic.
- Intelligent oversubscription services.
- WAN-PHY mode on 10-Gigabit Ethernet interfaces on a per-port basis.
- Up to four full-duplex tunnel interfaces on each MPC4E.



NOTE: By default on MX480 routers, only 5 out of the 6 line-card slots can be populated with MPC4Es. By default on MX960 routers, only 10 out of the 11 line-card slots can be populated with MPC4Es. This is a power restriction of default operating mode which supports operation at 55°C ambient temperature. You can insert other line-cards in the remaining slots as long as the power budget is not exceeded. However, if ambient-temperature is configured to 25°C or 40°C, all the 6 slots of an MX480 can be populated with MPC4E, and all the 11 slots of an MX960 can be populated with MPC4E. For more information about power requirements, see *Power Requirements for an MX480 Router*, and *Power Requirements for an MX960 Router*.

Also, on the MX960 router, FPC slot 0 and FPC slot 11 are not NEBS compliant beyond 104°F (40°C). This is a cooling restriction.

For more information about the supported and unsupported Junos OS software features for this MPC, see *Protocols and Applications Supported on the MPC4E for MX Series Routers* in the *MX Series Line Card Guide*.

MPC5E on MX Series Routers Overview

In Junos OS Release 13.3R2 and later, MX2020, MX2010, MX960, MX480, and MX240 routers support a new MPC, MPC5E. MPC5E is a fixed-port MPC. On MX2020 and MX2010 routers, MPC5E is housed in an adapter card (ADC). MPC5E is available in the following models:

| Type of MPC5E | Ports | Interfaces | Optical Transceiver Support | Initial Release |
|----------------|--|---|---|-----------------|
| MPC5E-40G10G | 6 built-in 40-Gigabit Ethernet ports and 24 built-in 10-Gigabit Ethernet ports | 40-Gigabit Ethernet and 10-Gigabit Ethernet interfaces | 40GBASE-SR4, 40GBASE-LR4, 10GBASE-LR, 10GBASE-SR, 10GBASE-ER, 10GBASE-ZR | 13.3R2 |
| MPC5EQ-40G10G | 6 built-in 40-Gigabit Ethernet ports and 24 built-in 10-Gigabit Ethernet ports | 40-Gigabit Ethernet and 10-Gigabit Ethernet interfaces | 40GBASE-SR4, 40GBASE-LR4, 10GBASE-LR, 10GBASE-SR, 10GBASE-ER, 10GBASE-ZR | 13.3R2 |
| MPC5E-100G10G | 2 built-in 100-Gigabit Ethernet ports and 4 built-in 10-Gigabit Ethernet ports | 100-Gigabit Ethernet and 10-Gigabit Ethernet interfaces | 100GBASE-SR10, 100GBASE-LR4, 100GBASE-ER4, 10GBASE-LR, 10GBASE-SR, 10GBASE-ER, 10GBASE-ZR | 13.3R3 |
| MPC5EQ-100G10G | 2 built-in 100-Gigabit Ethernet ports and 4 built-in 10-Gigabit Ethernet ports | 100-Gigabit Ethernet and 10-Gigabit Ethernet interfaces | 100GBASE-SR10, 100GBASE-LR4, 100GBASE-ER4, 10GBASE-LR, 10GBASE-SR, 10GBASE-ER, 10GBASE-ZR | 13.3R3 |

MPC5E supports the enhanced Switch Control Board (MX-SCBE) and MX-SCBE2 on MX240, MX480, and MX960 routers. MPC5E does not support the legacy SCB (MX-SCB). MPC5E supports the Switch Fabric Board (SFB) on MX2010 and MX2020 routers.

On MX240, MX480, and MX960 routers, the number of MPC5Es that can be supported depends on the power entry module (PEM) type. There are no such restrictions for MX2010 and MX2020 routers.



NOTE: On MX960 routers, all the MPC slots work with chassis temperature of up to 40°C (104°F). However, when the chassis temperature exceeds 40°C (104°F), slots 0 and 11 do not work with MPC3E-3D-NG, MPC3E-3D-NG-Q, MPC4E, and MPC5E.

MPC5E interoperates with existing MPCs but does not interoperate with existing DPCs, except the Multiservices DPC (MS-DPC). MX series routers do not support tunnel services PICs. MPC5E provides support for inline tunnel interfaces and supports the following tunnel types:

- Generic Routing Encapsulation (GRE) Tunnels
- Multicast Tunnels (MT)
- IP-IP Tunnels
- Protocol Independent Multicast (PIM) E tunnels
- Virtual loopback Tunneling (VT)
- Logical Tunneling (LT)



NOTE: On MX240, MX480, and MX960 routers, MPC5E powers on only if the **network-services** mode on the router is configured to either **enhanced-ip** or **enhanced-ethernet**. On the MX2010 and MX2020 routers, **enhanced-ip** is the only **network-services** mode supported.

MPC5E supports:

- Forwarding capability of up to 130 Gbps per Packet Forwarding Engine
- *Flexible Queuing Mode* using an add-on license
- Intelligent oversubscription services
- Optical Channel Transport Network services
- Quad small form-factor pluggable plus transceivers (QSFP+) and small form-factor pluggable transceivers (SFP) for connectivity
- Up to 240 Gbps of full-duplex traffic
- WAN-PHY mode on 10-Gigabit Ethernet interfaces on a per-port basis

For more information about the supported and unsupported Junos OS software features for this MPC, see *Protocols and Applications Supported by the MPC5E for MX Series Routers* in the [MX Series Interface Module Reference](#).

Guidelines for Identifying Active PICs on MPC5E (MPC5E-40G10G)

MPC5E contains two Packet Forwarding Engines (PFEs) and 4 fixed port PICs. On MPC5E-100G10G, the **PFE0** hosts **PIC0** and **PIC1** while **PFE1** hosts **PIC2** and **PIC3**. All the PICs can be powered on and used.

On the MPC5E-40G10G, the **PFE0** hosts **PIC0** and **PIC2** while **PFE1** hosts **PIC1** and **PIC3**. Only a maximum of two PICs (**PIC0** or **PIC2** and **PIC1** or **PIC3**) can be powered on. The remaining PICs are required to be kept powered off.

This topic describes the guidelines to consider while identifying active PICs on the MPC5E (MPC5E-40G10G):

- By default, (i.e. without any CLI configuration), **PIC0 (12x10GE)** and **PIC1 (12x10GE)** are powered ON while **PIC2 (3x40GE)** and **PIC3 (3x40GE)** shall be powered OFF.
- At least one PIC on every PFE should be configured in power OFF state. **PIC0** and **PIC2** belong to **PFE0** and **PIC1** and **PIC3** belong to **PFE1**.
- If you configure an invalid PIC combination, the default PICs (**PIC0** and **PIC1**) will be powered ON. Also, a syslog message is displayed to indicate the invalid PIC combination selected. When you configure an invalid PIC combination, and commit the change, the commit succeeds and a commit failure message is not displayed.

Table 3 on page 42 lists the active PICs on MPC5E-40G10G based on the configuration.

Table 3: MPC5E-40G10G Active PICs

| CLI Configuration | PIC Selection |
|---|---|
| Default (i.e no CLI configuration) | Online: PIC0 and PIC1 Offline: PIC2 and PIC3 |
| PIC1 , PIC2 , and PIC3 powered off | Online: PIC0 Offline: PIC1 , PIC2 , and PIC3 |
| PIC0 , PIC2 , and PIC3 powered off | Online: PIC1 Offline: PIC0 , PIC2 , and PIC3 |
| PIC0 , PIC1 , and PIC3 powered off | Online: PIC2 Offline: PIC0 , PIC1 , and PIC3 |
| PIC0 , PIC1 , and PIC2 powered off | Online: PIC3 Offline: PIC0 , PIC1 , and PIC2 |
| PIC2 and PIC3 powered off | Online: PIC0 and PIC1 Offline: PIC2 and PIC3 |

Table 3: MPC5E-40G10G Active PICs (continued)

| CLI Configuration | PIC Selection |
|--|---|
| PIC1 and PIC2 powered off | Online: PIC0 and PIC3 Offline: PIC1 and PIC2 |
| PIC0 and PIC3 powered off | Online: PIC1 and PIC2 Offline: PIC0 and PIC3 |
| PIC0 and PIC1 powered off | Online: PIC2 and PIC3 Offline: PIC0 and PIC1 |
| Invalid PIC Configuration (All other combinations of PICs powered off) | Online: PIC0 and PIC1 Offline: PIC2 and PIC3 NOTE: Default PIC configuration is selected for all invalid PIC configurations. |

MPC6E on MX Series Routers Overview

In Junos OS Release 13.3R2 and later, MX2020 and MX2010 routers support a new MPC, MPC6E (model number: MX2K-MPC6E). MPC6E is a 100-Gigabit Ethernet MPC that provides increased port density and performance to MX Series routers in broadband access networks for services such as Layer 3 peering, VPLS and Layer 3 aggregation, and video distribution.

MPC6E supports two MIC slots and each MIC slot supports a single MIC. The MPC can have any of the following MICs:

- 4-port 100-Gigabit Ethernet MIC with CXP
- 2-port 100-Gigabit Ethernet MIC with CFP2
- 24-port 10-Gigabit Ethernet MIC with SFPP (non-OTN)
- 24-port 10-Gigabit Ethernet MIC with SFPP OTN

Based on the MICs used, the following MPC6E models are supported:

| Type of MPC6E | Ports | Interfaces | Initial Release |
|--------------------|--|---------------------------------|-----------------|
| MX2K-MIC6-24XE | 24 built-in 10-Gigabit Ethernet ports | 10-Gigabit Ethernet interfaces | 13.3R2 |
| MX2K-MIC6-4CE-CXP | 4 built-in 100-Gigabit Ethernet ports | 100-Gigabit Ethernet interfaces | 13.3R2 |
| MX2K-MIC6-24XE-OTN | 24 built-in 10-Gigabit Ethernet ports with OTN | 10-Gigabit Ethernet interfaces | 13.3R3 |
| MX2K-MIC6-2CE-CFP2 | 2 built-in 100-Gigabit Ethernet ports with OTN | 100-Gigabit Ethernet interfaces | 13.3R3 |

MPC6E supports:

- Two Packet Forwarding Engines for each MIC slot.
- Forwarding capability of up to 130 Gbps per Packet Forwarding Engine.
- Two separate slots for MICs (MIC6-10G and MIC6-100G).
- Up to 520 Gbps of full-duplex traffic for the two MIC slots.
- Intelligent oversubscription services.
- WAN-PHY mode on 10-Gigabit Ethernet interfaces on a per-port basis.

MPC6E supports the following software features:

- Basic Layer 2 features and virtual private LAN service (VPLS) functionality, except for Operation, Administration, and Maintenance (OAM)
- Layer 3 routing protocols
- MPLS

- Multicast forwarding
- Firewall filters and policers
- Class of service (CoS)
- Tunnel service
- Interoperability with existing MPCs
- Internet Group Management Protocol (IGMP) snooping with bridging, integrated routing and bridging (IRB), or VPLS
- Intelligent hierarchical policers
- Layer 2 trunk port
- MPLS fast reroute (FRR) VPLS instance prioritization
- Synchronous Ethernet

The following features are not supported on MPC6E:

- Fine-grained queuing and input queuing
- Active flow monitoring and services
- Virtual Chassis support

For more information about the supported and unsupported Junos OS software features for this MPC, see *Protocols and Applications Supported by the MPC6E for MX2000 Routers* in the *Interface Reference Module Guide*.

MPC7E (Multi-Rate) on MX Series Routers Overview

In Junos OS Release 15.1F4 and later, MX2020, MX2010, MX960, MX480, and MX240 routers support the rate-selectable MPC MPC7E (Multi-Rate) (model number: MPC7E-MRATE). The MPC7E-MRATE is a fixed-configuration MPC that provides scalability in bandwidth and services capability of the routers.

The main features of the MPC7E-MRATE are the following:

- Line-rate throughput of up to 480 Gbps on MX240, MX480, and MX960 routers.
- Line-rate throughput of up to 400 Gbps on the MX2000 line of routers.
- Twelve ports that can each be configured as a 40-Gigabit Ethernet port or as four 10-Gigabit Ethernet ports by using a breakout cable. The ports support quad small-form factor pluggable plus (QSFP+) transceivers.
- Four ports—0/2, 0/5, 1/2, and 1/5—out of the twelve ports can be configured as 100-Gigabit Ethernet ports.
- By default, the ports are configured as 10-Gigabit Ethernet ports.
- You can configure different combinations of port speeds as long as the aggregate capacity per group of six ports labeled 0/0 through 0/5 does not exceed 240 Gbps. Similarly, aggregate capacity per group of the other six ports labeled 1/0 through 1/5 must not exceed 240 Gbps.

For information about the supported and unsupported Junos OS features for this MPC, see *Protocols and Applications Supported by the MPC7E for MX Series Routers* in the *MX Series Line Card Guide*.

MPC7E-MRATE Gigabit Ethernet Interface Naming Convention

The MPC7E-MRATE is a fixed-configuration MPC and does not contain separate slots for Modular Interface Cards (MICs). It contains two PICs, PIC 0 and PIC 1. Each PIC has six physical quad small form-factor pluggable plus (QSFP+) ports that support 100-Gbps, 10-Gbps, or 40-Gbps port speeds. You use the 4x duplex LC breakout cables and fiber-optic 40-gigabit and 100-gigabit QSFP+ transceivers to achieve these speeds.



TIP: You can issue the `show chassis pic fpc-slot fpc-slot-number pic-slot pic-slot-number` command to view the supported speeds on each port.

Each of the six ports of PIC 0 and PIC 1 supports 10-Gigabit and 40-Gigabit Ethernet interfaces. However, only ports 2 and 5 on both the PICs support 100-Gigabit Ethernet interfaces. The 40 and 100 Gigabit Ethernet interfaces configured on the MPC7E-MRATE follow the naming convention `et-fpc-slot/pic-slot/port-number`. For example, `et-0/0/2` indicate a 40-Gigabit or 100-Gigabit Ethernet interface configured on port 2 of PIC 0 of the MPC7E-MRATE that is installed in the FPC slot 0.

You can configure four 10-Gigabit Ethernet interfaces on each port. Therefore, the 10 Gigabit Ethernet interfaces configured on the MPC7E-MRATE follow the naming convention `xe-fpc-slot/pic-slot/port-number:channel-number`. Channel numbers 0 to 3 are used to indicate the four logical ports that are enabled by the use of the 4x duplex LC breakout cables. Therefore, the four 10-Gigabit Ethernet interfaces that are configured on port 2 of PIC 0 of an MPC7E-MRATE that is installed in the FPC slot 0 is as follows:

- `xe-0/0/2:0`
- `xe-0/0/2:1`
- `xe-0/0/2:2`
- `xe-0/0/2:3`

MPC7E-MRATE Rate-Selectability Overview

You can choose to configure all supported ports of the PIC to operate at the same speed or configure all the ports at different supported speeds. For example, you can choose to configure:

- All the ports of the PIC at 10-Gbps speed.
- All the ports of the PIC at 40-Gbps speed.
- Ports 2 and 5 of the PIC at 100-Gbps speed.
- Ports 0, 1, 3, 4 of the PIC at 10-gigabit or 40-gigabit speed and ports 2 and 5 at 100-gigabit speed.

To configure all ports to operate at the same speed, you configure rate selectability at the *PIC level*. When you configure rate selectability at the PIC level, all the ports of the PIC that support the configured speed operate at that speed. Additionally, you can configure the number of active ports that operate at the configured speed. That is, for example, if you want only two ports of the PIC to operate at 40-gigabit speed, you can configure the PIC to operate at 40-gigabit speed and enable the two ports that you want to operate at that speed. The remaining four ports of the PIC are automatically disabled. Configuring rate selectability at the PIC level helps you configure the operating speed of the PIC easily.

To configure different ports of the PIC to operate at different supported speeds, you configure rate selectability at the *port level*. You configure each port of the PIC to operate at a specific supported speed. Only the ports that are configured are enabled, while the other ports are automatically disabled. Configuring rate selectability at the PIC level provides you the flexibility of operating the ports of the PIC at different supported speeds. For example, you can configure four 10-Gigabit Ethernet interfaces on port 0, one 40-Gigabit Ethernet interface on port 1, and one 100-Gigabit Ethernet interface on port 2.



NOTE:

- Ensure that you connect optics to the ports according to the speeds that you configure. That is, you have to use 4x duplex LC breakout cables to configure 10-Gigabit Ethernet interfaces, fiber-optic 40-gigabit QSFP+ transceivers to configure 40-Gigabit Ethernet interfaces, and fiber-optic 100-gigabit QSFP28 transceivers to configure 100-Gigabit Ethernet interfaces.
- If rate selectability is not configured, each port of the MPC7E-MRATE operates as four 10-Gigabit Ethernet interfaces.

For more information about how to configure rate selectability, see *Configuring Rate Selectability on MPC7E (Multi-Rate) to Enable Different Port Speeds*.

- See Also**
- *Protocols and Applications Supported by the MPC7E for MX Series Routers*
 - *Configuring Rate Selectability on MPC7E (Multi-Rate) to Enable Different Port Speeds*
 - *MPC7E (Multi-Rate)*
 - *Interface Naming Overview*
 - [pic-mode on page 378](#)
 - [speed on page 425](#)
 - [number-of-ports on page 360](#)

MPC7E 10G on MX Series Routers Overview

Starting with Junos OS Release 15.1F5, MX2020, MX2010, MX960, MX480, and MX240 routers support the Modular Port Concentrator (MPC) MPC7E 10G (MPC7E-10G). This

is a fixed-configuration MPC with forty 10-Gbps Ethernet ports. To use the MPC7E 10G MPC on Junos OS Release 15.1F5, you must download and install the Junos Continuity software package for Junos OS Release 15.1F5.



NOTE:

- On MX2000 line of routers, MPC7E 10G is plugged into an adapter card. Therefore, to use the MPC7E 10G MPC on MX2000 line of routers, the adapter card must be installed on the routers.
- To operate MPC7E 10G on MX240, MX480, and MX960 routers, the routers must be equipped with high-capacity power supply, high-capacity fan tray, and Enhanced Switch Control Board SCBE2.

The main features of the MPC7E-MRATE are the following:

- Line-rate throughput of up to 400 Gbps on MX240, MX480, MX960, MX2010, and MX2020 routers.
- Forty 10-Gigabit Ethernet ports. The ports support small-form factor pluggable plus (SFP+) transceivers.
- Support maximum transmission units (MTUs) from 256 bytes through 16,000 bytes.
- Supports [Hyper mode](#) to speed up packet processing.
- Supports [Flexible queuing](#) using an add-on license to support 32,000 queues per line card, including queues on both ingress and egress interfaces. You can use an additional license to support up to 512,000 queues.



NOTE: On MX240, MX480, and MX960 routers, MPC7E 10G powers on only if the **network-services mode** on the router is configured as either **enhanced-ip** or **enhanced-ethernet**. On MX2000 routers, no additional configuration is required because by default the router operates in **enhanced-ip** mode.

For information about the supported and unsupported Junos OS features for this MPC, see *Protocols and Applications Supported by the MPC7E for MX Series Routers* in the *MX Series Line Card Guide*.

MPC8E on MX Series Routers Overview

In Junos OS Release 15.1F5 and later, MX2020 and MX2010 routers support *MPC8E* (model number: MX2K-MPC8E), a new Modular Port Concentrator (MPC) with two Modular Interface Card (MIC) slots that provide a maximum bandwidth of 960 Gbps. . Each MIC slot on MPC8E supports a 12-port rate selectable MIC (MIC-MRATE). MPC8E has four Packet Forwarding Engines, each providing a maximum bandwidth of 240 Gbps.



NOTE: To use the MPC8E MPC on Junos OS Release 15.1F5, you must download and install the Junos Continuity software package for Junos OS Release 15.1F5.

MPC8E plugs into the chassis and provides the fabric interface. The MX2000 line of routers can support eight Switch Fabric Boards (SFBs) and eight Enhanced Switch Fabric Boards (SFB2s) but not both at the same time. However, during an upgrade from SFB to SFB2, the MX2000 line of routers support both SFB and SFB2 at the same time for the duration of the upgrade.

Starting in Junos OS Release 17.4R1, MIC-MACSEC-MRATE with MACsec is supported on MPC8E to extend MACsec capabilities on MX2000 line of routers (MX2020, MX2010, MX2008). The MACsec feature increases the Data Center (DC) security and also for DC to DC secured connectivity. MIC-MACSEC-MRATE MIC enable 40G and 100G MACsec capability to the MPC8E. . Each MPC supports two MIC-MACSEC-MRATE MICs. On an MPC8E, each MIC supports 48 10-Gigabit Ethernet, 12 40-Gigabit Ethernet, or 4 100-Gigabit Ethernet MACsec-capable interfaces, or a combination.



NOTE: Compared to other MICs, MIC-MACSEC-MRATE takes longer time (around 4 minutes) to boot as it is required to bring up two MICs in serial.

MPC8E supports:

- Line-rate throughput of up to 960 Gbps on the MX2000 line of routers.
- MIC-MRATE MICs with QSFP+ transceivers that support rate selectability at the port level and at the MIC level.
- Configuration of 4 ports out of the 12 MIC-MRATE ports as 100-Gigabit Ethernet ports.
- Configuration of PIC-based tunnel interfaces from the Junos OS CLI.
- Maximum transmission unit (MTU) size of 16,000 bytes for transit traffic.

MPC8E supports the following software features:

- [Dynamic power management](#) for effective utilization of available power.
- [Inline flow monitoring](#) for higher scalability and performance.

- **Flexible queuing** using an add-on license to support 32,000 queues per line card, including queues on both ingress and egress interfaces. You can use an additional license to support up to 512,000 queues per slot or 1,000,000 queues per slot.
- **Hyper mode** to speed up packet processing.
- MACsec MIC MRATE support for MX2000 line of routers. See [Understanding Media Access Control Security \(MACsec\) on MX Series Routers](#) for more details.

For more information about the supported and unsupported Junos OS features on MPC8E, see *Protocols and Applications Supported by the MPC8E and MPC9E on the MX2010 and MX2020 Routers* in the [MX Series Interface Module Reference](#).

Upgrading MPC8E to Provide Increased Bandwidth

In Junos OS Release 16.1R1 and later, you can upgrade MPC8E to provide an increased bandwidth of 1600 Gbps (1.6 Tbps) by using an add-on license. After you purchase the license and perform the upgrade, MPC8E provides a bandwidth of 1.6 Tbps, which is equivalent to the bandwidth that MPC9E provides. However, the MPC continues to be identified as MPC8E.



NOTE: After you upgrade MPC8E to provide a bandwidth of 1.6 Tbps, the power consumption by MPC8E increases and is equivalent to the power that MPC9E consumes. See *MPC8E* for more information.

After you purchase the add-on license, you upgrade the bandwidth by using the **set chassis fpc slot bandwidth 1.6T** command. You can disable this feature by using the **delete chassis fpc slot bandwidth 1.6T** command.



NOTE: When you modify the bandwidth of MPC8E and commit the configuration, the MPC automatically reboots. For instance, if you upgrade MPC8E to provide a bandwidth of 1.6 Tbps and commit the configuration, the MPC automatically reboots. Also, if you disable the feature on MPC8E (to provide a bandwidth of 960 Gbps) and commit the configuration, the MPC automatically reboots.

MPC9E on MX Series Routers Overview

In Junos OS Release 15.1F5 and later, the MX2000 line of routers support a new modular MPC, MPC9E (MX2K-MPC9E). MPC9E has two Modular Interface Card (MIC) slots. MPC9E has four Packet Forwarding Engines, each with forwarding capacity of up to 400 Gbps. MPC9E supports only the 12-port, rate-selectable MIC (MIC-MRATE).



NOTE: To use the MPC9E MPC on Junos OS Release 15.1F5, you must download and install the Junos Continuity software package for Junos OS Release 15.1F5.

Starting in Junos OS Release 17.4R1, MIC-MACSEC-MRATE with MACsec is supported on MPC9E to extend MACsec capabilities on MX2000 line of routers (MX2020, MX2010, MX2008). The MACsec feature increases the Data Center (DC) security and also for DC to DC secured connectivity. Each MPC supports two MIC-MACSEC-MRATE MICs. On an MPC9E, each MIC supports 48 10-Gigabit Ethernet, 12 40-Gigabit Ethernet, or 8 100-Gigabit Ethernet MACsec-capable interfaces, or a combination.



NOTE: Compared to other MICs, MIC-MACSEC-MRATE MIC takes longer time (around 4 minutes) to boot as it is required to bring up two MICs in serial.

MPC9E plugs into the chassis and provides the fabric interface. MX2000 line of routers can support eight Switch Fabric Boards (SFB) and eight Enhanced Switch Fabric Boards (SFB2) but not both at the same time. However, during an upgrade from SFB to SFB2, the MX2000 line of routers support both SFB and SFB2 at the same time for the duration of the upgrade.

- Line-rate throughput of up to 1.6 Tbps on the MX2000 line of routers.
- MIC-MRATE MICs with QSFP+ transceivers that support rate selectability at the port level and at the MIC level.
- Configuration of 8 ports out of the 12 MIC-MRATE ports as 100-Gigabit Ethernet ports.
- Configuration of PIC-based tunnel interfaces from the Junos OS CLI.
- Maximum transmission unit (MTU) size of 16,000 bytes for transit traffic.

MPC9E supports the following software features:

- **Dynamic power management** for effective utilization of available power.
- **Inline flow monitoring** for higher scalability and performance.
- **Flexible queuing** using an add-on license to support 32,000 queues per line card, including queues on both ingress and egress interfaces. You can use an additional license to support up to 512,000 queues per slot or 1,000,000 queues per slot.

- [Hyper mode](#) to speed up packet processing.
- MACsec MIC MRATE support for MX2000 line of routers. See [Understanding Media Access Control Security \(MACsec\) on MX Series Routers](#) for more details.

For more information about the supported and unsupported Junos OS features for this MPC, see *Protocols and Applications Supported by the MPC8E and MPC9E on the MX2010 and MX2020 Routers* in the [MX Series Interface Module Reference](#).

MX10003 MPC on MX10003 Router Overview

In Junos OS Release 17.3R1 and later, the MX10003 router supports a new Modular Port Concentrator (MPC), MX10003 MPC. Each MPC supports a Multi-Rate 12xQSFP28 Ethernet Modular Interface Card (MIC) (model numbers: JNP-MIC1 (in Junos OS Release 17.3R1) and JNP-MIC1-MACSEC (in Junos OS Release 17.3R2)) and the fixed-port PIC (6xQSFP). The router provides two dedicated line-card slots for MPCs. MPCs install into the line-card slots. The fixed-port PIC is mapped to PIC 0, and each Packet Forwarding Engine is mapped to two ports in PIC 0. The Multi-Rate 12xQSFP28 Ethernet MIC is mapped to PIC 1, and each Packet Forwarding Engine is mapped to four ports in PIC 1. On the MIC all 12 ports are active and are capable of running in 40-Gigabit Ethernet, 100-Gigabit Ethernet, and 4x10-Gigabit Ethernet mode.

The MX10003 MPC supports:

- Line-rate throughput of up to 1.2 Tbps on the MX10003 routers.
- MICs with QSFP+/QSFP28 transceivers that are rate-selectable at the port level and at the MIC level.
- Configuration of all 12 ports of the MIC as 100-Gigabit Ethernet ports.
- Configuration of PIC-based tunnel interfaces from the Junos OS CLI.
- Maximum transmission unit (MTU) size of 16,000 bytes for transit traffic.

The MX10003 MPC supports the following software features:

- [Dynamic power management](#) for effective utilization of available power.
- [Inline flow monitoring](#) for higher scalability and performance.
- [Hyper mode](#) to speed up packet processing.

MPC and MIC Lane LED Scheme Overview

LEDs on the interface cards display the status of the ports. On some MICs and MPC that have multiple ports and supports multiple port speed, it is not feasible to have an individual LED display for each port on an interface card. Hence, a shared LED display is introduced—the lane LEDs.

The MX10003 MPC includes this new LED lane display. The Multi-Rate 12xQFSP28 MIC and the fixed-port PIC (6xQFSP) have separate lane LEDs.

The lane LEDs of the MIC are located on the MIC itself, whereas the lane LEDs of the PIC are located on the MPC.

The following interface cards support lane LEDs:

- *MX10003 MPC (Multi-Rate)*
- *Line card (MX10K-LC2101)*
- *Multi-Rate Ethernet MIC*

You can select a port operating in a breakout mode for an individual lane display, either periodically or when the **request chassis port-led** command is executed. Similar to the port status LEDs, the lane LED supports 4 states defined by the color or the LED status—OFF, GREEN, AMBER, and RED.

Figure 1 on page 53 illustrates the port LED and lane LED displays on the MPC.

Figure 1: Port LED and Lane LED display on the MPC

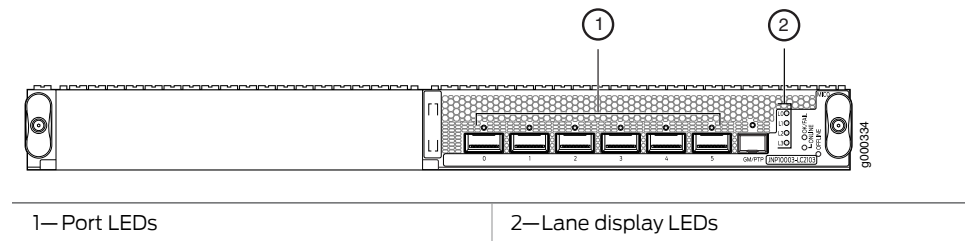


Figure 2 on page 53 illustrates the port LED and lane LED displays for the MPC.

Figure 2: Port LED and Lane LED display on the JNP10K-LC2101 MPC

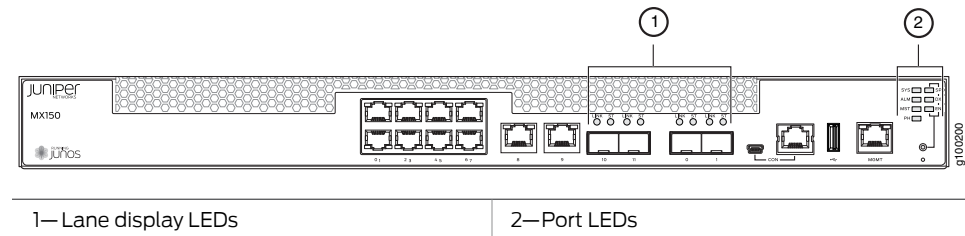
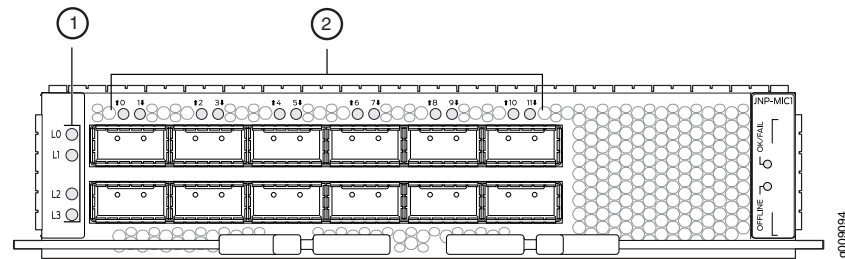


Figure 3 on page 54 illustrates the port LED and lane LED displays for the MIC.

Figure 3: Port LED and Lane LED display on the MIC



1—Lane display LEDs

2—Port LEDs

The following port LED display modes are defined:

- Normal—The port status LED represents port state or a breakout port state. By default, the port status display mode is Normal.
- Lane display—An array of lane status LEDs displays the status of each individual lane for the selected port. The lane display is ON when the software cycles through ports for lane status display. One port is selected at a time, and the display mode for that particular port switches to lane display mode. The other ports remain in normal display mode.
- Port location—The port location mode is ON when a remote operator initiates a port location command for a port or a group of ports. The **request chassis port-led** command temporarily overrides periodic software port selection for the lane display; all ports on an interface card that are not selected for port location switch to Normal mode, and selected ports switch to port location mode. If only one port is selected for port location, then the corresponding lane LEDs are applicable. However, if the selected port is in breakout mode, then all lane LEDs are applicable. If not in breakout mode, only lane 0 LED displays the port status. If more than one port is selected for port location, then the lane LEDs are disabled.

The following factors trigger a change in the port LED color:

- Change in the port state. For example, loss of signal (LOS) to no LOS, remote fault, or local fault
- Pluggable insertion or removal
- Change in configuration
- Activation or deactivation of port location feature
- Selection of breakout port for lane display



NOTE: Ports with all individual links in *Up* state are skipped and are not considered for lane display, thereby reducing the time needed to cycle through all the ports.

Table 4 on page 55 summarizes the state and color rules for the port LEDs. These rules help in determining the port LED color. When port location mode is activated, the port

LED state or color can be determined from the Port Location ON column. If the breakout port is selected for the lane status display, then port LED state or color can be determined from the Lane Display column.

Table 4: Port LED State and Color Rules

| Pluggable Inserted | Breakout Configuration State | Explicitly Disabled | Port State | Normal | Port Location ON | Lane Display |
|--------------------|------------------------------|---------------------|--|--------|------------------|----------------|
| Yes | No breakout | No | Up | Green | Blinking green | - |
| Yes | No breakout | No | Down; loss of signal (LOS) detected | Off | Blinking green | - |
| Yes | No breakout | No | Down; transceiver hardware failure | Red | Blinking red | - |
| Yes | No breakout | No | Down; any other fault other than LOS and transceiver hardware failure | Amber | Blinking amber | - |
| ANY | No breakout | Yes | Port disabled by CLI | Amber | Blinking amber | - |
| No | Any | No | Anything except disabled port; however, transceiver not present | Off | Blinking green | - |
| Yes | Breakout | No | All breakout ports are UP | Green | Blinking green | Blinking green |
| Yes | Breakout | No | All breakout ports are down with LOS | Off | Blinking green | Blinking green |
| Yes | Breakout | No | Hardware failure; transceiver initialization error at the port level (not individual lane) | Red | Blinking red | Blinking red |
| Yes | Breakout | Any | In all other cases the port LED color is amber | Amber | Blinking amber | Blinking amber |

The following factors trigger a change in the lane LED color:

- A breakout port is selected for a lane display.
- Port location mode is activated for a port on a given interface card.

[Table 5 on page 55](#) summarizes the state and color rules for the lane LEDs.

Table 5: Lane LED Color Rules

| Pluggable Inserted | Breakout Configuration State | Explicitly Disabled | Port State | Order | LED Color |
|--------------------|------------------------------|---------------------|------------|-------|-----------|
| Yes | Breakout | No | Up | 1 | Green |

Table 5: Lane LED Color Rules (continued)

| Pluggable Inserted | Breakout Configuration State | Explicitly Disabled | Port State | Order | LED Color |
|--------------------|------------------------------|---------------------|---|-------|-----------|
| Yes | Breakout | No | Down; loss of signal (LOS) detected | 2 | Off |
| Yes | Breakout | No | Down; transceiver hardware failure | 3 | Red |
| Yes | Breakout | No | Down; fault other than LOS and transceiver hardware failure | 4 | Amber |
| Yes | Breakout | Yes | Breakout port is disabled in the CLI | 5 | Amber |

JNP10K-LC2101 MPC on MX10008 Routers Overview

In Junos OS Release 18.2R1 and later, MX10008 routers support a new MPC, JNP10K-LC2101. JNP10K-LC2101 is a fixed-configuration MPC that provides increased port density and performance to the MX10008 routers. JNP10K-LC2101 does not contain separate slots for Modular Interface Cards (MICs) and has six Packet Forwarding Engines.

MX10008 routers support eight JNP10K-LC2101 MPCs. By default, each JNP10K-LC2101 MPC provides a maximum bandwidth of 2.4Tbps. JNP10K-LC2101 has six Packet Forwarding Engines, each providing a maximum bandwidth of up to 400 Gbps, which cannot be oversubscribed. JNP10K-LC2101 MPC plugs into the chassis and provides the fabric interface. The MX10008 router supports six Switch Fabric Boards (SFBs).

The MX10008 router supports only **enhanced-ip** and **enhanced-ethernet** network services mode. The default network services mode is **enhanced-ip**.

JNP10K-LC2101 supports:

- Multi-rate ports. The ports on the JNP10K-LC2101 MPC support multiple port speeds such as 10Gbps, 40 Gbps, and 100 Gbps. Hence, they are known as multi-rate ports. All ports support all port speeds. To view the port speed information for each port, use the **show chassis pic fpc-slot fpc-slot-number pic-slot pic-slot-number** command.
- PIC-based tunnel configuration
- Maximum Transmission Unit (MTU) size of 16000 bytes for transit traffic.
- [Dynamic Power Management](#) for effective utilization of available power.
- [Flexible queuing](#) supports 128,000 queues per line card, including queues on both ingress and egress interfaces. You can use an additional license to support up to 256,000 queues or 1,500,000 queues per slot.

For more information about the supported and unsupported Junos OS features on JNP10K-LC2101, see *Protocols and Applications Supported by the JNP10K-LC2101 on the MX10008 Routers* in the [MX Series Interface Module Reference](#).

Downgrading JNP10K-LC2101 to Provide Decreased Bandwidth

You can downgrade the JNP10K-LC2101 MPC to provide a decreased bandwidth of 1.44Tbps. After you perform the downgrade, JNP10K-LC2101 provides a bandwidth of 1.44Tbps. Each of the six Packet Forwarding Engines now provide a maximum bandwidth of up to 240 Gbps, which cannot be oversubscribed.

You can downgrade the bandwidth by using the **set chassis fpc slot bandwidth 1.44T** command. You can disable this feature by using the **delete chassis fpc slot bandwidth 1.44T** command.



NOTE: When you modify the bandwidth of JNP10K-LC2101 and commit the configuration, the MPC automatically reboots. For instance, if you downgrade JNP10K-LC2101 to provide a bandwidth of 1.44 Tbps and commit the configuration, the MPC automatically reboots. Also, if you disable the feature on JNP10K-LC2101 (to provide a bandwidth of 2.4Tbps) and commit the configuration, the MPC automatically reboots.

MX204 Router Overview

Starting with Release 17.4R1, Junos OS supports the MX204 Universal Routing Platform (model number: JNP204 [MX204]). The MX204 chassis is a monolithic system— that is, it does not have separate Switch Processor Mezzanine Boards and line cards. All the router components including Packet Forwarding Engines and WAN interfaces are managed by the CPU subsystem (consisting of an eight-core Broadwell CPU). The MX204 delivers a throughput of up to 400 Gbps.

The MX204 router is a fixed-configuration router, and supports one fixed Routing Engine. It contains a total of twelve fixed ports, in two groups of four and eight, respectively. The set of four ports (referred to as the PIC 0 ports) are rate selectable and can be configured at 10-Gbps (by using a breakout cable), 40-Gbps, or 100-Gbps speed. However, not all the ports support all the three speeds. The set of eight ports (referred to as PIC 1 ports) operate at a fixed speed of 10-Gbps. The four rate-selectable ports support QSFP28 and QSFP+ transceivers, whereas the eight 10-Gigabit Ethernet ports support SFP+ transceivers.

See *MX204 Router Rate-Selectability Overview* and *Supported Active Physical Rate-Selectable Ports to Prevent Oversubscription on MX204 Router* for more details.

MX204 LED Scheme Overview

LEDs on the interface cards display the status of the ports. In MX204 router, there are four port LEDs per port. Each port provides an individual status LED with four states signaled by the color/LED state: OFF, GREEN, AMBER, RED.

The following port LED display modes are defined:

- Normal—Represents the normal working mode of the LED. By default, the port status display mode is Normal.

- Port location—The port location mode is ON when a remote operator initiates a port location command for a port or a group of ports.

The following factors trigger a change in the port LED color:

- Change in the port state. For example, loss of signal (LOS) to no LOS, remote fault, or local fault
- Pluggable insertion or removal
- Change in configuration
- Activation or deactivation of port location feature

Table 6 on page 58 summarizes the state and color rules for the port LEDs. These rules help in determining the port LED color. When port location mode is activated, the port LED state or color can be determined from the Port Location ON column.



NOTE: In MX204 router, there are four port LEDs per port. On PIC 0, if the port operates at the speed of 40-Gbps or 100-Gbps, then the first LED of PIC 1 will be ON and the other three LEDs will be OFF. And, if the port operates at the speed of 10-Gbps, then all the LEDs will be ON.

Table 6: Port LED State and Color Rules

| Pluggable Inserted | Explicitly Disabled | Port State | Normal | Port Location ON |
|--------------------|---------------------|---|--------|------------------|
| Yes | No | Up | Green | Blinking green |
| Yes | No | Down; loss of signal (LOS) detected | Off | Blinking green |
| Yes | No | Down; transceiver hardware failure | Red | Blinking red |
| Yes | No | Down; any other fault other than LOS and transceiver hardware failure | Amber | Blinking amber |
| ANY | Yes | Port disabled by CLI | Amber | Blinking amber |
| No | No | Anything except disabled port; however, transceiver not present | Off | Blinking green |

MPC10E-15C-MRATE Overview

Starting with Junos OS Release 19.1R1, the MX240, MX480 and MX960 routers support MPC10E-15C-MRATE (15x100GE) line card. This fixed-port line card is capable of delivering a bandwidth of up to 1.5 Tbps per MPC slot. It supports three MICs (one per Packet Forwarding Engine), each of which can deliver a throughput of up to 500 Gbps. Each MIC comprises five ports that support 100 Gbps (the default), 40 Gbps, and 10 Gbps speeds through the use of QSFP28+ and QSFP+ optics. You can enable 10 Gbps speed (four 10 Gbps channels) by using breakout cables.

MPC10E-15C-MRATE supports a maximum transmission unit (MTU) starting from 256 bytes to 16,000 bytes for transit traffic, and from 256 bytes to 9,500 bytes for host bound packets.

The MPC10E-15C-MRATE line card supports both hyper mode and normal mode. However, the default mode for MPC10E is hyper mode. For more details about hypermode, see *Understanding the Hyper Mode Feature on Enhanced MPCs for MX Series Routers and EX9200 Switches*.



NOTE:

- The MPC10E-15C-MRATE is powered on only if the MX Series router has an enhanced Switch Control Board (SCBE3) installed.
- The MPC10E-15C-MRATE is powered on only if the router operates in enhanced-ip or enhanced-ethernet mode.
- The MPC10E-15C-MRATE will be powered on only when the MX Series router is installed with enhanced Fan Trays.
- The MPC10E-15C-MRATE will be supported only when the MX Series router is installed with Enhanced PEMs.
- On MX960 routers with enhanced Midplane on the slot 1, the MPC10E-15C-MRATE will not be powered on.



NOTE:

Fabric Management on MPC10E-15C-MRATE

The MPC10E line cards function only if the MX router has an SCBE3 installed. The MPC10E-15C-MRATE supports the following two fabric redundancy modes:

- redundant mode
- increased bandwidth mode

On MX Series routers with MPC10E-15C-MRATE, the default fabric redundancy mode is increased bandwidth mode. To configure the MPC10E-15C-MRATE to function in redundant fabric mode, use the existing **redundancy-mode redundant** statement at the [edit chassis fabric] hierarchy level. To configure the MPC10E-15C-MRATE to function in increased bandwidth mode, use the **redundancy-mode increased-bandwidth** statement at the [edit chassis fabric] hierarchy level. In a redundant configuration, an MPC10E line card provides a fabric bandwidth of up to 1 Tbps. In a non-redundant configuration, an MPC10E-15C-MRATE supports a fabric bandwidth of up to 1 Tbps (with four fabric planes) and 1.5 Tbps fabric bandwidth when all six fabric planes are used.

Fabric bandwidth supported by MPC10E-15C-MRATE with SCBE3 is as follows:

| Number of Active Fabric Planes | Fabric Bandwidth Per PFE | Fabric Bandwidth Per MPC |
|--------------------------------|--------------------------|--------------------------|
| 1 | 83.71G | 251.14G |
| 2 | 167.43G | 502.28G |
| 3 | 251.14G | 753.42G |
| 4 | 334.85G | 1004.56G |
| 5 | 418.57G | 1255.69G |
| 6 | 502.28G | 1506.84G |

MPC10E line cards support fabric hardening. It supports configuration of per fpc **bandwidth-degradation** and per fpc **blackhole-action**.

Release History Table

| Release | Description |
|---------|---|
| 18.3R1 | Starting in JunosOS Release 18.3R1, on MX240, MX480, and MX960 routers, the MIC-MACSEC-20GE with SFP/SFP+ ports are supported on MPC1 line card. |
| 18.3R1 | Starting in JunosOS Release 18.3R1, on MX240, MX480, and MX960 routers, the MIC-MACSEC-20GE with SFP/SFP+ ports are supported on MPC2 and MPC2E line cards. |
| 18.3R1 | Starting in JunosOS Release 18.3R1, on MX240, MX480, and MX960 routers, the MIC-MACSEC-20GE with SFP/SFP+ ports are supported on MPC3 and MPC3E line cards. |
| 17.4R1 | Starting in Junos OS Release 17.4R1, MIC-MACSEC-MRATE with MACsec is supported on MPC8E to extend MACsec capabilities on MX2000 line of routers (MX2020, MX2010, MX2008). |
| 17.4R1 | Starting in Junos OS Release 17.4R1, MIC-MACSEC-MRATE with MACsec is supported on MPC9E to extend MACsec capabilities on MX2000 line of routers (MX2020, MX2010, MX2008). |
| 13.3R2 | In Junos OS Release 13.3R2 and later, MX2020, MX2010, MX960, MX480, and MX240 routers support a new MPC, MPC5E. |
| 13.3R2 | In Junos OS Release 13.3R2 and later, MX2020 and MX2010 routers support a new MPC, MPC6E (model number: MX2K-MPC6E). |

Related Documentation

- [Understanding Rate Selectability](#)
- [MX Series Interface Module Reference](#).
- [Tunnel Interface Configuration on MX Series Routers Overview](#)

- *Calculating Power Requirements for MX240 Routers*
- *Calculating Power Requirements for MX480 Routers*
- *Calculating Power Requirements for MX960 Routers*
- *Calculating AC Power Requirements for MX2010 Routers*
- *Calculating DC Power Requirements for MX2010 Routers*
- *Calculating AC Power Requirements for MX2020 Routers*
- *Calculating DC Power Requirements for MX2020 Routers*
- *10-Gigabit Ethernet OTN Options Configuration Overview*
- *100-Gigabit Ethernet OTN Options Configuration Overview*
- *Junos Continuity Software User Guide (Junos OS Release 14.1R4 and Later Releases)*

CHAPTER 3

Line Card Interoperability

- [Configuring Line Card Interoperability on page 63](#)

Configuring Line Card Interoperability

- [Interoperability of Type 3 FPCs and Type 4 FPCs with Type 5 FPCs on page 63](#)
- [Configuring 100-Gigabit Ethernet MICs to Interoperate with Type 4 100-Gigabit Ethernet PICs \(PD-ICE-CFP-FPC4\) Using SA Multicast Mode on page 64](#)
- [Interoperability Between MPC4E \(MPC4E-3D-2CGE-8XGE\) and 100-Gigabit Ethernet PICs on Type 4 FPC on page 66](#)
- [Configuring MPC4E \(MPC4E-3D-2CGE-8XGE\) to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode on page 66](#)
- [Interoperability Between MPC7E-MRATE and 100-Gigabit Ethernet PICs on Type 4 FPC on page 68](#)
- [Configuring MPC7E-MRATE to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode on page 68](#)
- [Interoperability Between MPC8E \(MX2K-MPC8E\) and 100-Gigabit Ethernet PICs on Type 4 FPC on page 70](#)
- [Configuring MPC8E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode on page 71](#)
- [Interoperability Between MPC9E \(MX2K-MPC9E\) and 100-Gigabit Ethernet PICs on Type 4 FPC on page 72](#)
- [Configuring MPC9E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode on page 73](#)

Interoperability of Type 3 FPCs and Type 4 FPCs with Type 5 FPCs

Support for interoperability of Type 3 FPCs, Type 4 FPCs, and T640-FPC4-1P-ES with Type 5 FPCs is now possible with fabric notification translation. This feature is supported on T4000 routers.

Basic packet forwarding, IPv4, IPv6, MPLS, and multicast (dataplane) are currently supported through this feature.

Configuring 100-Gigabit Ethernet MICs to Interoperate with Type 4 100-Gigabit Ethernet PICs (PD-ICE-CFP-FPC4) Using SA Multicast Mode

To configure a 100-Gigabit Ethernet MIC (MIC3-3D-1X100GE-CFP) to interoperate with Juniper Networks Type 4 100-Gigabit Ethernet PICs (model number PD-ICE-CFP-FPC4), you can use the **forwarding-mode** statement with the **sa-multicast** option at the **[edit chassis fpc slot pic slot]** hierarchy level.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the 100-Gigabit Ethernet MIC. The egress packet flow is the traffic flowing from the 100-Gigabit Ethernet MIC to the 100-Gigabit Ethernet PIC. Since no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet PIC looks at the bit and forwards the packets to either Packet Forwarding Engine 0 or 1. The ingress packet flow is the traffic flowing from a 100-Gigabit Ethernet PIC to a 100-Gigabit Ethernet MIC. When the 100-Gigabit Ethernet PIC is sending out a packet, the multicast bit is set based on the Packet Forwarding Engine packet received. The multicast bit is then transmitted and the MPC3E sees the multicast bit on ingress.



NOTE: The SA multicast bit is ignored by MPC3E while learning the source MAC addresses.

Configuring 100-Gigabit Ethernet MICs

The interoperability mode between the 100-Gigabit Ethernet MIC and the 100-Gigabit Ethernet PIC is configured on a PIC basis. The MPC3E has two MIC slots. A 100-Gigabit Ethernet MIC installed in slot 0 corresponds to **pic 0**, and the MIC installed in slot 1 corresponds to **pic 2**.



NOTE: The configuration is valid only on PIC 0 and PIC 2.

To configure SA multicast mode on a Juniper Networks 100-Gigabit Ethernet MIC in MPC 0, PIC 0 for interconnection with another Juniper Networks 100-Gigabit Ethernet PIC, use the **set chassis fpc slot pic slot forwarding-mode sa-multicast** command, as follows:

```
[edit chassis fpc slot pic slot]
forwarding-mode {
  sa-multicast;
}
```

You can use the **show forwarding-mode** command to view the resulting configuration, as follows:

```
[edit chassis fpc slot pic slot]
user@host# show forwarding-mode
```

Configuring 100-Gigabit Ethernet PIC (PD-ICE-CFP-FPC4)

The default packet steering mode for the 100-Gigabit Ethernet PIC (PD-ICE-CFP-FPC4) is SA multicast bit mode. There is no SA multicast configuration required on the 100-Gigabit Ethernet PIC to enable this mode.



NOTE: SA multicast mode can be configured, but it is not necessary.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50 Gbps Packet Forwarding Engines to achieve 100 Gbps throughput. The 50 Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is installed. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC should be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit aggregated interface is visible on the link connecting to the 100-Gigabit Ethernet MIC instead of two independent 50 Gbps interfaces.

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one AE physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces **et-*fpc*/*pic*/0:0** and **et-*fpc*/*pic*/0:1** where *fpc* is the FPC slot number and *pic* is the PIC slot number. The example shows how to configure two physical interfaces for PIC 0 in FPC 5:

```
chassis {
  aggregated-devices {
    ethernet {
      device-count 1;
    }
  }
  interfaces {
    et-5/0/0:0 {
      gether-options {
        802.3ad ae0;
      }
    }
    et-5/0/0:1 {
      gether-options {
        802.3ad ae0;
      }
    }
  }
}
```

Interoperability Between MPC4E (MPC4E-3D-2CGE-8XGE) and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC4E (MPC4E-3D-2CGE-8XGE) and the 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC4E.
- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC4E. The egress packet flow is the traffic flowing from the MPC4E to the 100-Gigabit Ethernet PIC. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet PIC checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet PIC to the MPC4E. When the 100-Gigabit Ethernet PIC sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC4E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC4E instead of two independent 50-Gbps interfaces.

Configuring MPC4E (MPC4E-3D-2CGE-8XGE) to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

You can enable interoperability between the MPC4E and the 100-Gigabit Ethernet PIC by performing the following tasks:

- [Configuring SA Multicast Bit Steering Mode on MPC4E on page 66](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface on page 67](#)

Configuring SA Multicast Bit Steering Mode on MPC4E

The interoperability mode between the MPC4E and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC4E-3D-2CGE-8XGE is a fixed-configuration MPC and does not contain separate slots for Modular Interface Cards (MICs). MPC4E contains two Packet Forwarding Engines—PFE 0 hosts PIC 0 and PIC 1 and PFE 1 hosts PIC 2 and PIC 3.



NOTE: This configuration is valid only on PIC 1 and PIC 3.

To configure SA multicast mode on **PIC 1** of an MX480 router with MPC4E for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the **[edit chassis fpc slot pic slot]** hierarchy level.

```
[edit chassis]
user@host # set fpc 3 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis fpc 3 pic 1]
user@host # show forwarding-mode
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces `et-x/y/0:0` and `et-x/y/0:1` where `x` is the FPC slot number and `y` is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.



NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 gigether-options 802.3ad ae0
user@host # set et-4/3/0:1 gigether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
  gigeother-options {
    802.3ad ae0;
  }
}
et-4/3/0:1 {
  gigeother-options {
    802.3ad ae0;
  }
}
```

Interoperability Between MPC7E-MRATE and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC7E (MPC7E-MRATE) and the 100-Gigabit Ethernet PIC (PD-ICE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC7E
- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-ICE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC7E. The egress packet flow is the traffic flowing from the MPC to the 100-Gigabit Ethernet interface. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet interface checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet interface to the MPC7E. When the 100-Gigabit Ethernet interface sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC7E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC7E instead of two independent 50-Gbps interfaces.

Configuring MPC7E-MRATE to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

You can enable interoperability between the MPC7E (MPC7E-MRATE) and the 100-Gigabit Ethernet PIC by performing the following tasks:

- [Configuring SA Multicast Bit Steering Mode on MPC7E on page 69](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface on page 69](#)

Configuring SA Multicast Bit Steering Mode on MPC7E

The interoperability mode between the MPC7E (MPC7E-MRATE) and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC7E is a fixed-configuration MPC and does not contain separate slots for Modular Interfaces Cards (MICs). MPC7E contains two Packet Forwarding Engines—PFE 0 hosts PIC 0 and PFE 1 hosts PIC 1.

To configure SA multicast mode on FPC13, PIC 1 of MPC7E-MRATE for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the **[edit chassis fpc slot pic slot]** hierarchy level.

```
[edit chassis]
user@host # set fpc 13 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis fpc 13 pic 1]
user@host # show forwarding-mode
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces **et-x/y/0:0** and **et-x/y/0:1** where **x** is the FPC slot number and **y** is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.



NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 gigether-options 802.3ad ae0
user@host # set et-4/3/0:1 gigether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
  gigeether-options {
    802.3ad ae0;
  }
}
et-4/3/0:1 {
  gigeether-options {
    802.3ad ae0;
  }
}
```

Interoperability Between MPC8E (MX2K-MPC8E) and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC8E (MX2K-MPC8E) and the 100-Gigabit Ethernet PIC (PD-ICE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC8E.
- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-ICE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC8E. The egress packet flow is the traffic flowing from the MPC to the 100-Gigabit Ethernet Interface. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet Interface checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet Interface to the MPC8E. When the 100-Gigabit Ethernet Interface sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC8E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC8E instead of two independent 50-Gbps interfaces.

Configuring MPC8E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

You can enable interoperability between the MPC8E (MX2K-MPC8E) and the 100-Gigabit Ethernet PIC by performing the following tasks:

- [Configuring SA Multicast Bit Steering Mode on MPC8E on page 71](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface on page 71](#)

Configuring SA Multicast Bit Steering Mode on MPC8E

The interoperability mode between the MPC8E and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC8E (MX2K-MPC8E) is a modular MPC that contains two slots for Modular Interface Cards (MICs). MPC8E contains four Packet Forwarding Engines—PIC 0 hosts PFE 0 and PFE 1. PIC 1 hosts PFE 2 and PFE 3.

To configure SA multicast mode on FPC 7, PIC 1 of MPC8E for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the `[edit chassis fpc slot pic slot]` hierarchy level.

```
[edit chassis]
user@host # set fpc 7 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis]
user@host # show fpc 7 pic 1 forwarding-mode
```

```
sa-multicast;
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces `et-x/y/0:0` and `et-x/y/0:1` where `x` is the FPC slot number and `y` is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.



NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 gigether-options 802.3ad ae0
user@host # set et-4/3/0:1 gigether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
  gigether-options {
    802.3ad ae0;
  }
}
et-4/3/0:1 {
  gigether-options {
    802.3ad ae0;
  }
}
```

Interoperability Between MPC9E (MX2K-MPC9E) and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC9E (MX2K-MPC9E) and the 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC9E.
- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC9E. The egress packet flow is the traffic flowing from the MPC9E to the 100-Gigabit Ethernet Interface. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet Interface checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet Interface to the MPC9E. When the 100-Gigabit Ethernet interface sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC9E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created

when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC9E instead of two independent 50-Gbps interfaces.

Configuring MPC9E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

You can enable interoperability between the MPC9E (MX2K-MPC9E) and the 100-Gigabit Ethernet PIC by performing the following tasks:

- [Configuring SA Multicast Bit Steering Mode on MPC9E on page 73](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface on page 74](#)

Configuring SA Multicast Bit Steering Mode on MPC9E

The interoperability mode between the MPC9E and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC9E (MX2K-MPC9E) is a modular MPC that contains two slots for Modular Interface Cards (MICs). MPC9E contains four Packet Forwarding Engines—PIC 0 hosts PFE 0 and PFE 1. PIC 1 hosts PFE 2 and PFE 3.

To configure SA multicast mode on **FPC 19**, **PIC 1** of MPC9E for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the **[edit chassis fpc slot pic slot]** hierarchy level.

```
[edit chassis]
user@host # set fpc 19 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis]
user@host # show fpc 19 pic 1 forwarding-mode
```

```
sa-multicast;
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces `et-x/y/0:0` and `et-x/y/0:1` where `x` is the FPC slot number and `y` is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.



NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 gether-options 802.3ad ae0
user@host # set et-4/3/0:1 gether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
  gether-options {
    802.3ad ae0;
  }
}
et-4/3/0:1 {
  gether-options {
    802.3ad ae0;
  }
}
```

Related Documentation

- *T4000 FPCs Supported*
- *T4000 PICs Supported*
- *forwarding-mode (100-Gigabit Ethernet)*
- *sa-multicast (100-Gigabit Ethernet)*

CHAPTER 4

Fabric Management

- [Fabric Plane Management on page 75](#)
- [Fabric Fault Handling on page 86](#)
- [Fabric Resiliency on page 95](#)
- [Fabric Grant Bypass on page 108](#)
- [Smooth Upgrade from SFB to SFB2 on page 112](#)

Fabric Plane Management

- [Fabric Plane Management on AS MLC Modular Carrier Card on page 75](#)
- [Fabric Plane Management on MPC4E on page 78](#)
- [Fabric Plane Management on MPC7E on page 79](#)
- [Fabric Plane Management on JNP10K-LC2101 on page 81](#)
- [Example: Configuring Fabric Redundancy Mode on MPC4E on page 81](#)
- [Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers on page 84](#)
- [Signaling Neighboring Routers of Fabric Down on T640 and T1600 Routers on page 85](#)

Fabric Plane Management on AS MLC Modular Carrier Card

The Application Services Modular Line Card (AS MLC) provides high application throughput and storage space, and is designed to run services on the MX240, MX480, and MX960 routers. The AS MLC consists of the following components:

- Application Services Modular Carrier Card (AS MCC)
- Application Services Modular Processing Card (AS MXC)
- Application Services Modular Storage Card (AS MSC)

The AS MCC plugs into the chassis and provides the fabric interface.

An MX960 router can support three Switch Control Boards (SCBs) or six fabric planes. The AS MCC supports six fabric planes. An MX240 or MX480 router can support up to two SCBs or two fabric planes. The AS MCC at any time can provide connectivity to only six of the eight fabric planes. Fabric planes 1 and 5, and 3 and 7 use shared physical links.

So between fabric planes 1 and 5 only one plane can be active. Similarly between fabric planes 3 and 7, only one plane can be active.

This behavior impacts the output of fabric-related monitoring commands on MX240 and MX480 routers with AS MCCs.

The **show chassis fpc pic-status** command displays the output for an MX480 router with an AS MCC:

```
user@host>show chassis fpc pic-status
Slot 2   Online      MPC Type 1 3D Q
Slot 1   Online      AS-MCC
PIC 0    Online      AS-MSX
PIC 2    Online      AS-MXC
Slot 4   Offline     MPC 3D 16x 10GE
Slot 5   Offline     AS-MCC
```

In the **show chassis fpc pic-status** command output, **Slot 1 and 5** are AS MCC, **PIC 0** is the AS MSC, and **PIC 2** is the AS MXC.

The **show chassis fabric fpcs** command displays the output on an MX480 router with an AS MCC.

```
user@host>show chassis fabric fpcs
```

```
FPC 2
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 4
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
FPC 5
PFE #0
Plane 0: Plane enabled
```



```

Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused

```

In the **show chassis fabric fpcs** command output, **FPC 5** is the AS MCC.

The **show chassis fabric plane** command displays the output on an MX480 router with an AS MCC.

```
user@host>show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
Plane state: ACTIVE
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 2 :Links ok
```

```
FPC 5
```

```
PFE 0 :Links ok
```

```
Plane 1
```

```
Plane state: ACTIVE
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 2 :Links ok
```

```
FPC 5
```

```
PFE 0 :Links ok
```

```
Plane 2
```

```
Plane state: ACTIVE
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 2 :Links ok
```

```
FPC 5
```

```
PFE 0 :Links ok
```

```
Plane 3
```

```
Plane state: ACTIVE
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 2 :Links ok
```

```
FPC 5
```

```
PFE 0 :Links ok
```

```
Plane 4
```

```
Plane state: ACTIVE
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 2 :Links ok
```

```

    FPC 5
      PFE 0 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Unused
Plane 6
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Unused

```

In the **show chassis fabric plane** output, **FPC 5** is the AS MCC.

The term **Unused** in the output for the **show chassis fabric fpcs** and **show chassis fabric plane** command indicates that one fabric plane from each pair that share physical links (1 and 5, and 3 and 7) is inactive.

See *Junos OS System Basics and Services Command Reference* for more information.

Fabric Plane Management on MPC4E

MPC4E is a fixed-configuration MPC that provides scalability in bandwidth and services capability of routers. MPC4E is supported on MX240, MX480, MX960, MX2010 and MX2020 routers. The MPC4E plugs into the chassis and provides the fabric interface.

By default, MX240 and MX480 routers with MPC4E support four active fabric planes each. However, this default fabric redundancy mode, also known as redundant fabric mode, makes the MPC run in reduced bandwidth state. In increased bandwidth mode, the MX240 and MX480 routers with MPC4E support six active fabric planes each. You can increase the number of active fabric planes by changing the mode from redundant fabric mode to increased bandwidth mode. To configure the MPC4E to function in increased bandwidth mode, use the existing **redundancy-mode increased-bandwidth** statement at the **[edit chassis fabric]** hierarchy level.

If you do not configure the fabric redundancy mode, MPC4E functions in redundant fabric mode. To configure the redundant fabric mode, use the existing **redundancy-mode redundant** statement at the **[edit chassis fabric]** hierarchy level.

An MX960 router can support three Enhanced MX Switch Control Boards (SCBEs) or six fabric planes. MX240 and MX480 routers can support up to two SCBEs or four fabric planes each. MX2020 routers can support eight Switch Fabric Boards (SFBs) or 24 fabric planes.

At any given time, on MX240 and MX480 routers, MPC4E can provide connectivity to only six of the eight fabric planes. Fabric planes 1 and 5 and fabric planes 3 and 7 use shared physical links. So, among fabric planes 1 and 5, only one plane can be active. Similarly, among fabric planes 3 and 7, only one plane can be active.

On MX240 and MX480 routers with MPC4E, if the fabric redundancy mode is not configured, then fabric planes 0, 1, 2, and 3 are online and active and fabric planes 4, 5, 6, and 7 are spare. If you configure the increased bandwidth mode, then the fabric planes 0, 1, 2, 3, 4, and 6 are active and fabric planes 5 and 7 are spare.

On MX960 routers with MPC4E, if you configure increased bandwidth mode, then fabric planes 0, 1, 2, 3, 4, and 5 are online. When MPC4E is plugged into an MX960 router, it does not have any fabric redundancy.

MX2020 routers with MPC4E do not support the existing **redundancy-mode** statement. Of the 24 fabric planes, all 24 planes are active.

Fabric Plane Management on MPC7E

The two variants of MPC7E—MPC7E-MRATE and MPC7E 10G—provide scalability in bandwidth and services capability of routers. The two MPCs are supported on MX240, MX480, and MX960 routers. The MPCs plug into the chassis and provide the fabric interface.



NOTE: The MPC7E-MRATE and MPC7E-10G MPCs are supported only on MX-SCBE2.

An MX960 router can support three Enhanced Switch Control Boards (SCBE2s)—two planes on each SCB and make up a total of six fabric planes. MX240 and MX480 routers can support up to two SCBE2—four fabric planes on each SCBE2 make up a total of eight planes. However, the MX240 and MX480 routers have only six active planes. The remaining two are redundant.

By default, MX240, MX480, and MX960 routers support four active fabric planes each. However, this default fabric redundancy mode, also known as *redundant fabric mode*, makes the MPC run in reduced bandwidth state. In *increased bandwidth mode*, the MX240, MX480, and MX960 routers support six active fabric planes each. You can increase the number of active fabric planes by changing the mode from *redundant fabric mode* to *increased bandwidth mode*. To configure the MPC7E to function in increased bandwidth mode, use the existing **redundancy-mode increased-bandwidth** statement at the **[edit chassis fabric]** hierarchy level. An MPC working with reduced fabric bandwidth

can affect the routing process, resulting in reduced throughput. You can enable increased fabric bandwidth of the active SCBE2 for optimal and efficient performance and traffic handling.

On MX240 and MX480 routers, if the fabric redundancy mode is not configured, then fabric planes 0, 1, 2, and 3 are online and active and fabric planes 4, 5, 6, and 7 are redundant. If you configure the increased bandwidth mode, then the fabric planes 0, 1, 2, 3, 4, and 6 are active and fabric planes 5 and 7 are redundant.

On MX960 routers with MPC7E, if you configure increased bandwidth mode, then fabric planes 0, 1, 2, 3, 4, and 5 are active.

The following sections describe the fabric management features supported on the MPC7E MPCs in MX240, MX480, and MX960 routers.

- [Fabric Hardening on page 80](#)
- [Limiting Traffic Disruption by Detecting Packet Forwarding Engine Destinations That Are Unreachable over the Fabric on page 80](#)

Fabric Hardening

Fabric hardening is the process of controlling bandwidth degradation to prevent traffic black hole. Fabric hardening can be configured with two CLI configuration statements, **per fpc bandwidth-degradation** and **per fpc blackhole-action**. The two statements give you more control over what threshold of bandwidth degradation to react to, and what corrective action to take. The **per fpc bandwidth-degradation** statement determines how the MPC reacts when it reaches a specified bandwidth degradation percentage. The **per fpc blackhole-action** statement determines how the MPC responds to a 100 percent fabric degradation scenario. This statement is optional and overrides the default fabric hardening procedures.

Limiting Traffic Disruption by Detecting Packet Forwarding Engine Destinations That Are Unreachable over the Fabric

The router is able to detect unreachable destination Packet Forwarding Engines and limit the time for which traffic is disrupted. The router signals neighboring routers when it cannot carry traffic because of the inability of some or all source Packet Forwarding Engines to forward traffic to some or all destination Packet Forwarding Engines on any fabric plane, after interfaces have been created. This inability to forward traffic results in a traffic disruption by the router. When the router detects unreachable Packet Forwarding Engine destinations, it attempts to recover from the condition causing the disruption. If the recovery attempt fails, the system turns off the interfaces, thereby ending the disruption and initiating the recovery process.

The recovery process consists of the following steps:

1. Fabric plane restart phase: The MPC restarts the fabric planes one by one.
2. Fabric plane and MPC restart phase: The router restarts both the fabric planes and the MPCs. If there are unreachable MPCs that are unable to initiate high-speed links to the fabric after reboot, traffic disruption is limited because no interfaces are created for these MPCs.

3. MPC offline phase: When previous attempts at recovery fail, the router makes the MPCs that contribute to the traffic black-hole condition offline and turns off the interfaces.

Fabric Plane Management on JNP10K-LC2101

JNP10K-LC2101 is a fixed-configuration MPC that provides increased port density and performance to MX10008 routers. JNP10K-LC2101 plugs into the chassis and provides the fabric interface.

An MX10008 router has six Switch Fabric Boards (SFBs). JNP10K-LC2101 has six Packet Forwarding Engines, each having 24 connections to the fabric (24 planes, or 4 connections per SFB). MX10008 routers with JNP10K-LC2101 will have 24 planes active when all the six SFBs are populated. However, in case of a failure of one SFB, the line rate can be achieved with 20 planes. The fabric supports a link speed of 25 Gbps.

The MX10008 SFB also supports fabric hardening. Fabric hardening is the process of controlling bandwidth degradation to prevent traffic black hole. The following key CLI commands are available for fabric hardening:

- **set chassis fpc slot-number fabric bandwidth-degradation percentage**—Configures the FPC to take a specific action once bandwidth degradation reaches a certain percentage to avoid causing a traffic black hole in the chassis.
- **set chassis fabric degraded detection-enable**—Enables detection of an FPC with degraded fabric.
- **set chassis fabric degraded action-fpc-restart-disable**—Disables line card restarts to limit recovery actions from a degraded fabric condition.

In MX10008 SFBs, fabric fault handling is supported per plane. Fabric fault handling per plane results in increased granularity, which helps identify, isolate, and repair faults. If an SFB has a single faulty plane, the other three planes can continue to operate. There is no need to take the entire SFB offline. For example, if a plane encounters a training failure error, the line card isolates that faulty plane; while the other planes continue to operate. Also, any cyclic redundancy check (CRC) errors on any link on the SFB are indicated on the plane, not on SFB.

Example: Configuring Fabric Redundancy Mode on MPC4E

- [Requirements for Configuration of the Fabric Redundancy Mode on MPC4E on page 81](#)
- [Overview on page 82](#)
- [Configuring Increased Bandwidth Mode on page 82](#)
- [Verification on page 83](#)

Requirements for Configuration of the Fabric Redundancy Mode on MPC4E

This example uses the following hardware and software components:

- Junos OS Release 12.3 R2 or later for MX Series routers
- A single MX480 router with MPC4E

Overview

This example provides information about configuring the fabric redundancy mode on an MX480 router with MPC4E. You can configure the MPC4E to function in redundant fabric mode or increased bandwidth mode. If you do not configure the mode, the MPC4E, by default, functions in redundant fabric mode. In redundant fabric mode, the number of active fabric planes is 4. If you configure the MPC4E to function in increased bandwidth mode, the number of active fabric planes increases to 6.

Configuring Increased Bandwidth Mode

Step-by-Step Procedure

In this example, you configure increased bandwidth mode on an MX480 router with MPC4E. The existing fabric mode on the MX480 router is redundant fabric mode. To configure the fabric mode, perform the following tasks:

1. Verify the existing fabric mode of the router by using the **show chassis fabric mode** command.

```
user@host > show chassis fabric mode
```

```
Fabric Operating Mode :  
    Redundant Fabric
```

2. View the number of active fabric planes by using the **show chassis fabric summary** command.

```
user@host > show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|---------------------------------|
| 0 | Online | 2 hours, 58 minutes, 22 seconds |
| 1 | Online | 6 seconds |
| 2 | Online | 32 seconds |
| 3 | Online | 2 hours, 58 minutes, 23 seconds |
| 4 | Spare | 31 seconds |
| 5 | Spare | 21 seconds |
| 6 | Spare | 18 seconds |
| 7 | Spare | 9 seconds |

Note:

For FPC slots with MPC Type 4 or MCC:

Fabric planes 1 and 5, 3 and 7 use shared physical links.
Those slots may run in a reduced bandwidth in case both plane 1 and 5, or both 3 and 7 are active.

3. In configuration mode, go to the **[edit chassis]** hierarchy level and set the fabric mode to **increased-bandwidth** as follows:

```
[edit chassis]  
user@ host #set fabric redundancy-mode increased-bandwidth
```

Results In **redundant fabric** mode, the number of active fabric planes is 4 while the number of spare planes is also 4. In **increased-bandwidth** mode, the number of active planes is 6 while the number of spare planes is 2.



NOTE: Fabric planes 1 and 5 and fabric planes 3 and 7 use shared physical links. So, among fabric planes 1 and 5, only one plane can be active. Similarly, among fabric planes 3 and 7, only one plane can be active.

Verification

To verify that the fabric mode of the MX480 router with MPC4E, perform the following tasks:

- [Verifying the Fabric Redundancy Mode of the Router on page 83](#)
- [Verifying the Number of Active Fabric Planes on page 83](#)

Verifying the Fabric Redundancy Mode of the Router

Purpose To verify that the fabric redundancy mode of the MX480 router with MPC4E has been modified to **increased-bandwidth**.

Action To view the fabric mode of the router, use the **show chassis fabric mode** command.

```
user@host > show chassis fabric mode
```

```
Fabric redundancy mode: Increased Bandwidth
```

Meaning The MX480 router with MPC4E is functioning in increased bandwidth mode.

Verifying the Number of Active Fabric Planes

Purpose To verify that the number of active fabric planes is 6.

Action To view the number of active fabric planes, use the **show chassis fabric summary** command.

```
user@host > show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|---------------------------------|
| 0 | Online | 2 hours, 55 minutes, 49 seconds |
| 1 | Online | 2 hours, 55 minutes, 25 seconds |
| 2 | Online | 2 hours, 58 minutes, 48 seconds |
| 3 | Online | 2 hours, 55 minutes, 50 seconds |
| 4 | Online | 2 hours, 55 minutes, 48 seconds |
| 5 | Spare | 2 hours, 55 minutes, 40 seconds |
| 6 | Online | 2 hours, 55 minutes, 37 seconds |
| 7 | Spare | 2 hours, 55 minutes, 29 seconds |

Note:

For FPC slots with MPC Type 4 or MCC:

Fabric planes 1 and 5, 3 and 7 use shared physical links.

Those slots may run in a reduced bandwidth in case both plane 1 and 5, or both 3 and 7 are active.

Meaning Number of active planes on the MX480 router with MPC4E is 6 (0, 1, 2, 3, 4, and 6) while the number of spare planes is 2.

Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers

You can configure the active control board to be in redundancy mode or in increased fabric bandwidth mode. You can enable increased fabric bandwidth of active control boards for optimal and efficient performance and traffic handling by configuring the active control boards to be in redundancy mode. To configure redundancy mode for the active control board, use the **redundancy-mode redundant** statement at the **[edit chassis fabric]** hierarchy level:

```
[edit chassis fabric]
redundancy-mode {
  redundant;
}
```

When you configure this option, all the FPCs use 4 fabric planes as active planes, regardless of the type of the FPC.

To configure increased bandwidth mode for the active control board, use the **redundancy-mode increased-bandwidth** statement at the **[edit chassis fabric]** hierarchy level:

```
[edit chassis fabric]
redundancy-mode {
  increased-bandwidth;
}
```

In increased fabric bandwidth mode, MX Series routers will use 6 active planes. MX240 and MX480 routers will also use 2 spare planes in addition to the 6 active planes.

Increased fabric bandwidth mode is enabled by default on MX routers with Switch Control Board (SCB). On MX routers with Enhanced SCB—SCBE, regardless of the type of MPC or DPC installed on it, redundancy mode is enabled by default.

Configuring this feature does not affect the system. You can configure this feature without restarting the FPC or restarting the system.

Signaling Neighboring Routers of Fabric Down on T640 and T1600 Routers

In JUNOS OS Release 10.4 and later, T640 and T1600 routers signal neighboring routers if they are unable to carry traffic due to all fabric planes being taken offline for one of the following reasons:

- CLI or button press initiated offline state.
- Automatically taken offline by the SPMB due to high temperature.
- PIO errors or voltage errors detected by the SPMB CPU to the SIBs.

The following scenarios are not supported:

- All PFEs get destination errors on all planes to all destinations, even with the Switch Interface Boards (SIBs) staying online.
- Complete fabric loss caused by destination timeouts, with the SIBs still online.

When chassisd detects all fabric planes are down, the router reboots all the FPCs in the system. When the FPCs come back up, the interfaces will not be created again, since all the fabric planes are down.

Once the user diagnoses and fixes the cause of all fabric planes going down, the user must then online the SIBs. The SIB online process brings up the interfaces.

Fabric down signaling to neighboring routers offers the following benefits:

- FPCs reboot when the control plane connection to the RE times out.
- Extends a simple approach to reboot FPCs when the dataplane blacks out.

When the router transitions from a state where SIBs are online or spare to a state where there are no SIBs in online state, then all the FPCs in the system are rebooted.

An ERRMSG indicates if all fabric planes are down and the FPCs will be rebooted if any fabric planes do not come up in 2 minutes.

An ERRMSG indicates the reason for FPC reboot on fabric connectivity loss.

The chassisd daemon traces when an FPC comes online, but PIC attach is not done due to no fabric plane present.

A warning is issued in the CLI when the last fabric plane is taken offline, that FPCs will reboot. You will need to online the SIBs after fixing the cause of the SIBs not being online. When the first SIB goes online, and link training with the FPCs completes, the interfaces will be created.

Fabric down signaling to neighboring routers functionality is available by default, and no user configuration required to enable it.

No CLI commands or alarms are required for this feature. Alarms indicate an SIBs offline system state to the user.

**Related
Documentation**

- [Fabric Fault Handling on page 86](#)
- [Fabric Grant Bypass on page 108](#)
- [Fabric Resiliency on page 95](#)

Fabric Fault Handling

- [Understanding Fabric Fault Handling on T4000 Router on page 87](#)
- [Understanding Fabric Fault Handling on PTX5000 Packet Transport Router on page 90](#)
- [Understanding Fabric Fault Handling on Enhanced Switch Fabric Board \(SFB2\) on page 94](#)

Understanding Fabric Fault Handling on T4000 Router

The T4000 router consists of a Switch Interface Board (SIB) with fabric bandwidth double the capacity of the T1600 router. The fabric fault management functionality is similar to that in T1600 routers. This topic describes the fabric fault handling functionality on T4000 routers.

The fabric fault management functionality involves monitoring all high-speed links connected to the fabric and the ones within the fabric core for link failures and link errors.

Action is taken based on the fault and its location. The actions include:

- Reporting link errors in system log files and sending this information to the Routing Engine.
- Reporting link failures at the Flexible Port Concentrator (FPC) or at the SIB and sending this information to the Routing Engine.
- Marking a SIB in **Check** state.
- Moving a SIB into **Fault** state.

The SIB in T4000 routers forms the core of the fabric with 4:1 redundancy—the redundant SIB becomes active when the active SIB becomes nonfunctional, is deactivated, or is removed. The following are the high-level indications of fabric faults that are monitored by Junos OS:

- An SNMP trap is generated whenever a SIB is reported as **Check** or **Fault**.
- **show chassis alarms**—Indicates that a SIB is in **Check** or **Fault** state.
- **show chassis sibs**—Indicates that a SIB is in **Check** or **Fault** state or that a SIB is in **Offline** state when the SIB initializes (this occurs when the SIB does not power on fully).
- **show chassis fabric fpcs**—Indicates whether any fabric links are in error on the FPCs' side.
- **show chassis fabric sibs**—Indicates whether any fabric links are in error on the SIBs' side.
- The `/var/log/messages` system log messages file at the Routing Engine has error messages with the prefix **CHASSISD_FM_ERROR**.
- The SIBs display the **FAIL** LED.



NOTE:

The fabric planes in the chassis determine whether the chassis is a T640 router, a T1600 router, or a T4000 router. Power entry modules (PEMs), FPCs, or fan trays do not determine chassis personality. Alarms are raised if the old PEMs or fan trays are present in a T4000 chassis. You can identify a router based on its fabric planes:

- If all planes present are F16-based SIBs, the chassis is a T640 chassis.
- If all planes present are SF-based SIBs, the chassis is a T1600 chassis.
- If all planes present are XF-based SIBs, the chassis is a T4000 chassis.

Note that mixing of fabric planes is not a supported configuration except during upgrade. You can change the personality of a chassis without a reboot by changing all the fabric planes and by issuing the `set chassis fabric upgrade-mode` CLI command to check the personality. If you do not issue the `set chassis fabric upgrade-mode` CLI command, the personality does not change until the next boot.

In T4000 routers, you come across the following faults:

- Board-level faults—These faults occur during initialization or during runtime. Power failure during board initialization, high-speed links transmit error, and polled I/O error during runtime are some examples of board-level faults.
- Link-level faults—These faults occur during initialization or during runtime. Link training failure at initialization time (failure of the data plane links between an FPC and a SIB to be trained when the FPC or SIB is initialized), error detected on the channel between the SIB and a Packet Forwarding Engine, cyclic redundancy check (CRC) errors detected at runtime, and Packet Forwarding Engine destination errors are types of link-level faults.
- Faults based on environmental conditions—These faults occur during runtime. Sudden removal of an FPC or a SIB might result in an operator error. When a SIB becomes too hot or when SIB voltages are beyond thresholds, the errors generated are classified into environmental errors.

You can implement one of the following options to handle the faults:

- Log the error and raise an alarm.
- Switch over to the spare plane, if available.
- Continue with a reduced number of parts of a plane.
- Continue with a reduced number of usable planes.
- Use polling-based fault handling.
- Monitor high-speed link errors and manually bring the link down to a suitable threshold.

The polled I/O errors and the link errors are monitored every 500 milliseconds, and the board exhaust temperature and board voltages are monitored every 10 seconds.

Understanding Fabric Fault Handling on PTX5000 Packet Transport Router

Starting with Junos OS Release 14.1, the PTX5000 Packet Transport Router supports nine Switch Interface Boards (SIBs). Each FPC2-PTX-PIA FPC supports 1Tb per slot capacity, thereby resulting in a fabric bandwidth of 16 terabits per second (Tbps), full-duplex (8 Tbps of any-to-any, nonblocking, half-duplex) switching.

The fabric fault management functionality involves monitoring all high-speed links connected to the fabric and the ones within the fabric core for link failures and link errors.

The faults that occur in a PTX5000 can be broadly categorized into:

- Board faults—Faults that arise in a SIB or in an Flexible Port Concentrator (FPC) during initialization or during runtime, including issues that arise when a router component is accessing the SIB or FPC or issues that arise out of midplane failures.
- Link faults—Faults that occur on high-level links in a router during initialization or during runtime.
- Faults due to environmental conditions—Faults that occur because of overvoltage or over-temperature; faults that occur because of an operator mishandling a SIB or an FPC, and so on.

The router takes action on the basis of the fault category and the fault location. The actions include:

- Reporting link errors in system log files and sending this information to the Routing Engine.
- Displaying the link errors when you run one of the operational commands listed in [Table 7 on page 91](#):

Table 7: List of Operational Mode Commands

| Operational mode command | Description |
|--|---|
| <code>show chassis sibs</code> | Displays Switch Interface Boards (SIBs) status information. |
| <code>show chassis fabric fpcs <slot number></code> | Displays the fabric state of the specified FPC slot. If no slot number is provided, it displays the status of all FPCs. |
| <code>show chassis fabric sibs <slot number></code> | Displays the state of the electrical switch fabric link between the SIBs and the FPCs. |
| <code>show chassis fabric reachability <detail></code> | Displays the current state of fabric destination reachability. |
| <code>show chassis fabric unreachable-destinations</code> | Displays the list of destinations that have transitioned from a reachable state to an unreachable state. |
| <code>show pfe statistics error</code> | Displays Packet Forwarding Engine error statistics. |
| <code>show chassis fabric topology <sib_slot></code> | Displays the input-output link topology. |
| <code>show chassis fabric summary</code> | Displays the state of all fabric planes and the elapsed uptime. |

- Reporting link failures at the FPC level or at the SIB level and sending this information to the Routing Engine.
- Reporting link error information in the **show chassis alarms** operational command.
- Moving a SIB into *fault* state.

The following sections explain fabric fault handling functionality on the PTX5000:

- [SIB-Level Faults on page 92](#)
- [FPC-Level Faults on page 93](#)

SIB-Level Faults

The following sections give a brief overview on the types of faults that occur on a SIB and how to handle them:

- [Types of Faults That Occur on a SIB on page 92](#)
- [Handling SIB-Level Faults on page 92](#)

Types of Faults That Occur on a SIB

Board faults and link faults occur on a SIB during initialization and during runtime. Some faults occur because of environmental conditions such as overvoltage or over-temperature, or when an operator mishandles the SIB.



NOTE: Run the operational mode commands listed in [Table 7 on page 91](#) to detect faults.

During SIB initialization and runtime, the following faults might occur:

- Board faults, such as failure of SIBs to power up, ASICs reset failure, Switch Processor Mezzanine Board (SPMB) polled I/O access failure to ASICs, board component failures such as PIC failures, or router component access failures.
- Link faults such as high-level link errors that occur during link training.
- Faults that occur because of environmental conditions or because of mishandling of the SIB by the operator.

Handling SIB-Level Faults

The following list illustrates how the router handles a fault that occurs on a SIB during initialization, during runtime, because of environmental conditions, and because of mishandling of the SIB by the operator:

- To handle a board fault on a SIB during initialization, the chassis daemon (chassisd) marks the SIB to be in *fault* state. After the SIB is marked as faulty, no operation occurs on this SIB.
- To handle a board fault on a SIB during runtime, chassisd logs an error in the system log file, raises an alarm indication error type, and marks the SIB as faulty. After the SIB is marked as faulty, no operation occurs on this SIB.

- To handle a link fault on a SIB during runtime, when a link error comes up during link training, chassisd informs the FPC corresponding to the link on which the error occurred to disable the links to the affected SIB. The chassisd then sends an error message to all the other FPCs in the router to stop using the failed SIB link and a link error alarm is generated. Note that when more than one FPC report errors for a given SIB, the SIB is disabled for all FPCs and no traffic is sent by the Packet Forwarding Engine through the affected SIB.
- To handle a link fault on a SIB during runtime, chassisd marks the SIB as faulty and specifies a reason for the error, and the SIB is disabled.
- In case of an environmental fault—overvoltage or over-temperature—the SIB is immediately taken offline. Note that an error is logged periodically as the temperature or voltage rises, and the SIB is taken offline when it crosses a certain threshold voltage or temperature.
- When a SIB is abruptly removed or dislodged, all the affected Packet Forwarding Engines stop using that plane to reach other Packet Forwarding Engines in the router.

FPC-Level Faults

The following sections give a brief overview of the types of faults that occur on an FPC and how to handle them:

- [Types of Faults That Occur on an FPC on page 93](#)
- [Handling FPC-Level Faults on page 94](#)

Types of Faults That Occur on an FPC

Board faults and link faults occur on an FPC during initialization and during runtime. Some faults also occur because of environmental conditions such as overvoltage, over-temperature, or when the operator mishandles the FPC.



NOTE: Run the operational commands listed in [Table 7 on page 91](#) to detect faults.

During FPC initialization and runtime, the following faults might occur:

- Board faults such as failure of FPCs to power up, failure of ASICs to come out of reset phase, PMB polled I/O access failure to ASICs, board component failures such as PIC failure, or router component access failures.
- Link faults such as high-level link errors that occur during link training.
- Faults that occur because of environmental conditions or because of mishandling of an FPC by the operator.

Handling FPC-Level Faults

The following list illustrates how the router handles a fault that occurs on an FPC during initialization, during runtime, because of environmental conditions, and because of mishandling of the FPC by the operator:

- To handle a board fault on an FPC during initialization, chassisd marks the FPC to be in *fault* state. After the SIB is marked as faulty, no operation occurs on this FPC.
- To handle a board fault on an FPC during runtime, chassisd logs an error in the system log file, raises an alarm indication error type, and marks the FPC as faulty. After the FPC is marked as faulty, no operation occurs on this FPC.
- To handle onboard link errors on an FPC during initialization or during runtime, the FPC is taken down and all the affected Packet Forwarding Engines stop using that plane to reach other Packet Forwarding Engines in the router.



NOTE: No planes are taken down during initialization because the link training process for the fabric is not yet complete.

Onboard link errors during runtime are resolved on the basis of current configuration; either the FPC is rebooted or the error is logged and the FPC continues with initialization.

- In case of an environmental fault—over voltage or over-temperature—the FPC is immediately taken offline. Note that an error is logged periodically as the temperature or voltage rises, and the FPC is taken offline when it crosses a certain threshold voltage or temperature.
- When an FPC is abruptly removed or dislodged, all the other Packet Forwarding Engines stop sending traffic to the Packet Forwarding Engines in this FPC.

Understanding Fabric Fault Handling on Enhanced Switch Fabric Board (SFB2)

The MX2000 line of routers support Switch Fabric Boards (SFBs) and enhanced SFBs (SFB2s) but not both at the same time. The SFB and SFB2 host three fabric planes each. So, the chassis supports a total of 24 planes. Junos OS Release 15.1F6 and 16.1R1 support fabric fault handling for each plane in both SFB and SFB2. In earlier releases, fabric fault handling is supported for each SFB, not for each plane.

[Table 8 on page 94](#) lists the differences between fabric fault handling per plane and per SFB.

Table 8: SFB Versus SFB2 Fabric Fault Handling

| SFB Level (SFB) | Plane Level (SFB and SFB2) |
|--|---|
| Cyclic redundancy check(CRC) errors on any link on the SFB are indicated on the SFB. | CRC errors on any link on the SFB or SFB2 are indicated on the plane. |
| On encountering destination errors, the line card isolates the SFB (all 3 planes). | On encountering destination errors, the line card isolates the corresponding plane. Other planes continue to operate. |

Fabric fault handling per-plane provides the following benefits:

- Increased granularity, which helps identify, isolate, and repair faults.
- Alarms and log messages provide fault information per plane instead of per SFB, which makes debugging easier.
- If an SFB has a single faulty plane, the other two planes can continue to operate. There is no need to take the entire SFB offline.
- In case of transient errors, while repairing you can isolate a single plane instead of isolating the bouncing the SFB.

To view fabric fault handling information for all 24 planes, use the **extended** option with the existing fabric commands.

Release History Table

| Release | Description |
|---------|--|
| 14.1 | Starting with Junos OS Release 14.1, the PTX5000 Packet Transport Router supports nine Switch Interface Boards (SIBs). |

Related Documentation

- *Troubleshooting the T4000 SIBs*
- *Troubleshooting the T4000 FPCs*
- [show chassis alarms on page 563](#)
- [show chassis fabric fpcs on page 1060](#)
- [show chassis fabric destinations on page 1020](#)
- [show chassis fabric sibs on page 1205](#)
- [show chassis sibs on page 1515](#)
- *PTX5000 Description*
- *FPCs Supported on the PTX5000*
- *PTX5000 Switch Interface Board Description*

Fabric Resiliency

- [Fabric Resiliency and Degradation on page 96](#)
- [Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers on page 98](#)
- [MX Series Routers Fabric Resiliency on page 100](#)
- [Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers on page 102](#)
- [Managing Bandwidth Degradation on page 105](#)
- [Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions on page 105](#)

- [Disabling an FPC with Degraded Fabric Bandwidth on page 106](#)
- [Enabling Fabric Header Protection to Prevent Wedges on page 107](#)

Fabric Resiliency and Degradation

Juniper routers and switches have built in resiliency to tackle failures and error conditions encountered during normal operation. Immediate action is taken by JUNOS software to remedy the failure conditions to minimize traffic loss. No manual intervention is needed. Fabric degradation could be one of the reasons leading to such error conditions. The following sections explain how the PFEs recover in a resilient manner from these failures.

- [Packet Forwarding Engine Errors and Recovery on PTX Series Routers on page 96](#)
- [Packet Forwarding Engine Errors and Recovery on T640, T1600 or TX Matrix Routers on page 97](#)

Packet Forwarding Engine Errors and Recovery on PTX Series Routers

Packet Forwarding Engine destinations can become unreachable on PTX Series routers for the following reasons:

- The fabric Switch Interface Boards (SIBs) are offline as a result of a CLI command or a pressed physical button.
- The fabric SIBs are turned offline by the control board because of high temperature conditions.
- Voltage or polled I/O errors in the SIBs are detected by the control board.
- Unexpected link-training errors occur on all connected planes.
- Two Packet Forwarding Engines can reach the fabric but not each other.
- Link errors occur where two Packet Forwarding Engines have connectivity with the fabric but not through a common plane.

Starting with Junos OS Release 13.3, you can use PTX Series routers to configure Packet Forwarding Engine (PFE)-related error levels and the actions to perform when a specified threshold is reached.

If error levels are not defined, a PTX Series router begins the following phases in the recovery process:

1. SIB restart phase: The router attempts to resolve the issue by restarting the SIBs one by one. This phase does not start if the SIBs are functioning properly and a single line card is facing an issue.
2. SIB and line card restart phase: The router restarts both the SIBs and the line card. If there are line cards that are unable to initiate high-speed links to the fabric after reboot, it is not relevant to loss of live traffic as no interfaces are created for these line cards, preventing the system from issues.
3. Line Card offline phase: Because previous attempts at recovery failed, line cards and interfaces are turned off and the system avoids issues and error conditions.

Packet Forwarding Engine Errors and Recovery on T640, T1600 or TX Matrix Routers

Packet Forwarding Engine destinations can become unreachable on T640, T1600 or TX Matrix routers for the following reasons:

- The fabric Switch Interface Boards (SIBs) are offline as a result of a CLI command or a pressed physical button.
- The fabric SIBs are turned offline by the Switch Processor Mezzanine Board (SPMB) because of high temperature conditions.
- Voltage or polled I/O errors in the SIBs are detected by the SPMB.
- All Packet Forwarding Engines receive destination errors on all planes from remote Packet Forwarding Engines, even when the SIBs are online.
- Complete fabric loss is caused by destination timeouts, even when the SIBs are online.

The recovery process consists of the following phases:

1. The router restarts the fabric planes one by one. This phase does not start if the fabric plane is functioning properly and a single line card has issues.
2. Fabric plane and Line Card restart phase: The router restarts both the SIBs and the line cards. If there are line cards that are unable to initiate high-speed links to the fabric after reboot, it is not relevant to loss of live traffic as no interfaces are created for these line cards, preventing the system from issues.
3. Line card offline phase: Because previous attempts at recovery failed, line cards and interfaces are turned off and the system avoids issues and error conditions leading to serious consequences.



NOTE: Starting in Junos OS Release 14.2R6, if a SIB becomes offline because of extreme conditions such as high voltage or high temperature, then as part of the recovery process, the router does not restart the fabric plane for that SIB.

The phased recovery mechanism mentioned above is exhaustive unless there are other errors which could be correlated to these issues.

Starting in Junos OS Release 14.2R6, you can manage fabric degradation in single-chassis systems better by incorporating fabric self-ping and Packet Forwarding Engine liveness mechanisms. Fabric self-ping is a mechanism to detect issues in the fabric data path. Using the fabric self-ping mechanism, every Packet Forwarding Engine ascertains that a packet destined to itself is reaching it when the packet is sent over the fabric path. Packet Forwarding Engine liveness is a mechanism to detect whether a Packet Forwarding Engine is reachable on the fabric plane. To verify that it is reachable, the Packet Forwarding Engine sends a self-destined packet over the fabric plane periodically. If any error is detected by these two mechanisms, the fabric manager raises a *fabric degraded alarm* and initiates recovery by restarting the line card.

Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers

Connectivity loss in a router occurs when the router is unable to transmit data packets to other neighboring routers, although the interfaces on that router continue to be in the active state. As a result, the other neighboring routers continue to forward traffic to the impacted router, which drops the arriving packets without sending a notification to the other routers.

When a Packet Forwarding Engine in a router is unable to send traffic to other Packet Forwarding Engines over the data plane within the same router, the router is unable to transmit any packets to a neighboring router, although the interfaces are advertised as active on the control plane. Fabric failure can be one of the reasons for the loss of connectivity.

The following fabric failure scenarios can occur:

- Removal of the control board
- High-speed link 2 (HSL2) training failures
- Single link failure on a line card
- Multiple link failures on the same line card or the same fabric plane
- Multiple link failures randomly on a line card or a fabric plane
- Intermittent cyclic redundancy check (CRC) errors
- A complete loss of connectivity for only one destination and not to other destinations

When a line card does not forward traffic due to a certain reason to other line cards within the device, the control protocol on the Routing Engine is unable to detect this condition. The traffic transmission is not diverted to the functional, active line cards and, instead, the packets are continued to be sent to the affected line card and are dropped at that point. The following might be the causes for a line card being unable to forward traffic:

- All the planes in the system are in the **Offline** or **Fault** state.
- All the Packet Forwarding Engines on the line card might have disabled the fabric streams due to destination errors.

If all the Switch Control Boards (SCBs) lose connectivity to the line cards, then all the interfaces are brought down. If a Packet Forwarding Engine of a line card loses complete connectivity to or from the fabric, then that line card is brought down.

System hardware failures can be of the following types:

- A single occurrence or a rare failure for a brief period (such as environmental spikes). This failure is effectively healed without manual intervention by restarting the fabric plane and restarting the line cards and the fabric plane, if necessary.
- Repeated failures that occur frequently.
- A permanent failure.

A recovery from any case of reduced throughput, such as multiple Packet Forwarding Engine destination timeouts on multiple planes is not attempted. Restoration of connectivity is attempted only when all the planes are in the **Offline** or **Fault** state or when the destinations are unreachable on all active planes.

If connectivity loss occurs because of a certain line card, which is either a common source or common destination of the destination timeout, and if you have configured the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level, no recovery action is taken. The **show chassis fabric reachability** command output can be used to verify the status of the fabric and the line card. An alarm is triggered to indicate that the particular line card is causing the connectivity loss.

Fabric-Failure Detection Methods on MX Series Routers

The chassis daemon (chassisd) process detects the removal of a control board. The removal of the control board causes all the active planes that reside on that board to be disabled and a switchover is performed. If the active Routing Engine is also unplugged along with the control board, the detection of the control board removal is delayed until the switchover of the Routing Engine occurs and the reconnection in the primary, backup Routing Engine pair occurs. If the control board is turned offline by specifying the **request chassis cb slot slot-number offline** or a pressed physical button to cause a graceful shutdown, a fabric failure does not occur, even if the control board is moved to the offline state.

If active fabric planes are removed because of removal of the control board on the master RE, the line card takes the local action of disabling removed planes. If spare planes are available, line card initiates switchover to spare planes. If an active control board on a backup RE is removed, the master RE performs the switchover. The software attempts to optimize the duration of connectivity loss by disabling all removed planes. The spare planes are transitioned to the online state one by one.

Fabric self-ping is a mechanism to detect any issues in the fabric data path. Each Packet Forwarding Engine forwards fabric data cells that are destined to itself over all active fabric planes. To transmit the data cell, the Packet Forwarding Engine fabric sends the request cells over an active plane and waits for a grant packet. The destination Packet Forwarding Engine sends a grant packet over the same plane on which the request cell is received. When the grant cell is received, the source Packet Forwarding Engine sends the data cell.

The Packet Forwarding Engine fabric contains the capability to detect grant delays. If grants are not received within a certain period of time, a destination timeout is declared. Destination timeout on a certain plane by a Packet Forwarding Engine on two or more line cards is considered as an indication for plane failures. Even if one Packet Forwarding Engine on a line card flashes an error, the line card is considered to be in error. Destination timeouts are noticed when the Packet Forwarding Engine sends traffic actively because requests are sent only for valid data cells. The software takes an appropriate action based on the destination timeout. For self-ping, a data cell is destined to the source Packet Forwarding Engine only.

Fabric ping failure messages are sent to the fabric manager on the Routing Engine, which collates all of the errors reported by all the line cards and takes a corrective action. For

example, a ping failure for all links of the same line card might indicate a problem on the line card. Ping failure for multiple line cards for the same fabric plane might indicate a problem with the fabric.

If the Routing Engine determines that a fabric plane is down, based on the information on errors it receives from the line cards or the Packet Forwarding Engines, over a period of 5 seconds, it indicates a fabric failure. The duration of 5 seconds is the period for which the Routing Engine collates the errors from all of the line cards.

Fabric self-ping packets are periodically sent to check the sanity of the fabric links. Self pings are sent at interval of 500 ms. The destination timeout is also checked in intervals of 500 ms. If two timeouts occur successively, self ping failure is detected. When a destination timeout is received, the Packet Forwarding Engine fabric stops the sending of packets to the fabric. To examine the link condition again, the software resets the credits to ensure that new requests are sent again. When a self-ping failure occurs, the line card removes the affected plane from sending data to all destinations. This method ensures that self-ping is not attempted to be sent again on the defective plane.

The following guidelines apply to the self-ping capability:

- By default, self pings are not sent on spare fabric planes because spare planes do not carry traffic.
- The size of self-ping packets is large enough to enable the cells to be loaded over all the active fabric planes (maximum of 8 for MX Series routers).
- A detection of received self-ping packets is not performed.
- High priority queue is used to enable self-ping to be sent for oversubscription cases.

MX Series Routers Fabric Resiliency

MX routers provide intelligent mechanisms to reduce packet loss in hardware failures scenarios.

This topic contains the following sections that describe fabric resiliency options, failure detection methods used, and corrective actions:

- [Fabric Connectivity Restoration on page 100](#)
- [Line Cards with Degraded Fabric on page 102](#)
- [Connectivity Loss Towards a Single Destination Only on page 102](#)
- [Redundancy Fabric Mode on Active Control Boards on page 102](#)

Fabric Connectivity Restoration

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

- The control boards go offline as a result of a CLI command or a pressed physical button.
- The fabric control boards are turned offline because of high temperature.
- Voltage or polled I/O errors in the fabric.

- All Packet Forwarding Engines receive destination errors on all planes from remote Packet Forwarding Engines, even when the fabrics are online.
- Complete fabric loss caused by destination timeouts, even when the fabrics are online.

When the system detects any unreachable Packet Forwarding Engine destinations, fabric connectivity restoration is attempted. If restoration fails, the system turns off the interfaces to trigger local protection action or traffic re-route on the adjacent routers.

The recovery process consists of the following phases:

1. Fabric plane restart phase: Restoration is attempted by restarting the fabric planes one by one. This phase does not start if the fabric plane is functioning properly and an error is reported by one line card only. An error message is generated to specify that a connectivity loss is the reason for the fabric plane being turned offline. This phase is performed for fabric plane errors only.
2. Fabric plane and line card restart phase: The system waits for the first phase to be completed before examining the system state again. If the connectivity is not restored after the first phase is performed or if the problem occurs again within a duration of 10 minutes, connectivity restoration is attempted by restarting both the fabric planes and the line cards. If you configure the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level to disable restart of the line cards when a recovery is attempted, an alarm is triggered to indicate that connectivity loss has occurred. In this second phase, three steps are taken:
 1. All the line cards that have destination errors on a PFE are turned offline.
 2. The fabric planes are turned offline and brought back online, one by one, starting with the spare plane.
 3. The line cards that were turned offline are brought back online.
3. Line card offline phase: The system waits for the second phase to be completed before examining the system state again. Connectivity loss is limited by turning the line cards offline and by turning off interfaces because previous attempts at recovery have failed. If the problem is not resolved by restarting the line cards or if the problem recurs within 10 minutes after restarting the line cards, this phase is performed.

The three phases are controlled by timers. During these phases, if an event (such as offlining/onlining line cards or fabric planes) times out, then the phase skips that event and proceeds to the next event. The timer control has a timeout value of 10 minutes. If the first fabric error occurs in a system with two or more line cards, the fabric planes are restarted. If another fabric error occurs within the next 10 minutes, the fabric planes and line cards are restarted. However, if the second fabric error occurs outside of the timeout period of 10 minutes, then the first phase is performed, which is the restart of only the fabric planes.

In cases where all the destination timeouts are traced to a certain line card, for example, one source line card or one destination line card, only that line card is turned offline and online. The fabric planes are not turned offline and online. If another fabric fault occurs within the period of 10 minutes, the line card is turned offline.

By default, the system limits connectivity loss time by detecting severely degraded fabric. No user interaction is necessary.

Line Cards with Degraded Fabric

You can configure a line card with degraded fabric to be moved to the offline state. On an MX960, MX480, or MX240 router, you can configure link errors or bad fabric planes. This configuration is particularly useful in partial connectivity loss scenarios where bringing the line card offline results in faster re-routing. To configure this option on a line card, use the **offline-on-fabric-bandwidth-reduction** statement at the **[edit chassis fpc slot-number]** hierarchy level. For more information, see [“Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers” on page 102](#) “Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers” on page 102.

Connectivity Loss Towards a Single Destination Only

In certain deployments, a line card indicates a complete connectivity loss towards a single destination only, but it functions properly for other destinations. Such cases are identified and the affected line card is recovered. Consider a sample scenario in which the active planes are 0,1,2,3 and the spare planes are 4,5,6,7 in the connection between line card 0 and line card 1. If line card 0 has single link failures for planes 0 and 1 and if line card 1 has single link failures for planes 2 and 3, a complete connectivity loss occurs between the two line cards. Both line card 0 and line card 1 undergo a phased mode of recovery and fabric healing takes place.

Redundancy Fabric Mode on Active Control Boards

You can configure the active control board to be in redundancy mode or in increased fabric bandwidth mode. To configure redundancy mode for the active control board, use the **redundancy-mode redundant** statement at the **[edit chassis fabric]** hierarchy level. In redundancy mode, all the line cards use 4 fabric planes as active planes, regardless of the type of the line card. You can enable increased fabric bandwidth of active control boards for optimal and efficient performance and traffic handling. On an MX960, MX480, or MX240 router, you can use the **redundancy-mode increased-bandwidth** statement at the **[edit chassis fabric]** hierarchy level to enable increased fabric bandwidth mode for the active control board to cause all the available fabric planes to be used. In this mode, the maximum number of available fabric planes are used for MX routers and the MPC3E. On MX960 routers with active control boards, 6 active planes are used, and on MX240 and MX480 routers with active control boards, 8 active planes are used.

Increased fabric bandwidth mode is enabled by default on MX routers with Switch Control Board (SCB). On MX routers with Enhanced SCB—SCBE—and the MPC3E, redundancy mode is enabled by default. For more information, see [“Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers” on page 84](#).

Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers

You can configure a line card with degraded fabric to be moved to the offline state on an MX960, MX480, or MX240 router. Configuring this feature does not affect the system. You can configure this feature without restarting the line card or restarting the system.

The following scenarios can occur when you configure the feature to disable line cards with degraded fabric:

- If a line card has degraded fabric bandwidth and if you configure this capability to turn off such a line card after it has been operating with degraded fabric for some time, the corrective action is still taken.
- If a line card has been brought offline because of fabric errors and this functionality to move the line card to offline state is disabled, the line card is transitioned to the online state automatically.
- If a line card has been brought offline because of fabric errors and this functionality to move the line card to offline state is disabled or configured for some other line card, the line card that was turned offline is transitioned to the online state automatically.
- All the line cards that were brought offline because of degraded fabric, when you configured this setting, are brought back online when you commit any configuration under the **[edit chassis]** hierarchy level. Similarly, a restart of the chassis daemon or the Graceful Routing Engine switchover (GRES) operation also causes the line card that is disabled because of degraded fabric to be moved to the online state.

Degraded fabric indicates that a line card is operating with less than the required number of active fabric planes. If an line card is operating with less than four planes, it is considered to be degraded. This rule applies to all types of line cards and fabric. Degraded condition denotes that good fabric traffic exists at a reduced bandwidth.

The following conditions can result in degradation of fabric:

- The fabric control boards go offline as a result of an unintentional, abrupt power shutdown.
- An application-specific integrated circuit (ASIC) error, which causes a plane of a control board to be automatically turned offline.
- Manually bringing the fabric plane or the control board to the offline state.
- Removal of the control board
- Self-ping failure on any plane.
- HSL2 training failure for active plane.
- If a spare fabric plane has CRC errors, and this spare plane is made online, the link with the CRC error is disabled. This mechanism might cause a degradation in fabric in one direction and might cause a traffic black hole in the other direction.
- When a self-ping or HSL2 training failure occurs, the fabric plane is disabled for a particular line card and it is online for other line cards. This condition can also cause a traffic black hole.

If you need to remove the control board or move a fabric plane to the offline state during a system maintenance, you must enable the functionality to turn the line cards with degraded bandwidth to the offline state (by using the **offline-on-fabric-bandwidth-reduction** statement at the **[edit chassis fpc slot-number]** hierarchy level).

The following corrective actions are performed when a traffic black hole or fabric degradation occurs:

- Regardless of whether a spare control board is available or not, self-ping state for each line card is monitored at intervals of 5 seconds at the Routing Engine. Fabric manager uses the following rule to determine the presence of a spare control board:
 - MX960 routers with I-chip or I-chip and Trio-chip-based line cards that contain three control boards
 - MX240 or MX480 routers with I-chip or I-chip and Trio-chip-based line cards that contain two control boards
 - MX960, MX480, or MX240 routers that contain only Trio-based line cards are not considered to contain a spare control board

If during any such interval of 5 seconds, two line cards indicate a failure for the same plane, a switchover to the spare control board. In this case, the control board that reported errors is turned offline and the spare control board is turned online.

- If a spare control board is available, and if you configure the functionality to disable line cards with degraded fabric, self-ping state for each line card is monitored at intervals of 5 seconds at the Routing Engine. The following conditions can occur:
 - During any 5-second interval, if only one line card indicates a failure for a plane, the fabric Manager waits for the next interval. During the subsequent interval, if no other line card indicates a failure for the same plane, switchover of the control board is performed.
 - During any 5-second interval, if multiple line cards show failures for multiple control boards, the fabric manager waits for the next interval. During the subsequent interval, if the same condition remains, all the failing line cards are turned offline even if the spare control board is present.
 - During any 5-second interval, if any line card shows a failure for multiple planes on multiple control boards, the fabric manager waits for the next interval. During the subsequent interval, if the same condition persists, the line card is turned offline even if the spare control board is present.
- If spare planes are not available, the line card is turned offline when it displays a failure for a single plane or multiple planes. The line card is brought offline only if you previously configured the **offline-on-fabric-bandwidth-reduction** statement at the **[edit chassis fpc slot-number]** hierarchy level.

Managing Bandwidth Degradation

Certain errors result in packets being dropped by a system without notification. Other connected systems continue to forward traffic to the affected system, impacting network performance. A severely degraded fabric plane can be one of the reasons here.

By default, Juniper Networks routers attempt to start healing from such situations when the system detects issues with Packet Forwarding Engines. If the healing fails, the system turns off the interfaces, thereby preventing further escalations.

Junos OS software has the ability and the flexibility where a **bandwidth-degradation** configuration is available to detect and respond to fabric plane degradation in ways the user deems fit. Users can configure the router to specify which healing actions the router should take once such a condition is detected.

The **bandwidth-degradation** statement is configured with a percentage and an action. The **percent-age** value can range from 1 to 99, and it represents the percentage of fabric degradation needed to trigger a response from the line card. The **action** attribute determines the type of response the line card performs once fabric degradation reaches the configured percentage.

The statement is only configured with an **action** attribute, which triggers when the percentage of fabric degradation reaches 100 percent.

The following actions can be applied to either configuration statement:

- **log-only:** A message gets logged in the chassisd and message files when the fabric degradation threshold is reached. No other actions are taken.
- **restart:** The line card with a degraded fabric plane is restarted once the threshold is reached.
- **offline:** The line card with a degraded fabric plane is taken offline once the threshold is reached. The line card requires manual intervention to be brought back online. This is the default action if no action attribute configured.
- **restart-then-offline:** The line card with a degraded fabric plane is restarted once the threshold is reached, and if fabric plane degradation is detected again within 10 minutes, the line card is taken offline. The line card requires manual intervention to be brought back online.



NOTE: This feature is available in the Junos OS Release 15.1R1.

Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions

You can disable line card restarts to limit recovery actions from a degraded fabric condition. On T640 and T1600 routers, only the fabric plane is restarted. On PTX Series routers, only the Switch Interface Boards (SIBs) are restarted. To disable the restarting

of line cards, use the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level:

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

Whenever a line card restart is disabled, an alarm is raised when there are unreachable destinations present in the router, and you must restart the line cards manually.

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

Disabling an FPC with Degraded Fabric Bandwidth

You can bring an FPC with degraded fabric bandwidth offline to avoid causing a traffic black hole in the chassis for an extended time. To configure the option to disable an FPC with degraded bandwidth, use the **offline-on-fabric-bandwidth-reduction** statement at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis]
fpc slot-number {
  offline-on-fabric-bandwidth-reduction;
}
```

The fabric manager checks the number of current active planes periodically. If the number of active planes is lower than the required number of active planes for a particular router, the system waits 10 seconds before it takes any corrective action. If the reduced bandwidth condition persists for an FPC and if this feature has been configured for the FPC, the system brings the FPC offline.

Enabling Fabric Header Protection to Prevent Wedges

Starting in Junos OS Release 17.3R1, you can configure fabric header protection for MPCs to prevent wedges (blackholes).



NOTE: Fabric header protection is not supported on multiservices DPC (MS-DPC) and on MX104 and MX80 routers.

If the internal fabric header of a packet is corrupted, it can result in packet corruption. When the corrupted packets are transmitted within the chassis, from Ingress Packet Forwarding Engine (PFE) to Egress Packet Forwarding Engine (PFE), it can result in application-specific integrated circuit (ASIC) wedges (blackholes). To protect the internal fabric header from corruption, enable fabric header protection. When you enable protection of the fabric header, a 32-byte cyclic redundancy check (CRC) is added to each packet sent from Ingress PFE to the Egress PFE. When the packet is received at the Egress PFE, the CRC is validated and if the check fails, the packet is dropped. This protects the Egress PFE from corrupted packets.

To enable fabric header protection on MPCs to prevent wedges:

1. Enable fabric header protection by including the **fabric-header-crc-enable** statement at the [edit chassis] hierarchy level.

```
[edit chassis]
user@host# set fabric-header-crc-enable
```

2. After enabling fabric header protection, commit the configuration.

```
[edit chassis]
user@host# commit
```



NOTE: After enabling fabric header protection and committing the configuration, the router displays the following warning message after you commit the configuration:

```
[edit]
'chassis'
warning: Chassis configuration for fabric header crc has been changed. A
system reboot is mandatory. Please reboot the system NOW. Continuing
without a reboot might result in unexpected system behavior. commit
complete
```

3. Reboot the router for the configuration to take effect.

```
user@host> request system reboot
```

Release History Table

| Release | Description |
|---------|--|
| 17.3R1 | Starting in Junos OS Release 17.3R1, you can configure fabric header protection for MPCs to prevent wedges (blackholes). |
| 14.2R6 | Starting in Junos OS Release 14.2R6, if a SIB becomes offline because of extreme conditions such as high voltage or high temperature, then as part of the recovery process, the router does not restart the fabric plane for that SIB. |
| 14.2R6 | Starting in Junos OS Release 14.2R6, you can manage fabric degradation in single-chassis systems better by incorporating fabric self-ping and Packet Forwarding Engine liveness mechanisms. |
| 13.3 | Starting with Junos OS Release 13.3, you can use PTX Series routers to configure Packet Forwarding Engine (PFE)-related error levels and the actions to perform when a specified threshold is reached. |

Related Documentation

- [Fabric Fault Handling on page 86](#)
- [Fabric Grant Bypass on page 108](#)
- [Fabric Plane Management on page 75](#)

Fabric Grant Bypass

- [Understanding Fabric Grant Bypass on page 109](#)
- [Disabling Fabric Grant Bypass to Control Congestion and Improve Performance on page 110](#)
- [Re-Enabling Fabric Grant Bypass on page 111](#)

Understanding Fabric Grant Bypass

Module Port Concentrators (MPCs) contain one, two, or four Packet Forwarding Engines. Each Packet Forwarding Engine handles its forwarding decisions independently. Also, each Packet Forwarding Engine implements fabric queuing and flow control features required to communicate with other Packet Forwarding Engines on the same chassis. Packet Forwarding Engines use the fabric grant bypass feature to communicate with each other. For instance, when a Packet Forwarding Engine wants to send a packet to another Packet Forwarding Engine (on the same MPC or on a different MPC), a request is sent to the Packet Forwarding Engine across the fabric plane. After the request is granted, the source Packet Forwarding Engine sends the packet to the destination Packet Forwarding Engine.

On MX240, MX480, and MX960 routers with Switch Control Boards (SCB, SCBE, and SCBE2), the fabric grant bypass feature is disabled for all MPCs by default. On MX2010 and MX2020 routers with the Switch Fabric Board SFB2, the fabric grant bypass feature is disabled, by default, for all MPCs except MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP). On MX2010 and MX2020 routers with the Switch Fabric Board SFB, the fabric grant bypass feature is enabled for all MPCs by default. When the fabric grant bypass feature is enabled by default, the source Packet Forwarding Engine has to wait for the fabric plane to grant the request before the packet can be sent to the destination Packet Forwarding Engine. Waiting for the request to be granted can impact system behavior and performance.

Table 9 on page 109 describes the fabric grant bypass behavior on MX Series routers.

Table 9: Fabric Grant Bypass Behavior on MX Series Routers

| MX Series Routers | Switch Control Board | Switch Fabric Board | Default Fabric Grant Bypass Behavior |
|-------------------------|----------------------|---------------------|---|
| MX240, MX480, and MX960 | SCB, SCBE, MX-SCBE2 | - | Disabled for all MPCs. |
| MX2010 and MX2020 | - | SFB | Enabled for all MPCs. |
| MX2010 and MX2020 | - | SFB2 | Enabled for MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP). Disabled for all other MPCs. |

Starting in Junos OS Release 16.1, you can disable the fabric grant bypass feature on the MX2020 and MX2010 routers with SFBs. Disabling the default fabric grant bypass feature controls congestion and thus improves system behavior and performance on these routers. After disabling the feature, you must reboot the router for the changes to take effect.



NOTE: After you disable the fabric grant bypass feature and reboot the router, existing MPCs where the fabric grant bypass feature is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP)—do not power on.

You can re-enable the fabric grant bypass feature on the MX2020 and MX2010 routers. After enabling the feature, you must reboot the router for the changes to take effect. If the router has existing MPCs where the fabric grant bypass feature is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP)—these MPCs power on after the reboot.

Disabling Fabric Grant Bypass to Control Congestion and Improve Performance

You can disable the fabric grant bypass feature on the MX2020 and MX2010 routers with SFBs. Disabling the default fabric grant bypass feature controls congestion and thus improves system behavior and performance on MX2010 and MX2020 routers. After disabling the feature, you must reboot the router for the changes to take effect.



NOTE: After you disable the fabric grant bypass feature and reboot the router, existing MPCs on the router where the fabric grant bypass feature is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP)—do not power on.

To disable fabric grant bypass to control congestion and improve system behavior and performance:

1. Disable fabric grant bypass by including the **fabric disable-grant-bypass** statement at the **[edit chassis]** hierarchy level.

```
[edit chassis]
user@host# set fabric disable-grant-bypass
```

2. After disabling fabric grant bypass, commit the configuration.

```
[edit chassis]
user@host# commit
```



NOTE: After you disable fabric grant bypass and commit the configuration, the router displays the following warning message:

```
[edit]
```

```
'chassis'
```

```
WARNING: Chassis configuration for fabric grant bypass has been changed.
A system reboot is mandatory. Please reboot the system NOW. Continuing
without a reboot might result in unexpected system behavior. commit
complete
```

3. Reboot the router for the configuration to take effect.

```
user@host> request system reboot
```

To re-enable fabric grant bypass feature on the MX2020 and MX2010 routers, use the **delete chassis fabric disable-grant-bypass** command. After enabling the feature, you must reboot the router for the changes to take effect. If the router has existing MPCs where the fabric grant bypass feature is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP)—these MPCs power on after the reboot.

Re-Enabling Fabric Grant Bypass

After you disable the fabric grant bypass feature, you can re-enable the feature on the MX2020 and MX2010 routers with SFBs. This is the default behavior on these routers.



NOTE: After you enable the fabric grant bypass feature and reboot the router, existing MPCs on the router where the fabric grant bypass feature is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFPP)—power on.

To re-enable fabric grant bypass:

1. Use the **delete** statement with the **fabric disable-grant-bypass** statement at the **[edit chassis]** hierarchy level to enable fabric grant bypass.

```
[edit chassis]
user@host# delete fabric disable-grant-bypass
```

2. After enabling fabric grant bypass, commit the configuration.

```
[edit chassis]
user@host# commit
```



NOTE: After you enable fabric grant bypass and commit the configuration, the router displays the following warning message:

```
[edit]
```

```
'chassis'
```

```
WARNING: Chassis configuration for fabric grant bypass has been changed.
A system reboot is mandatory. Please reboot the system NOW. Continuing
without a reboot might result in unexpected system behavior. commit
complete
```

3. Reboot the router for the configuration to take effect.

```
user@host> request system reboot
```

To disable fabric grant bypass feature on the MX2020 and MX2010 routers, use the **set chassis fabric disable-grant-bypass** command. After disabling the feature, you must reboot the router for the changes to take effect. If the router has existing MPCs where the fabric grant bypass feature is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP)—these MPCs do not power on after the reboot.

- Related Documentation**
- [Fabric Plane Management on page 75](#)
 - [Fabric Resiliency on page 95](#)
 - [Fabric Fault Handling on page 86](#)

Smooth Upgrade from SFB to SFB2

- [Understanding the Smooth Upgrade Process on page 113](#)
- [Before you Begin the Smooth Upgrade Process on page 114](#)
- [Performing a Smooth Upgrade to Enhanced Switch Fabric Board \(SFB2\) with Minimal Impact on Traffic on page 123](#)

Understanding the Smooth Upgrade Process

The MX2000 line of routers support Switch Fabric Board (SFB; model number: MX2000-SFB) and the enhanced Switch Fabric Board (SFB2; model number: MX2000-SFB-S). SFB2 is designed to support higher bandwidth than that provided by SFB on the MX2000 line of routers. For instance, the MX2000 line of routers with SFB support fabric bandwidth of 800 Gbps. However, the MX2000 line of routers with SFB2 can support fabric bandwidth of 1.92 Tbps. A smooth upgrade enables you to upgrade from SFB to SFB2 with minimal traffic impact on the MX2000 line of routers.



NOTE: If you have installed the Junos Continuity software package, you cannot perform a smooth upgrade from Switch Fabric Board (SFB) to Enhanced Switch Fabric Board (SFB2) on MX2010 and MX2020 routers.

This topic explains the smooth upgrade process that takes place when you upgrade from Switch Fabric Board (SFB) to enhanced Switch Fabric Board (SFB2) on MX2000 line of routers.



NOTE: The MX2000 line of routers support either SFB or SFB2 only. The MX2000 line of routers do not support SFB and SFB2 at the same time. However, during an upgrade from SFB to SFB2, the MX2000 line of routers support both SFB and SFB2 at the same time for the duration of the upgrade. But, you must upgrade all 8 SFBs to 8 SFB2s. You cannot replace 4 SFBs with 4 SFB2s and retain the other SFBs.

The process of smooth upgrade from SFB and SFB2 includes the following steps:

1. Initiating the smooth upgrade process. When you initiate smooth upgrade, the router can support both SFB and SFB2 at the same time.
2. Performing the smooth upgrade. This step consists of replacing all SFBs with SFB2s.
3. Terminating the smooth upgrade. When you terminate the smooth upgrade process, the router stops supporting SFB and SFB2 at the same time.

A smooth upgrade provides the following benefits:

- The smooth upgrade eliminates network downtime during the smooth upgrade window because of 7+1 fabric redundancy. When one SFB is being upgraded to SFB2, the other seven SFBs are available to handle the traffic.



NOTE: If multiple SFBs are upgraded at the same time, multiple fabric planes are down at any specified time and so traffic is impacted.

- When multiple fabric boards and planes come online at the same time, you can batch them together and train. This reduces the booting up time and the time taken for the plane to come online.
- On MX2000 line of routers with SFB, fabric grant bypass is enabled by default. Disabling fabric grant bypass helps control congestion and improves performance. On MX2000 line of routers with SFB, you can disable fabric grant bypass by default, fabric grant bypass is disabled for all MPCs on MX2000 line of routers when they connect to SFB2. Fabric grant bypass is enabled by default on MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP). When fabric grant bypass is enabled by default, when those MPCs connect to SFB2, fabric grant bypass continues to be enabled and cannot be disabled.

To quickly access the information you need, click the links in [Table 10 on page 114](#).

Table 10: Locating the Information You Need to Work on Smooth Upgrade Process

| Task You Need to Perform | Where The Information Is Located |
|--------------------------|---|
| Before You begin | “Before you Begin the Smooth Upgrade Process” on page 114 |
| Perform a Smooth Upgrade | “Performing a Smooth Upgrade to Enhanced Switch Fabric Board (SFB2) with Minimal Impact on Traffic” on page 123 |

Before you Begin the Smooth Upgrade Process

Before you begin the smooth upgrade from Switch Fabric Board (SFB) to enhanced Switch Fabric Board (SFB2), complete the following tasks:



NOTE: If you have installed the Junos Continuity software package, you cannot perform a smooth upgrade from Switch Fabric Board (SFB) to Enhanced Switch Fabric Board (SFB2) on MX2010 and MX2020 routers.

- Prepare the router and install the version of Junos OS Release (16.1R1 or later) that supports the smooth upgrade process. For more information about how to install or upgrade the version of Junos OS Release, see *Installing the Software Package on a Device with Redundant Routing Engines*.
- Verify that the Switch Fabric Boards and fabric planes are online and operational. At this time, the line cards are connected to SFB.

1. To verify that all the switch fabric boards (SFBs) are online and operational, issue the following command:

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|----------------------|
| Chassis | | | JN11E0A50AFJ | MX2020 |
| Midplane | REV 01 | 711-032387 | abcd1111 | Lower Backplane |
| Midplane 1 | REV 04 | 711-032386 | ABAB9191 | Upper Backplane |
| PMP 1 | REV 05 | 711-032428 | ACAJ1526 | Upper Power Midplane |
| PMP 0 | REV 04 | 711-032426 | ACAJ1585 | Lower Power Midplane |
| FPM Board | REV 06 | 760-040242 | ABBT8836 | Front Panel Display |
| PSM 0 | REV 01 | 740-050037 | 1EDB32101E3 | DC 52V Power Supply |
| Module | | | | |
| PSM 1 | REV 01 | 740-033727 | 1E012130107 | DC 52V Power Supply |
| Module | | | | |
| PSM 2 | REV 01 | 740-050037 | 1EDB3210162 | DC 52V Power Supply |
| Module | | | | |
| PSM 3 | REV 01 | 740-050037 | 1EDB32000R6 | DC 52V Power Supply |
| Module | | | | |
| PSM 4 | REV 01 | 740-050037 | 1EDB313005M | DC 52V Power Supply |
| Module | | | | |
| PSM 5 | REV 01 | 740-050037 | 1EDB321016G | DC 52V Power Supply |
| Module | | | | |
| PSM 6 | REV 01 | 740-050037 | 1EDB313005F | DC 52V Power Supply |
| Module | | | | |
| PSM 7 | REV 01 | 740-050037 | 1EDB313009X | DC 52V Power Supply |
| Module | | | | |
| PSM 8 | REV 01 | 740-050037 | 1EDB3130082 | DC 52V Power Supply |
| Module | | | | |
| PSM 9 | REV 01 | 740-050037 | 1EDB32101HH | DC 52V Power Supply |
| Module | | | | |
| PSM 10 | REV 01 | 740-050037 | 1EDB321015G | DC 52V Power Supply |
| Module | | | | |
| PSM 11 | REV 01 | 740-050037 | 1EDB32101JW | DC 52V Power Supply |
| Module | | | | |
| PSM 12 | REV 01 | 740-045050 | 1E02224000N | DC 52V Power Supply |
| Module | | | | |
| PSM 13 | REV 01 | 740-050037 | 1EDB321015C | DC 52V Power Supply |
| Module | | | | |
| PSM 14 | REV 01 | 740-050037 | 1EDB321015J | DC 52V Power Supply |
| Module | | | | |
| PSM 15 | REV 01 | 740-045050 | 1E022240015 | DC 52V Power Supply |
| Module | | | | |
| PSM 16 | REV 01 | 740-045050 | 1E02224000L | DC 52V Power Supply |
| Module | | | | |
| PSM 17 | REV 01 | 740-050037 | 1EDB32101EP | DC 52V Power Supply |
| Module | | | | |
| PDM 1 | REV 03 | 740-045234 | 1EFA3230588 | DC Power Dist Module |
| PDM 2 | REV 03 | 740-045234 | 1EFA3230508 | DC Power Dist Module |
| Routing Engine 0 | REV 02 | 740-041821 | 9009115214 | RE-S-1800x4 |
| Routing Engine 1 | REV 02 | 740-041821 | 9009099720 | RE-S-1800x4 |
| CB 0 | REV 23 | 750-040257 | CAAR5968 | Control Board |
| CB 1 | REV 12 | 750-040257 | CAAD9498 | Control Board |
| SPMB 0 | REV 02 | 711-041855 | ABCC1066 | PMB Board |
| SPMB 1 | REV | 711-041855 | ABBS1488 | PMB Board |
| SFB 0 | REV 06 | 711-044466 | ABCD4944 | Switch Fabric Board |
| SFB 1 | REV 06 | 711-044466 | ABCD4938 | Switch Fabric Board |
| SFB 2 | REV 06 | 711-044466 | ABCD5175 | Switch Fabric Board |
| SFB 3 | REV 06 | 711-044466 | ABCD5160 | Switch Fabric Board |

| | | | | |
|--------|------------|--------------|--------------|----------------------|
| SFB 4 | REV 06 | 711-044466 | ABCD4997 | Switch Fabric Board |
| SFB 5 | REV 06 | 711-044466 | ABCD5013 | Switch Fabric Board |
| SFB 6 | REV 06 | 711-044466 | ABCD5267 | Switch Fabric Board |
| SFB 7 | REV 06 | 711-044466 | ABCD4968 | Switch Fabric Board |
| FPC 0 | REV 23 | 750-054901 | CAEH6678 | MPC3E NG HQoS |
| CPU | REV 11 | 711-045719 | CAEA4592 | RMPC PMB |
| MIC 0 | REV 26 | 750-028392 | ZM0999 | 3D 20x 1GE(LAN) SFP |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031469 | 17T446600017 | SFP-LX10 |
| Xcvr 1 | REV 01 | 740-031469 | 17T446600120 | SFP-LX10 |
| Xcvr 2 | REV 01 | 740-031469 | 19T446600010 | SFP-LX10 |
| Xcvr 3 | REV 01 | 740-031469 | 0ZT446600018 | SFP-LX10 |
| Xcvr 4 | REV 01 | 740-031469 | 19T446600007 | SFP-LX10 |
| Xcvr 5 | REV 01 | 740-031469 | 18T446600081 | SFP-LX10 |
| Xcvr 6 | REV 01 | 740-031469 | 18T446600088 | SFP-LX10 |
| Xcvr 7 | REV 01 | 740-031469 | 18T446600049 | SFP-LX10 Xcvr 8 |
| REV 01 | 740-031469 | 18T446600002 | SFP-LX10 | |
| Xcvr 9 | REV 01 | 740-031469 | 19T446600008 | SFP-LX10 |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031469 | 18T446600032 | SFP-LX10 |
| Xcvr 1 | REV 01 | 740-031469 | 09T446600025 | SFP-LX10 |
| Xcvr 2 | REV 01 | 740-031469 | 19T446600004 | SFP-LX10 |
| Xcvr 3 | REV 01 | 740-031469 | 18T446600084 | SFP-LX10 |
| Xcvr 4 | REV 01 | 740-031469 | 18T446600060 | SFP-LX10 |
| Xcvr 5 | REV 01 | 740-031469 | 17T446600085 | SFP-LX10 |
| Xcvr 6 | REV 01 | 740-031469 | 17T446600014 | SFP-LX10 |
| Xcvr 7 | REV 01 | 740-031469 | 17T446600315 | SFP-LX10 |
| Xcvr 8 | REV 01 | 740-031469 | 18T446600043 | SFP-LX10 |
| Xcvr 9 | REV 01 | 740-031469 | 0ZT446600017 | SFP-LX10 |
| MIC 1 | REV 19 | 750-033199 | CAAJ1818 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 1 | REV 32 | 750-028467 | ZR1986 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ZT7025 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AMH0285 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 1 | REV 01 | 740-031980 | AHK011H | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | APK0569 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| FPC 2 | REV 04 | 750-044444 | ZA7865 | MPCE Type 2 3D P |
| CPU | REV 02 | 711-038484 | ZB2728 | MPCE PMB 2G |
| MIC 0 | REV 07 | 750-028390 | XY2158 | 3D 40x 1GE(LAN) RJ45 |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) RJ45 |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) RJ45 |
| PIC 2 | | BUILTIN | BUILTIN | 10x 1GE(LAN) RJ45 |
| PIC 3 | | BUILTIN | BUILTIN | 10x 1GE(LAN) RJ45 |
| MIC 1 | | | | |
| QXM 0 | REV 05 | 711-028408 | ZC3420 | MPC QXM |
| QXM 1 | REV 05 | 711-028408 | ZC3350 | MPC QXM |
| FPC 3 | REV 22 | 750-054564 | CADG6972 | MPC5E 3D 2CGE+4XGE |
| CPU | REV 11 | 711-045719 | CADC7599 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | 193363A00483 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 1YT517101829 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-052505 | XUF0GPX | CFP2-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |

| | | | | |
|----------------------------|------------------|------------|-------------|---------------------|
| FPC 6 | REV 11 | 750-045372 | CABT0840 | MPCE Type 3 3D |
| CPU | REV 08 | 711-035209 | CABL0889 | HMPC PMB 2G |
| MIC 0 | REV 27 | 750-028392 | CABR4723 | 3D 20x 1GE(LAN) SFP |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-011782 | P9229UM | SFP-SX |
| Xcvr 1 | REV 01 | 740-011782 | P9POX6V | SFP-SX |
| Xcvr 2 | REV 01 | 740-011613 | PCE01W5 | SFP-SX |
| Xcvr 4 | REV 01 | 740-011613 | PD63DEN | SFP-SX |
| Xcvr 5 | REV 02 | 740-011613 | PG12FSF | SFP-SX |
| Xcvr 7 | REV 01 | 740-011782 | PCL3UDY | SFP-SX |
| Xcvr 8 | REV 01 | 740-011613 | PE713Z9 | SFP-SX |
| Xcvr 9 | REV 01 | 740-011613 | AM0846SAQA5 | SFP-SX |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-011613 | P9F16KE | SFP-SX |
| Xcvr 1 | REV 01 | 740-031851 | AM1045SU91U | SFP-SX |
| Xcvr 4 | REV 01 | 740-011613 | PAJ4SY8 | SFP-SX |
| Xcvr 5 | REV 01 | 740-011782 | P9228K7 | SFP-SX |
| MIC 1 | REV 27 | 750-028392 | CABT5724 | 3D 20x 1GE(LAN) SFP |
| PIC 2 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 02 | 740-011613 | AM0925SBG5T | SFP-SX |
| Xcvr 1 | | NON-JNPR | P7K1PUX | SFP-SX |
| Xcvr 2 | REV 01 | 740-011613 | PFF2DHH | SFP-SX |
| Xcvr 4 | REV 01 | 740-011613 | PD63DF2 | SFP-SX |
| Xcvr 5 | REV 02 | 740-011613 | AM1033SH3DH | SFP-SX |
| Xcvr 6 | REV 01 | 740-011613 | PE70W8W | SFP-SX |
| Xcvr 9 | REV 01 | 740-011613 | PD62W9W | SFP-SX |
| PIC 3 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 02 | 740-013111 | 9154876 | SFP-T |
| Xcvr 2 | REV 01 | 740-011613 | AM0846SAQ9H | SFP-SX |
| Xcvr 5 | REV 01 | 740-011613 | AM0820S9T2C | SFP-SX |
| Xcvr 9 | REV 01 | 740-011613 | AM0805S8LGQ | SFP-SX |
| FPC 7 | REV 27 | 750-033205 | ZL6014 | MPCE Type 3 3D |
| CPU | REV 07 | 711-035209 | ZK9068 | HMPC PMB 2G |
| MIC 0 | REV 04 | 750-028392 | JR6231 | 3D 20x 1GE(LAN) SFP |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031851 | AM1045SU93A | SFP-SX |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 4 | REV 01 | 740-011782 | P9P1050 | SFP-SX |
| Xcvr 9 | REV 01 | 740-011613 | PFF2K74 | SFP-SX |
| MIC 1 | REV 19 | 750-033199 | CAAF0016 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 11 | REV 16 | 750-037358 | CAAL1014 | MPC4E 3D 32XGE |
| CPU | REV 08 | 711-035209 | CAAS2637 | HMPC PMB 2G |
| PIC 0 | | | | |
| PIC 1 | | | | |
| PIC 2 | | | | |
| PIC 3 | | | FPC 12 | REV 29 750-031090 |
| ZA1887 | MPC Type 2 3D EQ | | | |
| CPU | REV 06 | 711-030884 | YR6876 | MPC PMB 2G |
| FPC 13 | REV 36 | 750-056519 | CAFW4205 | MPC7E 3D |
| MRATE-12xQSFP-XGE-XLGE-CGE | | | | |
| CPU | REV 16 | 750-057177 | CAFY5688 | SMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | |
| MRATE-6xQSFP-XGE-XLGE-CGE | | | | |
| Xcvr 0 | REV 01 | 740-054053 | QF3208FT | QSFP+-4X10G-SR |
| Xcvr 3 | REV 01 | 740-032986 | QB171000 | QSFP+-40G-SR4 |
| Xcvr 5 | REV 01 | 740-058732 | 1CJQA10700C | QSFP-100GBASE-LR4 |
| PIC 1 | | BUILTIN | BUILTIN | |
| MRATE-6xQSFP-XGE-XLGE-CGE | | | | |
| Xcvr 0 | REV 01 | 740-054053 | QF3208G2 | QSFP+-4X10G-SR |

| | | | | |
|----------------------------|--------|------------|-------------|--------------------|
| Xcvr 1 | REV 01 | 740-054053 | QF3208G3 | QSFP+-4X10G-SR |
| Xcvr 2 | | NON-JNPR | F2M2010439 | QSFP-100GBASE-LR4 |
| Xcvr 3 | REV 01 | 740-046565 | QF3300ZQ | QSFP+-40G-SR4 |
| Xcvr 5 | REV 01 | 740-058734 | 1ACQ104202U | QSFP-100GBASE-SR4 |
| FPC 14 | REV 68 | 750-044130 | ABDC2916 | MPC6E 3D |
| CPU | REV 12 | 711-045719 | ABDC2710 | RMPC PMB |
| FPC 16 | REV 22 | 750-037355 | CABW1289 | MPC4E 3D 2CGE+8XGE |
| CPU | REV 08 | 711-035209 | CABR9796 | HMPC PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 17 | REV 23 | 750-037355 | CACL2280 | MPC4E 3D 2CGE+8XGE |
| CPU | REV 10 | 711-035209 | CACK9073 | HMPC PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 18 | REV 23 | 750-054901 | CAEV3700 | MPC3E NG HQoS |
| CPU | REV 12 | 711-045719 | CAFK4017 | RMPC PMB |
| MIC 0 | REV 19 | 750-033199 | CAAJ9717 | 1X100GE CFP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CFP |
| MIC 1 | REV 15 | 750-033199 | ZP6432 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 19 | REV 29 | 750-063414 | CAEJ2194 | MPC9E 3D |
| CPU | REV 02 | 750-057177 | CACN2561 | SMPC PMB |
| MIC 0 | REV 01 | 750-055992 | CADV4595 | |
| MRATE-12xQSFP-XGE-XLGE-CGE | | | | |
| PIC 0 | | BUILTIN | BUILTIN | |
| MRATE-12xQSFP-XGE-XLGE-CGE | | | | |
| Xcvr 0 | REV 01 | 740-046565 | QF3300ZG | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-046565 | QF330122 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-046565 | QF33011P | QSFP+-40G-SR4 |
| Xcvr 3 | REV 01 | 740-046565 | QF3300ZU | QSFP+-40G-SR4 |
| Xcvr 4 | REV 01 | 740-046565 | QF3300ZS | QSFP+-40G-SR4 |
| Xcvr 5 | REV 01 | 740-046565 | QF3300ZN | QSFP+-40G-SR4 |
| Xcvr 6 | REV 01 | 740-046565 | QF3300ZP | QSFP+-40G-SR4 |
| Xcvr 7 | REV 01 | 740-046565 | QF3300ZT | QSFP+-40G-SR4 |
| Xcvr 8 | REV 01 | 740-046565 | QF3300ZM | QSFP+-40G-SR4 |
| Xcvr 9 | REV 01 | 740-046565 | QF3300ZR | QSFP+-40G-SR4 |
| Xcvr 10 | REV 01 | 740-046565 | QF330105 | QSFP+-40G-SR4 |
| Xcvr 11 | REV 01 | 740-046565 | QF3300ZK | QSFP+-40G-SR4 |
| MIC 1 | REV 08 | 750-055992 | CAEX1421 | |
| MRATE-12xQSFP-XGE-XLGE-CGE | | | | |
| PIC 1 | | BUILTIN | BUILTIN | |
| MRATE-12xQSFP-XGE-XLGE-CGE | | | | |
| Xcvr 6 | REV 01 | 740-046565 | QF330100 | QSFP+-40G-SR4 |
| ADC 0 | REV 19 | 750-043596 | ABCK6658 | Adapter Card |
| ADC 1 | REV 17 | 750-043596 | ABCB7201 | Adapter Card |
| ADC 2 | REV 05 | 750-043596 | CAAC2076 | Adapter Card |
| ADC 3 | REV 13 | 750-043596 | ABBX5549 | Adapter Card |
| ADC 6 | REV 17 | 750-043596 | ABCB7226 | Adapter Card |
| ADC 7 | REV 01 | 750-043596 | ZV4079 | Adapter Card |
| ADC 11 | REV 17 | 750-043596 | ABCD5472 | Adapter Card |
| ADC 12 | REV 17 | 750-043596 | ABCB7147 | Adapter Card |
| ADC 13 | REV 17 | 750-043596 | ABCD5410 | Adapter Card |
| ADC 16 | REV 17 | 750-043596 | ABCB7047 | Adapter Card |
| ADC 17 | REV 17 | 750-043596 | ABCD5525 | Adapter Card |
| ADC 18 | REV 17 | 750-043596 | ABCD5391 | Adapter Card |
| Fan Tray 0 | REV 01 | 760-042349 | ACAY4801 | FanTray v2 |

| | | | | |
|------------|--------|------------|----------|------------|
| Fan Tray 1 | REV 01 | 760-042349 | ACAY4802 | FanTray v2 |
| Fan Tray 2 | REV 01 | 760-042349 | ACAY4803 | FanTray v2 |
| Fan Tray 3 | REV 01 | 760-042349 | ACAY4800 | FanTray v2 |

- To verify that all the fabric planes are available and operational, issue the following command:

```
user@host> show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 3
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 6
```

```
PFE 0 :Links ok
```

```
FPC 7
```

```
PFE 0 :Links ok
```

```
FPC 11
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 12
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 13
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 14
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 16
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 17
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 18
```

```
PFE 0 :Links ok
```

```
FPC 19
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 1
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
    PFE 0 :Links ok
FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 3
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 6
    PFE 0 :Links ok
FPC 7
    PFE 0 :Links ok
FPC 11
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 12
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 13
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 14
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 16
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 17
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 18
    PFE 0 :Links ok
FPC 19
    PFE 0 :Links ok
PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
...
Plane 7
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
```

```

FPC 6
  PFE 0 :Links ok
FPC 7
  PFE 0 :Links ok
FPC 11
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 12
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 13
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 14
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 16
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 17
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 18
  PFE 0 :Links ok
FPC 19
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok

```

3. To verify that the state of the electrical switch fabric links between the Flexible PIC Concentrators (FPCs) and the Switch Fabric Boards (SFBs) are eligible for carrying traffic, issue the following command:

```
user@host>show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```

FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled

```

```
PFE #1
  Plane 0: Plane enabled
  Plane 1: Plane enabled
  Plane 2: Plane enabled
  Plane 3: Plane enabled
  Plane 4: Plane enabled
  Plane 5: Plane enabled
  Plane 6: Plane enabled
  Plane 7: Plane enabled
PFE #2
  Plane 0: Plane enabled
  Plane 1: Plane enabled
  Plane 2: Plane enabled
  Plane 3: Plane enabled
  Plane 4: Plane enabled
  Plane 5: Plane enabled
  Plane 6: Plane enabled
  Plane 7: Plane enabled
PFE #3
  Plane 0: Plane enabled
  Plane 1: Plane enabled
  Plane 2: Plane enabled
  Plane 3: Plane enabled
  Plane 4: Plane enabled
  Plane 5: Plane enabled
  Plane 6: Plane enabled
  Plane 7: Plane enabled
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
...
FPC 19
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
```

```

Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

```

4. To verify the state of all fabric planes and the elapsed time, issue the following command:

```
user@host> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|----------------------------------|
| 0 | Online | 11 hours, 13 minutes, 27 seconds |
| 1 | Online | 11 hours, 13 minutes, 6 seconds |
| 2 | Online | 11 hours, 12 minutes, 45 seconds |
| 3 | Online | 11 hours, 12 minutes, 24 seconds |
| 4 | Online | 11 hours, 12 minutes, 2 seconds |
| 5 | Online | 11 hours, 11 minutes, 41 seconds |
| 6 | Online | 11 hours, 11 minutes, 20 seconds |
| 7 | Online | 11 hours, 10 minutes, 59 seconds |

Note: For extended summary, use
show chassis fabric summary extended

Performing a Smooth Upgrade to Enhanced Switch Fabric Board (SFB2) with Minimal Impact on Traffic

This example shows how to perform a smooth upgrade from the Switch Fabric Board (SFB) to the enhanced Switch Fabric Board (SFB2) on the MX2000 line of routers. A smooth upgrade helps reduce network downtime because of 7+1 fabric redundancy. When one SFB is being upgraded to SFB2, the other 7 SFBs are available to handle the traffic.



NOTE: On MX2010 and MX2020 routers, if you have installed the Junos Continuity software package or if the router is not configured to allow multiple versions of the SFBs to coexist, you cannot perform a smooth upgrade from SFB to SFB2.

When not using a smooth upgrade, use one of the following methods to upgrade to SFB2:

- Power off the router, replace the SFB with SFB2, and then power on the router.
- Take both the Routing Engines offline, replace the SFB with SFB2, and then bring both the Routing Engines online.

-
- [Requirements on page 124](#)
 - [Overview on page 124](#)
 - [Configuration on page 125](#)
 - [Verification on page 127](#)

Requirements

This example uses the following hardware and software components:

- MX2020 router with dual Routing Engines
- 8 Switch Fabric Boards (SFBs)
- 8 enhanced Switch Fabric Boards (SFB2s)
- Junos OS Release 16.1R1 or later release

Before you begin the smooth upgrade, ensure that you:

- Prepare the router and install the version of Junos OS Release that supports the enhanced Switch Fabric Board (SFB2).
- Verify that the existing SFBs are online and operational and also check the status of the fabric planes.

For more information about what you must do before you commence smooth upgrade, see [“Before you Begin the Smooth Upgrade Process” on page 114](#).

Overview

The smooth upgrade process is used to upgrade from Switch Fabric Board (SFB) to enhanced Switch Fabric Board (SFB2) with minimal traffic impact. The existing SFBs are replaced one by one, in any order, by the new SFB2s. Because you are replacing a single SFB at a time, the remaining SFBs handle the traffic and so there is minimal impact to traffic. SFB2 is supported only on MX2020 and MX2010 routers.

Topology

This example shows how to perform a smooth upgrade on an MX2020 router that has eight SFBs. The 8 SFBs are replaced with 8 enhanced switch fabric boards (SFB2). First, initiate the smooth upgrade process and then take a single SFB offline. Replace the SFB with an SFB2, and then bring the SFB2 online. You can then repeat the steps for the other seven SFBs.

After you upgrade all the SFBs to SFB2s, the fabric bandwidth per slot of MPC8E and MPC9E on the MX2020 router is increased from 11 Gbps to 25 Gbps. However, the upgrade does not impact the fabric bandwidth per slot of MPC7.

Configuration

To upgrade from SFB to SFB2, perform the following tasks:

- [Initiating the Smooth Upgrade Process on page 125](#)
- [Performing the Smooth Upgrade on page 126](#)
- [Terminating the Smooth Upgrade Process on page 127](#)

Initiating the Smooth Upgrade Process

Step-by-Step Procedure

By default, the MX2000 line of routers do not support both SFB and SFB2 at the same time. However, when you initiate the smooth upgrade process, the router can support both SFB and SFB2 at the same time. So, before you replace an SFB with an SFB2, you must initiate the smooth upgrade process.

1. In configuration mode, at the **[edit]** hierarchy level, Initiate the smooth upgrade process for the SFBs.

```
[edit]
user@host# set chassis state sfb-upgrade on
```

2. Commit the changes by using the **commit** statement and exit the configuration mode.

```
[edit]
user@host# commit
```

3. In operational mode, verify that you have initiated the smooth upgrade process.

```
user@host> show configuration chassis
state {
  sfb-upgrade on;
}
```

*Performing the Smooth Upgrade***Step-by-Step Procedure**

1. In operational mode, take the SFBs offline. There is no specific order that needs to be maintained. In this example, you start with the SFB in slot 7 first.

```
user@host> request chassis sfb slot 7 offline
```

2. Verify that the SFB is offline.

```
user@host> show chassis sfb
```

| Slot | State | Uptime |
|------|---------|--|
| 0 | Online | 1 day, 12 hours, 6 minutes, 59 seconds |
| 1 | Online | 1 day, 12 hours, 6 minutes, 37 seconds |
| 2 | Online | 1 day, 12 hours, 6 minutes, 16 seconds |
| 3 | Online | 1 day, 12 hours, 5 minutes, 55 seconds |
| 4 | Online | 1 day, 12 hours, 5 minutes, 33 seconds |
| 5 | Online | 1 day, 12 hours, 5 minutes, 12 seconds |
| 6 | Online | 1 day, 12 hours, 4 minutes, 51 seconds |
| 7 | Offline | --- Offlined by cli command --- |

3. Replace the SFB that is offline with the enhanced SFB (SFB2). Minimal traffic loss is expected as only a single SFB is replaced and other seven SFBs are operational and handle the traffic.
4. In operational mode, bring the SFB2 online.

```
user@host> request chassis sfb slot 7 online
```

5. Verify that the SFB2 is online.

```
user@host> show chassis sfb
```

| Slot | State | Uptime |
|------|--------|---|
| 0 | Online | 1 day, 12 hours, 16 minutes, 38 seconds |
| 1 | Online | 1 day, 12 hours, 16 minutes, 16 seconds |
| 2 | Online | 1 day, 12 hours, 15 minutes, 55 seconds |
| 3 | Online | 1 day, 12 hours, 15 minutes, 34 seconds |
| 4 | Online | 1 day, 12 hours, 15 minutes, 12 seconds |
| 5 | Online | 1 day, 12 hours, 14 minutes, 51 seconds |
| 6 | Online | 1 day, 12 hours, 14 minutes, 30 seconds |
| 7 | Online | 38 seconds |

6. Repeat Step 3 through Step 5 for upgrading the other SFBs. We recommend that you upgrade fabric boards one at a time for minimal traffic impact.

Terminating the Smooth Upgrade Process

Step-by-Step Procedure After all the SFBs are upgraded to the enhanced SFB (SFB2), you can terminate the smooth upgrade process. When the smooth upgrade process is initiated, SFB and SFB2 can coexist on the same router. When you terminate the smooth upgrade process, the router can have only SFB or SFB2 and not both at the same time.

1. In configuration mode, at the **[edit]** hierarchy level, terminate the smooth upgrade process.



NOTE: You can also use the `delete chassis state sfb-upgrade` command to terminate the smooth upgrade process.

```
[edit]
user@host# set chassis state sfb-upgrade off
```

2. Commit the changes by using the **commit** statement and exit configuration mode.

```
[edit]
user@host# commit
```

3. In operational mode, verify that you have initiated the smooth upgrade process.

```
user@host> show configuration chassis
state {
  sfb-upgrade off;
}
```

Verification

To confirm that you have upgraded SFB to SFB2 on the MX2020 router, perform these tasks:

- [Verifying That the Switch Fabric Board \(SFB\) is Offline on page 127](#)
- [Verifying That the Enhanced Switch Fabric Board \(SFB2\) is Online on page 130](#)

Verifying That the Switch Fabric Board (SFB) is Offline

Purpose To verify that the SFB on a particular slot, for instance slot 1, is offline.

Action From operational mode, enter the **show chassis fabric fpcs** command.

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC 2
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
```

```
FPC 4
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
```

```
PFE #1
```

```
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
```

```
PFE #2
```

```
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
```

```
PFE #3
```

```
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
```

```
FPC 6
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
```

```

        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #1
        Plane 0: Plane enabled
        Plane 1: Plane disabled  >>>>>
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    FPC 7
    PFE #0
        Plane 0: Plane enabled
        Plane 1: Plane disabled  >>>>>
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #1
        Plane 0: Plane enabled
        Plane 1: Plane disabled  >>>>>
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #2
        Plane 0: Plane enabled
        Plane 1: Plane disabled  >>>>>
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #3
        Plane 0: Plane enabled
        Plane 1: Plane disabled >>>>>>
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled

```

From operational mode, enter the **show chassis fabric summary** command.

```
user@host> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|---------|--------------------------------|
| 0 | Online | 3 minutes, 14 seconds |
| 1 | Offline | |
| 2 | Online | 1 hour, 56 minutes, 53 seconds |
| 3 | Online | 1 hour, 56 minutes, 39 seconds |

```
4      Online  1 hour, 56 minutes, 25 seconds
5      Online  1 hour, 56 minutes, 11 seconds
6      Online  1 hour, 55 minutes, 56 seconds
7      Online  1 hour, 42 minutes, 28 seconds
```

Note: For extended summary, use
show chassis fabric summary extended

Meaning The SFB in Slot 1 has been taken offline.

Verifying That the Enhanced Switch Fabric Board (SFB2) is Online

Purpose To verify that the enhanced switch fabric board (SFB2) inserted in the same slot (slot 1) is online.

Action From operational mode, enter the **show chassis fabric fpcs** command.

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC 2
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
```

```
FPC 4
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
```

```
  PFE #1
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
```

```
  PFE #2
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
```

```
  PFE #3
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
```

```
FPC 6
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
```

```

Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 7
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

```

From operational mode, enter the **show chassis fabric summary** command.

```
user@host> show chassis fabric summary
```

```

Plane  State      Uptime
0       Online      6 minutes, 38 seconds
1       Online      2 minutes, 12 seconds >>>>
2       Online      2 hours, 17 seconds
3       Online      2 hours, 3 seconds

```


| | | |
|---|--------|--------------------------------|
| 4 | Online | 1 hour, 59 minutes, 49 seconds |
| 5 | Online | 1 hour, 59 minutes, 35 seconds |
| 6 | Online | 1 hour, 59 minutes, 20 seconds |
| 7 | Online | 1 hour, 45 minutes, 52 seconds |

Meaning The SFB2 that replaced the SFB on slot 1 is online and operational.

Related Documentation

- [Understanding Fabric Grant Bypass on page 109](#)
- [Disabling Fabric Grant Bypass to Control Congestion and Improve Performance on page 110](#)

CHAPTER 5

Power Management

- [Managing Power on page 135](#)
- [Configuring Ambient Temperature on page 148](#)

Managing Power

- [Understanding How Dynamic Power Management Enables Better Utilization of Power on page 135](#)
- [Understanding Power Management on the PTX5000 on page 136](#)
- [T4000 Power Management Overview on page 140](#)
- [Configuring the Six-Input DC Power Supply on T Series Routers on page 142](#)
- [Redistributing the Available Power by Configuring Power-On Sequence on page 145](#)
- [Configuring Power-On Sequence to Redistribute the Available Power on page 146](#)
- [Configuring Voltage Level Monitoring of FPCs on page 147](#)

Understanding How Dynamic Power Management Enables Better Utilization of Power

You can use the dynamic power management feature to better utilize the power available in the power entry module (PEM). Whether or not a new hardware component is powered on depends on the availability of power in the PEM. A component is not powered on if the PEM cannot meet the worst-case power requirement for that component. The dynamic power management feature is available in the following Junos OS Releases:

- MX Series routers—Junos OS Release 15.1R1 and later
- EX9200 switches—Junos OS Release 17.2R1 and later

The maximum power that each type of MIC consumes is maintained in a static database. The chassis daemon process (**chassisd**), which manages power budgeting for all line cards, uses this data when budgeting power for MICs. MICs are brought online only after the chassis daemon verifies that the worst-case power required for the MICs and the power required for all the online FRUs are available in the PEM.

In Junos OS Release 15.1R1, for MX Series routers, dynamic power management for MICs is disabled by default. You can enable the feature by enabling the **mic-aware-power-management** statement at the **[edit chassis]** hierarchy level. When dynamic power management is disabled, the chassis daemon checks for the worst-case

power requirement of the MPC and the MICs before allocating power for the MPC.

Whereas, when **mic-aware-power-management** statement is enabled, the chassis daemon considers the power requirement of only the MPCs. The worst-case power consumption by the MICs is not considered while the chassis daemon budgets power for the MPC. Power budgeting for MICs is done only after the MPC is powered on and the MICs come online. Every time you disable or enable dynamic power management, you must restart the chassis or the MPC for the changes to take effect.

In Junos OS Release 17.2R1, for EX9200 switches, dynamic power management for MICs is enabled by default.

Starting from Junos OS Release 17.3R1, for MX10003 routers, mic-aware dynamic power management is enabled by default.

Starting from Junos OS Release 18.2R1, for JNP10K-LC2101 MPC on MX10008 routers, dynamic power management is enabled by default. However, dynamic power management for MICs is not supported on JNP10K-LC2101 because JNP10K-LC2101 is a fixed configuration MPC and supports only built-in PICs.

After you enable the dynamic power management feature, use the **set chassis preserve-fpc-poweron-sequence** configuration mode command to preserve the sequence in which MPCs are powered on. This configuration is required to maintain the order in which the MPCs come online after a router or switch restart.



NOTE: In Junos OS Release 15.1F5 and later, dynamic power management is enabled by default on several MPCs. Models include MPC3E-3D-NG, MPC3E-3D-NG-Q, MPC2E-3D-NG, MPC2E-3D-NG-Q, MPC6E, MPC7E-MRATE, and MPC7E-10G on MX240, MX480, MX960, MX2010, and MX2020 and on MPC8E and MPC9E on MX2010, and MX2020 Universal Routing Platforms.

Understanding Power Management on the PTX5000

Starting in Junos OS Release 14.1, the power management feature for PTX5000 routers ensures that at any time, the chassis power requirements do not exceed the available chassis power. The PTX5000 has two PDUs to meet the power requirements of the chassis. Each PDU is capable of providing power to the chassis on its own. In case the power requirement exceeds the individual capacity of a PDU, the required power is provided by both the PDUs and the **No redundant power supply** alarm is triggered. If the system cannot provide power for all the installed FPCs or PICs, the system brings down FPCs or PICs that in can no longer provide power for and the **Insufficient Power - FRU(s) went offline** alarm is raised.

The power management feature provides the following functionality:

- Power management ensures that high-priority FPCs continue to receive power when the system does not have sufficient power to keep all the FPCs online.
- Power management ensures that if a power supply fails, the router can continue to operate normally by keeping high-priority FPCs online and taking low-priority FPCs offline.

- If power supply failure requires power management to power down some components, power management does so by gracefully powering down lower-priority FPCs.

Power management manages power to router components by employing a power budget policy. In its power budget policy, power management:

- Budgets power for each installed router component that requires power. The amount that power management budgets for each component is the maximum power that component might consume under worst-case operating conditions. For example, for the fan tray, power management budgets the amount of power required to run the fans at their maximum speed setting, even if the current fan speed is much lower.
- Manages the router for $N+N$ power redundancy, which ensures uninterrupted system operation if one power supply fails.
- Provides power to host subsystem components, such as the Routing Engines, before it provides power to the FPCs.
- Manages the priority of individual FPCs. By assigning different priorities to the FPCs, you can determine which FPCs are more likely to receive power in the event of insufficient power.

Power Priority of FPCs

The power priority of FPCs determines:

- The order in which FPCs are allocated power.
- How power is reallocated if there is a change in power availability or demand in an operating router.

This section covers:

- [How an FPC's Power Priority Is Determined on page 137](#)
- [FPC Priority and FPC Power Allocation on page 137](#)
- [FPC Priority and Changes in the Power Budget on page 138](#)

How an FPC's Power Priority Is Determined

Using the CLI, you can assign an explicit power priority to an FPC slot. The power priority is determined by the slot number, with the lowest-numbered slots receiving power first. Thus, if you do not explicitly assign priorities to slots, power priority is determined by slot number, with slot 0 having the highest priority. See [“Configuring Power-On Sequence to Redistribute the Available Power” on page 146](#).

FPC Priority and FPC Power Allocation

When a PTX5000 is powered on, power management allocates power to components according to its power budget policy. After power management has allocated power to the host subsystem components, it allocates the remaining available power to the FPCs. It powers on the FPCs in the configured order of priority until all FPCs are powered on or the available power provided by both the PDUs is exhausted. Thus if available power is exhausted before all FPCs receive power, higher-priority FPCs are powered on while lower-priority FPCs remain powered off.

FPCs that have been taken offline are not allocated power.



NOTE: Because power management does not allocate power to an FPC that has been taken offline, that FPC is brought online only when you commit a configuration. You must explicitly use the `request chassis fpc slot slot-number online` command to bring an FPC online that was taken offline previously.

If an FPC with a high priority in the priority sequence also has high-power requirement, and if the system does not have the required power available, then the lower priority FPCs with lower power requirements are also not powered on. This is to maintain consistency and also avoid powering off of the lower priority FPC when extra power is available. For example, if an FPC that requires 450 W has a higher priority than an FPC that requires 330 W, then the FPC with the lower power requirement (330 W) is also not powered on if the system does not have the required power to power the FPC that requires 450 W.

FPC Priority and Changes in the Power Budget

In an operating router, power management dynamically reallocates power in response to changes in power availability or demand or changes in FPC priority. Power management uses the configured priority on FPC slots to determine how to reallocate power in response to the following events:

- When a new power supply is brought online, FPCs that were powered off because of insufficient power are powered on in the order of priority.
- When a user changes the assigned power priority of one or more FPCs when power is insufficient to meet the power budget, power management reruns the current power budget policy and powers FPCs on or off based on their priority. As a result, FPCs receive power strictly by the order of priority and previously operating FPCs might no longer receive power.
- When an FPC is installed, Junos OS does not automatically power on and bring the FPC online. This FPC stays in the offline state until the user brings it online through the CLI or by pushing the online button, and only if the available chassis power is more than the budgeted power for this FPC, the FPC becomes operational.

Power Zones

In a PTX5000 equipped with high capacity PDUs and PSMs, there is one common zone that provides power to all FRUs and all FPCs. A high-capacity PDU can support up to eight PSMs and it does not support power zoning, unlike a normal-capacity PDU. All available PDU power is considered as a part of single zone. All PSMs provide power to the common zone. The PSM LEDs on the craft interface are interpreted as described in *PTX5000 Craft Interface LEDs*. After the PDU upgrade from the normal-capacity PDUs to High-Capacity PDUs, the power management converges all power zones into a single common zone. All FRU power is distributed based on the power available in the common zone.



NOTE: Presence of both normal-capacity PDUs and high-capacity PDUs is referred to as mixed-mode of operation and is supported only during the PDU upgrade.

To cater for the increase in the PIC power consumption, the power manager is enhanced to account for the PIC power separately from the FPC. The priority sequence for the PICs follows the priority sequence for the FPCs. That is, PICs installed in high-priority FPCs are given preference over PICs installed in low-priority FPCs. All PICs on an FPC have the same priority.



NOTE: You cannot mix existing PDUs with the High Capacity DC PDU.

Power Supply Redundancy

By default, power management in PTX5000 routers is configured to manage the power supplies for $N+N$ redundancy, by which power supplies are held in reserve for backup if the other power supplies are removed or fail.

When power is insufficient to meet the budgeted power requirements, power management raises alarms as follows:

- With power supply redundancy, when one PSM fails, it does not cause FPCs to go offline. Only the **No redundant power supply alarm** is raised. However, with no redundancy, FPCs can go offline depending on the total chassis power available at that time. When an FPC or PIC goes offline due to insufficient power, which is indicated by **No power** in the output of the **show chassis fpc** command, then the **Insufficient Power - FRU(s) went offline** alarm is raised. The alarm gets cleared when there is sufficient power to bring up all the FPCs and PICs. The **Insufficient Power - FRU(s) went offline** alarm is raised when PSMs fail, when PSMs are powered off manually, or any time there is insufficient power for the system to power all the FPCs or PICs in the system.
- When power fails or when a PSM is removed, power management:
 - Calculates the total chassis power available from the remaining PSMs for the FPCs.
 - Powers off the FPCs based on the priority depending on the power budget for the FPCs and the FRUs and their configured power-on sequence.



NOTE: In the scenario where the available power is more than the budgeted power required by the FPC but less than its maximum power, the FPC is taken offline and then brought online, but one or more PICs in that FPC are not online.

- When a new PSM is inserted, power management:
 - Checks the power-on sequence of the FPCs and the PICs and brings any offline PICs online when power is available.

- Powers on the FPCs based on the FPC's budgeted power and its power-on sequence depending on its priority.
- Maintains the power for high-priority FPCs and their PICs by taking the low-priority FPCs offline when all the FPCs are brought online, depending on the available power.

Power management clears all alarms when sufficient power is available to meet normal operating and reserved power requirements.

T4000 Power Management Overview

Starting with Junos OS Release 12.3, the power management feature is enabled on a Juniper Networks T4000 Core Router. This feature enables you to limit the overall chassis output power consumption. That is, this feature enables you to limit the router from powering on a Flexible PIC Concentrator (FPC) when sufficient output power is not available to power on the FPC during booting or normal operation.

The power management feature is enabled only when six input feeds with 40 amperes (A) each or four input feeds with 60 A each is configured on the router. The power management feature is *not* enabled for any other input feed—current combination. When the power management feature is *not* enabled, Junos OS tries to power on all the FPCs connected to the router.



CAUTION: If you do not configure the power management feature and the maximum power draw is exceeded by the router during booting or normal operation, FPCs' states might change from Online to Offline or Present, some traffic might drop, or the interfaces might flap.



TIP: Interface flapping occurs when a router alternately announces the state of the interface to be as *up* and *down* in quick sequence.

After you connect the input feeds to the router, you must configure the number of input feeds connected to the router and the amount of current received at the input feeds. Use the **feeds** statement and the **input current** statement at the **[edit chassis pem]** hierarchy level to configure the number of input feeds and the amount of current received at each input feeds, respectively.



NOTE: You can connect three 80 A DC power cables to the six-input DC power supply by using terminal jumpers. When you do this, ensure that you configure the **feeds** statement to have the value 6 and the **input current** statement to have the value 40. If these configurations are not set, the power management feature is *not* enabled and, therefore, Junos OS tries to power on all the FPCs connected to the router.

When the power management feature is enabled, FPCs connected to the router are powered on based on the power received by the router. If the router receives sufficient

power to power on all the FPCs connected to the router, all the FPCs are powered on. If sufficient power is not available, Junos OS limits the number of FPCs brought online. That is, Junos OS uses the total available chassis output power as a factor to decide whether or not to power on an FPC connected to the router.

Of all the supported FPCs of a T4000 router, the T1600 Enhanced Scaling FPC4 (model number: T1600-FPC4-ES) has the greatest power requirement. [Table 11 on page 141](#) compares the FPC connection limits between a six-input feed 40 A connection and a four-input feed 60 A connection when power management is enabled and T1600-FPC4-ES is connected to router.

Table 11: FPC Connection Limit Comparison

| Six Input Feeds with 40 A Connection | Four Input Feeds with 60 A Connection |
|--|--|
| When T1600-FPC4-ES is <i>not</i> connected: <ul style="list-style-type: none"> All eight FPC slots can be brought online. | When T1600-FPC4-ES is <i>not</i> connected: <ul style="list-style-type: none"> A maximum of seven other FPCs can be brought online. That is, only seven slots out of the eight FPC slots can be brought online. |
| When only one T1600-FPC4-ES is connected: <ul style="list-style-type: none"> A maximum of seven other FPCs can be brought online. That is, only seven slots out of the eight FPC slots can be brought online. | When only one T1600-FPC4-ES is connected: <ul style="list-style-type: none"> A maximum of six other FPCs can be brought online. That is, only six slots out of the eight FPC slots can be brought online. |
| When only T1600-FPC4-ES FPCs are connected: <ul style="list-style-type: none"> A maximum of six T1600-FPC4-ES FPCs can be brought online. | More than one T1600-FPC4-ES <i>cannot</i> be brought online. |



NOTE:

- When the power management feature is enabled, FPC power-on consistency is not maintained across router reboots. That is, the same set of FPCs that were powered on before a reboot might not be powered on after the reboot. Before the router reboot, the FPCs are powered on according to their insertion order in the chassis. After the reboot, the FPCs are powered on according to the FRU power-on sequence configured in the `fru-poweron-sequence` statement at the `[edit chassis]` hierarchy level. If the FRU power-on sequence is not configured, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power on the FPCs.
 - Removal of any online FPC from the chassis does not change the state of any other FPC and does not trigger the power management feature to power on the FPCs that were not powered on initially because of the lack of sufficient power. When any online FPC is removed from the chassis, if you need to trigger the power management feature to re-evaluate the situation, you need to reboot or restart the chassis. Alternatively, you can make a configuration change at the `[edit chassis]` hierarchy level and then issue the `commit` command to commit the changes made at the `[edit chassis]` hierarchy level. The power management feature re-evaluates the situation when a configuration change is committed at the `[edit chassis]` hierarchy level.
-

Configuring the Six-Input DC Power Supply on T Series Routers

By default, the six-input DC power supply is configured to have all the six input feeds connected. You can also choose to provide four or five input feeds to the six-input DC power supply. When providing four or five input feeds on standalone routers, you need to configure the **feeds** statement at the `[edit chassis pem]` hierarchy level. When providing four or five input feeds to an LCC router in a routing matrix, you need to configure the **feeds** statement at the `[edit chassis lcc lcc-number pem]` hierarchy level.

Starting with Junos OS Release 12.3, the power management feature is enabled on T4000 routers with six-input DC power supply. The power management feature is enabled only when six input feeds with 40 amperes (A) each or four input feeds with 60 A each is configured on the router. To do this, you need to configure the **feeds** and **input-current** statements at the `[edit chassis pem]` hierarchy level.

**NOTE:**

- Before configuring input feeds for your router, see the *T640 Core Router Hardware Guide*, *T1600 Core Router Hardware Guide*, or *T4000 Core Router Hardware Guide* for special considerations and for the number of input feeds supported by the router.
- The value assigned to the **feeds** statement must be equal to the number of input feeds provided to the power supply. Else, an alarm message is generated to indicate the mismatch.

The following procedures describe how to configure the six-input DC power supply on different routers:

- [Configuring the Six-Input DC Power Supply on an LCC Router in a Routing Matrix on page 143](#)
- [Configuring the Six-Input DC Power Supply on T640 and T1600 Routers on page 144](#)
- [Configuring the Six-Input DC Power Supply on T4000 Routers on page 144](#)

Configuring the Six-Input DC Power Supply on an LCC Router in a Routing Matrix

To configure the six-input DC power supply on an LCC router in a routing matrix:

1. At the **[edit chassis lcc lcc-number pem]** hierarchy level, configure the **feeds** statement with the number of input feeds provided to the power supply.

```
[edit chassis lcc lcc-number pem]
user@host# set feeds number-of-input-feeds
```

For example:

```
[edit chassis lcc 1 pem]
user@host# set feeds 5
```



NOTE: All power supplies in the router must use the same number of inputs feeds.

2. Verify the configuration by using the **show** command at the **[edit chassis]** hierarchy level:

```
[edit chassis lcc 1 pem]
user@host# show
pem {
    feeds 5;
}
```

Configuring the Six-Input DC Power Supply on T640 and T1600 Routers

To configure the six-input DC power supply on a standalone T640 or T1600 router:

1. At the **[edit chassis pem]** hierarchy level, configure the **feeds** statement with the number of input feeds provided to the power supply.

```
[edit chassis pem]
user@host# set feeds number-of-input-feeds
```

For example:

```
[edit chassis pem]
user@host# set feeds 5
```



NOTE: All power supplies in the router must use the same number of inputs feeds.

2. Verify the configuration by using the **show** command at the **[edit chassis]** hierarchy level:

```
[edit chassis]
user@host# show
pem {
    feeds 5;
}
```

Configuring the Six-Input DC Power Supply on T4000 Routers

To configure the six-input DC power supply on a T4000 router:

1. At the **[edit chassis pem]** hierarchy level, configure the **feeds** statement with the number of input feeds provided to the power supply.

```
[edit chassis pem]
user@host# set feeds number-of-input-feeds
```

For example:

```
[edit chassis pem]
user@host# set feeds 4
```



NOTE: All power supplies in the router must use the same number of inputs feeds.

2. Configure the input current received by the router.

```
[edit chassis pem]
user@host# set input-current amps-in-each-feed
```

For example, if the router receives 60 A of input current:

```
[edit chassis pem]
user@host# set input-current 60
```



NOTE: You can connect three 80 A DC power cables to six-input DC power supply by using terminal jumpers. When you do this, ensure that you set the value of the `feeds` statement to 6 and that of the `input-current` statement to 40. If these configurations are not set, the power management feature is *not* enabled. For more information about the power management feature, see [“T4000 Power Management Overview” on page 140](#).

3. Verify the configuration by using the `show` command at the `[edit chassis]` hierarchy level:

```
[edit chassis]
user@host# show
pem {
    feeds 4;
    input-current 60;
}
```

Redistributing the Available Power by Configuring Power-On Sequence

Routers running on Junos OS Release 10.0 and later support an enhanced AC Power Entry Module (PEM) to provide the necessary power infrastructure to support up to twelve higher-capacity DPCs with higher port density and slot capacity. To support the cooling requirements for the enhanced AC PEMs, the routers support enhanced fan trays and fans.

The default behavior for MPC power-on sequence is slot number based, that is, slot 0 is brought online first followed by slot 1, slot 2 up to slot 11. For the scenarios, where it is running a mix of high capacity line cards (for core facing), and low capacity line cards (for access facing) in their system, you can use the `fru-poweron-sequence` option to manually set the MPC power on sequence and hence ensure that the more important core facing line cards are brought online first irrespective of which slots these are in. This approach provides fine control over deterministically bringing up MPCs, however, it is heavy on configuration and entails to follow the discipline in slot to MPC mapping across all the systems.

The Junos OS enables you to configure the power-on sequence for the DPCs on an MX Series router chassis containing the new AC PEM. This enables you to redistribute the available power to the DPCs based on your requirements and the calculated power consumption of the DPCs. To configure the power-on sequence, refer to [“Configuring Power-On Sequence to Redistribute the Available Power” on page 146](#).

Configuring Power-On Sequence to Redistribute the Available Power

You can configure the power-on sequence for the Flexible PIC Concentrators (FPCs) on MX, PTX, and T routers. This configuration enables you to redistribute the available power to the FPCs on the basis of your requirements and the calculated power consumption of the FPCs.

To configure the power-on sequence:

1. At the **[edit chassis]** hierarchy level, configure the **fru-poweron-sequence** statement indicating the order in which the FPCs need to be powered on.

```
[edit chassis]
user@host# set fru-poweron-sequence fru-poweron-sequence
```

For example:

```
[edit chassis]
user@host# set fru-poweron-sequence "0 2 1"
```

2. Verify the configuration by using the **show** command at the **[edit chassis]** hierarchy level:

```
[edit chassis]
user@host# run show chassis power sequence
fru-poweron-sequence "0 2 1";
```



NOTE:

- If the configured sequence contains invalid numbers, Junos OS considers only the valid numbers in the sequence. The invalid numbers are silently discarded.
 - If the power-on sequence is not configured by including the **fru-poweron-sequence** statement, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power on the FPCs.
 - Issue the **show chassis power** command to view power limits and usage details for the FPCs.
-

See Also • [fru-poweron-sequence on page 316](#)

Configuring Voltage Level Monitoring of FPCs

You can monitor the voltage on the flexible PIC concentrator (FPC) at regular intervals. When the voltage falls below 10%, the FPC is offlined.

The faulty FPC is monitored at 500ms intervals. The output of the **show chassis fpc** command shows **Power Failure** for the faulty FPC. The FPC remains in powered down state until the voltage level is normal again.

- [Enabling Voltage Failure Errors on the FPC on page 147](#)
- [Disabling Voltage Failure Errors on the FPC on page 147](#)

Enabling Voltage Failure Errors on the FPC

fpc-nmi-volt-fail-knob controls the behavior of the FPC after detecting voltage failure, and to online or offline the FPC based on the voltage level. To enable monitoring the voltage level on the FPC:

1. Navigate to the **[edit chassis]** hierarchy level.
2. Include the **set chassis fpc-nmi-volt-fail-knob enable** statement to enable voltage monitoring on the FPC.

```
[edit chassis]
{
  fpc-nmi-volt-fail-knob enable;
}
```

Disabling Voltage Failure Errors on the FPC

To disable monitoring the voltage level on the FPC:

1. Navigate to the **[edit chassis]** hierarchy level.
2. Include the **set chassis fpc-nmi-volt-fail-knob disable** statement to disable voltage monitoring on the FPC.

```
[edit chassis]
{
  fpc-nmi-volt-fail-knob disable;
}
```

Release History Table

| Release | Description |
|---------|---|
| 18.2R1 | Starting from Junos OS Release 18.2R1, for JNP10K-LC2101 MPC on MX10008 routers, dynamic power management is enabled by default. |
| 17.3R1 | Starting from Junos OS Release 17.3R1, for MX10003 routers, mic-aware dynamic power management is enabled by default. |
| 17.2R1 | EX9200 switches—Junos OS Release 17.2R1 and later |
| 17.2R1 | In Junos OS Release 17.2R1, for EX9200 switches, dynamic power management for MICs is enabled by default. |
| 15.1R1 | MX Series routers—Junos OS Release 15.1R1 and later |
| 15.1R1 | In Junos OS Release 15.1R1, for MX Series routers, dynamic power management for MICs is disabled by default. |
| 15.1F5 | In Junos OS Release 15.1F5 and later, dynamic power management is enabled by default on several MPCs. |
| 14.1 | Starting in Junos OS Release 14.1, the power management feature for PTX5000 routers ensures that at any time, the chassis power requirements do not exceed the available chassis power. |

- Related Documentation**
- [Configuring Ambient Temperature on page 148](#)
 - [fru-poweron-sequence on page 316](#)

Configuring Ambient Temperature

- [Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization on page 148](#)
- [Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature on page 149](#)
- [Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration on page 152](#)

Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization

The key to managing power in network infrastructure is the efficient utilization of provisioned power. Provisioned power is the minimum power that is required to bring a router or a switch online. Junos OS determines the minimum required power by considering the worst-case power requirement for all the FRUs installed in the device. One of the methods to optimize the provisioned power on MX Series routers or EX9200 switches is to configure the device to operate at a cooler temperature. You can enable a device to operate at a lower operating temperature by configuring a lower ambient temperature.

Ambient temperature is the maximum operating temperature for a device. By configuring an ambient temperature, you can optimize power provisioned for the cooling system and the line cards. The maximum speed at which fans operate depends on the configured ambient temperature. As the fan speed increases, the power consumed by the fans increases. As a result, the device consumes more power when the temperature is high because the fans run faster to maintain the operating temperature of the chassis within the configured limits.

When a router or a switch restarts, the system adjusts the power allocation or the provisioned power for the line cards on the basis of the configured ambient temperature. If enough power is not available, a minor chassis alarm is raised. However, the chassis continues to run with the configured ambient temperature. You can configure a new higher ambient temperature only after you make more power available by adding new power supply modules or by taking a few line cards offline. By using the provisioned power that is saved by configuring a lower ambient temperature, you can bring more hardware components online.

A specific ambient temperature value might not be applicable to a different geographical location, for example, in a colder region. For devices operating in colder regions, you can configure a lower ambient temperature, which helps reduce provisioned power significantly. However, in a region of higher temperature, you might need to configure a higher ambient temperature to ensure smooth functioning of the device. For example, if the router or switch operates in a colder region, you can set the ambient temperature to 25°C, which reduces the maximum fan speed, thereby reducing the maximum power consumption. Thus, by configuring an appropriate ambient temperature, you can reduce the provisioned power and save cost on network power infrastructure.

You can configure ambient temperature by using the **set chassis ambient-temperature (25C|40C|55C)** statement at the **[edit chassis]** hierarchy level. The default ambient temperature for MX Series routers and EX9200 switches is 40°C.

Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature

You can configure the ambient temperature of the PTX5000 chassis to manage power allocated to the FPCs. You can set the ambient temperature of the chassis at 25° C, or 40° C. On system initialization, the power manager reads the ambient temperature and allocates power to the FPCs according to the power budget policy at that temperature.

1. To configure the ambient temperature, include the **set chassis ambient-temperature 25|40|55** statement at the **[edit]** hierarchy level in the configuration mode:

```
[edit]
user@host# set chassis ambient-temperature 25|40
```

2. To verify the ambient temperature of the chassis, use the **show chassis ambient-temperature** command at the **[edit]** hierarchy level in the operational mode:

```
[edit]
user@host> show chassis ambient-temperature
```

Ambient Temperature: 25C

To verify the power consumption of the FPCs, use the following statements:

1. Use the **show chassis power detail | grep "FPC"** statement at the **[edit]** hierarchy level to view the power consumption of the FPCs.

```
user@host> show chassis power detail | grep "FPC"
```

```
FPC 0          448
FPC 1          419
FPC 2          373
FPC 3           0
FPC 4           0
FPC 5           0
FPC 6           0
FPC 7           0
```

Alternatively use the SNMP MIB command, **show snmp mib walk jnxOperatingFRUPower | grep "\.7\."** to view the power consumption of each FPC:

```
user@host> show snmp mib walk jnxOperatingFRUPower | grep "\.7\."
```

```
jnxOperatingFRUPower.4.1.7.0 = 0
jnxOperatingFRUPower.7.1.0.0 = 457          < ----- For FPC 0
jnxOperatingFRUPower.7.2.0.0 = 428          < ----- For FPC 1
jnxOperatingFRUPower.7.3.0.0 = 381          < ----- For FPC 2
jnxOperatingFRUPower.15.7.0.0 = 0
```

2. Use the **show chassis alarms** statement to view the alarms generated for any of the FPCs:

```
user@host> show chassis alarms
```

| Alarm time | Class | Description |
|-------------------------|-------|--|
| 2007-04-08 05:51:12 UTC | Minor | FPC 1, Consumption > 90percent of allocated Budget |
| 2007-04-08 05:51:12 UTC | Minor | FPC 0, Consumption > 90percent of allocated Budget |
| 2007-04-08 05:50:26 UTC | Minor | FPC 0 SIB Link Error |
| 2007-04-08 05:49:34 UTC | Minor | SIB 0 FPC Link Error |
| 2007-04-08 05:48:02 UTC | Minor | No Redundant Power for FPC 0-7 |
| 2007-04-08 05:48:01 UTC | Minor | No Redundant Power for Rear Chassis |
| 2007-04-08 05:48:01 UTC | Minor | No Redundant Power for Fan 0-2 |

If an FPC consumes more than 90% of the allocated power budget, the **Consumption > 90percent of allocated Budget** alarm is raised. FPC power consumption is measured at intervals of 65 seconds.



NOTE: Starting in Junos OS Release 18.4R1, the PTX5000 routers do not raise a chassis alarm in the following events:

- Power consumption by an FPC exceeds 90% of the allocated power budget.
- Power consumption by an FPC exceeds 100% of the allocated power budget (in this case, a system log is registered).



NOTE: If the PTX5000 chassis has redundant power supply modules, and if one PSM fails, the FPCs can still be online. Only the No redundant power supply alarm is raised.

If the PTX5000 chassis does not have redundant power supply modules, failure of one PSM can cause the FPCs to go offline, depending on the total chassis power available at that time.

3. When the power consumption of an FPC is more than the allocated budget for three consecutive intervals, the **Consumption > 90percent of allocated Budget** is cleared and **PWR Range Overshoot** alarms is raised for that particular FPC and the ambient temperature is set to the next higher setting.

```
user@host> show chassis alarms
```

```
9 alarms currently active
```

| Alarm time | Class | Description |
|-------------------------|-------|--|
| 2007-04-08 05:56:38 UTC | Minor | FPC 2, Consumption > 90percent of allocated Budget |
| 2007-04-08 05:55:33 UTC | Minor | FPC 1, PWR Range Overshoot |
| 2007-04-08 05:53:22 UTC | Minor | FPC 0, PWR Range Overshoot |
| 2007-04-08 05:50:26 UTC | Minor | FPC 0 SIB Link Error |
| 2007-04-08 05:49:34 UTC | Minor | SIB 0 FPC Link Error |
| 2007-04-08 05:48:02 UTC | Minor | No Redundant Power for FPC 0-7 |
| 2007-04-08 05:48:01 UTC | Minor | No Redundant Power for Rear Chassis |
| 2007-04-08 05:48:01 UTC | Minor | No Redundant Power for Fan 0-2 |



NOTE: Consumption > 90percent of allocated Budget alarms are updated according to the new ambient temperature setting but the chassis ambient temperature is not changed.

```
user@host> show chassis alarms
```

```
5 alarms currently active
```

| Alarm time | Class | Description |
|-------------------------|-------|-------------------------------------|
| 2007-04-01 04:36:53 UTC | Minor | No Redundant Power for FPC 0-7 |
| 2007-04-01 04:36:52 UTC | Minor | No Redundant Power for Rear Chassis |
| 2007-04-01 04:36:51 UTC | Minor | No Redundant Power for Fan 0-2 |
| 2007-04-01 04:36:47 UTC | Minor | PDU 1 Absent |

- a. You can verify the temperature by using the **show chassis ambient-temperature** command.

```
user@host> show chassis ambient-temperature
```

```
Ambient Temperature: 25C
```

- b. Enter the configuration mode and check the configured ambient temperature. Use the **show chassis ambient temperature** operational mode command.

```
user@host# show chassis ambient temperature
```

```
Ambient Temperature: 25C
```

This is set to the last configured value.

- c. To clear the temperature set for the overshooting condition, use the **request chassis power-manager reset ambient-config** command.

```
user@host> request chassis power-manager reset ambient-config
```

Verify the ambient temperature after the reset.

```
show chassis ambient-temperature
```

```
Ambient Temperature: 25C
```

4. Verify the active alarms in the chassis by using the **show chassis alarms** command.

```
user@host> show chassis alarms
```

```
7 alarms currently active
```

| Alarm time | Class | Description |
|-------------------------|-------|-------------------------------------|
| 2007-04-01 04:36:53 UTC | Minor | No Redundant Power for FPC 0-7 |
| 2007-04-01 04:36:52 UTC | Minor | No Redundant Power for Rear Chassis |
| 2007-04-01 04:36:51 UTC | Minor | No Redundant Power for Fan 0-2 |
| 2007-04-01 04:36:47 UTC | Minor | PDU 1 Absent |

Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration

The power management feature of the PTX5000 Packet Transport Router is enhanced to manage the power supplied to the FPCs on the router by configuring the ambient temperature of the chassis. You can set the ambient temperature of the chassis at 25° C, or 40° C. On system initialization, the power manager reads the ambient temperature and allocates power to the FPC according to the power budget policy at that temperature. If the actual power consumption of any FPC exceeds the configured value for more than three minutes, the power manager overrides the configured ambient temperature setting of that FPC, and resets its ambient temperature to the next higher level and reallocates power according to the new temperature setting. All the overshooting FPCs remain in the dynamic ambient temperature mode until the next reboot, or until you override it with a CLI command. The power manager then resets the power budget of the FRUs according to the configured ambient temperature setting.



NOTE: If the ambient temperature is not set, then, 55° C is considered as the default ambient-temperature and FPCs are assigned power according to the default ambient temperature.

For example, if the chassis ambient temperature is set to 25° C, the power manager allocates power to the FPCs according to the power budget policy at 25 ° C. If an FPC consumes more than 90% of the allocated power, an alarm—**Consumption > 90percent of allocated Budget**—is raised. If the FPC power consumption exceeds the allocated

power for more than three minutes, the **PWR Range Overshoot** alarm is raised and the power manager reallocates power to that FPC according to the next higher temperature setting, that is, 40° C .



NOTE: During the PWR Range Overshoot alarm condition, you cannot reconfigure or delete the ambient temperature setting. You can reset the ambient temperature to the earlier setting after clearing the alarm condition by using the `request chassis power-manager reset ambient-config` command.



NOTE: If the PTX5000 chassis has redundant power supply modules, and if one PSM fails, the FPCs can still be online. Only the **No redundant power supply** alarm is raised.

If the PTX5000 chassis does not have redundant power supply modules, failure of one PSM can cause the FPCs to go offline, depending on the total chassis power available at that time.

**Related
Documentation**

- [ambient-temperature on page 265](#)
- [show chassis temperature-thresholds on page 1564](#)
- [Understanding How Dynamic Power Management Enables Better Utilization of Power on page 135](#)

CHAPTER 6

Managing Errors and Alarms

- [Managing Errors on page 155](#)
- [Understanding Chassis Alarms on page 167](#)
- [Craft Interface on page 221](#)

Managing Errors

- [Configuring FPC Error Levels and Actions on page 155](#)
- [Example: Configuring FPC Error Detection and Self-Healing on T Series Core Routers on page 157](#)
- [Managing FPC Errors on page 162](#)
- [Configuring Sanity Polling on page 162](#)
- [Configuring the Junos OS to Make a Flexible PIC Concentrator Stay Offline on page 165](#)
- [Configuring an SFM to Stay Offline on page 165](#)
- [Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online on page 166](#)
- [Enabling a Routing Engine to Reboot on Hard Disk Errors on page 166](#)

Configuring FPC Error Levels and Actions

Starting with Junos OS Release 13.3 or Release 14.2 for M320 routers, you can use MX Series, PTX Series, and T Series routers to configure Packet Forwarding Engine (PFE)-related error levels on FPCs and the actions to perform when a specified threshold is reached. In Junos OS Release 13.2 and earlier, Packet Forwarding Engine errors would disable the FPC. When you use the **error** command, Packet Forwarding Engine errors can be isolated, which reduces the need for a field replacement. Using the **error** command, you can classify errors according to severity, set an automatic recovery action for each severity, and configure the actions to perform when a specified threshold is reached. This command is available at the **[edit chassis fpc slot-number]** and **[edit chassis]** hierarchies.

To configure Packet Forwarding Engine error levels and actions for an FPC:

- (Optional) Configure the fatal error level threshold and action. A fatal error is an error that results in blockage of considerable amount of traffic across modules.

```
[edit chassis fpc fpc-number error]
```

```

user@host# set fatal action action
user@host# set fatal threshold threshold-level

```

If the severity level of the error is fatal, the action is carried out when the total number of errors reaches the threshold value. After the threshold value is crossed, for every occurrence of the error, an action is carried out.

- (Optional) Configure the major error level threshold and action. A major error is an error that results in continuing loss of packet traffic but does not affect other modules.

```

[edit chassis fpc fpc-number error]
user@host# set major action action
user@host# set major threshold threshold-level

```

If the severity level of the error is major, the action is carried out when the total number of errors reaches the threshold value. After the threshold value is crossed, for every occurrence of the error, an action is carried out.

- (Optional) Configure the minor error level threshold and action. A minor error is an error that results in the loss of a single packet but is fully recoverable.

```

[edit chassis fpc fpc-number error]
user@host# set minor action action
user@host# set minor threshold threshold-level

```

If the severity level is minor, the action is carried out only once when the total number of errors reaches the threshold value

Starting with Junos OS Release 18.1R3, MX Series routers support configuration of error thresholds and actions at the error scope and error category levels. Use the command **set chassis fpc *fpc-slot* error scope *error-scope* category *category* (fatal | major | minor) threshold *error-threshold* action (alarm | disable-pfe | get-state | offline | log | reset)** to configure a threshold and action for a particular error scope and category at the FPC level. You can also configure these features at the chassis level (at the **[edit chassis]** hierarchy). However, threshold and action configured at the **[edit chassis fpc]** hierarchy overrides the same configuration at the **[edit chassis]** hierarchy.

You can use the command **show chassis fpc errors** to view the error information at the error scope and category level.

For Junos OS Evolved, you can use the following **show** commands to view the error information:

- **show system errors count**—Displays system-wide errors and its count.
- **show system errors active**—Displays current active errors in the system.
- **show system errors active fpc <slot number>** —Displays active errors for the specified FPC.
- **show system errors fru detail**—Displays detailed FRU-specific error.
- **show system errors fru detail fpc <slot number>**—Displays information about detected errors based on the FRU.

If you have configured the action **log** against a particular error threshold, the system logs the event when the error count breaches the set threshold. The following sample syslog messages indicate an error threshold breach and the resultant action being taken:

```
Sep 17 23:12:10 sw-s3-u8-03 fpc0 Error:
/fpc/0/pfe/0/cm/0/PE_Chip/1/PECHIP_CMERROR_OQB_INT_REG_RD_ADDR_ERR (0x21078b),
scope: pfe, category: functional, severity: minor, module: PE Chip, type:
Description for PECHIP_CMERROR_OQB_INT_REG_RD_ADDR_ERR
```

```
Sep 17 23:12:10 sw-s3-u8-03 fpc0 Performing action log for error
/fpc/0/pfe/0/cm/0/PE_Chip/1/PECHIP_CMERROR_OQB_INT_REG_RD_ADDR_ERR (0x21078b) in
module: PE Chip with scope: pfe category: functional level: minor
```

Example: Configuring FPC Error Detection and Self-Healing on T Series Core Routers

This example shows how to configure error detection and self-healing on a Juniper Networks T Series Core Router with Type 5 FPC.

- [Requirements on page 157](#)
- [Overview on page 157](#)
- [Configuration on page 158](#)
- [Verification on page 161](#)

Requirements

This example uses the following hardware and software components:

- Juniper Networks T4000 Core Router with Type 5 FPCs.
- Junos OS Release 13.3 or later.

Before you proceed, ensure that the required connections are complete and the interfaces are functional.

Overview

FPC error detection and self-healing involves configuring a set of actions to be performed on each FPC, when the number of errors for a particular severity increases beyond a user-configured threshold. The error severity is categorized into fatal, major, and minor. Recovery actions include raising an alarm, generating log entries, getting the current state of the FPC, restarting the FPC, taking the FPC offline, and resetting the FPC. For a particular FPC and error severity, you can configure the error threshold to any value within the allowed limits and map the threshold to an action. In this example, you will set these errors on FPC 0 in Juniper Networks T4000 Core Router.

Configuration

To configure the error detection and self-healing, you need to set the error severity, threshold values corresponding to each error severity, and actions to be performed when the threshold value is crossed.

- [Configuring the Error Detection and Self-Healing on page 159](#)
- [Results on page 161](#)

CLI Quick Configuration

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

```
set chassis fpc 0 fatal threshold 1 action reset
set chassis fpc 0 major threshold 1 action alarm
set chassis fpc 0 minor threshold 10 action log
```

Configuring the Error Detection and Self-Healing

**Step-by-Step
Procedure**

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

- Configure the threshold value and associated action for fatal errors.

1. Set the error severity to fatal.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error fatal
```

2. Set the threshold value for fatal errors.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error fatal threshold 1
```

3. Set the associated action for fatal errors.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error fatal threshold 1 action reset
```

- Configure the threshold value and associated action for major errors.

1. Set the error severity to major.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error major
```

2. Set the threshold value for major errors.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error major threshold 1
```

3. Set the associated action for major errors.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error major threshold 1 action alarm
```

- Configure the threshold value and associated action for minor errors.

1. Set the error severity to minor.

```
[edit interfaces]
```

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error minor
```

2. Set the threshold value for minor errors.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error minor threshold 10
```

3. Set the associated action for minor errors.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error minor threshold 10 action log
```

Results

The following is the result of the configuration for the fatal severity level.

```
user@host# set chassis fpc 0 error ?
Possible completions:
+ apply-groups          Groups from which to inherit configuration data
+ apply-groups-except  Don't inherit configuration data from these groups
> fatal                FPC Fatal errors (default threshold = 1)
> major                FPC Major Level errors (default threshold = 1)
> minor                FPC Minor Level errors (default threshold = 10)
user@host# set chassis fpc 0 error fatal action ?
Possible completions:
alarm                  Raise FPC alarm
get-state              Retrieve FPC state for debugging
log                   Log occurrence to system log file
offline               Offline FPC
offline-pic            Offline PICs associated with PFE on FPC
reset                 Reset FPC
user@host# set chassis fpc 0 error fatal action reset
user@host# set chassis fpc 0 error fatal threshold ?
Possible completions:
<threshold>           Error count at which to take the action (0..4294967295)
user@host# set chassis fpc 0 error fatal threshold 1
```

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

Verification

To verify that the configuration is successful and the router is configured with the correct action, use the **show chassis fpc errors** command.

- [Verifying the Configured Actions Related to Fatal Severity of FPC Error on page 161](#)

Verifying the Configured Actions Related to Fatal Severity of FPC Error

Purpose Make sure that the threshold value and the associated action are set for fatal errors.

Action user@host> show chassis fpc errors

```
FPC Level Occurred Cleared Threshold Action-Taken Action
0 Fatal 0 0 1 RESET
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
```

Meaning The sample output shows **Fatal** error at FPC **0** with **0** error **Occurred** (no previous occurrences), **0** error **Cleared** (no previous occurrences) with **Threshold** value set to 1 and **Action-Taken** set to **RESET**.

Managing FPC Errors

On the PTX10001 routers, you can disable an FPC error or modify the severity of the error at the error-id level. The error-id, which uniquely identifies an FPC error, is represented in the uniform resource identifier (URI) format and is composed of a module identifier and an error identifier. If an error occurs, you can find the error-id in the system log messages.

- [Modifying Severity of an Error on page 162](#)
- [Disabling an Error on page 162](#)

Modifying Severity of an Error

Though you cannot configure a new error severity, you can modify the existing severity of an error. For example, if you do not want to treat a particular error (identified by an error-id) as fatal anymore, you can modify its severity to major or minor as required.



NOTE: You cannot modify the error severity at a group (for example, category) level.

To modify the severity of an error, use the following command:

```
user@host# set chassis fpc fpc-slot error error-id severity new-severity
```

See the following example:

```
user@host# set chassis fpc 3 error "/cpu/0/memory/0/ECC_CORRECTED_ERROR" severity
minor
```

In the above example, you modified the severity of the error ID
“/cpu/0/memory/0/memory-uncorrected-error” in FPC 3 to **minor**.

Disabling an Error

To configure the system to stop reporting an error, identify the error-id and disable it. You can find the error-id in the system log messages. To disable an error, use the following command:

```
user@host# set chassis fpc fpc-slot error error-id state disable
```

See the following example:

```
user@host# set chassis fpc 3 error "/cpu/0/memory/0/ECC_CORRECTED_ERROR" state disable
```

In the above example, you disabled the error
“/cpu/0/memory/0/memory-uncorrected-error” in FPC 3.

Configuring Sanity Polling

You can configure the **sanity-poll** statement for a particular FPC or FEB or CFEB to start a periodic sanity check for that FPC or FEB or CFEB. The periodic sanity check includes checking for error conditions such as “register sanity issues,” “high temperature,” “hardware

failure,” and so on. If you do not configure the **sanity-poll** statement, then sanity polling is disabled.



NOTE: Currently, periodic sanity check is performed only on the routing chip register.

Sanity polling periodically checks for an error condition in an FPC or FEB or CFEB and performs the appropriate actions in case of an error.

- To configure sanity polling for an FPC on T Series routers and M320 routers, include the **sanity-poll** statement and its substatements at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis]
fpc slot-number {
  sanity-poll {
    retry-count number;
    on-error {
      raise-alarm;
      power (cycle | off);
      write-coredump;
    }
  }
}
```

- To configure sanity polling for a FEB on the M120 router, include the **sanity-poll** statement and its substatements at the **[edit chassis feb slot-number]** hierarchy level:

```
[edit chassis]
feb slot-number {
  sanity-poll {
    retry-count number;
    on-error {
      raise-alarm;
      power (cycle | off);
      write-coredump;
    }
  }
}
```

- To configure sanity polling for a CFEB on M7i and M10 routers, include the **sanity-poll** statement and its substatements at the **[edit chassis cfeb slot-number]** hierarchy level:

```
[edit chassis]
cfeb slot-number {
  sanity-poll {
    retry-count number;
    on-error {
      raise-alarm;
      power (cycle | off);
      write-coredump;
    }
  }
}
```

```
}
}
```



NOTE: On a TX Matrix or TX Matrix Plus router, you can configure the **sanity-poll** statement at the `[edit chassis lcc number fpc number]` hierarchy level.

The **sanity-poll** statement comprises the following substatements:

- The **retry-count** statement specifies the number of rechecks to be performed after the occurrence of a particular error condition. If an error exists in all the periodic checks, then sanity polling reports an error and proceeds to perform the appropriate actions (described as options of the **on-error** statement).

For example, if the periodic sanity check detects an error in the FPC or FEB or CFEB and if you configure the **retry count number** to 15, sanity polling does not report the error immediately. Sanity polling checks 15 times for the same error condition. If an error persists in all 15 rechecks, then it reports an error and takes the appropriate actions.

If you do not configure the **retry-count** statement, then by default, the **sanity-poll** statement rechecks the detected error 10 times before reporting an error condition.

- If sanity polling detects an error condition, the **on-error** statement performs the appropriate actions to eliminate the error.

The following actions are common to all kinds of error conditions:

- To generate a chassis alarm, configure the **raise-alarm** statement. The chassis alarm is displayed in the front panel of the chassis.
- To reboot the FPC or FEB or CFEB after generating a core file, configure the **power cycle** statement. This statement is useful for temporary software errors that are eliminated after reboot.
- To halt the FPC or FEB or CFEB, configure the **power off** statement. This statement is useful in case of permanent hardware failure.



CAUTION: The **power off** statement halts the FPC. Ensure that you have backup paths through a different FPC or FEB or CFEB to avoid service outage.



NOTE: The **power cycle** and **power off** statements are mutually exclusive: You can configure either the **power cycle** or the **power off** action for an error.

- To trigger the core file, configure the **write-coredump** statement.

You can configure multiple actions for a given FPC or FEB or CFEB. If you do not configure any actions, the **sanity-poll** statement generates only FPC or FEB or CFEB system log messages.

Configuring the Junos OS to Make a Flexible PIC Concentrator Stay Offline

By default, a Flexible PIC Concentrator (FPC) is configured to restart after a system reboot. You can use the **request chassis fpc** operational mode command to take an FPC offline, but on Junos OS the FPC attempts to restart when you enter a **commit** CLI command. To configure an FPC to stay offline and prevent it from restarting, include the **power off** statement at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis fpc slot-number]
power off;
```

To bring an FPC online that is configured to stay offline and configure it to stay online, include the **power on** statement at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis fpc slot-number]
power on;
```



NOTE: For platforms running Junos OS Evolved Release 19.1R1 (PTX10003), although the **power off** command is supported, the **power on** command is not. The only way to bring up an offlined FPC is to delete the **power off** configuration and reboot the chassis.

- See Also**
- [Configuring an SFM to Stay Offline on page 165](#)
 - [request chassis fpc on page 494](#)

Configuring an SFM to Stay Offline

By default, if you use the **request chassis sfm** CLI command to take a Switching and Forwarding Module (SFM) offline, the SFM attempts to restart when you enter a **commit** CLI command. To prevent a restart, you can configure an SFM to stay offline. This feature is useful for repair situations.

To configure an SFM to stay offline, include the **sfm** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
sfm slot-number {
  power off;
}
```

- **slot number**—Slot number in which the SFM is installed.
- **power off**—Take the SFM offline and configure it to remain offline.

For example, the following statement takes an SFM in slot 3 offline:

```
[edit chassis]
sfm 3 power off;
```

Use the **show chassis sfm** CLI command to confirm the offline status:

```
user@host# show chassis sfm
```

| Slot | State | Temp (C) | CPU Utilization (%) | | Memory Utilization (%) | | |
|------|---------|------------------------------|---------------------|-----------|------------------------|------|--------|
| | | | Total | Interrupt | DRAM (MB) | Heap | Buffer |
| 0 | Online | 34 | 2 | 0 | 64 | 16 | 47 |
| 1 | Online | 38 | 2 | 0 | 64 | 16 | 47 |
| 2 | Online | 42 | 2 | 0 | 64 | 16 | 47 |
| 3 | Offline | --- Configured power off --- | | | | | |

To bring the SFM back online, delete the **edit chassis sfm** statement and then commit the configuration.

Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online

On M320, T320, T640, T1600, T4000, TX Matrix, and TX Matrix Plus routers, when you bring a Flexible PIC Concentrator (FPC) online, the sequence number on the FPC may not be synchronized with the other active FPCs in the router, which may result in the loss of a small amount of initial traffic.

To avoid any traffic loss, include the **fpc-resync** statement at the **[edit chassis]** hierarchy level. This ensures that the sequence numbers of the FPC that is brought online is resynchronized with the other active FPCs in the router.

```
[edit chassis]
fpc-resync;
```



NOTE: In order to prevent traffic blackholing, the **fpc-resync** command will have no effect if a single LMNR based FPC and one or more I-chip FPCs exist in the same chassis.

Enabling a Routing Engine to Reboot on Hard Disk Errors

When a hard disk error occurs, a Routing Engine might enter a state in which it responds to local pings and interfaces remain up, but no other processes are responding.

To recover from this situation, you can configure a single Routing Engine to reboot automatically when a hard disk error occurs. To enable this feature, include the **on-disk-failure reboot** statement at the **[edit chassis routing-engine]** hierarchy level.

```
[edit chassis routing-engine]
on-disk-failure {
  disk-failure-action (halt | reboot);
}
```

For dual Routing Engine environments, you can configure a backup Routing Engine to assume mastership automatically, if it detects a hard disk error on the master Routing Engine. To enable this feature, include the **on-disk-failure** statement at the **[edit chassis redundancy failover]** hierarchy level. For information about this statement, see the *High Availability Feature Guide*.

You can configure the Routing Engine to halt (instead of rebooting) when the hard disk fails on the Routing Engine. To configure this feature, include the **disk-failure-action (halt | reboot)** statement at the **[edit chassis routing-engine on-disk-failure]** hierarchy level:

```
[edit chassis routing-engine]
on-disk-failure {
  disk-failure-action (halt | reboot);
}
```

Use the **halt** option to configure the Routing Engine to halt when the hard disk fails. Use the **reboot** option to configure the Routing Engine to reboot when the hard disk fails.

Release History Table

| Release | Description |
|---------|--|
| 13.3 | Starting with Junos OS Release 13.3 or Release 14.2 for M320 routers, you can use MX Series, PTX Series, and T Series routers to configure Packet Forwarding Engine (PFE)-related error levels on FPCs and the actions to perform when a specified threshold is reached. |

Related Documentation

- [Fabric Resiliency and Degradation on page 96](#)
- [Configuring Automatic Mirroring of the CompactFlash Card on the Hard Disk Drive](#)

Understanding Chassis Alarms

- [Chassis Alarms on page 167](#)
- [Chassis Conditions That Trigger Alarms on page 174](#)
- [Configuring Slow Packet Forwarding Engine Alarm on page 215](#)
- [User-Defined Alarm Relay Overview on page 218](#)
- [Configuring Chassis Alarm Relays on page 219](#)
- [Configuring Chassis Alarm Input on page 219](#)
- [Configuring Chassis Alarm Output on page 220](#)

Chassis Alarms

[Table 12 on page 168](#) and [Table 13 on page 171](#) list the chassis-related alarms that are displayed when you execute the **show chassis alarms** operational mode command on PTX Series routers.

Table 12: Chassis Alarms for PTX5000 series routers

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|--|
| Mix of PDUs | Appears when AC PDUs and DC PDUs are installed. Also appears when zoning and non- zoning PDUs are installed. | Minor | Install same type of PDUs in all slots. |
| Power Manager Non Operational) | Appears when zoning and non- zoning PDUs are installed. | Minor | Install same type of PDUs in all slots. |
| No Redundant Power | When backup PDUs are absent or down | Minor | Install backup PDU. |
| PDU 0/1 Converter Failed | Appears when one or more 36V booster converter fails in PDU (PDU2-PTX-DC). | Major | Check PDU and replace if required. |
| No redundant power for system | Appears when there is no backup PDUs in the router | Minor | Install backup PDU. |
| No Power for System | Appears when the router is powered on with only one PSM. | Major | Install backup PDU. |
| SIB 1 FPC Link Error | Appears when the indicated SIB is down. | Minor | Replace faulty SIB. |
| SIB 1 Absent | Appears when the indicated SIB is absent. | Major | Replace faulty SIB. |
| PDU 1 PSM 1 Not OK | Appears when the PSM in the displayed PDU is down. | Major | Replace faulty PSM. |
| Host x disk drive y smart error | <p>Appears when there is an issue with the internal state of the disk such as, the disk life remaining is below the threshold.</p> <ul style="list-style-type: none"> • x=0 for Host 0 (RE0) and 1 for Host 1 (RE1) • y=1 for disk 1 and 2 for disk 2 | Minor | Replace the disk. |
| VMHost x Boot from alternate set | Appears when the Routing Engine is booted from the alternate set. | Minor | Verify logs. As required, recover the Routing Engine by using the command request vmhost snapshot |

Table 12: Chassis Alarms for PTX5000 series routers (continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|---|
| VMHost RE x host application failed | Appears when one of the vmhost daemon has failed. | Minor | Manual mastership switchover followed by reboot using the command request vmhost reboot . |
| VMHost Boot from alternate disk | Appears when the primary disk is corrupted and unable to launch the guest. | Minor | Recover the disk by using the command request vmhost snapshot recovery . |
| Host 0/1 CPU Temperature Warm | Appears when the Routing Engine CPU temperature is above the TCONTROL threshold. 0 for Host 0 (RE0) and 1 for Host 1 (RE1) | Minor | No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system, thereby reducing the temperature. |
| Host 0/1 CPU Temperature Hot | Appears when the Routing Engine CPU temperature is above the PROCHOT threshold. 0 for Host 0 (RE0) and 1 for Host 1 (RE1) | Minor | No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system, thereby reducing the temperature. |
| Host 0/1 ECC single bit parity error | Appears when single bit ECC error is above the threshold value. 0 for Host 0 (RE0) and 1 for Host 1 (RE1) | Major | No recovery action required from the user. The count gets reset after 24 hours. |
| Host 0 ECC 53 parity error | Appears when multiple bit Error Checking and Correction (ECC) error is above the threshold value. | Major | Reboot the router. |
| VMHost RE x Disk y Missing | Appears when the disk in the Routing Engine is missing. <ul style="list-style-type: none"> • x—0 for RE0 and 1 for RE1 • y—1 for disk 1 and 2 for disk 2 | Minor | Check if there is missing or a defective disk. Insert healthy disk. Take a snapshot and recover the disk by using the command request vmhost snapshot . See <i>Disk Recovery Using the VM Host Snapshot in VM Host Installation</i> |

Table 12: Chassis Alarms for PTX5000 series routers (continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|--|--------|---|
| VMHost RE x Disk y Label Missing | <p>Appears when the labels on the disk in the Routing Engine is missing.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | Reboot the Routing-Engine from healthy disk and recover the impacted disk using the command request vmhost snapshot . |
| VMHost RE x Disk y Wrong Slot | <p>Appears when there is disk swap or pre-labelled disk inserted in wrong slot.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | If both the disks are in wrong slot, swap the disks and reboot. If only one disk is in wrong slot, recover the disk via snapshot after booting from healthy disk. |
| VMHost RE x Disk y File System Errors | <p>Appears when there is a file system error.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | Boot the Routing-engine from healthy disk and recover the impacted disk using the command request vmhost snapshot . |
| VMHost RE x Disk y Write Rate Threshold Cross | <p>Appears if write rate threshold is crossed.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | Identify the application that is generating excessive writes and apply configuration changes to prevent excessive writes. |
| VMHost RE x Disk y Size Incorrect | <p>Appears if the size of the disk is not appropriate for the platform.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | Insert an disk of the right size and reboot the Routing Engine. |
| VMHost RE x Disk y Usage Is Above Threshold | <p>Appears when the usage of the disk partition is above the threshold limit.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | Cleanup the disks using request vmhost cleanup command. |
| VMHost RE x Secure Boot Disabled | Appears when Secure Boot is not enforced in the BIOS. | Medium | Enable Secure Boot in the BIOS. |

Table 12: Chassis Alarms for PTX5000 series routers (continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|--|--------|---|
| VMHost RE x Secure BIOS Version Mismatch | Appears when current BIOS version is older than the Last Known good BIOS version. | Medium | Upgrade the BIOS using the request system firmware command. |
| RE x Mismatch in total memory detected | Appears when total memory for the pair of Routing Engines does not match, possibly because a memory module has failed. | Medium | Check the available RAM size using show vmhost hardware command. If the RAM size for the pair of Routing Engines does not match, contact JTAC. |

Table 13: Chassis Alarms for PTX10008 and PTX10016 routers

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|--|-------|--|
| FPC x need bounce | Appears when port speed configuration needs an FPC reboot for the new speed configuration to take effect. <ul style="list-style-type: none"> x-FPC slot number. | Minor | Do one of the following to clear the alarm. <ul style="list-style-type: none"> Manually reboot the FPC for the new port speed configuration to take effect. Delete the new port speed configuration that has triggered the alarm. In this case, the new port speed configuration will not take effect. |
| PEM pem-slot No Power | Appears when both power supplies are not connected and the enable switch is not set correctly. | Major | Check power supply input connection and the enable switch setting. |
| PEM pem-slot feed feed-slot no input | Appears when both power supplies are not connected but the enable switch is set to on. | Major | See <i>Enable Switch Settings</i> . |
| PEM pem-slot feed feed-slot Switch Cfg Wrong | Appears when either both power supplies are connected or one of the power supplies is connected but the enable switch is not set correctly. | Major | |

Table 14 on page 172 lists the chassis-related alarms that are displayed when you execute the **show chassis alarms** operational mode command on MX Series routers

Table 14: Chassis Alarms for MX series routers

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|---|
| Host x disk drive y smart error | <p>Appears when there is an issue with the internal state of the disk such as, the disk life remaining is below the threshold.</p> <ul style="list-style-type: none"> • x=0 for Host 0 (RE0) and 1 for Host 1 (RE1) • y=1 for disk 1 and 2 for disk 2 | Minor | Replace the disk. |
| VMHost x Boot from alternate set | Appears when the Routing Engine is booted from the alternate set. | Minor | Verify logs. As required, recover the Routing Engine by using the command request vmhost snapshot |
| VMHost RE x host application failed | Appears when one of the vmhost daemon has failed. | Minor | Manual mastership switchover followed by reboot using the command request vmhost reboot . |
| VMHost Boot from alternate disk | Appears when the primary disk is corrupted and unable to launch the guest. | Minor | Recover the disk by using the command request vmhost snapshot recovery . |
| Host 0/1 CPU Temperature Warm | <p>Appears when the Routing Engine CPU temperature is above the TCONTROL threshold.</p> <p>0 for Host 0 (RE0) and 1 for Host 1 (RE1)</p> | Minor | No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system thereby reducing the temperature |
| Host 0/1 CPU Temperature Hot | <p>Appears when the Routing Engine CPU temperature is above the PROCHOT threshold.</p> <p>0 for Host 0 (RE0) and 1 for Host 1 (RE1)</p> | Minor | No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system thereby reducing the temperature |
| Host 0/1 ECC single bit parity error | <p>Appears when single bit ECC error is above the threshold value.</p> <p>0 for Host 0 (RE0) and 1 for Host 1 (RE1)</p> | Major | No recovery action required from the user. The count gets reset after 24 hours. |
| Host 0 ECC 53 parity error | Appears when multiple bit ECC error is above the threshold value. | Major | Reboot the router. |

Table 14: Chassis Alarms for MX series routers (continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|--|
| Mixed Master and Backup RE types | Appears when dissimilar Routing Engines are present on the chassis. | Major | Both Routing Engines must be of the same model number. Replace one of the Routing Engines. |
| VMHost RE x Disk y Missing | Appears when the disk in the Routing Engine is missing. <ul style="list-style-type: none"> • x=0 for RE0 and 1 for RE1 • y=1 for disk 1 and 2 for disk 2 | Minor | Check if there is missing or a defective disk. Insert healthy disk. Take a snapshot and recover the disk by using the command request vmhost snapshot . See <i>Disk Recovery Using the VM Host Snapshot</i> in <i>VM Host Installation</i> |
| VMHost RE x Disk y Label Missing | Appears when the labels on the disk in the Routing Engine is missing. <ul style="list-style-type: none"> • x=0 for RE0 and 1 for RE1 • y=1 for disk 1 and 2 for disk 2 | Minor | Reboot the Routing-Engine from healthy disk and recover the impacted disk using the command request vmhost snapshot . |
| VMHost RE x Disk y Wrong Slot | Appears when there is disk swap or pre-labelled disk inserted in wrong slot. <ul style="list-style-type: none"> • x=0 for RE0 and 1 for RE1 • y=1 for disk 1 and 2 for disk 2 | Minor | If both the disks are in wrong slot, swap the disks and reboot. If only one disk is in wrong slot, recover the disk via snapshot after booting from healthy disk. |
| VMHost RE x Disk y File System Errors | Appears when there is a file system error. <ul style="list-style-type: none"> • x=0 for RE0 and 1 for RE1 • y=1 for disk 1 and 2 for disk 2 | Minor | Boot the Routing-engine from healthy disk and recover the impacted disk using the command request vmhost snapshot . |
| VMHost RE x Disk y Write Rate Threshold Cross | Appears if write rate threshold is crossed. <ul style="list-style-type: none"> • x=0 for RE0 and 1 for RE1 • y=1 for disk 1 and 2 for disk 2 | Minor | Identify the application that is generating excessive writes and apply configuration changes to prevent the excessive writes. |

Table 14: Chassis Alarms for MX series routers (continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|--|--------|---|
| VMHost RE x Disk y Size Incorrect | <p>Appears if the size of the disk is not appropriate for the platform.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | Insert an disk of the right size and reboot the Routing Engine. |
| VMHost RE x Disk y Usage Is Above Threshold | <p>Appears when the usage of the disk partition is above the threshold limit.</p> <ul style="list-style-type: none"> • x-0 for RE0 and 1 for RE1 • y-1 for disk 1 and 2 for disk 2 | Minor | Cleanup the disks using request vmhost cleanup command. |
| VMHost RE x Secure Boot Disabled | Appears when Secure Boot is not enforced in the BIOS. | Medium | Enable Secure Boot in the BIOS. |
| VMHost RE x Secure BIOS Version Mismatch | Appears when current BIOS version is older than the Last Known good BIOS version. | Medium | Upgrade the BIOS using the request system firmware command. |
| RE x Mismatch in total memory detected | Appears when total memory for the pair of Routing Engines does not match, possibly because a memory module has failed. | Medium | Check the available RAM size using show vmhost hardware command. If the RAM size for the pair of Routing Engines does not match, contact JTAC. |

See Also • [show chassis alarms on page 563](#)

Chassis Conditions That Trigger Alarms

Various conditions related to the chassis components trigger yellow and red alarms. You cannot configure these conditions.

- [Backup Routing Engine Alarms on page 212](#)
- [Chassis Component Alarm Conditions on M5 and M10 Routers on page 175](#)
- [Chassis Component Alarm Conditions on M7i and M10i Routers on page 178](#)
- [Chassis Component Alarm Conditions on M20 Routers on page 182](#)
- [Chassis Component Alarm Conditions on M40 Routers on page 186](#)
- [Chassis Component Alarm Conditions on M40e and M160 Routers on page 191](#)
- [Chassis Component Alarm Conditions on M120 Routers on page 196](#)

- [Chassis Component Alarm Conditions on M320 Routers on page 201](#)
- [Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms on page 206](#)
- [Chassis Component Alarm Conditions for Guest Network Functions \(GNFs\) on page 214](#)
- For PTX5000 Packet Transport Router chassis component alarm conditions, see the [PTX5000 Packet Transport Router Hardware Guide](#)
- For T320 Core Router chassis component alarm conditions, see the [T320 Core Router Hardware Guide](#)
- For T640 Core Router chassis component alarm conditions, see the [T640 Core Router Hardware Guide](#)
- For T1600 Core Router chassis component alarm conditions, see the [T1600 Core Router Hardware Guide](#)
- For T4000 Core Router chassis component alarm conditions, see the [T4000 Core Router Hardware Guide](#)
- For TX Matrix chassis component alarm conditions, see the [TX Matrix Router Hardware Guide](#)
- For TX Matrix Plus chassis component alarm conditions, see the [TX Matrix Plus Router Hardware Guide](#)

Chassis Component Alarm Conditions on M5 and M10 Routers

Table 15 on page 175 lists the alarms that the chassis components can generate on M5 and M10 routers.

Table 15: Chassis Component Alarm Conditions on M5 and M10 Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at www.juniper.net/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Craft interface | The craft interface has failed. | Replace failed craft interface. | Red |

Table 15: Chassis Component Alarm Conditions on M5 and M10 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------------------|---|----------------------------|----------------|
| Fan trays | One fan tray has been removed from the chassis. | Install missing fan tray. | Yellow |
| | Two or more fan trays have been removed from the chassis. | Install missing fan trays. | Red |
| | One fan in the chassis is not spinning or is spinning below required speed. | Replace failed fan tray. | Red |
| Forwarding Engine Board (FEB) | The control board has failed. If this occurs, the board attempts to reboot. | Replace failed FEB. | Red |
| Flexible PIC Concentrator (FPC) | An FPC has failed. If this occurs, the FPC attempts to reboot. If the FEB sees that an FPC is rebooting too often, it shuts down the FPC. | Replace failed FPC. | Red |
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken. | Replace failed component. | Red |

Table 15: Chassis Component Alarm Conditions on M5 and M10 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|---|----------------|
| Routing Engine | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | Red |
| Power supplies | A power supply has been removed from the chassis. | Install missing power supply. | Yellow |
| | A power supply has failed. | Replace failed power supply. | Red |

Table 15: Chassis Component Alarm Conditions on M5 and M10 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| Temperature | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | <p>Open a support case using the Case Manager link at www.juniper.net/</p> <p>or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).</p> | Red |

Chassis Component Alarm Conditions on M7i and M10i Routers

Table 16 on page 179 lists the alarms that the chassis components can generate on M7i and M10i routers.

Table 16: Chassis Component Alarm Conditions on M7i and M10i Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--------------------|--|--|----------------|
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Compact FEB (CFEB) | For an M7i router, CFEB has failed. If this occurs, the board attempts to reboot. | Replace failed CFEB. | Red |
| | For an M10i router, both control boards have been removed or have failed. | Replace failed or missing CFEB. | Red |
| | Too many hard errors in CFEB memory. | Replace failed CFEB. | Red |
| | Too many soft errors in CFEB memory. | Replace failed CFEB. | Red |
| | A CFEB microcode download has failed. | Replace failed CFEB. | Red |
| Fan trays | A fan has failed. | Replace failed fan tray. | Red |
| | For an M7i router, a fan tray has been removed from the chassis. | Install missing fan tray. | Red |
| | For an M10i router, both fan trays are absent from the chassis. | Install missing fan tray. | Red |
| | For a TX Matrix Plus router, fan tray is not matching the ST-SIB-Ls SIB. | Install a Rev.3 fan tray. | Red |
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's midplane from the front is broken. | Replace failed component. | Red |

Table 16: Chassis Component Alarm Conditions on M7i and M10i Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| Power supplies | A power supply has been removed. | Insert missing power supply. | Yellow |
| | A power supply has failed. | Replace failed power supply. | Red |
| | For an M10i router, only one power supply is operating. | Insert or replace secondary power supply. | Red |

Table 16: Chassis Component Alarm Conditions on M7i and M10i Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|---|----------------|
| Routing Engine | Excessive framing errors on console port. | Replace the serial cable connected to the device. | Yellow |
| | An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. | If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically. | |
| | This might be caused by a faulty serial console port cable connected to the device. | | |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. This alarm only applies, if you have an optional CompactFlash card. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | Routing Engine failed to boot. | Replace failed Routing Engine. | Red |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | Red |

Table 16: Chassis Component Alarm Conditions on M7i and M10i Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Temperature | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | Open a support case using the Case Manager link at https://www.junipernet/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Chassis Component Alarm Conditions on M20 Routers

Table 17 on page 183 lists the alarms that the chassis components can generate on M20 routers.

Table 17: Chassis Component Alarm Conditions on M20 Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Craft interface | The craft interface has failed. | Replace failed craft interface. | Red |
| Fan trays | One fan tray has been removed from the chassis. | Install missing fan tray. | Yellow |
| | Two or more fan trays have been removed from the chassis. | Install missing fan trays. | Red |
| | One fan in the chassis is not spinning or is spinning below requires speed. | Replace fan tray. | Red |
| FPC | An FPC has failed. If this occurs, the FPC attempts to reboot. If the System and Switch Board (SSB) sees that an FPC is rebooting too often, it shuts down the FPC. | Replace failed FPC. | Red |
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs in to the router's backplane from the front (generally, an FPC) is broken. | Replace failed component. | Red |

Table 17: Chassis Component Alarm Conditions on M20 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Routing Engine | Excessive framing errors on console port. | Replace the serial cable connected to the device. | Yellow |
| | An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. | If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically. | |
| | This might be caused by a faulty serial console port cable connected to the device. | | |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default master Routing Engine. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | | Red |

Table 17: Chassis Component Alarm Conditions on M20 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| | | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | |
| | Routing Engine failed to boot. | Replace failed Routing Engine. | Red |
| Power supplies | A power supply has been removed from the chassis. | Insert power supply into empty slot. | Yellow |
| | A power supply has failed. | Replace failed power supply. | Red |
| SSB | The control board has failed. If this occurs, the board attempts to reboot. | Replace failed control board. | Red |

Table 17: Chassis Component Alarm Conditions on M20 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Temperature | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | Open a support case using the Case Manager link at https://www.junipernet/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Chassis Component Alarm Conditions on M40 Routers

Table 18 on page 186 lists the alarms that the chassis components can generate on M40 routers.

Table 18: Chassis Component Alarm Conditions on M40 Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--------------------|--------------------|----------------|
| Air filter | Change air filter. | Change air filter. | Yellow |

Table 18: Chassis Component Alarm Conditions on M40 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Craft interface | The craft interface has failed. | Replace failed craft interface. | Red |
| Fan trays | One fan tray has been removed from the chassis. | Install missing fan tray. | Yellow |
| | Two or more fan trays have been removed from the chassis. | Install missing fan trays. | Red |
| | One fan in the chassis is not spinning or is spinning below required speed. | Replace fan tray. | Red |
| FPC | An FPC has an out of range or invalid temperature reading. | Replace failed FPC. | Yellow |
| | An FPC microcode download has failed. | Replace failed FPC. | Red |
| | An FPC has failed. If this occurs, the FPC attempts to reboot. If the SCB sees that an FPC is rebooting too often, it shuts down the FPC. | Replace failed FPC. | Red |
| | Too many hard errors in FPC memory. | Replace failed FPC. | Red |
| | Too many soft errors in FPC memory. | Replace failed FPC. | Red |
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken. | Replace failed component. | Red |

Table 18: Chassis Component Alarm Conditions on M40 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Power supplies | A power supply has been removed from the chassis. | Insert power supply into empty slot. | Yellow |
| | A power supply temperature sensor has failed. | Replace failed power supply or power entry module. | Yellow |
| | A power supply fan has failed. | Replace failed power supply fan. | Yellow |
| | A power supply has high temperature. | Replace failed power supply or power entry module. | Red |
| | A 5-V power supply has failed. | Replace failed power supply or power entry module. | Red |
| | A 3.3-V power supply has failed. | Replace failed power supply or power entry module. | Red |
| | A 2.5-V power supply has failed. | Replace failed power supply or power entry module. | Red |
| | A power supply input has failed. | Check power supply input connection. | Red |
| | A power supply has failed. | Replace failed power supply or power entry module. | Red |

Table 18: Chassis Component Alarm Conditions on M40 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Routing Engine | Excessive framing errors on console port. | Replace the serial cable connected to the device. | Yellow |
| | An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. | If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically. | |
| | This might be caused by a faulty serial console port cable connected to the device. | | |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default master Routing Engine. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | Routing Engine failed to boot. | Replace failed Routing Engine. | Red |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | | Red |

Table 18: Chassis Component Alarm Conditions on M40 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|---|----------------|
| | | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | |
| SCB | The System Control Board (SCB) has failed. If this occurs, the board attempts to reboot. | Replace failed SCB. | Red |

Table 18: Chassis Component Alarm Conditions on M40 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Temperature | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | Open a support case using the Case Manager link at https://www.junipernet/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Chassis Component Alarm Conditions on M40e and M160 Routers

Table 19 on page 191 lists the alarms that the chassis components can generate on M40e and M160 routers.

Table 19: Chassis Component Alarm Conditions on M40e and M160 Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--------------------|--------------------|----------------|
| Air filter | Change air filter. | Change air filter. | Yellow |

Table 19: Chassis Component Alarm Conditions on M40e and M160 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------------------|--|--|----------------|
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Connector Interface Panel (CIP) | A CIP is missing. | Insert CIP into empty slot. | Red |
| Craft interface | The craft interface has failed. | Replace failed craft interface. | Red |
| Fan trays | One fan tray has been removed from the chassis. | Install missing fan tray. | Yellow |
| | Two or more fan trays have been removed from the chassis. | Install missing fan trays. | Red |
| | One fan in the chassis is not spinning or spinning below required speed. | Replace fan tray. | Red |
| FPC | An FPC has an out of range or invalid temperature reading. | Replace failed FPC. | Yellow |
| | An FPC microcode download has failed. | Replace failed FPC. | Red |
| | An FPC has failed. If this occurs, the FPC attempts to reboot. If the MCS sees that an FPC is rebooting too often, it shuts down the FPC. | Replace failed FPC. | Red |
| | Too many hard errors in FPC memory. | Replace failed FPC. | Red |
| | Too many soft errors in FPC memory. | Replace failed FPC. | Red |

Table 19: Chassis Component Alarm Conditions on M40e and M160 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--|---|-----------------------------|----------------|
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken. | Replace failed component. | Red |
| Miscellaneous Control Subsystem (MCS) | An MCS has an out of range or invalid temperature reading. | Replace failed MCS. | Yellow |
| | MCS0 has been removed. | Reinstall MCS0. | Yellow |
| | An MCS has failed. | Replace failed MCS. | Red |
| Packet Forwarding Engine Clock Generator (PCG) | A backup PCG is offline. | Set backup PCG online. | Yellow |
| | A PCG has an out of range or invalid temperature reading. | Replace failed PCG. | Yellow |
| | A PCG has been removed. | Insert PCG into empty slot. | Yellow |
| | A PCG has failed to come online. | Replace failed PCG. | Red |

Table 19: Chassis Component Alarm Conditions on M40e and M160 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Routing Engine | Excessive framing errors on console port. | Replace the serial cable connected to the device. | Yellow |
| | An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. | If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically. | |
| | This might be caused by a faulty serial console port cable connected to the device. | | |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default master Routing Engine. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | Routing Engine failed to boot. | Replace failed Routing Engine. | Red |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | | Red |

Table 19: Chassis Component Alarm Conditions on M40e and M160 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------------------------|---|---|----------------|
| | | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | |
| Power supplies | A power supply has been removed from the chassis. | Insert power supply into empty slot. | Yellow |
| | A power supply has failed. | Replace failed power supply. | Red |
| Switching and Forwarding Module (SFM) | An SFM has an out of range or invalid temperature reading on SPP. | Replace failed SFM. | Yellow |
| | An SFM has an out of range or invalid temperature reading on SPR. | Replace failed SFM. | Yellow |
| | An SFM is offline. | Set SFM online. | Yellow |
| | An SFM has failed. | Replace failed SFM. | Red |
| | An SFM has been removed from the chassis. | Insert SFM into empty slot. | Red |
| | All SFMs are offline or missing from the chassis. | Insert SFMs into empty slots or set all SFMs online. | Red |

Table 19: Chassis Component Alarm Conditions on M40e and M160 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Temperature | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | Open a support case using the Case Manager link at https://www.junipernet/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Chassis Component Alarm Conditions on M120 Routers

Table 20 on page 196 lists the alarms that the chassis components can generate on M120 routers.

Table 20: Chassis Component Alarm Conditions on M120 Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--------------------|--------------------|----------------|
| Air filters | Change air filter. | Change air filter. | Yellow |

Table 20: Chassis Component Alarm Conditions on M120 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------------------|--|--|----------------|
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| | A CB Ethernet switch has failed. | Replace failed CB. | Yellow |
| | A CB has been removed. | Insert CB into empty slot. | Red |
| Control Board (CB) | A CB has failed. | Replace failed CB. | Red |
| | The craft interface has failed. | Replace failed craft interface. | Red |
| | Craft interface | | |
| Fan trays | One fan tray has been removed from the chassis. | Install missing fan tray. | Yellow |
| | Two or more fan trays have been removed from the chassis. | Install missing fan trays. | Red |
| | One fan in the chassis is not spinning or is spinning below required speed. | Replace fan tray. | Red |
| Forwarding Engine Boards (FEBs) | A spare FEB has failed. | Replace failed FEB. | Yellow |
| | A spare FEB has been removed. | Insert FEB into empty slot. | Yellow |
| | A FEB is offline. | Check FEB. Remove and reinsert the FEB. If this fails, replace failed FEB. | Yellow |
| | A FEB has failed. | Replace failed FEB. | Red |
| | A FEB has been removed. | Insert FEB into empty slot. | Red |

Table 20: Chassis Component Alarm Conditions on M120 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Host subsystem | A host subsystem has failed. | Replace the host subsystem. | Yellow |
| | A host subsystem has been removed. | Insert host subsystem into empty slot. | Red |
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken. | Replace failed component. | Red |
| Power supplies | A power supply has been removed from the chassis. | Insert power supply into empty slot. | Yellow |
| | A power supply has a high temperature. | Replace failed power supply or power entry module. | Red |
| | A power supply input has failed. | Check power supply input connection. | Red |
| | A power supply output has failed. | Check power supply output connection. | Red |
| | A power supply has failed. | Replace failed power supply. | Red |

Table 20: Chassis Component Alarm Conditions on M120 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Routing Engine | Excessive framing errors on console port. | Replace the serial cable connected to the device. | Yellow |
| | An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. | If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically. | |
| | This might be caused by a faulty serial console port cable connected to the device. | | |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | |
| | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default master Routing Engine. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | Routing Engine failed to boot. | Replace failed Routing Engine. | Red |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | | Red |

Table 20: Chassis Component Alarm Conditions on M120 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|-----------------|---|----------------|
| | | <ul style="list-style-type: none">• Check the interface cable connection.• Reboot the system.• If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.com/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | |

Table 20: Chassis Component Alarm Conditions on M120 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Temperature | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | Chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Chassis Component Alarm Conditions on M320 Routers

Table 21 on page 202 lists the alarms that the chassis components can generate on M320 routers.

Table 21: Chassis Component Alarm Conditions on M320 Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--------------------|--|--|----------------|
| Air filters | Change air filter. | Change air filter. | Yellow |
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Control Board (CB) | A CB has been removed. | Insert CB into empty slot. | Yellow |
| | A CB temperature sensor alarm has failed. | Replace failed CB. | Yellow |
| | A CB has failed. | Replace failed CB. | Red |
| CIP | A CIP is missing. | Insert CIP into empty slot. | Red |
| Craft interface | The craft interface has failed. | Replace failed craft interface. | Red |
| Fan trays | One fan tray has been removed from the chassis. | Install missing fan tray. | Yellow |
| | Two or more fan trays have been removed from the chassis. | Install missing fan trays. | Red |
| | One fan in the chassis is not spinning or is spinning below required speed. | Replace fan tray. | Red |

Table 21: Chassis Component Alarm Conditions on M320 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--------------------------------------|----------------|
| FPC | An FPC has an out of range or invalid temperature reading. | Replace failed FPC. | Yellow |
| | An FPC microcode download has failed. | Replace failed FPC. | Red |
| | An FPC has failed. If this occurs, the FPC attempts to reboot. If the CB sees that an FPC is rebooting too often, it shuts down the FPC. | Replace failed FPC. | Red |
| | Too many hard errors in FPC memory. | Replace failed FPC. | Red |
| | Too many soft errors in FPC memory. | Replace failed FPC. | Red |
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken. | Replace failed component. | Red |
| Power supplies | A power supply has been removed from the chassis. | Insert power supply into empty slot. | Yellow |
| | A power supply has failed. | Replace failed power supply. | Red |

Table 21: Chassis Component Alarm Conditions on M320 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Routing Engine | Excessive framing errors on console port. | Replace the serial cable connected to the device. | Yellow |
| | An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. | If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically. | |
| | This might be caused by a faulty serial console port cable connected to the device. | | |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default master Routing Engine. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | Routing Engine failed to boot. | Replace failed Routing Engine. | Red |
| | A spare SIB is missing. | Insert spare SIB in to empty slot. | Yellow |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | | Red |

Table 21: Chassis Component Alarm Conditions on M320 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|------------------------------|--|---|----------------|
| | | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | |
| Switch Interface Board (SIB) | A SIB has failed. | Replace failed SIB. | Yellow |
| | A spare SIB has failed. | Replace failed SIB. | Yellow |
| | A SIB has an out of range or invalid temperature reading. | Replace failed SIB. | Yellow |
| | A SIB is missing. | Insert SIB into empty slot. | Red |
| | A SIB has failed. | Replace failed SIB. | Red |
| | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |

Table 21: Chassis Component Alarm Conditions on M320 Routers (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Temperature | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | Chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms

Table 22 on page 206 lists the alarms that the chassis components can generate on MX Series 5G Universal Routing Platforms.

Table 22: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--------------------|--------------------|----------------|
| Air filters | Change air filter. | Change air filter. | Yellow |

Table 22: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------------------|--|--|----------------|
| Alternative media | The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Craft interface | The craft interface has failed. | Replace failed craft interface. | Red |
| Dense Port Concentrators (DPC)s | A DPC is offline. | Check DPC. Remove and reinsert the DPC. If this fails, replace failed DPC. | Yellow |
| | A DPC has failed. | Replace failed DPC. | Red |
| | A DPC has been removed. | Insert DPC into empty slot. | Red |
| Fan trays | A fan tray has been removed from the chassis. | Install missing fan tray. | Red |
| | One fan in the chassis is not spinning or is spinning below required speed. | Replace fan tray. | Red |
| | A higher-cooling capacity fan tray is required when an MPC is installed on the chassis. | Upgrade to a high-capacity fan tray. | Yellow |
| Host subsystem | A host subsystem has been removed. | Insert host subsystem into empty slot. | Yellow |
| | A host subsystem has failed. | Replace failed host subsystem. | Red |
| Hot swapping | Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken. | Replace failed component. | Red |

Table 22: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Power supplies | A power supply has been removed from the chassis. | Insert power supply into empty slot. | Yellow |
| | A power supply has a high temperature. | Replace failed power supply or power entry module. | Red |
| | A power supply input has failed. | Check power supply input connection. | Red |
| | A power supply output has failed. | Check power supply output connection. | Red |
| | A power supply has failed. | Replace failed power supply. | Red |
| | Invalid AC power supply configuration. | When two AC power supplies are installed, insert one power supply into an odd-numbered slot and the other power supply into an even-numbered slot. | Red |
| | Invalid DC power supply configuration. | When two DC power supplies are installed, insert one power supply into an odd-numbered slot and the other power supply into an even-numbered slot. | Red |
| | Mix of AC and DC power supplies. | Do not mix AC and DC power supplies. For DC power, remove the AC power supply. For AC power, remove the DC power supply. | Red |
| | Not enough power supplies. | Install an additional power supply. | Red |

Table 22: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Routing Engine | Excessive framing errors on console port. | Replace the serial cable connected to the device. | Yellow |
| | An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. | If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically. | |
| | This might be caused by a faulty serial console port cable connected to the device. | | |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | Error in reading or writing CompactFlash card. | Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default master Routing Engine. If this fails, replace failed Routing Engine. | Yellow |
| | System booted from hard disk. | Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine. | Yellow |
| | CompactFlash card missing in boot list. | Replace failed Routing Engine. | Red |
| | Hard disk missing in boot list. | Replace failed Routing Engine. | Red |
| | Routing Engine failed to boot. | Replace failed Routing Engine. | Red |
| | The Ethernet management interface (fxp0 or em0) on the Routing Engine is down. | | Red |

Table 22: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|----------------------------|---|---|----------------|
| | | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | |
| System Control Board (SCB) | An SCB has been removed. | Insert SCB into empty slot. | Yellow |
| | An SCB temperature sensor alarm has failed. | Replace failed SCB. | Yellow |
| | An SCB has failed. | Replace failed SCB. | Red |

Table 22: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| Temperature | The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Yellow |
| | The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | Chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down. | <ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. | Red |
| | The temperature sensor has failed. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Table 22: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------------------|--|---|----------------|
| Flexible PIC Concentrator (FPC) | <p>FPC <slot number> Major Errors</p> <p>On MX Series routers with MPC1 and MPC2 line cards, a major chassis alarm is raised when the following transient hardware errors occur</p> <ul style="list-style-type: none"> • CPQ Sram parity error • CPQ RLDRAM double bit ECC error <p>By default, these errors result in the Packet Forwarding Engine interfaces on the FPC being disabled. You can use the show chassis fpc errors command to view the default or user-configured action that resulted from the error.</p> <p>You can check the syslog messages to know more about the errors.</p> | To resolve the error, restart the line card. If the error is still not resolved, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Red |

Backup Routing Engine Alarms

For routers with master and backup Routing Engines, a master Routing Engine can generate alarms for events that occur on a backup Routing Engine. [Table 23 on page 213](#) lists chassis alarms generated for a backup Routing Engine.



NOTE: Because the failure occurs on the backup Routing Engine, alarm severity for some events (such as Ethernet interface failures) is yellow instead of red.



NOTE: For information about configuring redundant Routing Engines, see the *Junos OS High Availability Library for Routing Devices*.

Table 23: Backup Routing Engine Alarms

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| Alternative media | The backup Routing Engine boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Boot Device | The boot device (CompactFlash or hard disk) is missing in boot list on the backup Routing Engine. | Replace failed backup Routing Engine. | Red |
| Ethernet | The Ethernet management interface (fxp0 or em0) on the backup Routing Engine is down. | <ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | Yellow |
| FRU Offline | The backup Routing Engine has stopped communicating with the master Routing Engine. | Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States). | Yellow |
| Hard Disk | Error in reading or writing hard disk on the backup Routing Engine. | Reformat hard disk and install bootable image. If this fails, replace failed backup Routing Engine. | Yellow |

Table 23: Backup Routing Engine Alarms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------|---|--|----------------|
| Multibit Memory ECC | The backup Routing Engine reports a multibit ECC error. | <ul style="list-style-type: none"> Reboot the system with the board reset button on the backup Routing Engine. If the alarm recurs, open a support case using the Case Manager link at www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) | Yellow |

Chassis Component Alarm Conditions for Guest Network Functions (GNFs)

Table 24 on page 214 lists the Chassis conditions that trigger alarms on guest network functions (GNFs).

Read more about GNFs in [this Junos Node Slicing article](#).

Table 24: GNF Alarms

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| Routing Engine | <p>Mixed Master and Backup RE types</p> <p>This alarm is raised when the GNF Master Routing Engine and GNF Backup Routing Engine have been assigned either mismatching frequencies (with difference above 100 MHz), mismatching numbers of cores, or DRAM.</p> | Correct the differences and then relaunch the corrected GNF Routing Engine. | Yellow |
| Routing Engine | <p>System Incompatibility with BSYS</p> <p>The alarm is shown when any incompatibilities between BSYS and GNF software versions cause the GNF to go offline.</p> | Make the required changes to the BSYS or GNF software through upgrade. | Red |

Table 24: GNF Alarms (continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|--|----------------|
| Routing Engine | <p>Feature Incompatibility with BSYS</p> <p>Indicates a minor incompatibility between BSYS and GNF software versions. This could result in a:</p> <ul style="list-style-type: none"> • A warning error for the GNF. • A FRU going offline. <p>NOTE: Minor incompatibilities do not cause the GNF to go offline.</p> | Make the required changes to the BSYS or GNF software through upgrade. | Yellow |

Configuring Slow Packet Forwarding Engine Alarm

On an M Series, an MX Series, a T Series, or a SRX Series router, the Packet Forwarding Engine might not send a resource acknowledgment message to the Routing Engine within a predetermined time of 360 seconds. This delay in receiving resource acknowledgment could be due to a slow or stuck Packet Forwarding Engine on the M Series, MX Series, T Series, or SRX Series router, or on one of the LCCs connected to a TX Matrix, TX Matrix Plus, or TX Matrix Plus router with 3D SIBs.

Starting with Junos OS Release 13.2R1 (also applicable in Junos OS Releases 12.1R6, 12.2R5, 12.3R3, 13.1R2 and later), to display the issue as an alarm in the **show chassis alarms** command output and to append the alarm to the system log messages file, you must enable the slow Packet Forwarding Engine alarm on the router.

The following sections provide more information about the slow Packet Forwarding Engine alarm:

- [Enabling Slow Packet Forwarding Engine Alarm on page 215](#)
- [Disabling Slow Packet Forwarding Engine Alarm on page 216](#)
- [Verifying That the Alarm Output and System Log Messages are Updated on page 216](#)

Enabling Slow Packet Forwarding Engine Alarm

To enable the slow Packet Forwarding Engine alarm, perform the following steps:



NOTE: By default, the slow Packet Forwarding Engine alarm is disabled.

1. In configuration mode, go to the **[edit chassis]** hierarchy level:

```
[edit]
user@host# edit chassis
```

2. Enable the slow Packet Forwarding Engine alarm by configuring the **slow-pfe-alarm** statement.

```
[edit chassis]
user@host# set slow-pfe-alarm
```

Disabling Slow Packet Forwarding Engine Alarm

To disable the slow Packet Forwarding Engine alarm, perform the following steps:

1. In configuration mode, go to the **[edit chassis]** hierarchy level:

```
[edit]
user@host# edit chassis
```

2. Disable the slow Packet Forwarding Engine alarm by deleting the **slow-pfe-alarm** statement.

```
[edit chassis]
user@host# delete slow-pfe-alarm
```

Verifying That the Alarm Output and System Log Messages are Updated

Purpose To verify that the output of the **show chassis alarms** operational mode command and the system log messages file are updated with the slow Packet Forwarding Engine alarm when:

- The **slow-pfe-alarm** statement is enabled in the **[edit chassis]** hierarchy.
- The Packet Forwarding Engine resource acknowledgment is not received by the Routing Engine within a predetermined time of 360 seconds.

Action To check the output on an M Series, MX Series, T Series, or a SRX Series router:

1. Verify that the alarm is displayed in the output of the **show chassis alarms** operational mode command.

```
user@host> show chassis alarms

1 alarms currently active
Alarm time           Class  Description
2013-02-05 01:12:33 PST  Minor  Potential slow peers are: XDPC2
```

For field descriptions, see [show chassis alarms](#).

2. Verify that the alarm is appended to the system log messages file.

```
/var/log/messages -
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
```

```
are: XDPC2
... Minor alarm set, Potential slow peers are: XDPC2
```

To check the output on a TX Matrix, TX Matrix Plus, or a TX Matrix Plus with 3D SIBs router:

1. Verify that the alarm is displayed in the output of the **show chassis alarms** operational mode command.

```
user@scc> show chassis alarms

scc-re0:
-----
9 alarms currently active
Alarm time           Class  Description
2013-02-06 00:45:46 PST  Minor  Potential slow peers are: LCC1 LCC0
...
lcc0-re0:
-----
4 alarms currently active
Alarm time           Class  Description
2013-02-06 00:44:51 PST  Minor  Potential slow peers are: GFPC4 GFPC3
...
lcc1-re0:
-----
4 alarms currently active
Alarm time           Class  Description
2013-02-06 00:45:44 PST  Minor  Potential slow peers are: GFPC10
...
lcc2-re0:
-----
No alarms currently active
lcc3-re0:
-----
No alarms currently active
```

For field descriptions, see [show chassis alarms](#).

2. Verify that the alarm is appended to the system log messages file.

```
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
are: LCC0 LCC1
... Minor alarm set, Potential slow peers are: LCC0
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
are: GFPC4 GFPC3
... Minor alarm set, Potential slow peers are: GFPC4 GFPC3
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
are: GFPC10
... Minor alarm set, Potential slow peers are: GFPC10
```

Meaning The output of **show chassis alarms** operational mode command and the system log messages file are updated as expected when the slow Packet Forwarding Engine alarm is enabled and when the Packet Forwarding Engine resource acknowledgment is not received by the Routing engine within a predetermined time of 360 seconds.

User-Defined Alarm Relay Overview

The ACX Series router alarm contact port—labeled ALARM on the front panel—allows you to manage sensors and external devices connected to the router in remote unstaffed facilities.



NOTE: Alarm contact port is not applicable on ACX5048 and ACX5096 routers.

- [Alarm Contact Port on page 218](#)
- [Alarm Input on page 218](#)
- [Alarm Output on page 218](#)

Alarm Contact Port

The ACX Series router alarm contact port is a 15-pin D-type dry contact connector for alarms. The alarm contact port is used to generate LED alarms on the router and to turn external devices on or off. You can connect up to four input alarms and two output alarms. The alarm setting is open or closed.

Alarm Input

Alarm input provides dry contacts to connect to security sensors such as door or window monitors. The alarm input—open or closed—is sensed and reported to the management software. You can configure up to four alarm input relay ports (0 through 3) to operate as normally open or normally closed, and to trigger a red alarm condition or a yellow alarm condition or to ignore alarm conditions.

Alarm Output

Alarm output provides dry contacts to connect to external equipment, such as an audible or visual alarm that switches on or off—for example, a bell or a light. The four alarm output relay ports—0 through 3—are set up as follows:

- Ports 0 and 1—These ports can be configured to trigger an alarm when the system temperature goes to the red alarm status and when an alarm input port is triggered.
- Ports 2 and 3—These ports are *not* configured. They are used to indicate system major and minor alarms and are normally open. When a condition triggers an alarm, an alarm message is displayed.

To view the alarm input and output relay information, issue the **show chassis craft-interface** command from the Junos OS command line interface.

- See Also**
- [Alarm Contact Port on the ACX2000 Router](#) (Hardware topic)
 - [Configuring Chassis Alarm Relays on page 219](#)
 - [Configuring Chassis Alarm Input on page 219](#)
 - [Configuring Chassis Alarm Output on page 220](#)

- *relay (Chassis Alarm)*

Configuring Chassis Alarm Relays

On ACX Series routers, you can configure alarm relays that can trigger alarms and turn external devices on or off. For example, if the router heats up to more than the critical temperature, the output port is activated and a device connected to the output port—such as a fan—is turned on.

To configure conditions that trigger alarms, include the **relay** statement with the **input** and **output** options at the **[edit chassis alarm]** hierarchy level.

```
[edit chassis alarm]
relay
  input {
    port port-number {
      mode (close | open);
      trigger (ignore | red | yellow);
    }
  }
  output {
    port port-number {
      input-relay input-relay;
      mode (close | open);
      temperature;
    }
  }
}
```

The following output shows an example configuration of a chassis relay alarm:

```
[edit chassis alarm]
user@host# show
relay {
  input {
    port 1 {
      mode close;
      trigger red;
    }
  }
  output {
    port 0 {
      temperature;
    }
  }
}
```

Configuring Chassis Alarm Input

The ACX Series router alarm contact port—labeled ALARM on the front panel—allows you to manage sensors and external devices connected to the router in remote unstaffed facilities. You can configure up to four alarm input ports (0 through 3) to operate as normally open or normally closed, and to trigger a red alarm condition or a yellow alarm condition or to ignore alarm conditions.

To configure an input alarm:

1. Configure the input port:

```
[edit chassis alarm relay input port port-number]
```

For example, to configure input port zero (0):

```
user@host# edit chassis alarm relay input port 0
```

2. Configure the mode in which the input alarm is not active:

```
[edit chassis alarm relay input port port-number mode (close | open)]
```

For example, to configure open mode:

```
[edit chassis alarm relay input port 0]  
user@host# set mode open
```

3. Configure the trigger to set off the alarm:

```
[edit chassis alarm relay input port port-number trigger (ignore | red | yellow)]
```

For example, to set off the yellow alarm:

```
[edit chassis alarm relay input port 0]  
user@host# set trigger yellow
```

4. Verify the configuration with the **show** command:

```
[edit chassis alarm relay input port 0]  
user@host# show  
mode open;  
trigger yellow;
```

5. Commit the configuration with the **commit** command.

To view the alarm input relay information, issue the **show chassis alarms** or **show chassis craft-interface** commands from the Junos OS command line interface.

Configuring Chassis Alarm Output

The ACX Series router alarm contact port—labeled ALARM on the front panel—allows you to manage sensors and external devices connected to the router in remote unstaffed facilities. You can configure up to two alarm output relay ports (0 and 1) to operate as normally open or normally closed, and to trigger an alarm when the system temperature goes to the red alarm status and when an alarm input port is triggered.



NOTE: Ports 2 and 3 are *not* configured. They are used to indicate system major and minor alarms and are normally open. When a condition triggers an alarm, an alarm message is displayed, and the corresponding LED turns on.

To configure an output alarm:

1. Configure the output port:

```
[edit chassis alarm relay output port port-number]
```

For example, to configure output port zero (0):

```
user@host# edit chassis alarm relay output port 0
```

2. Configure the trigger to set off the alarm:

```
[edit chassis alarm relay output port port-number (input-relay | mode | temperature)]
```

For example, to set off the alarm when the system temperature goes into the red status:

```
[edit chassis alarm relay output port 0]
user@host# set temperature
```

3. Verify the configuration with the **show** command:

```
[edit chassis alarm relay output port 0]
user@host# show
temperature;
```

4. Commit the configuration with the **commit** command.

To view the alarm output relay information, issue the **show chassis alarms** or **show chassis craft-interface** command from the Junos OS command line interface.

Related Documentation

- [Silencing External Devices Connected to Alarm Relay Contacts on page 222](#)

Craft Interface

- [Silencing External Devices Connected to Alarm Relay Contacts on page 222](#)
- [Configuring the Junos OS to Disable the Physical Operation of the Craft Interface on page 222](#)
- [Remote Port Identification using LEDs for Cabling Assistance on page 222](#)

Silencing External Devices Connected to Alarm Relay Contacts

You can manually silence external devices connected to alarm relay contacts. To silence an external device, press the alarm cutoff button located on the craft interface front panel of the device.

Silencing the device does not remove the alarm messages from the display (if present on the router or switch) or extinguish the alarm LEDs. In addition, new alarms that occur after an external device is silenced reactivate the external device.

Configuring the Junos OS to Disable the Physical Operation of the Craft Interface

You can disable the physical operation of the craft interface front panel on the router. When you disable the operation of the craft interface, the buttons on the front panel, such as the alarm cutoff button, no longer function. To disable the craft interface operation, include the **craft-lockout** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
craft-lockout;
```

- See Also**
- [Configuring Junos OS to Determine Conditions That Trigger Alarms on Different Interface Types](#)
 - [Silencing External Devices Connected to Alarm Relay Contacts on page 222](#)

Remote Port Identification using LEDs for Cabling Assistance

With new and higher-density Modular Interface Cards (MICs) and Modular Port Concentrators (MPCs), cabling is complex and can result in wiring mistakes. Remote port identification reduces the complexity by providing an easy way of identifying the ports that must be connected to the cables. Starting in Junos OS Release 16.1, the remote port identification feature is supported on MPC7E-10G, MPC7E-MRATE, MX2K-MPC8E, and MX2K-MPC9E.

Starting in Junos OS Release 18.2, the remote port identification feature is supported on JNP10K-LC2101 on MX10008 routers.

LEDs, used to display the status of the port, can be configured to blink for a small duration of time to identify the port and provide cabling assistance. Depending on the port identification required, you can configure the LED of a specific port, LEDs of all ports, LED of a specific type of port to blink. For instance, on MX2020 routers with MPC8E, you can identify the active ports that support port speeds of 100 Gbps by configuring the LEDs of the specific port to blink. Similarly, you can identify active ports that support port speeds of 10 Gbps and 40 Gbps. You can configure the LED of, for example, active port 9 on the MX2020 router with MPC9E and MIC-MRATE. You can also make the LEDs of all the ports blink, if required.

You can specify the duration of time that a LED blinks. The default duration is 5 minutes (300 seconds). You can also stop the LED from blinking before the duration expires, if required.

To enable port identification on the enhanced MPCs, you can make the LED corresponding to the ports to blink using the **request chassis port-led** command.

Release History Table

| Release | Description |
|---------|---|
| 18.2 | Starting in Junos OS Release 18.2, the remote port identification feature is supported on JNP10K-LC2101 on MX10008 routers. |
| 16.1 | Starting in Junos OS Release 16.1, the remote port identification feature is supported on MPC7E-10G, MPC7E-MRATE, MX2K-MPC8E, and MX2K-MPC9E. |

Related Documentation

- *Configuring Junos OS to Determine Conditions That Trigger Alarms on Different Interface Types*
- [request chassis port-led on page 518](#)

CHAPTER 7

Network Services Mode

- [Configuring Network Services Mode on page 225](#)

Configuring Network Services Mode

- [Network Services Mode Overview on page 225](#)
- [Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers on page 228](#)
- [Feature Restrictions on MX Series Routers Running in Ethernet Network Services Mode or Enhanced Ethernet Network Services Mode on page 229](#)
- [Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode on page 230](#)

Network Services Mode Overview

A network services mode defines how the router chassis recognizes and uses certain modules. You can configure network services modes on MX Series 5G Universal Routing Platforms and on T4000 Core Routers with Type 5 FPCs.

On MX Series 5G Universal Routing Platforms, you can configure IP Network Services mode, Enhanced IP Network Services mode, Ethernet Network Services mode, or Enhanced Ethernet Network Services mode.

You can use either Enhanced IP Network Services mode or Enhanced Ethernet Network Services mode to improve the scaling and performance specific to filters in a subscriber access network that uses statically configured subscriber interfaces. For more information about using enhanced network services modes with firewall filters, see *Firewall Filters and Enhanced Network Services Mode Overview*.

On MX240, MX480, and MX960 routers, the MPC5E and MPC7E line cards power on only if the configured network services mode is **enhanced-ip** or **enhanced-ethernet**. All other MPCs work with any of the network services modes. MX2010 and MX2020 support only **enhanced-ip** and **enhanced-ethernet** network services modes.



NOTE: If Dense Port Concentrators (DPCs) in Ethernet Network Services mode or Enhanced Ethernet Network Services mode are up and running, you cannot configure the system for IP Network Services mode. You must first disable any Ethernet Network Services mode DPCs before switching to IP Network Services mode.



NOTE: When a chassis starts without any functioning FPCs, the Network Services mode defaults to IP Network Services. When the first FPC comes online, the configured Networks Services mode is applied.



NOTE: Starting from Junos OS Release 13.3, you can configure the Enhanced IP Network Services mode and Enhanced Ethernet Network Services mode on MX240, MX480 and MX960 routers with an SCBE2. Specify the **enhanced-ip** option or the **enhanced-ethernet** option at the **[edit chassis network-services]** hierarchy level.

You can configure T4000 Core Routers with Type 5 FPCs to run in Enhanced Network Services mode to enable improved virtual private LAN service (VPLS) MAC address learning. For more information, see [enhanced-mode](#).

[Table 25 on page 226](#) explains how different modules function when the MX Series 5G Universal Routing Platform chassis is configured to run in different network services modes.

Table 25: Network Services Mode Functions

| Configuration Upon Boot or Configuration Change | Module Function |
|---|--|
| IP Network Services mode (default; upon boot) | <p>All modules except DPCE-X and DPCE-X-Q are powered on.</p> <p>Starting with Junos OS Release 15.1, you can limit the maximum number of logical interfaces on MX Series routers with MS-DPCs to 64,000 for enhanced IP network services mode. To do this, include the limited-ift-scaling option with the network-services enhanced-ip statement at the [edit chassis] hierarchy level. Using the limited-ift-scaling option prevents any collision of logical interface indices that can occur in a scenario in which you enable the Enhanced IP Network Services mode on the router which also contains an MS-DPC.</p> |
| Ethernet Network Services mode (upon boot) | <p>All modules are powered on. However, operating in Ethernet Network Services mode restricts certain BGP protocol functions and does not support Layer 3 VPN, unicast RPF, and source and destination class usage (SCU and DCU) functions. In addition, the number of externally configured filter terms is restricted to 64K.</p> <p>Ethernet Network Services mode provides support for only Layer 2.5 functions.</p> |

Table 25: Network Services Mode Functions (continued)

| Configuration Upon Boot or Configuration Change | Module Function |
|--|---|
| Enhanced IP Network Services mode (upon boot) | Only MPCs, MS-MPCs, and MS-DPCs are powered on. NOTE: Only Multiservices DPCs (MS-DPCs) and MS-MPCs are powered on with the enhanced network services mode options. No other DPCs function with the enhanced network services mode options. |
| Enhanced Ethernet Network Services mode (upon boot) | Only MPCs, MS-MPCs, and MS-DPCs are powered on. All restrictions for operating in Ethernet Network Services mode apply. NOTE: Only Multiservices DPCs (MS-DPCs) and MS-MPCs are powered on with the enhanced network services mode options. No other DPCs function with the enhanced network services mode options. |
| Change from IP Network Services mode to Ethernet Network Services mode | DPCE-X and DPCE-X-Q modules are powered on. No reboot is required. No impact to MPCs or MS-DPCs. |
| Change from Ethernet Network Services mode to IP Network Services mode | Invalid modification. No commit occurs. A warning message indicates if any FPCs (along with their slot location) must be offline before switching to other network services. No impact to MPCs or MS-DPCs. |
| Change from Enhanced IP Network Services mode to Enhanced Ethernet Network Services mode | No reboot is required. No impact to MPCs or MS-DPCs. |
| Change from IP Network Services mode to Enhanced IP Network Services mode | System reboot is required (PFE/FPCs) |
| Change from Ethernet Network Services mode to Enhanced Ethernet Network Services mode | Reboot is required. |

For details on the Layer 2.5 support for Ethernet Network Services mode, see [“Restricted Software Features in Ethernet Network Services Mode” on page 229](#).

Network Services on SCBE2

The following scenarios are to be noted when you use an MX Series router with an SCBE2:

- You must configure the **set chassis network-services (enhanced-ip | enhanced-ethernet)** configuration command and reboot the router to bring up the FPCs on the router. However, after the router reboots, the MS DPC, the MX FPC, and the ADPC are powered off.
- All the FPCs and DPCs in the router are powered off when you reboot the router without configuring either the enhanced-ip option or the enhanced-ethernet option at the **[edit chassis network-services]** hierarchy level.
- You must reboot the router when you configure or delete the enhanced-ip option or the enhanced-ethernet option at the **[edit chassis network-services]** hierarchy level.

The following warning message, which prompts you to reboot the router, is displayed when you configure or delete the **enhanced-ip** or the **enhanced-ethernet** configuration statement at the **[edit chassis network-services]** hierarchy level.

```
'chassis'
WARNING: Chassis configuration for network services has been changed. A
system reboot is mandatory. Please reboot the system NOW. Continuing without
a reboot might result in unexpected system behavior.
commit complete
```

- Starting with Junos OS Release 14.2, you must perform a commit synchronization of the settings between dual Routing Engines under some specific conditions. If you configure or remove the **enhanced-ip** or the **enhanced-ethernet** option at the **[edit chassis network-services]** hierarchy level on one of the Routing Engines on a router that contains dual Routing Engines, perform commit synchronization of the settings between the two Routing Engines by entering the **commit synchronize** command at the **[edit system]** hierarchy level. In addition, you must reboot all of the Routing Engines on the router when the enhanced IP network services mode is changed. The reboot is performed to prevent any unexpected system behavior.



NOTE: Dynamic multicast replication mode is supported on SCBE2. Static multicast replication mode is not supported on SCBE2.



NOTE: If a route's next hop is a unicast next hop through integrated routing and bridging (IRB) and the corresponding MAC address is learned over a label-switched interface (LSI), the IRB derives the Layer 2 information from the indirect next hop for the LSI. If you configure the **load-balance per-packet** policy statement, the indirect next hop of the LSI points to a unilist, which has all the member links to load balance the packets toward the MPLS cloud. You should configure the **enhanced-ip** option to enable the unicast next hop for IRB to use the unilist as the Layer 2 forwards next hop and load balance the packets.

Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers

You can configure MX Series 5G Universal Routing Platforms to run in different network services modes. Each network services mode defines how the chassis recognizes and uses certain modules.

To configure the network services mode of an MX Series router:

- Access the chassis hierarchy.

```
[edit]
user@host# edit chassis
```


- Specify the network services mode that you want the router to use.

```
[edit chassis]
user@host# set network-services service
```

Feature Restrictions on MX Series Routers Running in Ethernet Network Services Mode or Enhanced Ethernet Network Services Mode

Table 26 on page 229 lists Junos OS feature restrictions when running in Ethernet Network Services mode or Enhanced Ethernet Network Services mode.

Table 26: Restricted Software Features in Ethernet Network Services Mode

| Software Feature | Restriction in Ethernet Network Services Mode |
|--|---|
| BGP | <ul style="list-style-type: none"> Data plane support applies only to Ethernet and MPLS. BGP only supports the following address families: inet labeled-unicast, inet unicast, inet-vpn unicast, l2vpn, and route-target. |
| L3VPN | <p>Layer 3 VPNs are supported. You can only include loopback interfaces in the Virtual Routing and Forwarding (VRF) instance. A maximum of two VRFs are supported. Each VRF can handle up to 10,000 routes.</p> <p>The <code>ping mpls l3vpn</code> operational mode command is also supported.</p> |
| Unicast RPF | Unicast reverse-path forwarding is disabled. |
| Source and destination class usage (SCU and DCU) | Source and Destination Class Usage is disabled. |
| Filter terms | The number of externally configured filter terms is restricted to 64 KB. |
| Prefixes | The number of supported prefixes is restricted to 32 K. |



NOTE: MX Series routers supporting Layer 2.5 functions work as full-scale routers and they support interior gateway protocol (IGP), multicast routing protocols, and other routing features. The restrictions applicable on these routers are that the number of routes is limited and you cannot use BGP.

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

Starting in Junos OS Release 15.1, you can impose a limitation on the maximum number of logical interfaces on MX Series routers with MS-DPCs to be 64,000 for enhanced IP network services mode. To impose that limit, include the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement at the **[edit chassis]** hierarchy level. When network-services is configured as enhanced IP mode, the kernel increases the total number of logical interfaces to 256,000. However, MS-DPC line cards are not capable of handling more than 64,000 logical interfaces globally on a router. Using the **limited-ifl-scaling** option prevents the problem of a collision of logical interface indices that can occur in a scenario in which you enable enhanced IP services mode and an MS-DPC is also present in the same chassis. To support MS-DPCs with enhanced IP mode on the chassis, you must limit the maximum logical interfaces as 64,000, which is performed with the **limited-ifl-scaling** option.

To define the maximum number of logical interfaces on MX Series routers with MS-DPCs as 64,000, include the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement at the **[edit chassis]** hierarchy level.

```
[edit chassis]
network-services enhanced-ip limited-ifl-scaling;
```

When the default network services mode on a router is IP services mode (by using the **network-services ip** statement), the maximum logical interfaces is set as 64,000. When you change the network services mode as enhanced IP, the chassis process sets a general configuration (GENCFG) script to the kernel that increases the maximum logical interfaces as 256,000. When you configure the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement, the chassis process does not generate a message to the kernel to increase the number of logical interfaces. As a result, the kernel retains the maximum number of logical interfaces as 64,000.

If your router chassis is previously configured with enhanced IP services mode and without the **limited-ifl-scaling** option set, and if you later configure the setting to limit the logical interfaces for MS-DPCs, the number of logical interfaces remains as 256,000 and it is not reduced. A cold reboot of the router must be performed in such a case to reduce the logical interfaces after you set the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement. When you enter the **limited-ifl-scaling** option, none of the MPCs are moved to the offline state. All the optimization and scaling capabilities supported with enhanced IP mode apply to enhanced IP mode with the limitation of IFL scaling functionality.

Release History Table

| Release | Description |
|---------|--|
| 15.1 | Starting with Junos OS Release 15.1, you can limit the maximum number of logical interfaces on MX Series routers with MS-DPCs to 64,000 for enhanced IP network services mode. |
| 15.1 | Starting in Junos OS Release 15.1, you can impose a limitation on the maximum number of logical interfaces on MX Series routers with MS-DPCs to be 64,000 for enhanced IP network services mode. |
| 14.2 | Starting with Junos OS Release 14.2, you must perform a commit synchronization of the settings between dual Routing Engines under some specific conditions. |
| 13.3 | Starting from Junos OS Release 13.3, you can configure the Enhanced IP Network Services mode and Enhanced Ethernet Network Services mode on MX240, MX480 and MX960 routers with an SCBE2. |

**Related
Documentation**

- *Firewall Filters and Enhanced Network Services Mode Overview* in the *Junos OS Broadband Subscriber Management and Services Library*.
- *Configuring Enhanced IP Network Services for a Virtual Chassis*
- [enhanced-mode on page 286](#)
- [network-services on page 355](#)

CHAPTER 8

Packet Scheduling Mode

- [Enabling an M160 Router to Operate in Packet Scheduling Mode on page 233](#)

Enabling an M160 Router to Operate in Packet Scheduling Mode

By default, packet scheduling is disabled on M160 Routers. To configure a router to operate in packet-scheduling mode, include the **packet-scheduling** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
packet-scheduling;
```

To explicitly disable the **packet-scheduling** statement, include the **no-packet-scheduling** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
no-packet-scheduling;
```

When you enable packet-scheduling mode, the Packet Director application-specific integrated circuit (ASIC) schedules packet dispatches to compensate for transport delay differences. This preserves the interpacket gaps as the packets are distributed from the Packet Director ASIC to the Packet Forwarding Engine.

Whenever you change the configuration for packet-scheduling, the system stops all SFMs and FPCs and restarts them in the new mode.



NOTE: Packet scheduling is for M160 routers only.

Related Documentation

- [Configuring the Junos OS to Support Eight Queues on IQ Interfaces for T Series and M320 Routers](#)

CHAPTER 9

OSS Mapping

- [Configuring OSS Mapping on page 235](#)

Configuring OSS Mapping

- [Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis on page 235](#)
- [Example: Configuring a T4000 Chassis to Represent a T640 Chassis on page 237](#)

Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis

You can configure the operations support systems (OSS) mapping feature to represent a T4000 chassis as a T1600 chassis or a T640 chassis. This topic includes the following tasks:

- [Configuring T4000 Chassis as a T1600 Chassis on page 235](#)
- [Configuring T4000 Chassis as a T640 Chassis on page 235](#)
- [Disabling the OSS Mapping Feature on page 236](#)

Configuring T4000 Chassis as a T1600 Chassis

To configure a T4000 chassis as a T1600 chassis:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]  
user@T4000# edit chassis
```

2. Configure the OSS mapping feature to map the T4000 chassis to a T1600 chassis.

```
[edit chassis]  
user@T4000# set oss-map model-name t1600
```

Configuring T4000 Chassis as a T640 Chassis

To configure a T4000 chassis as a T640 chassis:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]
user@T4000# edit chassis
```

2. Configure the OSS mapping feature to map the T4000 chassis to a T640 chassis.

```
[edit chassis]
user@T4000# set oss-map model-name t640
```



NOTE: By default, the OSS mapping feature is disabled.

Disabling the OSS Mapping Feature

To disable the OSS mapping feature:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]
user@T4000# edit chassis
```

2. Disable the OSS mapping feature that maps a T4000 chassis to a T640 chassis.

```
[edit chassis]
user@T4000# delete oss-map model-name t640
```

3. Disable the OSS mapping feature that maps a T4000 chassis to a T1600 chassis.

```
[edit chassis]
user@T4000# delete oss-map model-name t1600
```



NOTE:

- The `set chassis oss-map model-name t640 | t1600` command is applicable only on T4000 routers. You must explicitly set this command when a T1600 chassis or a T640 chassis is upgraded to a T4000 chassis.
 - You can execute the `set chassis oss-map model-name t640` command or the `set chassis oss-map model-name t1600` command if the OSS is compatible with either the T640 chassis or the T1600 chassis, respectively.
-

Example: Configuring a T4000 Chassis to Represent a T640 Chassis

This example shows how to configure OSS mapping feature to represent a T4000 chassis as a T640 chassis. You can extend this concept to configure a T4000 chassis to represent as a T1600 chassis as well.

- [Requirements on page 237](#)
- [Overview on page 237](#)
- [Configuring the T4000 Chassis to Represent a T640 Chassis on page 238](#)
- [Verification on page 238](#)

Requirements

This example uses the following hardware and software components:

- One T4000 router
- Junos OS Release 12.3R3, 13.1R2, 13.2R1, or later

Overview

Operations support systems (OSS) is used by service providers to maintain their networks. When a new router is added or removed from the network, the OSS must be updated to reflect the changes. This process is tedious and time-consuming.

When a T1600 chassis or a T640 chassis is upgraded to a T4000 chassis, the OSS identifies the new chassis as a new networking element and follows a tedious process of qualifying it for the customer's network. The *OSS mapping feature* helps avoid this scenario.

Using the OSS mapping feature, you can map a T4000 chassis to a T1600 chassis or to a T640 chassis with the **set chassis oss-map model-name t640|t1600** configuration command. This configuration command overrides the chassis model name, so that the OSS recognizes the chassis as a known chassis and proceeds without any requalification.



NOTE:

- The **set chassis oss-map model-name t640 | t1600** command is applicable only on T4000 routers. You must explicitly set this command when a T1600 chassis or a T640 chassis is upgraded to a T4000 chassis.
- You can execute the **set chassis oss-map model-name t640** command or the **set chassis oss-map model-name t1600** command, if the OSS is compatible with either the T640 chassis or the T1600 chassis, respectively.

Configuring the T4000 Chassis to Represent a T640 Chassis

Step-by-Step Procedure To configure the T4000 chassis to represent a T640 chassis by using the OSS mapping feature:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]
user@T4000# edit chassis
```

2. Configure the OSS mapping feature to map the T4000 chassis to a T640 chassis.

```
[edit chassis]
user@T4000# set oss-map model-name t640
```

Verification

Verifying the OSS Mapping Feature

Purpose To verify that the OSS mapping feature is working on a T4000 router.

Action Run the `show chassis operational` command and verify that the configured known chassis name is displayed when the T4000 chassis is mapped to a T640 chassis.

- Run the `show chassis hardware` operational command:

```
user@T4000> show chassis hardware
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-----------------------|
| Chassis | | | JN11B3892AHA | T640 |
| Midplane | REV 01 | 710-027486 | RC9848 | T-series Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAG5143 | T640 FPM Board |
| FPM Display | REV 04 | 710-021387 | BBAL2705 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAL3705 | T-series CIP |
| PEM 1 6x60 | REV 03 | 740-036442 | VJ00054 | Power Entry Module |
| SCG 0 | REV 18 | 710-003423 | BBAJ0727 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAE3887 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 06 | 740-026941 | P737F-002705 | RE-DUO-1800 |
| Routing Engine 1 | REV 06 | 740-026941 | P737F-002675 | RE-DUO-1800 |
| CB 0 | REV 09 | 710-022597 | EF7371 | LCC Control Board |
| | | | | |

- Run the `show chassis hardware detail` operational command:

```
user@T4000> show chassis hardware detail
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------|---------|-------------|---------------|--------------------|
| Chassis | | | JN11B3892AHA | T640 |
| Midplane | REV 01 | 710-027486 | RC9848 | T-series Backplane |

```

FPM GBUS          REV 13   710-002901  BBAG5143          T640 FPM Board
FPM Display       REV 04   710-021387  BBAL2705          T1600 FPM Display
CIP               REV 06   710-002895  BBAL3705          T-series CIP
PEM 1            REV 03   740-036442  VJ00054          Power Entry Module
6x60
SCG 0             REV 18   710-003423  BBAJ0727          T640 Sonet Clock Gen.
SCG 1             REV 18   710-003423  BBAE3887          T640 Sonet Clock Gen.
Routing Engine 0 REV 06   740-026941  P737F-002705      RE-DUO-1800
  ad0   3823 MB SMART CF          201101050335CCFACCF Compact Flash
  ad1   62720 MB SMART Lite SATA Drive 2011021700D8789F789F Disk 1
Routing Engine 1 REV 06   740-026941  P737F-002675      RE-DUO-1800
  ad0   3823 MB SMART CF          201011150208AF59AF59 Compact Flash
  ad1   62720 MB SMART Lite SATA Drive 2010122700A160026002 Disk 1
CB 0              REV 09   710-022597  EF7371           LCC Control Board
....

```

- Run the **show chassis hardware extensive** operational command:

```

user@T4000> show chassis hardware extensive

Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
              S/N:          JN11B3892AHA
Assembly ID:  0x0507          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
....

```

Verifying the OSS Mapping Feature on SNMP MIBs

Purpose To verify that the SNMP MIBs are updated with the configured known chassis name.

Action Run the **show snmp mib** operational commands and verify that the configured known chassis name is displayed in SNMP MIBs when the T4000 chassis is mapped to a T640 chassis:

- Run the **show snmp mib walk system** operational command:

```

user@T4000> show snmp mib walk system

sysDescr.0    = Juniper Networks, Inc. t640 internet router, kernel JUNOS
12.3-...Juniper Networks, Inc.
sysObjectID.0 = jnxProductNameT640
...

```

- Run the **show snmp mib walk jnxBoxAnatomy** operational command:

```

user@T4000> show snmp mib walk jnxBoxAnatomy

jnxBoxClass.0 = jnxProductLineT640.0
jnxBoxDescr.0 = Juniper t640 Internet Backbone Router
jnxBoxSerialNo.0 = JN11B3892AHA
jnxBoxRevision.0
....

```

Meaning On configuring the OSS mapping feature, the OSS maps the T4000 chassis to a T640 chassis, thereby preventing requalification of the new chassis.

Related Documentation

- [oss-map on page 365](#)
- [show chassis oss-map on page 1409](#)

CHAPTER 10

Configuration Statements

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account-layer2-overhead (PIC Level)

| | |
|---------------------------------|--|
| Syntax | account-layer2-overhead; |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>] |
| Release Information | Statement introduced in Junos OS Release 13.2. |
| Description | Enable the automatic adjustment of Layer 2 overhead in bytes, which is the octet adjustment per packet, based on the encapsulation on the logical interface for the total octet count for ingress and egress traffic on all the interfaces in the PIC. |
| 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">• <i>Accounting of the Layer 2 Overhead Attribute in Interface Statistics</i>• <i>Configuring Layer 2 Overhead Accounting in Interface Statistics</i>• <i>Verifying the Accounting of Layer 2 Overhead in Interface Statistics</i> |

action

Syntax

```
action {
  alarm;
  disable-pfe;
  get-state;
  log;
  offline;
  reset;
}
```

Hierarchy Level

- [edit chassis **fpc** *slot-number* **error fatal**]
- [edit chassis **fpc** *slot-number* **error major**]
- [edit chassis **fpc** *slot-number* **error minor**]
- [edit chassis **error fatal**]
- [edit chassis **error major**]
- [edit chassis **error minor**]

Release Information Statement introduced for PTX Series routers in Junos OS Release 13.3.
Statement introduced for MX240, MX480, MX960 routers in Junos OS Release 14.2.

Description Depending on the severity level of an error, you can configure one or more actions for the router to perform. For example, if the severity level of an error is major, you can configure the system to raise an alarm and restart the FPC.



NOTE: You cannot configure **disable-pfe** and **offline** actions at the same time.

Options **alarm**—Raise an FPC alarm.

disable-pfe—(PTX routers) Disable Packet Forwarding Engine interfaces on an FPC.
(MX240, MX480, MX960, MX2020 routers) Disables the interface associated with the ASIC that raised the error. On MX Series routers, an MPC can have multiple ASICs handled by a single PFE. Disabling the PFE in such cases, is not the optimal way to handle the error.

get-state—The system starts collecting statistics counters and other data from the affected FPC. The data is written and saved to a file under **/var** on the routing engine.

offline—The system shuts down the affected FPC, thus allowing traffic to be re-routed through interfaces on other FPC in the device.

reset —The system restarts the affected FPC.

log—Log occurrences to the system log file.

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

Related Documentation

- [Fabric Resiliency and Degradation on page 96](#)
- [show chassis fpc errors on page 1363](#)
- [Configuring FPC Error Levels and Actions on page 155](#)

action-fpc-restart-disable

Syntax `action-fpc-restart-disable;`

Hierarchy Level `[edit chassis fabric degraded]`

Release Information Statement added in Junos OS Release 11.4.
Statement introduced in Junos OS Release 12.1 for MX240, MX480, and MX960 routers.
Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Routers.

Description Allow the user to disable restarting of the FPCs during healing from a degraded fabric condition. The device can automatically recover from degraded fabric conditions by restarting both the fabric planes and the FPCs. If the **action-fpc-restart-disable** statement is configured, the healing attempt is limited to restarting the fabric planes only.

Default The system will detect a blackholing condition and try to heal the system.

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

Related Documentation

- [Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions on page 105](#)
- [Fabric Resiliency and Degradation on page 96](#)

adaptive-services

Syntax

```
adaptive-services {
  service-package {
    extension-provider {
      control-cores control-number;
      data-cores data-number;
      data-flow-affinity {
        hash-key (layer-3 | layer-4);
      }
      forwarding-db-size size;
      object-cache-size size;
      package package-name;
      policy-db-size size;
      syslog {
        facility {
          severity;
          destination destination;
        }
      }
      wired-max-processes num-procs;
      wired-process-mem-size mem-size;
    }
    layer-2;
    layer-3;
  }
}
```

Hierarchy Level [edit chassis fpc *slot-number* pic *pic-number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description Enable a service package on adaptive services interfaces.

Options The remaining statements are explained separately. See [CLI Explorer](#).

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

Related Documentation

- *Enabling Service Packages*
- *Multiservices MIC and Multiservices MPC (MS-MIC and MS-MPC) Overview*
- *Configuring MS-MPC-Based, Static HTTP Redirect Services*
- *Configuring MS-MPC-Based, Converged HTTP Redirect Services*

aggregated-ether

| | |
|---------------------------------|--|
| Syntax | <code>aggregated ether <i>aggregated-ether-group-name</i>;</code> |
| Hierarchy Level | <code>[edit chassis synchronization source interfaces]</code> |
| Release Information | Statement introduced in Junos OS Release 17.2R1. |
| Description | Specify an aggregated Ethernet group while configuring a member of the group as the clock source. This is an optional setting. Any number of interfaces from an aggregated Ethernet group can be configured as the clock source. If a member from the aggregated Ethernet group is selected as the locked clock source, then all the members of the group will transmit the Do not Use (DNU) ESMC quality level. |
| Options | <i>aggregated-ether-group-name</i> —aggregated ethernet group name |
| 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"> • <i>Synchronous Ethernet Overview</i> • show chassis synchronization on page 1544 |

aggregate-ports

| | |
|---------------------------------|--|
| Syntax | <code>aggregate-ports;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>]</code> |
| Release Information | Statement introduced in Junos OS Release 8.1. |
| Description | For T Series routers only, specify OC768-over-OC192 mode on the 4-port OC192C PIC. Four OC192 links are aggregated into one OC768 link with one logical interface. |
| 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"> • <i>Configuring 4-Port OC192 PIC to Operate in OC768-over-OC192 Mode</i> |

aggregated-devices

```
Syntax aggregated-devices {
    ethernet {
        device-count number;
        lacp {
            link-protection {
                non-revertive;
            }
            system-priority;
        }
    }
    sonet {
        device-count number;
    }
    maximum-links maximum-links-limit;
}
```

Hierarchy Level [edit chassis]

Release Information Statement introduced before Junos OS Release 7.4.
Support for LACP link protection and system priority introduced in Junos OS Release 9.3.

Description Configure properties for aggregated devices on the router. Aggregate Ethernet links are logical interfaces defined on the device that bundle together multiple physical interfaces into a single interface for the use of redundancy and bandwidth aggregation. When interconnecting devices you can create aggregate ethernet interfaces to bundle together multiple physical ethernet links to increase bandwidth and redundancy between devices.

Link aggregation enables you to group Ethernet interfaces to form a single link layer interface. Link Aggregation Control Protocol (LACP) is supported in chassis cluster deployments, where aggregated Ethernet interfaces and redundant Ethernet interfaces are supported simultaneously.

You must first configure the system to enable configuring the Aggregated Ethernet (ae) Interfaces. By default, Juniper devices do not have any aggregated ethernet interfaces created. To configure the device to support a given number of ae interfaces, you must define it on a per chassis basis using the **set chassis aggregated-devices devices {1-32}** in configuration mode. The number of devices you define will be the number of aggregated ethernet interfaces that the system will create which can be configured just like any other ethernet interface. Also you can view the interfaces created by using the **show interface terse** command. Once you have defined the number of aggregated ethernet devices on the chassis you can then continue to configure the LAG members on a per ethernet interface basis.

Options The remaining statements are explained separately.

| | |
|------------------------------|---|
| Required Privilege | interface—To view this statement in the configuration. |
| Level | interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Junos OS for Supporting Aggregated Devices</i> |

alarm (chassis)

| | |
|--------------------------|--|
| Syntax | <pre>alarm { interface-type { alarm-name (ignore red yellow); } }</pre> |
| Hierarchy Level | <pre>[edit chassis], [edit chassis interconnect-device name], [edit chassis node-group name]</pre> |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Statement introduced in Junos OS Release 12.2 for the ACX Series.</p> <p>Statement introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> |
| Description | <p>Configure the chassis alarms and whether they trigger a red or yellow alarm, or whether they are ignored. Red alarm conditions light the RED ALARM LED on either the router's craft interface or the switch's LCD screen and trigger an audible alarm if one is connected to the contact on the craft interface or LCD screen. Yellow alarm conditions light the YELLOW ALARM LED on either the router's craft interface or the switch's LCD screen and trigger an audible alarm if one is connected to the craft interface or LCD screen.</p> <p>To configure more than one alarm, include multiple alarm-name lines.</p> |
| Options | <p>alarm-name—Alarm condition. For a list of conditions, see <i>Configurable PIC Alarm Conditions</i>.</p> <p>ignore—The specified alarm condition does not set off any alarm.</p> <p>interface-type—Type of interface on which you are configuring the alarm: atm, ethernet, sonet, or t3.</p> <p>red—The specified alarm condition sets off a red alarm.</p> <p>yellow—The specified alarm condition sets off a yellow alarm.</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>Understanding Alarms</i> • Chassis Conditions That Trigger Alarms on page 174 • <i>Chassis Alarm Messages on a QFX3500 Device</i> • <i>Interface Alarm Messages</i> |


allow-sram-parity-errors

| | |
|---------------------------------|---|
| Syntax | allow-sram-parity-errors; |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i>] |
| Release Information | Statement introduced in Junos OS Release 8.0. |
| Description | (T Series routers only) Allow SRAM parity errors to occur without restarting the FPC. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |

atm-cell-relay-accumulation

| | |
|---------------------------------|--|
| Syntax | atm-cell-relay-accumulation; |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i>] (Routing Matrix) |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure an Asynchronous Transfer Mode (ATM) Physical Interface Card (PIC) in cell-relay accumulation mode. |
| 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"> • <i>Configuring the Junos OS to Use ATM Cell-Relay Accumulation Mode on an ATM1 PIC</i> |

atm-l2circuit-mode

| | |
|--|--|
| Syntax | <code>atm-l2circuit-mode (cell aal5 trunk <i>trunk</i>);</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>],</code> <code>[edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i>] (Routing Matrix)</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure the ATM2 intelligent queuing (IQ) Layer 2 circuit transport mode. |
| Default | <code>aal5</code> |
| Options | <p><code>aal5</code>—Tunnel a stream of ATM cells encoded with ATM Adaptation Layer (AAL5) over an IP Multiprotocol Label Switching (MPLS) backbone.</p> <p><code>cell</code>—Tunnel a stream of ATM cells over an IP MPLS backbone.</p> <p><code>trunk <i>trunk</i></code>—Transport ATM cells over an MPLS core network that is implemented on some other vendor switches. Trunk mode can be UNI or NNI.</p> |
| <div>  <p>NOTE: To determine which vendors support Layer 2 circuit trunk mode, contact Juniper Networks Customer Support.</p> </div> | |
| 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>Configuring the Junos OS to Enable ATM2 Intelligent Queuing Layer 2 Circuit Transport Mode</i> |

auto-recovery-disable

| | |
|---------------------------------|---|
| Syntax | auto-recovery-disable; |
| Hierarchy Level | [edit chassis fabric degraded] |
| Release Information | Statement introduced in Junos OS Release 14.2 for TX Matrix Plus routers with 3D SIBs. |
| Description | Disable the autorecovery option which is used to recover the routing matrix if fabric black-hole condition is detected on links between Packet Forwarding Engines. By default, autorecovery is enabled. If it is disabled, to reenale the autorecovery option, delete the auto-recovery-disable statement from the existing 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">• show chassis fabric faults recovery-actions on page 1051 |

bandwidth (MPC Bandwidth)

| | |
|---------------------------------|--|
| Syntax | bandwidth <i>bandwidth</i> ; |
| Hierarchy Level | [edit chassis fpc slot] |
| Release Information | Statement introduced in Junos OS Release 16.1 for MPC8E. |
| Description | <p>Configure the MPC bandwidth.</p> <p>By default, MPC8E provides a maximum bandwidth of 960 Gbps. You can upgrade MPC8E to provide an increased bandwidth of 1600 Gbps (1.6 Tbps) by using an add-on license. After you purchase the license and configure the bandwidth 1.6T statement, MPC8E provides an increased bandwidth of 1.6 Tbps. After you upgrade the MPC, you can use the show chassis fpc slot detail command to verify the status as shown in the following example:</p> <pre>[edit] user@router# run show chassis fpc 3 detail Slot 3 information: State Online Temperature 29 Total CPU DRAM 3200 MB ... Max Power Consumption 1150 Watts Configured Bandwidth 1600 G Operating Bandwidth 1600 G [edit] user@router#</pre> |
| Options | bandwidth —Configure the MPC to operate at a specified bandwidth. You can specify 1.6T as the value to configure the MPC to operate at a bandwidth of 1.6 Tbps. |
| 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"> • MPC8E on MX Series Routers Overview on page 49 • MPC8E |

bandwidth (Tunnel Services)

| | |
|---------------------|--|
| Syntax | <code>bandwidth <i>bandwidth-value</i>;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i> pic <i>number</i> tunnel-services]</code> |
| Release Information | Statement introduced in Junos OS Release 8.2. Statement introduced in Junos OS Release 12.3X54 for ACX Series routers. |
| Description | (ACX Series, MX Series 5G Universal Routing Platforms and T4000 Core Routers only) Configure the amount of bandwidth in gigabits per second reserved on each Packet Forwarding Engine for tunnel traffic using tunnel services. Configuring the bandwidth creates a virtual tunnel interface that is represented as <code>lt-<fpc/pic/port></code> . |
| Options | <p><i>bandwidth-value</i>—Amount of bandwidth in Gbps to reserve for tunnel traffic using tunnel services:</p> <ul style="list-style-type: none"> On ACX Series routers, the bandwidth values can be 1g or 10g. On MX Series routers, the bandwidth values can be as follows: <ul style="list-style-type: none"> 1g 10g through 100g in 10 Gbps increments: 10g, 20g, 30g, 40g, 50g, 60g, 70g, 80g, 90g, 100g 100g through 400g in 100 Gbps increments: 100g, 200g, 300g, 400g On T4000 routers, the bandwidth values can be 10g through 100g in 10 Gbps increments: 10g, 20g, 30g, 40g, 50g, 60g, 70g, 80g, 90g, 100g. |



NOTE: The bandwidth that you specify determines the port number of the tunnel interfaces that are created. When you specify a bandwidth of **1g**, the port number is always 10. When you specify any other bandwidth, the port number is always 0.



NOTE: If you specify a bandwidth that is not compatible with the type of DPCs or MPCs and their respective Packet Forwarding Engine, tunnel services are not activated. For example, you cannot specify 1 gigabit per second bandwidth for a Packet Forwarding Engine on a 10-Gigabit Ethernet 4-port DPC or 16x10GE 3D MPC.

When the tunnel bandwidth is unspecified in the Routing Engine CLI, the maximum tunnel bandwidth for MPC3E is 60G.

| | |
|---------------------------------|--|
| 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">• <i>Example: Configuring Tunnel Interfaces on a Gigabit Ethernet 40-Port DPC</i>• <i>Tunnel Interface Configuration on MX Series Routers Overview</i>• <i>Configuring Tunnel Interfaces on T4000 Routers</i>• <i>Example: Configuring Tunnel Interfaces on a 10-Gigabit Ethernet 4-Port DPC</i>• <i>Example: Configuring Tunnel Interfaces on the MPC3E</i>• tunnel-services (Chassis) on page 454 |

bandwidth-degradation

Syntax

```
bandwidth-degradation {
  action (log-only | restart | offline | restart-then-offline);
  no-fabric-switchover;
  percentage (1-99);
}
```

Hierarchy Level [edit chassis fpc slot-number fabric]

Release Information Statement introduced in Junos OS Release 15.1.

Description Configure a FPC to take a specific action once bandwidth degradation reaches a certain percentage to avoid causing a traffic black hole in the chassis.



NOTE: This configuration statement is mutually exclusive with the **offline-on-fabric-bandwidth-reduction** statement. If both statements are configured, the commit check fails and returns an error.

Options

- log-only**—A message gets logged in the chassisd and message files when the fabric degradation threshold is reached. No other actions are taken.
- restart**—The FPC with a degraded fabric plane is restarted once the threshold is reached.
- offline**—The FPC with a degraded fabric plane is taken offline once the threshold is reached. The FPC requires manual intervention to be brought back online. This is the default action if no action attribute configured.
- restart-then-offline**—The FPC with a degraded fabric plane is restarted once the threshold is reached, and if fabric plane degradation is detected again within 10 minutes, the FPC is taken offline. The FPC requires manual intervention to be brought back online.

Required Privilege Level

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

Related Documentation

- [Managing Bandwidth Degradation on page 105](#)
- [blackhole-action on page 262](#)
- [offline-on-fabric-bandwidth-reduction on page 362](#)

blackhole-action

| | |
|---------------------------------|--|
| Syntax | <code>blackhole-action (log-only restart offline restart-then-offline);</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number fabric]</code> |
| Release Information | Statement introduced in Junos OS Release 15.1. |
| Description | Configure an FPC to take a specific action when fabric plane degradation reaches 100 percent. |
| 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">• Managing Bandwidth Degradation on page 105• bandwidth-degradation on page 261 |

cel

| | |
|---------------------------------|---|
| Syntax | <pre>cel { e1 port-number { channel-group channel-number timeslots slot-number; } }</pre> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure channelized E1 port and channel specifications. |
| Options | e1 port-number —Any valid E1 port number on the host system. The remaining statements are explained separately. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Configuring the Junos OS to Support Channel Groups and Time Slots for Channelized E1 PICs |

channel-group

| | |
|---------------------------------|---|
| Syntax | <code>channel-group <i>channel-number</i> timeslots <i>slot-number</i>;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ce1 e1 <i>link-number</i>],</code> <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ct3 port <i>port-number</i> t1 <i>link-number</i>],</code> <code>[edit chassis lcc <i>lcc-index</i> fpc <i>slot-number</i> pic <i>pic-number</i> ce1 e1 <i>link-number</i>],</code> <code>[edit chassis lcc <i>lcc-index</i> fpc <i>slot-number</i> pic <i>pic-number</i> ct3 port <i>port-number</i> t1 <i>link-number</i>]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure the DS0 channel number. |
| Options | <p><i>channel-number</i>—DS0 channel group.</p> <p>Range: 0 through 7 for DS0 naming, and 0 through 23 for E1 naming.</p> <p><i>timeslots slot-number</i>—One or more actual time slot numbers allocated.</p> <p>Range: 1 through 24 for T1 and 1 through 32 for E1</p> <p>Default: All time slots for T1 and all time slots for E1</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>Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots</i> <i>Configuring the Junos OS to Support Channel Groups and Time Slots for Channelized E1 PICs</i> |

channelization

| | |
|---------------------------------|---|
| Syntax | channelization; |
| Hierarchy Level | [edit chassis fpc slot-number pic pic-number] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Enable the DS3/E3 MIC, MIC-3D-16CHE1-T1-CE, and MIC-3D-8CHOC3-4CHOC12 on MX Series routers with Queuing and Enhanced Queuing MPCs (MX-MPC1-3D-Q, MX-MPC2-3D-Q, MX-MPC2-3D-EQ, MPC2E-3D-NG, and MPC3E-3D-NG) or on MX80 routers to function in channelized mode. |
| 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">• <i>Configuring the Junos OS to Enable Channelization on DS3/E3 MIC</i> |

chassis

| | |
|---------------------------------|---|
| Syntax | chassis { ... } |
| Hierarchy Level | [edit] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure router chassis properties. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |

ambient-temperature

| | |
|----------------------------|---|
| Syntax | <code>chassis ambient-temperature (25C 40C 55C);</code> |
| Hierarchy Level | <code>[edit chassis]</code> |
| Release Information | <p>Statement introduced in Junos OS Release 14.1 for PTX Series routers.</p> <p>Statement introduced in Junos OS Release 15.1 for MX Series routers.</p> <p>Statement introduced in Junos OS Release 17.2R1 for EX9200 switches.</p> <p>Statement introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.</p> <p>Statement 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>Set the chassis ambient temperature and instruct the power manager to allocate power to the line cards according to the ambient temperature value.</p> <p>On system initialization in a PTX Series router, the power manager reads the ambient temperature and allocates power to the line cards according to the power budget policy at that temperature. If the actual power consumption of any line card exceeds the configured value for more than three minutes, the power manager overrides the configured ambient temperature setting of that line card, and resets its ambient temperature to the next higher level and reallocates power according to the new temperature setting. All the overshooting line cards remain in the dynamic ambient temperature mode until the next reboot, or until you override the configured ambient temperature with a CLI command. The power manager then resets the power budget of the FRUs according to the configured ambient temperature setting.</p> <p>When an MX Series router or an EX9200 switch restarts, the system adjusts the power allocation or the provisioned power for the line cards on the basis of the configured ambient temperature. If enough power is not available, a minor chassis alarm is raised. However, the chassis continues to run with the configured ambient temperature. You can configure a new higher ambient temperature only after you make more power available by adding new power supply modules or by taking a few line cards offline. By using the provisioned power that is saved by configuring a lower ambient temperature, you can bring more hardware components online.</p> <p>For MX960 Universal Routing Platform and the MX2000 line of routers, a maximum operating temperature of 40°C is recommended at an altitude of up to 6000 feet above sea level. The router can operate up to a maximum temperature of 46°C at sea level and can be set accordingly.</p> |



NOTE: If ambient temperature is not set, then the line cards are allocated power according to the default ambient temperature.

- Default**
- MX Series routers—40°C
 - PTX Series routers—40°C
 - EX9200 switches—40°C
 - EX9251 switches—40°C
 - EX9253 switches—40°C

- Options**
- 25C** —Set the ambient temperature of the chassis to 25°C
- 40C** —Set the ambient temperature of the chassis to 40°C
- 55C** —Set the ambient temperature of the chassis to 55°C



NOTE: Starting in Junos OS Evolved Release 19.1R1, the PTX10003-80C routers do not support configuration of the ambient temperature value 55C.

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

- Related Documentation**
- [Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration on page 152](#)
 - [Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature on page 149](#)
 - [Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization on page 148](#)

clock-class

| | |
|---------------------------------|--|
| Syntax | <code>clock-class <i>clock-class-value</i>;</code> |
| Hierarchy Level | [edit protocols ptp slave clock-class-to-quality-level-mapping] |
| Release Information | Statement introduced in Junos OS Release 12.2R2. |
| Description | Configure the clock class to the set ESMC quality level. |
| Default | <p>Following are the default clock class values for various clocks:</p> <ul style="list-style-type: none"> • Boundary clock—248 • Ordinary clock (master)—52 • Ordinary clock (slave)—255 |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Example: Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Understanding Hybrid Mode</i> • <i>Precision Time Protocol Overview</i> • <i>Synchronous Ethernet Overview</i> |

clock-class-to-quality-level-mapping

Syntax

```
clock-class-to-quality-level-mapping {  
  clock-class clock-class-value;  
  {  
    quality-level ql-value;  
  }  
}
```

Hierarchy Level [edit protocols ptp [slave](#)]

Release Information Statement introduced in Junos OS Release 12.2R2.

Description Configure the slave to override the default Precision Time Protocol (PTP) clock class to Ethernet Synchronization Message Channel (ESMC) mapping.

The remaining statements are explained separately. See [CLI Explorer](#).

Required Privilege Level

| |
|---|
| routing—To view this statement in the configuration. |
| routing-control—To add this statement to the configuration. |


Related Documentation

- *Configuring Hybrid Mode and ESMC Quality Level Mapping*
- *Example: Configuring Hybrid Mode and ESMC Quality Level Mapping*
- *Understanding Hybrid Mode*
- *Precision Time Protocol Overview*
- *Synchronous Ethernet Overview*


clock-ipv6-source (slave)

| | |
|---------------------------------|--|
| Syntax | <code>clock-ipv6-source <i>master-ipv6-address</i> { local-ip-address <i>local-ip-address</i>; }</code> |
| Hierarchy Level | [edit protocols ptp slave interface <i>interface-name</i> unicast-mode transport] |
| Release Information | Statement introduced in Junos OS Release 16.1. |
| Description | Configure the IPv6 address of the master. |
| Options | <p><i>master-ipv6-address</i>—IPv6 address for the master.</p> <p>The remaining statements are explained separately. See CLI Explorer.</p> |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Precision Time Protocol</i> • <i>Example: Configuring Precision Time Protocol</i> • <i>Precision Time Protocol Overview</i> |

clock-source (hybrid)

| | |
|--|--|
| Syntax | <pre>clock-source <i>ip-address</i> { interface <i>interface1-name</i>; interface <i>interface2-name</i>; }</pre> |
| Hierarchy Level | [edit protocols ptp slave hybrid synchronous-ethernet-mapping] |
| Release Information | Statement introduced in Junos OS Release 12.2R2. |
| Description | Configure the IP address of the PTP master and its possible Synchronous Ethernet source interfaces. |
| Options | <p>interface <i>interface1-name</i>—Synchronous Ethernet interface traceable to the same PTP master clock.</p> <p>interface <i>interface2-name</i>—Synchronous Ethernet interface traceable to the same PTP master clock.</p> |
| <div>  <p>NOTE: You must first configure these interfaces at the [edit chassis synchronization] hierarchy level as Synchronous Ethernet sources. For information about configuring the interfaces, see synchronization (MX Series).</p> </div> | |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Example: Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Understanding Hybrid Mode</i> • <i>Precision Time Protocol Overview</i> • <i>Synchronous Ethernet Overview</i> |

clock-mode

| | |
|---------------------------------|--|
| Syntax | <code>clock-mode (boundary ordinary);</code> |
| Hierarchy Level | <code>[edit protocols ptp]</code> |
| Release Information | Statement introduced in Junos OS Release 12.2. Statement introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers. Statement introduced in Junos OS Release 17.3 for the QFX Series. |
| Description | Configure the clock mode as either boundary clock or ordinary clock. The clock mode determines whether the node is going to act as a slave, master, or both. This attribute is mandatory and has no default value. |
| Options | boundary —The clock mode of the node is a boundary clock where the clock acts as both master and slave. <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;">  NOTE: A boundary clock is not supported on the ACX Series routers for 12.2. </div> ordinary —The clock mode of the node is a system clock where the clock acts either as a master or as a slave. |
| 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"> • <i>Configuring Precision Time Protocol</i> • <i>Example: Configuring Precision Time Protocol</i> • <i>Precision Time Protocol Overview</i> • <i>IEEE 1588v2 Precision Timing Protocol (PTP)</i> • <i>Configuring the Precision Time Protocol G.8275.2 Enhanced Profile (Telecom Profile)</i> |

clock-mode (Clock Synchronization)

| | |
|---------------------------------|--|
| Syntax | clock-mode (auto-select free-run); |
| Hierarchy Level | [edit chassis synchronization] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | Configure the mode of operation to select the clock source from a free-run local oscillator or from an external qualified clock. On MX240, MX480, and MX960 routers with enhanced MPCs, the free-run clock is provided by a local oscillator. On other MX Series routers, the free-run clock is provided by the SCB. |
| Default | auto-select |
| Options | auto-select —Select the best external clock source as a clock source. free-run —Select the free-run local oscillator as a clock source. |
| 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">• synchronization on page 434 |

clock-ipv6-client

| | |
|---------------------------------|--|
| Syntax | <code>clock-ipv6-client <i>slave-ip-address</i>;</code> |
| Hierarchy Level | <code>[edit protocols ptp master interface interface-name unicast-mode transport ipv4]</code> |
| Release Information | Statement introduced in Junos OS Release 16.1. |
| Description | Configure the IPv6 address of the slave. |
| Options | <i>slave-ip-address</i> —The IPv6 address for the slave. |
| 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">• <i>Configuring Precision Time Protocol</i>• <i>Example: Configuring Precision Time Protocol</i>• <i>Precision Time Protocol Overview</i> |

convert-clock-class-to-quality-level

| | |
|---------------------------------|---|
| Syntax | <code>convert-clock-class-to-quality-level;</code> |
| Hierarchy Level | <code>[edit protocols ptp slave]</code> |
| Release Information | Statement introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers. Statement introduced in Junos OS Release 12.2R2 for MX Series 5G Universal Routing Platforms. |
| Description | <p>Configure the slave to enable it to retrieve Ethernet Synchronization Message Channel (ESMC) information from the Precision Time Protocol (PTP) clock class.</p> <p>When this option is set, the outgoing quality level depends on the PTP clock class mapping, irrespective of the clock being configured in hybrid mode or pure PTP mode. This is the default mapping mode of the ESMC quality level value to the clock class.</p> |
| 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">• <i>Configuring Hybrid Mode and ESMC Quality Level Mapping</i>• <i>Example: Configuring Hybrid Mode and ESMC Quality Level Mapping</i>• <i>Precision Time Protocol Overview</i>• <i>Synchronous Ethernet Overview</i>• <i>Understanding ESMC Quality Level Mapping</i>• <i>Understanding Hybrid Mode</i> |

craft-lockout

| | |
|---------------------------------|---|
| Syntax | craft-lockout; |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 8.1. |
| Description | Disable the physical operation of the craft interface front panel. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Configuring the Junos OS to Disable the Physical Operation of the Craft Interface on page 222 |

ct3

Syntax

```
ct3 {  
  port port-number {  
    t1 link-number {  
      channel-group channel-number timeslots slot-number;  
    }  
  }  
}
```

Hierarchy Level [edit chassis fpc *slot-number* pic *pic-number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure channelized T3 port and channel specifications.

Options **port** *port-number*—Any valid T3 port number on the host system.

t1 *link-number*—T1 link.

Range: 0 through 27

The remaining statements are explained separately.

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

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

Related Documentation

- *Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots*

degraded

| | |
|---------------------------------|---|
| Syntax | <pre>degraded { action-fpc-restart-disable; degraded-fabric-detection-enable; degraded-fpc-bad-plane-threshold <i>number-bad-planes</i>; }</pre> |
| Hierarchy Level | [edit chassis fabric degraded] |
| Release Information | <p>Statement introduced in Junos OS Release 11.4.</p> <p>Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Routers.</p> |
| Description | Configure options that apply to degraded chassis fabric conditions. |
| Options | The remaining statements are explained separately. See CLI Explorer . |
| 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"> • Fabric Resiliency and Degradation on page 96 • Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions on page 105 |


degraded-fabric-detection-enable

| | |
|---------------------------------|--|
| Syntax | degraded-fabric-detection-enable; |
| Hierarchy Level | [edit chassis fabric degraded] |
| Release Information | Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Routers. |
| Description | Enable detection of an FPC with degraded fabric. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Fabric Resiliency and Degradation on page 96• Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions on page 105 |


degraded-fpc-bad-plane-threshold

| | |
|---------------------------------|--|
| Syntax | degraded-fpc-bad-plane-threshold <i>number-bad-planes</i> ; |
| Hierarchy Level | [edit chassis fabric degraded] |
| Release Information | Statement introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Routers. |
| Description | Configure the number of bad planes that indicate an FPC is degraded. |
| Options | number-bad-planes —Number of bad planes. Range: 4 through 18 Default: 4 |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Fabric Resiliency and Degradation on page 96• Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions on page 105 |

device-count

| | |
|---------------------------------|--|
| Syntax | <code>device-count <i>number</i>;</code> |
| Hierarchy Level | [edit chassis aggregated-devices ethernet] [edit chassis aggregated-devices sonet] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement functionality updated in Junos OS Release 14.2, as described below. |
| Description | <p>Configure the number of aggregated logical devices available to the router.</p> <p>Starting in Junos release 14.2, for MX series routers, aggregated Ethernet interfaces created under a logical system can be individually named. Prior to 14.2, ae interfaces were named automatically (AE1, AE2) etc. upon setting the device count. This change allows administrators to use custom naming schemes. System resources are only allocated for named ae interfaces, regardless of how many were declared in the device count. (In Junos 14.2 and earlier, ae naming occurred automatically up to the number specified for device count, and system resources were allocated whether a given ae interface was used or not.)</p> |
| Options | <p><i>number</i>—Set the number of aggregated logical devices that will be available for configuration.</p> |
| | <p> NOTE: Starting with Junos OS Release 13.2, a maximum of 64 aggregated interfaces are supported for link aggregation of SONET/SDH interfaces. In releases before Junos OS Release 13.2, a maximum of 16 aggregated interfaces are supported for link aggregation of SONET/SDH interfaces.</p> <p>For Junos OS Evolved, you can specify up to 512 aggregated Ethernet devices.</p> |
| | <p>Range: 1 - 496. The upper limit for this value is system specific.</p> <p>Range: 1 - 512 for Junos OS Evolved.</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>Configuring Junos OS for Supporting Aggregated Devices</i> • <i>Configuring Aggregated SONET/SDH Interfaces</i> |


disable-grant-bypass

| | |
|---------------------------------|---|
| Syntax | disable-grant-bypass; |
| Hierarchy Level | [edit chassis fabric] |
| Release Information | Statement introduced in Junos OS Release 16.1. |
| Description | <p>Disable the fabric grant bypass feature. This feature is used for communication between Packet Forwarding Engines. For instance, when a Packet Forwarding Engine wants to send a packet to another Packet Forwarding Engine (on the same MPC or on a different MPC), a request is sent to the Packet Forwarding Engine across the fabric plane. Only after the request is granted, can the source Packet Forwarding Engine send the packet to the destination Packet Forwarding Engine. Disabling the default behavior controls congestion and thus improves system behavior and performance on MX2010 and MX2020 routers.</p> <p> NOTE: After disabling fabric grant bypass feature on the MX2010 and MX2020, you must reboot the router for the changes to take effect. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable the fabric grant bypass feature and reboot the router.</p> |
| Default | Enabled for all MPCs on MX2010 and MX2020 routers with Switch Fabric Boards (SFBs). On MX2010 and MX2020 routers with the Switch Fabric Board SFB2, this feature is enabled only on the MPCs, MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP), and disabled on all other MPCs. The feature is disabled on routers with Switch Control Boards (SCBs). |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • Understanding Fabric Grant Bypass on page 109 • Disabling Fabric Grant Bypass to Control Congestion and Improve Performance on page 110 • Re-Enabling Fabric Grant Bypass on page 111 |

disk-failure-action

| | |
|---------------------------------|---|
| Syntax | disk-failure-action (halt reboot); |
| Hierarchy Level | [edit chassis routing-engine on-disk-failure] |
| Release Information | Statement introduced in Junos OS Release 9.0. |
| Description | Configure the Routing Engine to halt or reboot when the Routing Engine hard disk fails. |
| Options | halt —Specify the Routing Engine to halt. reboot —Specify the Routing Engine to reboot. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Enabling a Routing Engine to Reboot on Hard Disk Errors on page 166 |

domain

| | |
|--------------------------|---|
| Syntax | <code>domain <i>domain-value</i>;</code> |
| Hierarchy Level | <code>[edit protocols ptp]</code> |
| Release Information | Statement introduced in Junos OS Release 12.2. Statement introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers. |
| Description | Configure multiple independent Precision Time Protocol (PTP) domains. <div> NOTE: Only one PTP domain is supported at any given point in time.</div> |
| Options | <i>domain-value</i> —The PTP domain value. Range: 0 through 127 Default: 0 |
| 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">• <i>Configuring Precision Time Protocol</i>• <i>Example: Configuring Precision Time Protocol</i>• <i>Precision Time Protocol Overview</i> |

dynamic-profile-options

| | |
|---------------------------------|--|
| Syntax | <pre>dynamic-profile-options { versioning; }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | <p>Configure global dynamic profile options.</p> <p>The remaining statement is explained separately. Search for a statement in CLI Explorer or click a linked statement in the Syntax section for details.</p> |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> <i>Versioning for Dynamic Profiles</i> |


e1

| | |
|---------------------------------|--|
| Syntax | <pre>e1 port-number { channel-group channel-number timeslots slot-number; }</pre> |
| Hierarchy Level | [edit chassis fpc slot-number pic pic-number ce1] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure the channelized E1 port number on the PIC. The range is from 0 through 9. |
| 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>Configuring the Junos OS to Support Channel Groups and Time Slots for Channelized E1 PICs</i> |

e1-options (Clock Synchronization)

| | |
|---------------------------------|---|
| Syntax | <pre>e1-options { framing (g704 g704-no-crc4); line-encoding (ami hdb3); sabit <i>bit</i>; }</pre> |
| Hierarchy Level | <pre>[edit chassis synchronization interfaces external] [edit chassis synchronization interfaces (external-0/0 external-1/0)]</pre> |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the E1 interface options. |
| Options | The remaining statements are explained separately. See CLI Explorer . |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• synchronization on page 434 |

egress-policer-overhead

| | |
|---------------------------------|---|
| Syntax | <code>egress-policer-overhead bytes;</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number]</code> |
| Release Information | Statement introduced before Junos OS Release 11.1. |
| Description | <p>Add the specified number of bytes to the actual length of an Ethernet frame when determining the actions of Layer 2 policers, MAC policers, or queue rate limits applied to output traffic on the line card. You can configure egress policer overhead to account for egress <i>shaping</i> overhead bytes added to output traffic on the line card.</p> <p>On M Series and T Series routers, this statement is supported on Gigabit Ethernet Intelligent Queuing 2 (IQ2) PICs and Enhanced IQ2 (IQ2E) PICs. On MX Series routers, this statement is supported for interfaces configured on Dense Port Concentrators (DPCs).</p> |
| | <div>  <p>NOTE: This statement is not supported on Modular Interface Cards (MICs) or Modular Port Concentrators (MPCs) in MX Series routers.</p> </div> |
| Options | <p>bytes—Number of bytes added to a packet exiting an interface.</p> <p>Range: 0–255 bytes</p> <p>Default: 0</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>egress-shaping-overhead</i> • <i>Policer Overhead to Account for Rate Shaping Overview</i> • <i>Example: Configuring Policer Overhead to Account for Rate Shaping</i> • <i>Configuring a Policer Overhead</i> • <i>CoS on Enhanced IQ2 PICs Overview</i> |

enhanced-mode (Network Services)

| | |
|----------------------------|---|
| Syntax | enhanced-mode; |
| Hierarchy Level | [edit chassis network-services] |
| Release Information | <p>Statement introduced in Junos OS Release 12.3 for T4000 Core Routers with Type 5 FPCs.</p> <p>Statement introduced in Junos OS Release 15.1F3 and 16.1R2 for PTX5000 routers with third-generation FPCs.</p> <p>Statement introduced in Junos OS Release 15.1F6 and 16.1R2 for PTX3000 routers with third-generation FPCs.</p> <p>Statement introduced in Junos OS Release 17.3R1 for PTX1000 routers.</p> |
| Description | <p>PTX1000, PTX3000 and PTX5000 Routers—When you configure enhanced-mode on PTX series routers, the following features are enabled on the router:</p> <ul style="list-style-type: none"> • Filter-based generic routing encapsulation (GRE) for IPV4 and IPV6 tunneling. • promote gre-key statement for configuring gre-key as one of the matches in a filter. • promote dscp under family inet, and promote traffic-class under family inet6 statements for configuring these as one of the matches in a filter. (Added in Junos OS 17.1 for all PTX Series routers with third-generation FPCs.) • gtp-tunnel-endpoint-identifier statement for including hash calculation for IPV4 or IPV6 packets in the GPRS tunneling protocol—Tunnel end point ID (GTP-TEID) field hash calculations. • Wider configuration range for Bidirectional Forwarding Detection (BFD) protocol intervals. • Support for up to two million routes per chassis. • Support for Layer 3 VPN. The vrf-table-label statement is supported. (Added in Junos OS 15.1F5 for PTX5000 routers.) • Support for destination class usage (DCU) and source class usage (SCU) accounting. (Added in Junos OS 15.1F5 for PTX5000 routers.) |



NOTE:

- When you configure the **enhanced-mode** statement, only third-generation FPCs are allowed to be powered on. All other FPCs are powered off and cannot be brought online.
- When you do not configure the **enhanced-mode** statement, third-generation FPCs do not support the advanced features in the preceding list. Third-generation FPC only provide the same functionality as the first-generation and second-generation FPCs.

- After you configure the **enhanced-mode** statement and commit the configuration, the router must reboot.

T4000 Routers—When you configure **enhanced-mode** on T4000 routers, improved virtual private LAN service (VPLS) MAC address learning by supporting up to 262,143 MAC addresses per VPLS routing instance is enabled.



NOTE:

- The **enhanced-mode** statement supports up to 262,143 MAC addresses per VPLS routing instance. However, the MAC address learning limit for each interface remains the same (that is, 65,535 MAC addresses).
- After you configure the **enhanced-mode** statement and committing the configuration, you receive a warning message that prompts you to reboot the router. You must reboot the router and then modify the size of the VPLS MAC address table; otherwise, the improved VPLS MAC address learning does not take effect.
- When the T4000 router reboots after the **enhanced-mode** statement is configured, only the T4000 Type 5 FPCs are online while the remaining FPCs are offline.

Default PTX Series Routers—By default, the **enhanced-mode** statement is disabled.

T4000 Routers—By default, the improved VPLS MAC address learning feature is disabled.

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

Related Documentation

- [Network Services Mode Overview on page 225](#)
- [show chassis fpc on page 1309](#)
- [mac-table-size](#)
- [show chassis network-services on page 1406](#)

error

```
Syntax  error {
        (fatal | major | minor) {
            threshold threshold value;
            action (alarm | disable-pfe | offline-pic | log | get-state | offline | reset);
        }
        scope error-scope {
            category category {
                (fatal | major | minor) {
                    threshold threshold value;
                    action (alarm | disable-pfe | log | get-state | offline | reset);
                }
            }
        }
    }
```

Hierarchy Level [edit chassis]

Release Information Statement introduced in Junos OS Release 13.3 on MX Series routers.

Description Configure the threshold at which FPC errors will take the action you configure to be performed by the device. Starting from Junos OS Release 18.1R3, you can configure error thresholds and actions at the error scope and error category levels on MX Series routers.

Some Juniper devices include an internal framework for detecting and correcting FPC errors that can have the potential to affect services. You can classify FPC errors according to severity, set an automatic recovery action for each severity, and set a threshold (i.e., the number of times the error must occur before the action is triggered).

Options You can configure the threshold for the following severity levels:



NOTE: You cannot configure the severity level of an error. However you can modify the severity of an error by using the error ID. See [error-id](#).

- **fatal**—Fatal error on the FPC. An error that results in blockage of considerable amount of traffic across modules is a fatal error.
- **major**—Major error on the FPC. An error that results in continuing loss of packet traffic but does not affect other modules is a major error.
- **minor**—Minor error on the FPC. An error that results in the loss of a single packet but is fully recoverable is a minor error.
- **threshold *threshold-value***—Configure the threshold value at which to take action. If the severity level of the error is fatal, the action is carried out only once when the total number of errors crosses the threshold value. If the severity level of the error is major,

the action is carried out once after the occurrence crosses the threshold. If the severity level is minor, the action is carried out as many times as the value specified by the threshold. For example, when the severity level is minor, and you have configured the threshold value as 10, the action is carried out after the tenth occurrence.



NOTE: You can set the threshold value to 0 for errors with severity level as minor. This implies that no action is taken for that error. You cannot set the threshold value to 0 for errors with severity level as major or fatal.

Default: The error count for fatal and major actions is 1. The default error count for minor actions is 10.

Range: 0—429,496,729

The available detection and recovery actions are as follows:

- **alarm**—Raise an alarm.
- **disable-pfe**—Disable the PFE interfaces on the FPC.
- **get-state**—Get the current state of the FPC.
- **log**—Generate a log for the event.
- **offline**—Take the FPC offline.
- **offline-pic**—Take the PIC (installed in the FPC) offline.
- **reset**—Reset the FPC.



NOTE: Starting in Junos OS Evolved Release 19.1R1, the **offline** and **disable-pfe** actions are not available for errors with minor severity (under the hierarchy **edit chassis error minor action**).

The available detection and recovery actions are as follows for devices running Junos OS Evolved:

- **alarm**—Raise an alarm.
- **fault**—System goes to fault state but stays up (diagnostics can be run on it).
- **get-state**—Get the current state of the FPC.
- **log**—Generate a log for the event.



NOTE: Starting in Junos OS Release 17.2R1, if you configure the **disable-pfe**, **offline**, **offline-pic** or **reset** action on an MX Series or PTX Series router, the **get-state** action is additionally configured on the router. This means, for example, if you configure the **disable-pfe** action on the router, the router gets both **disable-pfe** and **get-state** actions configured.

- **scope error-scope**—Group the errors of a particular severity into different scopes. Errors belonging to each error scope is further grouped into categories, before thresholds and actions are defined at the group level. The following scopes are available: **board** and **pfe**.
- **category category**—Categorize errors into various subgroups under the scope level. An error category helps you group similar errors belonging to a particular scope and define actions for them at once. This feature eliminates the need for configurations against individual error-ids. Some of the error-categories are **functional**, **io** (input/output errors), **storage** (for example, errors related to HDD, SSD, and flash), **memory** (for example, errors related to static RAM), **processing** (for example, CPU-related errors), and **switch**.

Required Privilege Level

interface—To view this statement in the configuration.

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

- Related Documentation**
- [Fabric Resiliency and Degradation on page 96](#)
 - [Configuring FPC Error Levels and Actions on page 155](#)
 - [fpc error on page 306](#)
 - [show chassis fabric errors on page 1054](#)
 - [show chassis fpc errors on page 1363](#)

error-id

Syntax

```
error-id {
  severity; {
    (fatal | major | minor) {
    }
  }
  state {
    disable;
  }
}
```

Hierarchy Level [edit chassis fpc slot error]

Release Information Statement introduced in Junos OS Release 18.2R1.

Description Manage an error by using the error identifier. This feature allows you to disable an error or modify its severity. The **disable** option allows you to stop the error from being reported in the system until the error is enabled again.

An *error-id*, a unique error identifier, is represented as a Uniform Resource Identifier (URI), and is composed of a module identifier and an error identifier. For example, the error-id **"/cpu/0/memory/0/memory-uncorrected-error"** indicates an uncorrectable error under CPU memory module instance 0.

- Options**
- **severity**—Apply a new severity to the error ID. You can apply any of the following severities:
 - **fatal**—Fatal error on the FPC. An error that results in blockage of considerable amount of traffic across modules is a fatal error.
 - **major**—Major error on the FPC. An error that results in continuing loss of packet traffic but does not affect other modules is a major error.
 - **minor**—Minor error on the FPC. An error that results in the loss of a single packet but is fully recoverable is a minor error.
 - **state**—By default, an error is in “enabled” state.
 - **disable**—Disable an error.

Required Privilege Level

routing—To view this statement in the configuration.
 routing-control—To add this statement to the configuration.

- Related Documentation**
- [Managing FPC Errors on page 162](#)
 - [Configuring FPC Error Levels and Actions on page 155](#)
 - [fpc error on page 306](#)
 - [show chassis fpc errors on page 1363](#)

esmc-transmit

| | |
|--------------------------|--|
| Syntax | <pre>esmc-transmit { interfaces (all <i>interface-name</i>); }</pre> |
| Hierarchy Level | [edit chassis synchronization] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | Enable Ethernet Synchronization Message Channel (ESMC) packet transmission on all the interfaces or on a specific interface. |
| Options | <p><i>interface-name</i>—Enable ESMC packet transmission on this interface.</p> <p><i>all</i>—Enable ESMC packet transmission on all interfaces.</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">• synchronization on page 434 |

ethernet (Chassis)

| | |
|---------------------------------|--|
| Syntax | <pre>ethernet { device-count <i>number</i>; lacp { link-protection { non-revertive; } system-priority; } }</pre> |
| Hierarchy Level | [edit chassis aggregated-devices] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 11.4 for EX Series switches. |
| Description | Configure properties for Ethernet aggregated devices on the router. |
| 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">• <i>Configuring Junos OS for Supporting Aggregated Devices</i>• <i>Configuring LACP Link Protection of Aggregated Ethernet Interfaces for Switches</i> |

family

```
Syntax
family {
  inet {
    layer-3;
    layer-4;
    symmetric-hash {
      complement;
    }
  }
  multiservice {
    source-mac;
    destination-mac;
    payload {
      ip {
        layer-3;
        layer-4;
      }
    }
    symmetric-hash {
      complement;
    }
  }
}
```

Hierarchy Level [edit chassis fpc *slot-number* pic *pic-number* hash-key]

Release Information Statement introduced in Junos OS Release 9.6.

Description (MX Series 5G Universal Routing Platforms only) Configure data used in a hash key for a specific protocol family when configuring PIC-level symmetrical load balancing on an 802.3ad Link Aggregation Group.

Options **inet**—Configure data used in a hash key for the **inet** protocol family.

multiservice—Configure data used in a hash key for the **multiservice** protocol family.

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

Related Documentation

- *Configuring PIC-Level Symmetrical Hashing for Load Balancing on 802.3ad LAGs for MX Series Routers*

fatal

```
Syntax fatal {
    threshold threshold-value;
    action {
        alarm;
        disable-pfe;
        get-state;
        log;
        offline;
        reset;
    }
}
```

Hierarchy Level [edit chassis [fpc slot-number error](#)]

[edit chassis]

Release Information Statement introduced for PTX Series routers in Junos OS Release 13.3.
Statement introduced for MX240, MX480, MX960, and MX2020 routers in Junos OS Release 14.2.

Description Severity level of the error. An error that results in blockage of considerable amount of traffic across modules is a fatal error. The severity level of an error cannot be configured by a user.


The other statements are explained separately.

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


Related Documentation

- [Fabric Resiliency and Degradation on page 96](#)
- [Configuring FPC Error Levels and Actions on page 155](#)

feeds (T640, T1600, and T4000 Routers with Six-Input DC Power Supply)

| | |
|--------------------------|--|
| Syntax | <code>feeds number-of-input-feeds;</code> |
| Hierarchy Level | <code>[edit chassis pem]</code> <code>[edit chassis lcc lcc-number pem]</code> (Routing Matrix) |
| Release Information | Statement introduced in Junos OS Release 12.1. |
| Description | <p>Configure the number of input feeds connected to the six-input DC power supply on T640, T1600, or T4000 routers. The value assigned to the feeds statement must be equal to the number of input feeds provided to the power supply.</p> <p>When providing four or five input feeds on standalone routers, you must configure the feeds statement at the <code>[edit chassis pem]</code> hierarchy level. When providing four or five input feeds to an LCC router in a routing matrix, you must configure the feeds statement at the <code>[edit chassis lcc lcc-number pem]</code> hierarchy level.</p> <div style="margin-top: 20px;">  <p>NOTE:</p> <ul style="list-style-type: none"> Before configuring input feeds for your router, see the <i>T640 Core Router Hardware Guide</i>, <i>T1600 Core Router Hardware Guide</i>, or <i>T4000 Core Router Hardware Guide</i> for special considerations and for the number of input feeds supported by the router. All power supplies in the router must use the same number of inputs feeds. </div> |
| Options | <p>Range: 4 through 6</p> <p>Default: 6</p> |
| Required Privilege Level | <p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> Configuring the Six-Input DC Power Supply on T Series Routers on page 142 |

fib-local

| | |
|---------------------------------|--|
| Syntax | fib-local; |
| Hierarchy Level | [edit chassis fpc <i>fpc-number</i> route-localization] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure the Packet Forwarding Engine on an FPC as FIB-local. |
| | <div>  <p>NOTE: At least, one Packet Forwarding Engine must be configured as fib-local for the commit operation to be successful. If you do not configure fib-local for the Packet Forwarding Engine, the CLI displays an appropriate error message and the commit fails.</p> </div> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • <i>Example: Configuring Packet Forwarding Engine FIB Localization</i> |

fib-remote

| | |
|---------------------------------|---|
| Syntax | fib-remote; |
| Hierarchy Level | [edit chassis fpc <i>fpc-number</i> route-localization] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure the Packet Forwarding Engine on an FPC as FIB-remote. |
| 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"> • <i>Example: Configuring Packet Forwarding Engine FIB Localization</i> |

filter

| | |
|---------------------------------|--|
| Syntax | filter; |
| Hierarchy Level | [edit chassis memory-enhanced] |
| Release Information | Statement added in Junos OS Release 11.1. |
| Description | Enables storing of firewall filters across multiple static RAM (SRAM) segments, resulting in proper utilization of SRAM segments. This feature is useful in routers with small routing tables and large firewall filters. This statement is supported on T Series routers. |
| 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">• <i>Configuring the Junos OS to Allocate More Memory for Routing Tables, Firewall Filters, and Layer 3 VPN Labels</i> |

flexible-queuing-mode

| | |
|---------------------------------|--|
| Syntax | <code>flexible-queuing-mode;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>fpc-slot</i>]</code> |
| Release Information | Statement introduced in Junos OS Release 14.1R1 for MX Series Routers. |
| Description | <p>Enable flexible queuing on a non-HQoS MPCE that is installed in an MPC slot. A maximum of up to 32,000 queues are supported per port and per card, including queues on both ingress and egress interfaces.</p> <p>When flexible queuing is enabled, the non-HQoS MPC is restarted for the changes to take effect and is brought online only if the power required for the queuing component is available in the power entry module (PEM). The MPC remains offline if the PEM cannot meet the power requirement for the queuing component.</p> <p>You can configure flexible queuing even when a non-HQoS MPC is not present in the chassis. The configuration takes effect when a non-HQoS MPC is installed.</p> <p>For more information about the MPCs and the Junos OS release that support this feature, see <i>Flexible Queuing Mode</i>.</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>Upgrading non-HQoS MPCs to Support Flexible Queuing</i> • <i>Flexible Queuing Mode Overview</i> • MPC3E on MX Series Routers Overview on page 35 • MPC5E on MX Series Routers Overview on page 40 • <i>Protocols and Applications Supported by the MPC5E for MX Series Routers</i> • <i>Upgrading non-HQoS MPCs to Support Flexible Queuing</i> |

force-switch

| | |
|---------------------------------|--|
| Syntax | force-switch; |
| Hierarchy Level | [edit chassis synchronization source (external <i>interface-name</i>)] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | For MX Series routers operating with Synchronous Ethernet, force a router to use the clock source, provided that the source is enabled and not locked out. Only one configured source may be force-switched. |
| 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">• synchronization (MX Series) on page 434 |

fpc (M320, T320, T640 and PTX Series Routers)

```

Syntax  fpc slot-number {
        error {
            [fatal | major | minor] {
                threshold threshold-value;
                action (alarm | disable-pfe | offline-pic | log | get-state | offline | reset);
            }
        }
        optical-options {
            expansion-card {
                fpc fpc-slot;
            }
            express-in {
                fpc fpc-slot;
            }
            tca tca-identifier (enable-tca | no-enable-tca) (threshold number | threshold-24hrs
            number) ;
            wavelength nm{
                switch interface-name{
                }
                wss-express-in fpc-slot;
            }
        }
    }
    pic pic-number {
        cel {
            el port-number {
                channel-group group-number timeslots slot-number;
            }
        }
        ct3 {
            port port-number {
                tl link-number {
                    channel-group group-number timeslots slot-number;
                }
            }
        }
        framing (sdh | sonet);
        idle-cell-format {
            itu-t;
            payload-pattern payload-pattern-byte;
        }
        max-queues-per-interface (8 | 4);
        no-concatenate;
        q-pic-large-buffer (large-scale | small-scale);
    }
}

```

Hierarchy Level [edit chassis]

- Release Information** Statement introduced before Junos OS Release 7.4.
Error statement introduced for PTX Series routers in Junos OS Release 13.3.
- Description** Configure properties for the PICs in individual Flexible PIC Concentrators (FPCs).
- Options** *slot-number*—Slot number in which the FPC is installed.
Range: M320, T640, T1600, T4000, and PTX5000 routers: 0 through 7
Range: PTX3000 routers: 0, 2, 4, 6, 8, 10, 12, 14



NOTE: On PTX1000 routers, the FPC number is always 0.

The remaining statements are explained separately.

- Required Privilege Level** interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.
- Related Documentation**
- *Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs*
 - *Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized (Multiplexed) Mode*
 - [Configuring FPC Error Levels and Actions on page 155](#)

fpc (MX Series 5G Universal Routing Platforms)

```
Syntax  fpc slot-number {
        inline-services {
            flow-table-size {
                ipv4-flow-table-size units;
                ipv4-flow-table-size units;
                ipv6-extended-attrib;
            }
        }
        ir-mode (R | IR);
        pic number {
            inline-services {
                bandwidth (1g | 10g);
            }
            port-mirror-instance port-mirroring-instance-name-pic-level;
            tunnel-services {
                bandwidth (1g | 10g);
            }
        }
        port-mirror-instance port-mirroring-instance-name-fpc-level;
    }
```

Hierarchy Level [edit chassis]

Release Information Statement introduced in Junos OS Release 8.2.
port-mirror-instance option added in Junos OS Release 9.3.
ipv6-extended-attrib option added in Junos OS Release 14.2 for MX Series routers.

Description Configure properties for the DPC or MPC and corresponding Packet Forwarding Engines to create tunnel interfaces.

(MX Series Virtual Chassis only) When you configure chassis properties for MPCs installed in a Virtual Chassis member router, statements included at the **[edit chassis member member-id fpc slot slot-number]** hierarchy level apply to the MPC in the specified slot number only on the specified member router in the Virtual Chassis. Statements included at the **[edit chassis fpc slot slot-number]** hierarchy level apply to the MPCs in the specified slot number on *each* member router in the Virtual Chassis.



BEST PRACTICE: To ensure that the statement you use to configure MPC chassis properties in an MX Series Virtual Chassis applies to the intended member router and MPC, we recommend that you always include the **member member-id** option before the **fpc** statement, where **member-id** is 0 or 1 for a two-member MX Series Virtual Chassis.

Options **fpc slot-number**—Specify the slot number of the DPC.

Range: 0 through 11

pic number—Specify the number of the Packet Forwarding Engine. Each DPC includes four Packet Forwarding Engines.

Range: 0 through 4

port-mirror-instance port-mirroring-instance-name-fpc-level—Associate a port-mirroring instance with the DPC and its corresponding PICs. The port-mirroring instance is configured under the **[edit forwarding-options port-mirroring]** hierarchy level.

The remaining statements are explained separately. Search for a statement in [CLI Explorer](#) or click a linked statement in the Syntax section for details.

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

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

- Related Documentation**
- *Configuring Port-Mirroring Instances on MX Series 5G Universal Routing Platforms*
 - *Enabling Inline Service Interfaces*
 - *Virtual Chassis Components Overview*

fpc (TX Matrix and TX Matrix Plus Routers)

| | |
|---------------------------------|---|
| Syntax | <pre>fpc slot-number { pic pic-number { atm-cell-relay-accumulation; atm-l2circuit-mode (cell aal5 trunk <i>trunk</i>); framing (sdh sonet); idle-cell-format { itu-t; payload-pattern <i>payload-pattern-byte</i>; } max-queues-per-interface (8 4); no-concatenate; no-mcast-replication; q-pic-large-buffer (large-scale small-scale); } }</pre> |
| Hierarchy Level | [edit chassis <i>lcc number</i>] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | On a TX Matrix or TX Matrix Plus router, configure properties for the PICs in individual FPCs. |
| Options | <p>slot-number—Slot number in which the FPC is installed.</p> <p>Range: 0 through 7</p> <p>The remaining statements are explained separately.</p> |
| Required Privilege Level | <p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>TX Matrix Router and T640 Router Configuration Overview</i> • <i>TX Matrix Plus Router Configuration Overview</i> • <i>Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs</i> • <i>TX Matrix Router Chassis and Interface Names</i> • <i>TX Matrix Plus Router Chassis and Interface Names</i> |

fpc error

```
Syntax  fpc slot number {
        error {
            (fatal | major | minor) {
                threshold threshold value;
                action (alarm | disable-pfe | offline-pic | log | get-state | offline | reset);
            }
            scope error-scope {
                category category {
                    (fatal | major | minor) {
                        threshold threshold value;
                        action (alarm | disable-pfe | log | get-state | offline | reset);
                    }
                }
            }
        }
    }
```

Hierarchy Level [edit chassis]

Release Information Statement introduced in Junos OS Release 13.3 on MX Series, PTX Series, and T Series routers.
Statement introduced in Junos OS Release 14.2 on M320 routers.

Description Configure the threshold at which FPC errors will take the action you configure to be performed by the device. Starting from Junos OS Release 18.1R3, you can configure error thresholds and actions at the error scope and error category levels on MX Series routers.

Some Juniper devices include an internal framework for detecting and correcting FPC errors that can have the potential to affect services. For each FPC on the device, you can classify errors according to severity, set an automatic recovery action for each severity, and set a threshold (i.e., the number of times the error must occur before the action is triggered).

Options You can configure the threshold for the following severity levels:

- **fatal**—Fatal error on the FPC. An error that results in blockage of considerable amount of traffic across modules is a fatal error.
- **major**—Major error on the FPC. An error that results in continuing loss of packet traffic but does not affect other modules is a major error.
- **minor**—Minor error on the FPC. An error that results in the loss of a single packet but is fully recoverable is a minor error.



NOTE: You cannot configure the severity level of an error.

- **threshold *threshold-value***—Configure the threshold value at which to take action. If the severity level of the error is fatal or major, the action is carried out when the total number of errors reaches the threshold value. After the threshold value is crossed, for every occurrence of the error, an action is carried out. If the severity level is minor, the action is carried out only once after the total number of errors crosses the threshold value.



NOTE: You can set the threshold value to 0 for errors with severity level as minor. This implies that no action is taken for that error. You cannot set the threshold value to 0 for errors with severity level as major or fatal.

Default: The error count for fatal and major actions is 1. The default error count for minor actions is 10.

Range: 0—429,496,729

Range(Junos OS Evolved): 0—1024

The available detection and recovery actions are as follows:

- **alarm**—Raise an alarm.
- **disable-pfe**—Disable the PFE interfaces on the FPC.



NOTE: For PTX Series routers, when an alarm occurs and a **disable-pfe** action is the result, to clear the alarm you must place the FPC offline and then back online.

- **get-state**—Get the current state of the FPC.
- **log**—Generate a log for the event.
- **offline**—Take the FPC offline.
- **offline-pic**—Take the PIC (installed in the FPC) offline.



NOTE: This option is supported only on T Series Routers.

- **reset**—Reset the FPC.



NOTE: Starting in Junos OS Release 17.2R1, if you configure the `disable-pfe`, `offline`, or `reset` action on an MX Series or PTX Series router, the `get-state` action is additionally configured on the router. This means, for example, if you configure the `disable-pfe` action on the router, the router gets both `disable-pfe` and `get-state` actions configured.

- **scope *error-scope***—Group the errors of a particular severity into different scopes. Errors belonging to each error scope is further grouped into categories, before thresholds and actions are defined at the category level. The following scopes are available: **board** and **pfe**.
- **category *category***—Categorize errors into various subgroups under the scope level. An error category helps you group similar errors belonging to a particular scope and define actions for them at once. This feature eliminates the need for configurations against individual error-ids. Some of the error-categories are **functional**, **io** (input/output errors), **storage** (for example, errors related to HDD, SSD, and flash), **memory** (for example, errors related to static RAM), **processing** (for example, CPU-related errors), and **switch**.
- **error-id**—Use the error ID to disable an error or modify the error severity associated with that error. An *error-id*, which is a unique error identifier, is represented as a Uniform Resource Identifier (URI). For example, `/cpu/0/memory/0/memory-uncorrected-error` is an error ID that indicates an uncorrectable error under CPU memory module instance 0.

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

- | | |
|------------------------------|--|
| Related Documentation | • Fabric Resiliency and Degradation on page 96 |
| | • Configuring FPC Error Levels and Actions on page 155 |
| | • show chassis fabric errors on page 1054 |
| | • show chassis fpc errors on page 1363 |
| | • error on page 288 |

fpc-feb-connectivity

| | |
|---------------------------------|--|
| Syntax | <pre>fpc-feb-connectivity { fpc number feb (slot-number none); }</pre> |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 8.0. |
| Description | On the M120 router only, configure a connection between any Flexible PIC Concentrator (FPC) and any Forwarding Engine Board (FEB). |
| Options | <p>fpc number—Specify the FPC slot number. Range: 0 through 5</p> <p>feb slot-number—Specify the FEB slot number. Range: : 0 through 5</p> <p>none—Disconnect the FPC from the FEB.</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>Configuring the Junos OS to Support FPC to FEB Connectivity on M120 Routers</i> |

fpc-offline-on-blackholing

| | |
|---------------------------------|--|
| Syntax | fpc-offline-on-blackholing; |
| Hierarchy Level | [edit chassis fabric degraded] |
| Release Information | Statement introduced in Junos OS Release 14.2 for TX Matrix Plus routers with 3D SIBs. |
| Description | Take the FPC offline and raise an alarm if a traffic black-hole condition is detected in the routing matrix. By default, FPCs remain online when a traffic black-hole condition is detected. |
| 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">• show chassis alarms on page 563 |

fpc-nmi-volt-fail-knob

| | |
|---------------------------------|--|
| Syntax | fpc-nmi-volt-fail-knob (enable disable) |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 10.4R15, 11.4R8-S2, 11.4R9, 12.1R8, 12.2R6, 12.3R3-S1, 12.3R4, 13.1R3, and 13.2R1 |
| Description | Enable or disable the non maskable interrupt (NMI) for the voltage failure errors on the flexible pic concentrator (FPC). |
| 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">• show chassis fpc on page 1309• Configuring Voltage Level Monitoring of FPCs on page 147 |

fpc-offline-on-blackholing

| | |
|---------------------------------|--|
| Syntax | fpc-offline-on-blackholing; |
| Hierarchy Level | [edit chassis fabric degraded] |
| Release Information | Statement introduced in Junos OS Release 14.2 for TX Matrix Plus routers with 3D SIBs. |
| Description | Take the FPC offline and raise an alarm if a traffic black-hole condition is detected in the routing matrix. By default, FPCs remain online when a traffic black-hole condition is detected. |
| 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"> • show chassis alarms on page 563 |


fpc-nmi-volt-fail-knob

| | |
|---------------------------------|---|
| Syntax | fpc-nmi-volt-fail-knob (enable disable) |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 10.4R15, 11.4R8-S2, 11.4R9, 12.1R8, 12.2R6, 12.3R3-S1, 12.3R4, 13.1R3, and 13.2R1 |
| Description | Enable or disable the non maskable interrupt (NMI) for the voltage failure errors on the flexible pic concentrator (FPC). |
| 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"> • show chassis fpc on page 1309 • Configuring Voltage Level Monitoring of FPCs on page 147 |

fpc-restart

| | |
|---------------------------------|--|
| Syntax | fpc-restart; |
| Hierarchy Level | [edit chassis fabric degraded] |
| Release Information | Statement added in Junos OS Release 13.2R6. |
| Description | Allow the user to restart the FPCs when a traffic black-hole condition is detected in the routing matrix. To enable this feature set the fpc-restart statement at the edit chassis fabric degraded hierarchy level. |
| Default | FPCs are not restarted when a traffic black-hole condition is detected. |
| 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">• Fabric Resiliency and Degradation on page 96• Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions on page 105 |

fpc-resync

| | |
|---------------------------------|---|
| Syntax | fpc-resync; |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 10.2. |
| Description | (On M320, T320, T640, T1600, T4000, TX Matrix, and TX Matrix Plus routers only) When a Flexible PIC Concentrator (FPC) is brought online, resynchronize the sequence numbers of the FPC with the other active FPCs. |
| | <div>  <p>NOTE: In order to prevent traffic blackholing, the <code>fpc-resync</code> command will have no effect if a single LMNR based FPC and one or more I-chip FPCs exist in the same chassis.</p> </div> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online on page 166 • <i>TX Matrix Router Hardware Guide</i> |

framing

| | |
|---------------------------------|--|
| Syntax | <code>framing (sdh sonet);</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number]</code> , <code>[edit chassis lcc number fpc slot-number pic pic-number]</code> (Routing Matrix) |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | On SONET/SDH PICs only, configure the framing type. |
| Default | <code>sonet</code> |
| Options | <code>sdh</code> —SDH framing. <code>sonet</code> —SONET framing. |
| Required Privilege Level | <code>interface</code> —To view this statement in the configuration. <code>interface-control</code> —To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs</i> |

framing (E1 Options)

| | |
|---------------------------------|---|
| Syntax | <code>framing (g704 g704-no-crc4);</code> |
| Hierarchy Level | [edit chassis synchronization interfaces external e1-options] [edit chassis synchronization interfaces (external-0/0 external-1/0) e1-options] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the framing format for the E1 interface. |
| Options | g704 —Set the G.704 framing format for E1 interfaces. g704-no-crc4 —Set the G.704 framing without CRC4 for E1 interfaces. |
| 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"> • synchronization on page 434 |

framing (T1 Options)

| | |
|---------------------------------|---|
| Syntax | <code>framing (esf sf);</code> |
| Hierarchy Level | [edit chassis synchronization interfaces external t1-options] [edit chassis synchronization interfaces (external-0/0 external-1/0) t1-options] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the framing format for the T1 interface. |
| Options | esf —Set the framing format as extended super frame. sf —Set the framing format as super frame. |
| 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"> • synchronization on page 434 |

fru-poweron-sequence

| | |
|----------------------------|--|
| Syntax | <code>fru-poweron-sequence fru-poweron-sequence;</code> |
| Hierarchy Level | [edit chassis] |
| Release Information | <p>Statement introduced in Junos OS Release 10.0.</p> <p>Statement introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>Statement introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Statement introduced in Junos OS Release 12.3 for T640, T1600, and T4000 routers.</p> |
| Description | <p>(MX Series 5G Universal Routing Platforms only) Configure the power-on sequence for the DPCs in the chassis for routers with the enhanced AC Power Entry Module (PEM).</p> <p>(T640 routers, T1600 routers, T4000 routers, MX2020 routers, and PTX Series packet transport routers) Configure the power-on sequence for Flexible PIC Concentrators (FPCs) installed in the chassis.</p> |
| Options | (MX Series 5G Universal Routing Platforms only) fru-poweron-sequence —Power-on sequence for the DPCs in the chassis. The numbers indicate the slot number of the DPCs. |



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

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



NOTE:

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

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

Related Documentation

- [Redistributing the Available Power by Configuring Power-On Sequence on page 145](#)
- [Configuring Power-On Sequence to Redistribute the Available Power on page 146](#)

global-wait-to-restore

Syntax `global-wait-to-restore minutes;`

Hierarchy Level [edit chassis synchronization]

Release Information Statement introduced in Junos OS Release 14.2.

Description Use this statement to configure the global time to wait before opening the interface to receive ESMC messages.

When an interface's signal transitions out of the signal fail state, it must be fault-free for the global-wait-to-restore time before it is again considered by the clock selection process.

When the ESMC clock's EEC quality level (QL) mode is enabled, it sends a signal failure to the clock selection process during the global wait-to-restore time. After the global wait-to-restore time ends, a new quality level value is sent to the clock selection process.

To override the global wait-to-restore time on a specific interface, include the [wait-to-restore](#) statement at the [edit chassis source interfaces (external-a | external-b | interface *interface-name*)] hierarchy level.

Options *minutes*—Set the time for the port signal to be up before the port is opened to receive and transmit ESMC messages.

Range: 0 through 12 minutes

Default: 5 minutes

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

Related Documentation

- [synchronization \(MX Series\) on page 434](#)
- [synchronization \(PTX Series\) on page 442](#)
- [wait-to-restore on page 462](#)

hash-key (Chassis LAG)

```
Syntax hash-key {
    family {
        inet {
            layer-3;
            layer-4;
            symmetric-hash {
                complement;
            }
        }
        multiservice {
            source-mac;
            destination-mac;
            payload {
                ip {
                    layer-3 (source-ip-only | destination-ip-only);
                    layer-4;
                }
            }
        }
    }
}
```

Hierarchy Level [edit chassis fpc slot-number pic pic-number]

Release Information Statement introduced in Junos OS Release 9.6.

Description (MX Series 5G Universal Routing Platforms only) Configure data used in a hash key for a PIC for symmetrical load balancing on an 802.3ad Link Aggregation Group.

Options **family**—Configure data used in a hash key for a protocol family. This statement has the following suboptions:

- **inet**—Configure data used in a hash key for the **inet** protocol family.
- **multiservice**—Configure data used in a hash key for the **multiservice** protocol family.

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

Related Documentation • *Configuring PIC-Level Symmetrical Hashing for Load Balancing on 802.3ad LAGs for MX Series Routers*

hold-interval (Clock Synchronization)

| | |
|---------------------------------|---|
| Syntax | <pre>hold-interval { configuration-change <i>seconds</i>; restart <i>seconds</i>; switchover <i>seconds</i>; }</pre> |
| Hierarchy Level | [edit chassis synchronization] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | Configure the wait time for clock selection after a change in configuration and after a reboot of the router, and configure the switchover wait time after clock recovery. |
| Options | <p>configuration-change—Set the wait time for clock selection after a change in configuration. Range: 15 seconds through 60 seconds</p> <p>restart—Set the wait time for clock selection after reboot of the router. Range: 60 seconds through 180 seconds Default: 120 seconds</p> <p>switchover—Set the switchover wait time after clock recovery. Range: 30 seconds through 60 seconds. Default: 30 seconds</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"> • synchronization on page 434 |

holdover-mode-disable

| | |
|--------------------------|---|
| Syntax | holdover-mode-disable; |
| Hierarchy Level | [edit chassis synchronization output interfaces external] [edit chassis synchronization output interfaces (external-0/0 external-1/0)] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Disable the holdover mode on the external output interface—external—on SCBE or on the external output interfaces—external-0/0 and external-1/0—on SCBE2. |
| 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">• synchronization on page 434 |

hold off time

| | |
|--------------------------|--|
| Syntax | hold-off-time <i>time</i> ; |
| Hierarchy Level | [set chassis synchronization source interfaces] |
| Release Information | Statement introduced in Junos OS Release 14.2 for MX Series routers. |
| Description | Enable hold-off time for Synchronous Ethernet interfaces and external clock source interfaces. If an interface goes down, hold-off time delays short signal failures from being sent to the clock selection process to prevent rapid successive switching. |
| Options | time —Amount of time in milliseconds that a signal is held before being passed to the clock selection process. Range: 300–1800 milliseconds Default: 1000 milliseconds |
| 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">• <i>Configuring Clock Synchronization Interface on MX Series Routers</i>• <i>Ethernet Synchronization Message Channel Overview</i> |

hybrid

Syntax

```

hybrid {
  synchronous-ethernet-mapping {
    clock-source ip-address {
      interface interface1-name;
      interface interface2-name;
    }
  }
}

```

Hierarchy Level [edit protocols ptp [slave](#)]

Release Information Statement introduced in Junos OS Release 12.2R2.

Description Configure hybrid mode.

The remaining statements are explained separately. See [CLI Explorer](#).

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

Related Documentation

- *Configuring Hybrid Mode and ESMC Quality Level Mapping*
- *Example: Configuring Hybrid Mode and ESMC Quality Level Mapping*
- *Understanding Hybrid Mode*
- *Precision Time Protocol Overview*
- *Synchronous Ethernet Overview*

idle-cell-format

| | |
|---------------------------------|--|
| Syntax | <pre>idle-cell-format { itu-t; payload-pattern <i>payload-pattern-byte</i>; }</pre> |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> idle-cell-format], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> idle-cell-format] (Routing Matrix) |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | For ATM2 PICs only, configure the format of the idle cell header and payload bytes. |
| Options | <p>itu-t—Configure the idle cell header to use the International Telecommunications Union (ITU-T) standard of 0x00000001.</p> <p>Default: (4 bytes): 0x00000000</p> <p><i>payload-pattern-byte</i>—Configure the idle cell payload pattern. The payload pattern byte can range from 0x00 through 0xff.</p> <p>Default: cell payload (48 bytes)</p> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring the Junos OS to Enable Idle Cell Format and Payload Patterns for ATM Devices</i> |

inet (chassis)

| | |
|---------------------------------|--|
| Syntax | <pre>inet { layer-3; layer-4; symmetric-hash { complement; } }</pre> |
| Hierarchy Level | [edit chassis fpc slot-number pic pic-number hash-key family] |
| Release Information | Statement introduced in Junos OS Release 9.6. |
| Description | (MX Series 5G Universal Routing Platforms only) Configure data used in a hash key for the inet protocol family when configuring PIC-level symmetrical load balancing on an 802.3ad Link Aggregation Group. |
| Options | <p>layer-3—Include Layer 3 IP data in the hash key.</p> <p>layer-4—Include Layer 4 IP data in the hash key.</p> <p>symmetric-hash—Configure symmetric hash key with source and destination ports.</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>Configuring PIC-Level Symmetrical Hashing for Load Balancing on 802.3ad LAGs for MX Series Routers</i> |

ingress-policer-overhead

| | |
|----------------------------|--|
| Syntax | <code>ingress-policer-overhead bytes;</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number]</code> |
| Release Information | Statement introduced before Junos OS Release 11.1. Statement introduced in Junos OS Release 15.1X49-D30 for vSRX. |
| Description | <p>Add the configured number of bytes to the length of a packet entering the interface.</p> <p>Configure a policer overhead to control the rate of traffic received on an interface. Use this feature to help prevent denial-of-service (DoS) attacks or to enforce traffic rates to conform to the service-level agreement (SLA). When you configure a policer overhead, the configured policer overhead value (bytes) is added to the length of the final Ethernet frame. This calculated length of frame is used to determine the policer or the rate-limiting action.</p> <p>Traffic policing combines the configured policy bandwidth limits and the burst size to determine how to meter the incoming traffic. If you configure a policer overhead on an interface, Junos OS adds those bytes to the length of incoming Ethernet frames. This added overhead fills each frame closer to the burst size, allowing you to control the rate of traffic received on an interface.</p> <p>You can configure the policer overhead to rate-limit queues and Layer 2 and Layer 3 policers, for standalone (SA) and high-availability (HA) deployments. The policer overhead and the shaping overhead can be configured simultaneously on an interface.</p> |



NOTE: vSRX supports policer overhead on Layer 3 policers only.

The policer overhead applies to all interfaces on the PIC. In the following example, Junos OS adds 10 bytes of overhead to all incoming Ethernet frames on ports ge-0/0/0 through ge-0/0/4.

```
set chassis fpc 0 pic 0 ingress-policer-overhead 10
```



NOTE: vSRX only supports fpc 0 pic 0. When you commit the `ingress-policer-overhead` statement, the vSRX takes the PIC offline and then back online.

You need to craft the policer overhead size to match your network traffic. A value that is too low will have minimal impact on traffic bursts. A value that is too high will rate-limit too much of your incoming traffic.

In this example, the policer overhead of 255 bytes is configured for ge-0/0/0 through ge-0/0/4. The firewall policer is configured to discard traffic when the burst size is over 1500 bytes. This policer is applied to ge-0/0/0 and ge 0/0/1. Junos OS adds 255 bytes to every Ethernet frame that comes into the configured ports. If, during a burst of traffic, the combined length of incoming frames and the overhead bytes exceeds 1500 bytes, the policer starts to discard further incoming traffic.

```
set chassis fpc 0 pic 0 ingress-policer-overhead 255
set interfaces ge-0/0/0 unit 0 family inet policer input overhead_policer
set interfaces ge-0/0/0 unit 0 family inet address 10.9.1.2/24
set interfaces ge-0/0/1 unit 0 family inet policer input overhead_policer
set interfaces ge-0/0/1 unit 0 family inet address 10.9.2.2/24
set firewall policer overhead_policer if-exceeding bandwidth-limit 32k
set firewall policer overhead_policer if-exceeding burst-size-limit 1500
set firewall policer overhead_policer then discard
```

Options *bytes*—Number of bytes added to a frame entering an interface.
Range: 0–255 bytes
Default: 0


```
[edit chassis fpc 0 pic 0]
user@host# set ingress-policer-overhead 10;
```

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

Related Documentation

- [ingress-shaping-overhead](#)
- [Policer Overhead to Account for Rate Shaping Overview](#)
- [Example: Configuring Policer Overhead to Account for Rate Shaping](#)
- [Configuring a Policer Overhead](#)
- [CoS on Enhanced IQ2 PICs Overview](#)

input-current (T4000 Routers)

| | |
|--------------------------|---|
| Syntax | <code>input-current <i>amps-in-each-feed</i>;</code> |
| Hierarchy Level | [edit chassis pem] |
| Release Information | Statement introduced in Junos OS Release 12.3. |
| Description | Configure the amount of input current received in each feed. The value assigned to the input-current statement must be equal to the input current capability of each feed. |
| | <div> NOTE: Before configuring input current for your router, see the <i>T4000 Core Router Hardware Guide</i> for special considerations.</div> |
| Options | <p>Values:</p> <ul style="list-style-type: none">• 40—Indicates 40 A of input current is received in each feed.• 60—Indicates 60 A of input current is received in each feed. <p>Default: 60 A</p> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Configuring the Six-Input DC Power Supply on T Series Routers on page 142 |

interfaces external

Syntax

```

interfaces {
  external/external-0-0/external-1/0 {
    e1-options {
      framing (g704 | g704-no-crc4);
      line-encoding (ami | hdb3);
      sabit bit;
    }
    signal-type (1mhz | 5mhz | 10mhz | 2048khz | t1 | e1);
    t1-options {
      framing (esf | sf);
      line-encoding (ami | b8zs);
    }
    pulse-per-second-enable;
  }
}

```

Hierarchy Level [edit chassis [synchronization](#)]

Release Information Statement introduced in Junos OS Release 12.3 for MX Series routers.

Description Starting from Junos OS Release 12.3, configure options for the external clock source interface—external—for SCBE.

Starting from Junos OS Release 13.3, configure options for the two external clock source interfaces—external-0/0 and external-1/0—for SCBE2.


Options The remaining statements are explained separately. See [CLI Explorer](#).

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


Related Documentation

- [synchronization on page 434](#)

ipv6-extended-attrib

| | |
|--------------------------|--|
| Syntax | ipv6-extended-attrib; |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> inline-services ipv6 flow-table-size] |
| Description | Enable the inclusion of element ID, 54, fragmentIdentification, and element ID, 64, ipv6ExtensionHeaders, in IPFIX flow templates that are exported to the flow collector |
| | <div> NOTE: Collection of IPv4 fragmentation IDs occurs automatically without having to configure this setting explicitly.</div> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"><i>Configuring Inline Active Flow Monitoring Using Routers, Switches or NFX250</i> |

ir-mode

| | |
|---------------------------------|---|
| Syntax | <code>ir-mode (IR R);</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number]</code> |
| Release Information | Statement introduced in Junos OS Release 14.2. |
| Description | Configure the license mode of the specified enhanced MPC in an MPC slot as IR or R. Setting the license mode enables you to distinguish between an MPC with an IR license and an MPC with an R license after the MPC is installed on the router. |
| | <div>  <p>NOTE: The license mode settings are used only to provide information. You cannot set or alter the license of the MPC when you configure the mode.</p> </div> |
| Default | <p>The default IR mode is Base. You do not set this configuration statement if Base is the mode of your license. Base mode includes the following features:</p> <ul style="list-style-type: none"> • All Layer 2, Layer 2.5, and Layer 3 features. • Up to 32 Layer 3 routing instances of the virtual routing and forwarding (VRF) instance type. • Up to 2 million routes in the forwarding information base (FIB), provided there is hardware support. (FIB is also known as forwarding table.) • Up to 6 million routes in the routing information base (RIB), also known as routing table. |
| Options | <p>IR—Configure the license mode IR for an MPC installed in a specified MPC slot. Includes the following features:</p> <ul style="list-style-type: none"> • All Layer 2, Layer 2.5, and Layer 3 features. • Up to 32 Layer 3 routing instances of the virtual routing and forwarding (VRF) instance type. <p>R—Configure the license mode R for an MPC installed in a specified MPC slot. Includes full-scale Layer 2, Layer 2.5, and Layer 3 features. Scale is determined by the hardware capabilities.</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**
- *License Modes for Enhanced MPCs Overview*
 - *Configuring the License Mode for Specific Enhanced MPCs on MX Series Routers*
 - *Viewing the License Mode for MPC Cards on MX Series Routers*

lacp

Syntax

```
lacp {  
  link-protection {  
    non-revertive;  
  }  
  system-priority priority;  
}
```

Hierarchy Level [edit chassis aggregated-devices ethernet]

Release Information Statement introduced in Junos OS Release 9.3.

Description For aggregated Ethernet interfaces only, configure Link Aggregation Control Protocol (LACP) parameters at the global level for use by LACP at the interface level.

Options The statements are described separately.

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

- Related Documentation**
- *Configuring Junos OS for Supporting Aggregated Devices*

lcc

```

Syntax  lcc number {
        fpc slot-number {
            pic pic-number {
                atm-cell-relay-accumulation;
                atm-l2circuit-mode (cell | aal5 | trunk trunk);
                framing (sdh | sonet);
                idle-cell-format {
                    itu-t;
                    payload-pattern payload-pattern-byte;
                }
                max-queues-per-interface (8 | 4);
                no-concatenate;
                no-mcast-replication;
            }
        }
        online-expected;
        offline;
    }
    q-pic-large-buffer {
        large-scale;
    }
}

```

Hierarchy Level [edit chassis]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure a T640 router (on a routing matrix based on a TX Matrix router) or a T1600 router (on a routing matrix based on a TX Matrix Plus router) or a T4000 router (on a routing matrix based on a TX Matrix Plus router).

Options *number*—Specify a T640 router or a T1600 router or a T4000 router on a routing matrix.

Range:

- 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.


The remaining statements are explained separately.

| | |
|---------------------------------|---|
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>TX Matrix Router and T640 Router Configuration Overview</i>• <i>Using the Junos OS to Configure a T640 Router Within a Routing Matrix</i>• <i>TX Matrix Plus Router Configuration Overview</i>• <i>Using the Junos OS to Configure a T1600 or T4000 Router Within a Routing Matrix</i>• <i>TX Matrix Router Hardware Guide</i>• <i>TX Matrix Plus Router Hardware Guide</i> |

lcc-mode

| | |
|---------------------------------|---|
| Syntax | <pre>lcc-mode { lcc <i>lcc_number</i>{ mode <i>mode</i>; } }</pre> |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 13.1 for TX Matrix Plus routers with 3D SIBs. |
| Description | Set the line-card chassis (LCC) in a routing matrix to function as a T1600 router or a T4000 router. If you set the value of the mode variable as empty , then the line-card chassis goes offline. If the mode statement is not configured, then by default the LCC functions as a T1600 router. |
| Default | If you do not include the lcc-mode statement, the LCC functions as a T1600 router. |
| Options | <p>lcc <i>number</i>—On a TX Matrix Plus router, display hardware information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. <p>mode <i>mode</i>—Configure the LCC to function as a T1600 or a T4000 router. The value of the <i>mode</i> variable can be set as t1600, t4000, or empty.</p> |
| Required Privilege Level | interface-control |
| Related Documentation | <ul style="list-style-type: none"> • <i>Overview of a Routing Matrix with a TX Matrix Plus Router</i> • <i>Example: Configuring a Routing Matrix with a TX Matrix Plus Router in Mixed Mode</i> |

led-beacon

| | |
|--------------------------|--|
| Syntax | led-beacon |
| Hierarchy Level | [edit interfaces <i>interface-name (with port number)</i>] |
| Release Information | Statement introduced in Junos OS Release 15.1F3 and 16.1R2 for PTX5000 routers. Statement introduced in Junos OS Release 15.1F6 and 16.1R2 for PTX3000 routers. |
| Description | This command causes the LED for the specified port to flash green. You can use the command to physically locate a specific optic port on the PIC. <div> NOTE: At the [edit interfaces <i>interface-name (with port number)</i>] hierarchy level, you must include the port number as part of the interface name. For example, et-x/y/z(:n).</div> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>show interfaces detail</i> |

license-mode

| | |
|----------------------------|---|
| Syntax | license-mode IR R |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i>] |
| Release Information | Statement introduced in Junos OS Release 15.1F3 for PTX Series routers with third-generation FPCs. |
| Description | Configures the FPC's license mode. This can be used to track the number of PICs configured for a specific mode. |
| Options | IR—Sets the PIC to LSR mode. R—Sets the PIC to full IP mode. |



NOTE: Starting in Junos OS Release 16.1R3 for PTX Series routers, the IR and R options are used. For previous releases (starting in Junos OS Release 15.1F3) the Ip (full IP mode) and lsr (LSR mode) options are used.

| | |
|---------------------------------|---|
| 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"> • fpc on page 301 |

limited-ifl-scaling

| | |
|---------------------------------|--|
| Syntax | limited-ifl-scaling; |
| Hierarchy Level | [edit chassis network-services enhanced-ip] |
| Release Information | Command introduced in Junos OS Release 15.1R3 for MX Series routers. |
| Description | Limits the maximum number of logical interfaces on MX Series routers with MS-DPCs to 64,000 for enhanced IP network services mode. |
| 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">• Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode on page 230• Network Services Mode Overview on page 225• Configuring Enhanced IP Network Services for a Virtual Chassis |

line-encoding (E1 Options)

| | |
|---------------------------------|---|
| Syntax | line-encoding (ami hdb3); |
| Hierarchy Level | [edit chassis synchronization interfaces external e1-options] [edit chassis synchronization interfaces (external-0/0 external-1/0) e1-options] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the line encoding format on the E1 interface. |
| Options | ami —Set the line encoding format as automatic mark inversion. hdb3 —Set the line encoding format as high-density bipolar 3 code. |
| 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">• synchronization on page 434 |

line-encoding (E1 Options)

| | |
|---------------------------------|---|
| Syntax | line-encoding (ami hdb3); |
| Hierarchy Level | [edit chassis synchronization interfaces external e1-options] [edit chassis synchronization interfaces (external-0/0 external-1/0) e1-options] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the line encoding format on the E1 interface. |
| Options | ami —Set the line encoding format as automatic mark inversion. hdb3 —Set the line encoding format as high-density bipolar 3 code. |
| 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"> • synchronization on page 434 |

line-encoding (T1 Options)

| | |
|---------------------------------|---|
| Syntax | line-encoding (ami b8zs); |
| Hierarchy Level | [edit chassis synchronization interfaces external t1-options] [edit chassis synchronization interfaces (external-0/0 external-1/0) t1-options] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the line encoding format on the T1 interface. |
| Options | ami —Set the line encoding format as automatic mark inversion. b8zs —Set the line encoding format as 8-bit zero suppression. |
| 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"> • synchronization on page 434 |



linerate-mode

| | |
|---------------------------------|---|
| Syntax | <code>linerate-mode;</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number linerate-mode],</code> <code>[edit chassis lcc number fpc slot-number pic pic-number linerate-mode]</code> (Routing Matrix) |
| Release Information | Statement introduced in Junos OS Release 10.1. |
| Description | For 10-port 10-Gigabit Oversubscribed Ethernet (OSE) PICs only, configure the line rate operation. |
| 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">• <i>Junos OS Network Interfaces Library for Routing Devices</i> |

link-protection (Protocols LACP)

| | |
|---------------------------------|---|
| Syntax | <code>link-protection {</code> <code>non-revertive;</code> <code>}</code> |
| Hierarchy Level | <code>[edit chassis aggregated-devices ethernet lacp]</code> |
| Release Information | Statement introduced in Junos OS Release 9.3. |
| Description | Enable LACP link protection at the global (chassis) level. |
| Options | The remaining statements are explained separately. See CLI Explorer . |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Junos OS for Supporting Aggregated Devices</i> |



lite-mode

| | |
|--------------------------|---|
| Syntax | lite-mode; |
| Hierarchy Level | [edit chassis fpc 0] |
| Release Information | Statement introduced in Junos OS Release 15.1F4 and 16.1R1 for vMX routers. |
| Description | <p>(vMX routers only) Enables vMX to run in lite mode and disables performance mode. Lite mode needs fewer vCPUs and memory to run at lower bandwidth. If you are using paravirtualized network interfaces such as virtio (for KVM) or VMXNET3 (for VMware) for lab simulation use cases, you can enable lite mode.</p> <p>.....</p> <p> NOTE: Make sure you have configured the proper number of vCPUs and memory for your VMs based on your use case. If you have not configured enough vCPUs for performance mode, vMX runs in lite mode.</p> <p>.....</p> <p>Starting with Junos OS Release 15.1F6, performance mode is enabled by default for vMX.</p> <p>.....</p> <p> NOTE: The FPC reboots if you change this configuration.</p> <p>.....</p> |
| Options | <p>lite-mode—Enables lite mode.</p> <p>To disable lite mode, enable performance mode by including the performance-mode statement at the [edit chassis fpc 0] hierarchy level.</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"> • performance-mode on page 371 |

major



| | |
|---------------------------------|---|
| Syntax | <pre>major { threshold threshold-value; action { alarm; disable-pfe; get-state; log; offline; reset; } }</pre> |
| Hierarchy Level | <p>[edit chassis fpc slot-number error]</p> <p>[edit chassis]</p> |
| Release Information | <p>Statement introduced for PTX Series routers in Junos OS Release 13.3.</p> <p>Statement introduced for MX240, MX480, MX960, and MX2020 routers in Junos OS Release 14.2.</p> |
| Description | <p>Severity level of the error. An error that results in continuing loss of packet traffic but does not affect other modules is a major error. The severity level of an error cannot be configured by a user.</p> <p>The other statements are explained separately.</p> |
| Required Privilege Level | <p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Fabric Resiliency and Degradation on page 96 • show chassis fpc errors on page 1363 • Configuring FPC Error Levels and Actions on page 155 |

maximum-ecmp

| | |
|---------------------|--|
| Syntax | <code>maximum-ecmp <i>next-hops</i>;</code> |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 10.1. |
| Description | <p>(M10i routers with Enhanced CFEB, and M320, M120, MX Series, and T Series routers) Configure 16, 32, or 64 ECMP next hops for RSVP or LDP LSPs, or MPLS static LSPs that are configured using set protocols mpls static-label-switched-path.</p> <p>This command is used to control the maximum number of ECMP legs in an NH. This command applies to all protocols, and the maximum configurable ECMP next hops are chassis dependent.</p> <p> NOTE: MX Series routers with one or more Modular Port Concentrator (MPC) cards and with Junos OS 11.4 or earlier installed, support the configuration of the <code>maximum-ecmp</code> statement with only 16 next hops. You should <i>not</i> configure the <code>maximum-ecmp</code> statement with 32 or 64 next hops. When you commit the configuration with 32 or 64 next hops, the following warning message appears:</p> <p>Error: Number of members in Unilist NH exceeds the maximum supported 16 on Trio.</p> |
| Default | 16 |
| Options | <p><i>next-hops</i>—Specify the number of next hops (16, 32, or 64) for RSVP or LDP LSPs, or MPLS static LSPs.</p> <p>The following types of routes support next hops with up to 64 ECMP gateways:</p> <ul style="list-style-type: none"> • RSVP routes in inet tables where multiple RSVP LSPs are created to the same destination. In the case where LSP path protection or FRR is configured, the combination of active, backup and FRR next-hops is a maximum of 64. • LDP routes in inet.3 and mpls.0 where the associated IGP route contains 64 next-hop gateways. • ISIS, OSPF, iBGP, eBGP and Static routes in inet and inet6 tables. <p> NOTE: These routes also include routes in routing-instances (foo.inet.0).</p> |

| | |
|---------------------------------|--|
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring ECMP Next Hops for RSVP and LDP LSPs for Load Balancing</i> |

maximum-links

| | |
|--------------------------|--|
| Syntax | <code>maximum-links <i>maximum-links-limit</i>;</code> |
| Hierarchy Level | [edit chassis aggregated-devices] |
| Release Information | <p>Statement introduced in Junos OS Release 11.1 for T Series routers.</p> <p>Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.</p> <p>Statement introduced in Junos OS Release 12.3 for MX Series routers.</p> |
| Description | <p>Configure the maximum links limit for aggregated devices. Note that for MX Series routers, to set a range of 32 or 64 the router must be running in Enhanced IP mode, which is only supported for Trio-based MPCs and multiservice DPCs (MS-DPCs). For more information on Enhanced IP mode, "Network Services Mode Overview" on page 225.</p> <p>For MX series routers and PTX series switches, the option for 64 links is only supported for Junos OS release 12.3 and later.</p> |
| | <p> NOTE: This statement is not supported on the MX80, MX104, and PTX1000 routers.</p> |
| Options | <p><i>maximum-links-limit</i>—Maximum links limit for aggregated devices.</p> <p>Range: 16, 32, 64</p> |
| | <p> NOTE: On T-Series routers, the maximum-links supported is 32 in an aggregated Ethernet link.</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"> • Network Services Mode Overview on page 225 • <i>Configuring Junos OS for Supporting Aggregated Devices</i> • <i>Configuring an Aggregated Ethernet Interface</i> • network-services on page 355 |

max-queues-per-interface

| | |
|---------------------|--|
| Syntax | <code>max-queues-per-interface (8 4);</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number]</code> , <code>[edit chassis lcc number fpc slot-number pic pic-number]</code> (Routing Matrix) |
| Release Information | Statement introduced before Junos OS Release 7.4. Support for TX Matrix and TX Matrix Plus added in Junos OS Release 9.6. |
| Description | On IQ, MPC, and DPC interfaces on M120, T320, T640, T1600, TX Matrix, and TX Matrix Plus routers, or on MIC or MPC interfaces on MX Series routers, set the number of egress queues per port to four or eight. |



NOTE: If you include the `max-queues-per-interface 8` statement, the configuration at the `[edit class-of-service]` hierarchy level must also support eight queues per interface.



NOTE: When you include the `max-queues-per-interface` statement and commit the configuration, all physical interfaces on the PIC/MIC are deleted and readded. Also, the PIC/MIC is restarted automatically. You should change modes between four queues and eight queues only when there is no active traffic going to the PIC/MIC.

By default, IQ PICs on T Series and M320 routers are restricted to a maximum of four egress queues per interface. If you include the `max-queues-per-interface 4` statement, you can configure all four ports and configure up to four queues per port.

For Quad T3 and Quad E3 PICs and for 4-port OC3c/STM1 Type I and Type II PICs on M320 and T Series routers, when you include the `max-queues-per-interface 8` statement, you can configure up to eight queues on ports 0 and 2. After you commit the configuration, the PIC goes offline and comes back online with only ports 0 and 2 operational. No interfaces can be configured on ports 1 and 3.



NOTE: Starting from Junos OS Release 14.1R8, 14.2R6, 15.1F6, 15.1R3, 15.1R4, and 16.1R1, the restricted queue PICs without the `max-queues-per-interface` configuration boot up with a maximum of eight queues per port and two operational ports (port 0 and 2). PICs with restricted queues include Quad T3 PIC, Quad E3 PIC, 4-port SONET/SDH OC3c/STM1 PIC, and 4-Port OC3 and 1-port OC12 PICs with SFP.

On certain older MPCs (*MPC1 Q*, *MPC1E Q*, *MPC2 Q*, *MPC2E Q*), you can include the **max-queues-per-interface** statement to set the number of queues per logical interface to four or eight. Setting **max-queues-per-interface 4** sets the MPC to have four queues per logical interface and provides twice as many logical interfaces on the MPC as setting **max-queues-per-interface 8**.



NOTE: For consistency, **max-queues-per-interface** should not be set on MPCs starting from Junos OS 14.1X51.

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

Related Documentation

- *Configuring the Junos OS to Support Eight Queues on IQ Interfaces for T Series and M320 Routers*
- *Configuring Up to 16 Custom Forwarding Classes*
- *Enabling Eight Queues on ATM Interfaces*
- *Configuring the Maximum Number of Queues for Trio MPC/MIC Interfaces*
- *Example: Configuring CoS on SRX5000 Devices with an MPC*
- *Example: Enabling Eight-Queue Class of Service on Redundant Ethernet Interfaces on SRX Series Devices in a Chassis Cluster*

max-transmit-quality-level

| | |
|---------------------|--|
| Syntax | max-transmit-quality-level; |
| Hierarchy Level | [edit chassis synchronization] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the threshold quality level for the router. If the received quality level is below the threshold quality level, then the router will send out a received quality level of SEC. The available quality levels are listed in Table 27 on page 347 . |



NOTE: For GPS external output, when you configure the maximum transmit quality level as PRC and the router is rebooted, no valid output is obtained from SCBE. However, when the maximum transmit quality level is configured to any other quality level other than PRC and the router gets rebooted, then the SCBE works normally.

Options *quality-level*—The available quality levels are as given in [Table 27 on page 347](#).

Table 27: Quality Levels

| Quality Level | Description |
|---------------|--|
| prc | Timing quality of a primary reference clock (option-1 only). |
| prs | Clock traceable to a primary reference source (option-2 only). |
| sec | Timing quality of an SDH equipment clock (option-1 only). |
| smc | Clock traceable to a self-timed SONET (option-2 only). |
| ssu-a | Timing quality of a type I or IV slave clock (option-1 only). |
| ssu-b | Timing quality of a type VI slave clock (option-1 only). |
| st2 | Clock traceable to Stratum 2 (option-2 only). |
| st3 | Clock traceable to Stratum 3 (option-2 only). |
| st3e | Clock traceable to Stratum 3E (option-2 only). |
| st4 | Clock traceable to Stratum 4 free-run (option-2 only). |
| stu | Clock traceable to an unknown quality (option-2 only). |
| tnc | Clock traceable to a transit node clock (option-2 only). |

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

Related Documentation

- [synchronization on page 434](#)

member

| | |
|---------------------------------|--|
| Syntax | <pre>member <i>member-id</i> { fabric-tree-root; location <i>location</i>; mastership-priority <i>number</i>; no-management-vlan; serial-number <i>serial-number</i>; role <i>role</i>; }</pre> |
| Hierarchy Level | [edit virtual-chassis] |
| Release Information | Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 13.2X50-D15 for the QFX Series. Statement introduced in Junos OS Release 13.2X51-D20 for Virtual Chassis Fabric (VCF). |
| Description | Configure a switch or an XRE200 External Routing Engine as a member of a Virtual Chassis or a Virtual Chassis Fabric (VCF) with characteristics specified by the available options. |
| Default | <p>When an EX Series switch or a QFX Series devices configured in standalone mode is powered on but not interconnected through its Virtual Chassis ports (VCPs) with other member switches, its default member ID is 0.</p> <p>There is no default member ID in an EX8200 or EX9200 Virtual Chassis. An EX8200 or EX9200 Virtual Chassis must be preprovisioned, and that process configures the member IDs.</p> |
| Options | <p><i>member-id</i>—Identifies a specific member switch of a Virtual Chassis or VCF configuration.</p> <p>The exact range for a specific Virtual Chassis or VCF depends on the number of switches allowed in the Virtual Chassis or VCF.</p> <p>In an EX8200 Virtual Chassis, member IDs 0 through 7 are reserved for EX8200 member switches and member IDs 8 and 9 are reserved for the master and backup external Routing Engines.</p> <p>The remaining statement options set characteristics of the Virtual Chassis or VCF member, and are explained separately.</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>Autoprovisioning a Virtual Chassis Fabric</i>• <i>Preprovisioning a Virtual Chassis Fabric</i> |

- *Adding a Device to a Virtual Chassis Fabric*
- *Configuring a QFX Series Virtual Chassis*
- *Configuring an EX2300, EX3400, or EX4300 Virtual Chassis*
- *Configuring EX4600 Switches in a Mixed or Non-Mixed Virtual Chassis*
- *Configuring an EX9200 Virtual Chassis*
- *Configuring a QFX Series Virtual Chassis*

memory-enhanced

Syntax

```
memory-enhanced {
  filter;
  route;
  vpn-label;
}
```

Hierarchy Level [edit chassis]

Release Information Statement added in Junos OS Release 10.4.

Description Allocate more jtree memory for routing tables and Layer 3 VPNs.



NOTE: The `memory-enhanced` statement supports MX Series routers with DPC (I-chip based) line cards only.

The remaining statements are explained separately.

Required Privilege Level

| | |
|-------------------|---|
| interface | —To view this statement in the configuration. |
| interface-control | —To add this statement to the configuration. |

Related Documentation

- *Configuring the Junos OS to Allocate More Memory for Routing Tables, Firewall Filters, and Layer 3 VPN Labels*

minor

Syntax

```
minor {  
  threshold threshold-value;  
  action {  
    alarm;  
    disable-pfe;  
    get-state;  
    log;  
    offline;  
    reset;  
  }  
}
```

Hierarchy Level [edit chassis **fpc** slot-number **error**]

[edit chassis]

Release Information Statement introduced for PTX Series routers in Junos OS Release 13.3.
Statement introduced for MX240, MX480, MX960, and MX2020 routers in Junos OS Release 14.2.

Description Severity level of the error. An error that results in the loss of a single packet but is fully recoverable is a minor error. The severity level of an error cannot be configured by a user.

The other statements are explained separately.

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

Related Documentation

- [Fabric Resiliency and Degradation on page 96](#)
- [show chassis fpc errors on page 1363](#)
- [Configuring FPC Error Levels and Actions on page 155](#)

minimum-quality

Syntax minimum-quality;

Hierarchy Level [edit chassis [synchronization](#) output interfaces external]
[edit chassis [synchronization](#) output interfaces (external-0/0 | external-1/0)]

Release Information Statement introduced in Junos OS Release 12.3 for MX Series routers.

Description Configure the minimum quality level threshold to select a clock source (see [Table 27 on page 347](#)). If the quality level of the output clock source drops below the configured minimum quality level threshold, the external output clock is suppressed on the external output interface—external—on SCBE and on the external output interfaces—external-0/0 and external-1/0—on SCBE2.

Table 28: Quality Levels

| Quality Level | Description |
|---------------|--|
| prc | Timing quality of a primary reference clock (option-1 only). |
| prs | Clock traceable to a primary reference source (option-2 only). |
| sec | Timing quality of an SDH equipment clock (option-1 only). |
| smc | Clock traceable to a self-timed SONET (option-2 only). |
| ssu-a | Timing quality of a type I or IV slave clock (option-1 only). |
| ssu-b | Timing quality of a type VI slave clock (option-1 only). |
| st2 | Clock traceable to Stratum 2 (option-2 only). |
| st3 | Clock traceable to Stratum 3 (option-2 only). |
| st3e | Clock traceable to Stratum 3E (option-2 only). |
| st4 | Clock traceable to Stratum 4 free-run (option-2 only). |
| stu | Clock traceable to an unknown quality (option-2 only). |
| tnc | Clock traceable to a transit node clock (option-2 only). |

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

Related Documentation • [synchronization on page 434](#)

mlfr-uni-nni-bundles

| | |
|---------------------------------|--|
| Syntax | <code>mlfr-uni-nni-bundles <i>number</i>;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure link services management properties. |
| Options | <i>number</i> —Number of Multilink Frame Relay user-to-network interface network-to-network interface (UNI-NNI) (FRF.16) bundles to allocate on a Link Services PIC. Range: 1 through 255 Default: 16 |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | • <i>Configuring the Number of Bundles on Link Services PICs</i> |



mixed-rate-mode

| | |
|---------------------------------|--|
| Syntax | <code>mixed-rate-mode;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> mixed-rate-mode],</code> <code>[edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i> mixed-rate-mode] (Routing Matrix)</code> |
| Release Information | Statement introduced in Junos OS Release 13.3. |
| Description | Configure the mixed-rate mode for the 24-port 10 Gigabit Ethernet PIC (PF-24XGE-SFPP) only. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | • <i>Modes of Operation of 10-Gigabit Ethernet PICs</i> • <i>Configuring Mixed-Rate Mode Operation</i> |

multiservice

| | |
|---------------------------------|--|
| Syntax | <pre> multiservice { source-mac; destination-mac; payload { ip { layer-3 (source-ip-only destination-ip-only); layer-4; } } symmetric-hash { complement; } } </pre> |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> hash-key family] |
| Release Information | Statement introduced in Junos OS Release 9.6. |
| Description | (MX Series 5G Universal Routing Platforms only) Configure data used in a hash key for the multiservice protocol family when configuring PIC-level symmetrical hashing for load balancing on an 802.3ad Link Aggregation Group. |
| Options | <p>destination-mac—Include destination MAC address in the hash key.</p> <p>payload—Include payload data in the hash key. This option has the following suboptions:</p> <ul style="list-style-type: none"> • layer-3—Include Layer 3 IP information in the hash key. • layer-4—Include Layer 4 IP information in the hash key. <p>source-mac—Include source MAC address in the hash key.</p> <p>symmetric-hash—Create a symmetric hash or symmetric hash complement key with any attribute.</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>Configuring PIC-Level Symmetrical Hashing for Load Balancing on 802.3ad LAGs for MX Series Routers</i> |

network-option

| | |
|--------------------------|---|
| Syntax | network-option (option-1 option-2); |
| Hierarchy Level | [edit chassis synchronization] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | <p>Configure the Ethernet equipment clock (EEC) synchronization networking type.</p> <p> NOTE: For SCB, this option is set with the <code>set chassis synchronization network-type (option-1 option-2)</code> configuration command at the <code>[edit]</code> hierarchy level.</p> <p> NOTE: For Junos OS releases 11.2R4 through 13.3R3 for MX240, MX480, and MX960 with SCB, SCBE, and SCBE2; and MX2010 and MX2020 with SCB or SCBE; you must execute the following commands after you change the network option at the <code>[edit chassis synchronization]</code> hierarchy level. This is because the loop bandwidth does not change automatically when you change the network option.</p> <pre> user@host# deactivate chassis synchronization user@host# activate chassis synchronization </pre> |
| Options | <p>Depending on the configuration of the Synchronization Status Messages (SSM) quality level, the network option functions in the following ways:</p> <ul style="list-style-type: none"> option-1—Maps to the G.813 option 1 (EEC1). option-2—Maps to the G.812 type IV clock (EEC1). |
| 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"> synchronization on page 434 |

network-services


| | |
|---------------------------------|--|
| Syntax | <code>network-services (ethernet enhanced-ethernet ip enhanced-ip lan);</code> |
| Hierarchy Level | <code>[edit chassis]</code> |
| Release Information | <p>Statement introduced before Junos OS Release 8.5.</p> <p>enhanced-ethernet and enhanced-ip options introduced in Junos OS Release 11.4.</p> <p>limited-ifl-scaling option introduced in Junos OS Release 15.1R3 for MX Series routers.</p> |
| Description | <p>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.</p> <p>MX2010 and MX2020 support only enhanced-ip and enhanced-ethernet network services modes.</p> |
| 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"> Network Services Mode Overview on page 225 <i>Firewall Filters and Enhanced Network Services Mode Overview</i> |

- [Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers on page 228](#)
- [Configuring Enhanced IP Network Services for a Virtual Chassis](#)
- [Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode on page 230](#)

no-concatenate

| | |
|--------------------------|---|
| Syntax | no-concatenate; |
| Hierarchy Level | [edit chassis fpc slot-number pic pic-number], [edit chassis lcc number fpc slot-number pic pic-number] (Routing Matrix) |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | <p>Do not concatenate (multiplex) the output of a SONET/SDH PIC (an interface with a name <i>so-fpc/pic/port</i>).</p> <p>When configuring and displaying information about interfaces that are operating in channelized mode, you must specify the channel number in the interface name (<i>physical:channel</i>); for example, <i>so-2/2/0:0</i> and <i>so-2/2/0:1</i>.</p> <p>On SONET OC48 interfaces that are configured for channelized (multiplexed) mode, the bytes e1-quiet and bytes f1 options in the sonet-options statement have no effect. The bytes f2, bytes z3, bytes z4, and path-trace options work correctly on channel 0. They work in the transmit direction only on channels 1, 2, and 3.</p> |
| Default | Output is concatenated (multiplexed). |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized (Multiplexed) Mode |


no-multi-rate

| | |
|---------------------------------|---|
| Syntax | no-multi-rate; |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>] |
| Release Information | Statement introduced in Junos OS Release 11.2. |
| Description | Disable the rate-selectability configuration. |
| | <div>  <p>NOTE:</p> <ul style="list-style-type: none"> The no-multi-rate statement is supported only on MIC-3D-8OC3OC12-4OC48. The no-multi-rate statement enables the first four ports [0 – 3] exclusively at OC48/STM16 speed. The no-multi-rate statement disables the last four ports [4 – 7]. </div> |
| Default | Rate-selectability is enabled, that is, by default the multirate mode is enabled. |
| 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"> <i>Configuring Port Speed on Multi-Rate MICs</i> |

no-route-localize

| | |
|---------------------------------|---|
| Syntax | no-route-localize; |
| Hierarchy Level | [edit policy-options policy-statement <i>policy-name</i> term <i>term-name</i> then] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Enforce installation of routes on all FIB-remote Packet Forwarding Engines. |
| 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">• <i>Example: Configuring Packet Forwarding Engine FIB Localization</i> |

non-revertive (Chassis)

| | |
|--|---|
| Syntax | non-revertive; |
| Hierarchy Level | [edit chassis aggregated-devices ethernet lacp link-protection] |
| Release Information | Statement introduced in Junos OS Release 9.3. Statement introduced in Junos OS Release 11.4 for EX Series switches. |
| Description | Disable the ability to switch to a better priority link (if one is available) once a link is established as active and a collection or distribution is enabled. |
| <div>  <p>BEST PRACTICE: (MX Series) By default, Link Aggregation Control Protocol link protection is revertive. This means that after the current link becomes active, the router switches to a higher-priority link if one becomes operational or is added to the aggregated Ethernet bundle. 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.</p> </div> | |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Junos OS for Supporting Aggregated Devices</i> • <i>Configuring LACP Link Protection of Aggregated Ethernet Interfaces for Switches</i> |

number-of-ports

| | |
|----------------------------|---|
| Syntax | <code>number-of-ports <i>number-of-active-physical-ports</i>;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i>]</code> <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>]</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>fpc-slot</i> pic <i>pic-number</i> pic-mode <i>pic-speed</i>]</code> |
| Release Information | <p>Statement introduced in Junos OS Release 10.1 for the 16x10GE MPC.</p> <p>Support for MPC3, MPC4, MPC5, and MPC6 introduced in Junos OS Release 13.3R2.</p> <p>Support for MPC7E-MRATE MPC introduced in Junos OS Release 15.1F4.</p> <p>Support for MPC8E and MPC9E introduced in Junos OS Release 15.1F5.</p> <p>Support for MX10003 MPC introduced in Junos OS Release 17.3R1</p> <p>Support for MX204 routers introduced in Junos OS Release 17.4R1</p> <p>Statement introduced in Junos OS Release 16.1 for EX9200 switches.</p> |
| Description | <p>Administratively enable physical ports, for example, to prevent oversubscription of the line card fabric interface. By default, all available ports are enabled. When disabled, the LED on the affected line card will appear yellow on capable line cards.</p> <p>(MX Series with 16x10GE MPC, MPC3, MPC4, MPC5, and MPC6) You can disable a subset of the physical ports available on the Packet Forwarding Engines of the 16x10GE MPC, and for MICs installed in MPC3, MPC4, MPC5, and MPC6. Specify either 8 or 12 ports by using this statement. When eight active ports are configured, two ports per Packet Forwarding Engine are disabled, and the LEDs on the MPC appear yellow. When you specify 12 active ports, one port per Packet Forwarding Engine is disabled and the corresponding LED appear yellow. When you do not include this statement in the configuration, all 16 default ports on the MPC are active.</p> <p>(MX Series with MPC7E-MRATE, MPC8E, and MPC9E) To ensure guaranteed bandwidth by preventing fabric oversubscription, you can disable a subset of the physical ports available on MPC7E-MRATE, MPC8E, and MPC9E. For information about the active ports for MPC7E-MRATE, MPC8E, and MPC9E, see <i>Supported Active Physical Ports for Configuring Rate Selectability to Prevent Oversubscription</i>.</p> <p>(MX204 routers) To ensure guaranteed bandwidth by preventing oversubscription, you can disable a subset of the physical ports available on MX204 routers. For information about the active ports for MX204 routers, see <i>Supported Active Physical Rate-Selectable Ports to Prevent Oversubscription on MX204 Router</i></p> <p>(EX9200 switches)</p> |
| Options | <code><i>number-of-active-physical-ports</i></code> —Specify the number of physical ports to enable on PICs or MICs on an MPC. |

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

Related Documentation

- [Configuring the Number of Active Ports on 16-Port MPCs of MX Series Routers on page 34](#)
- *Supported Active Physical Ports for Configuring Rate Selectability to Prevent Oversubscription*
- *Configuring Rate Selectability on MPC7E (Multi-Rate) to Enable Different Port Speeds*
- *Configuring Rate Selectability on MIC-MRATE to Enable Different Port Speeds*
- *Configuring Rate Selectability on MX204 to Enable Different Port Speeds*
- *Understanding Rate Selectability*

offline

Syntax offline;

Hierarchy Level [edit chassis *lcc number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description (Routing matrix based on the TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, configure a T640 router so that it is not part of the routing matrix. On a TX Matrix Plus router, configure a T1600 or T4000 router so that it is not part of the routing matrix.

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

Related Documentation

- [online-expected on page 364](#)
- *TX Matrix Router and T640 Router Configuration Overview*
- *TX Matrix Plus Router Configuration Overview*
- *Configuring Junos OS to Enable the TX Matrix Router to Generate an Alarm If a T640 Router Stays Offline*
- *Configuring Junos OS to Enable the TX Matrix Plus Router to Generate an Alarm If a T1600 or T4000 Router Stays Offline*



offline-on-fabric-bandwidth-reduction

| | |
|---------------------------------|--|
| Syntax | <code>offline-on-fabric-bandwidth-reduction;</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number]</code> |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure an FPC with degraded fabric bandwidth offline, to avoid causing a traffic black hole in the chassis for an extended time. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Disabling an FPC with Degraded Fabric Bandwidth on page 106• Managing Bandwidth Degradation on page 105 |

on-disk-failure (Chassis Routing Engine)

| | |
|---------------------------------|---|
| Syntax | <pre>on-disk-failure { disk-failure-action (halt reboot); }</pre> |
| Hierarchy Level | <code>[edit chassis routing-engine]</code> |
| Release Information | Statement introduced before JUNOS Release 7.4. The <code>disk-failure-action</code> statement added in JUNOS Release 9.0. |
| Description | Instruct the router to halt or reboot if it detects hard disk errors on the Routing Engine. |
| Options | The remaining statement is 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">• Enabling a Routing Engine to Reboot on Hard Disk Errors on page 166 |

on-error

| | |
|---------------------------------|---|
| Syntax | <pre>on-error { raise-alarm; power (cycle off); write-coredump; }</pre> |
| Hierarchy Level | <pre>[edit chassis cfep slot-number] [edit chassis feb slot-number] [edit chassis fpc slot-number sanity-poll] [edit chassis lcc number fpc number sanity-poll] (Routing Matrix)</pre> |
| Release Information | <p>Statement introduced in Junos OS Release 11.4.</p> <p>Statement introduced in Junos OS Release 15.1 on M7i, M10, M120, and M320 routers.</p> |
| Description | Instruct the FPC or FEB or CFEB to perform actions during an error condition. |
| Options | <p>raise-alarm—Generate and display a chassis alarm in case of an error.</p> <p>power cycle—Reboot the FPC or FEB or CFEB after generating a core file. This statement is useful in case of temporary software errors that are eliminated after reboot.</p> <p>power off—Halt the FPC or FEB or CFEB and keep it offline. This statement is useful in case of permanent hardware failures.</p> |
| | <div>  <p>CAUTION: The power off statement halts the FPC or FEB or CFEB. Ensure that you have backup paths through different FPC or FEB or CFEB to avoid service outage.</p> </div> |
| | <div>  <p>NOTE: The power cycle and power off statements are mutually exclusive: You can configure either the power cycle or the power off statement for an error.</p> </div> |
| | <p>write-coredump—Trigger the core file in case of an error.</p> |
| Required Privilege Level | <p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Configuring Sanity Polling on page 162 • sanity-poll on page 409 |

- [retry-count on page 404](#)

online-expected

| | |
|---------------------------------|---|
| Syntax | online-expected; |
| Hierarchy Level | [edit chassis <i>lcc number</i>] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | (TX Matrix and TX Matrix Plus routing matrix only) On a TX Matrix router, configure a T640 router so that if it does not come online, an alarm is sent to the TX Matrix router. On a TX Matrix Plus router, configure a T1600 or a T4000 router so that if it does not come online, an alarm is sent to the TX Matrix Plus router. |
| 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">• <i>TX Matrix Router and T640 Router Configuration Overview</i>• <i>TX Matrix Plus Router Configuration Overview</i>• <i>Configuring Junos OS to Enable the TX Matrix Router to Generate an Alarm If a T640 Router Stays Offline</i>• <i>Configuring Junos OS to Enable the TX Matrix Plus Router to Generate an Alarm If a T1600 or T4000 Router Stays Offline</i>• offline on page 361 |

oss-map

| | |
|--------------------------|---|
| Syntax | <pre>oss-map { model-name t640 t1600; }</pre> |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 12.3R3, 13.1R2, and 13.2R1 for T4000 routers. |
| Description | Configure the operations support systems (OSS) mapping feature to map a T4000 chassis to a T1600 chassis or a T640 chassis, so that the T4000 chassis is represented as a T1600 chassis or a T640 chassis, respectively. The configuration helps prevent requalifying the T1600 chassis and T640 chassis as a new chassis on the OSS. |
| Options | <p>model-name t640—Perform OSS mapping on a T4000 chassis to represent it as a T640 chassis, thereby overriding the chassis model name as displayed in the output of the show chassis hardware, the show snmp mib walk system, and the show snmp mib walk jnxBoxAnatomy operational commands.</p> <p>model-name t1600—Perform OSS mapping on a T4000 chassis to represent it as a T1600 chassis, thereby overriding the chassis model name as displayed in the output of the show chassis hardware, the show snmp mib walk system, and the show snmp mib walk jnxBoxAnatomy operational commands.</p> |
| Required Privilege Level | <p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis on page 235 • Example: Configuring a T4000 Chassis to Represent a T640 Chassis on page 237 • show chassis oss-map on page 1409 |

output interfaces external

Syntax

```
output {
  interfaces {
    external {
      holdover-mode-disable;
      minimum-quality (prc | prs | sec | smc | ssu-a | ssu-b | st2 | st3 | st3e | st4 | stu | tnc);
      source-mode (chassis | line); tx-dnu-to-line-source-enable;
      tx-dnu-to-line-source-enable;
      wander-filter-disable;
    }
  }
}
```

Hierarchy Level [edit chassis [synchronization](#)]

Release Information Statement introduced in Junos OS Release 12.3 for MX Series routers.

Description Configure the options for the external clock output interface—external—on SCBE.

Configure the options for the external clock output interfaces—external-0/0 and external-1/0—on SCBE2.


Options The remaining statements are explained separately. See [CLI Explorer](#).

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

Related Documentation

- [synchronization on page 434](#)

packet-scheduling

| | |
|---|--|
| Syntax | (packet-scheduling no-packet-scheduling); |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | (M 160 routers only) Enable packet-scheduling mode, in which the Packet Director application-specific integrated circuit (ASIC) schedules packet dispatches to compensate for transport delay differences. This preserves the interpacket gaps as the packets are distributed from the Packet Director ASIC to the Packet Forwarding Engine. |
| Default | no-packet-scheduling |
| <div>  <p>NOTE: The packet-scheduling feature is available on M160 routers only.</p> </div> | |
| Options | <p>no-packet-scheduling—Do not schedule packets.</p> <p>packet-scheduling—Schedule packets to preserve interpacket gaps.</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"> • Enabling an M160 Router to Operate in Packet Scheduling Mode on page 233 |

payload

| | |
|---------------------------------|---|
| Syntax | <pre>payload { ip { layer-3; layer-4; } }</pre> |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> hash-key family multiservice] |
| Release Information | Statement introduced in Junos OS Release 9.6. |
| Description | (MX Series 5G Universal Routing Platforms only) Include payload data in a hash key for the multiservice protocol family when configuring PIC-level symmetrical load balancing on an 802.3ad Link Aggregation Group. |
| Options | <p>ip—Include IPv4 payload data in the hash key. This option has the following suboptions:</p> <ul style="list-style-type: none">• layer-3—Include Layer 3 IP information in the hash key.• layer-4—Include Layer 4 IP information in the hash key. |
| 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>Configuring PIC-Level Symmetrical Hashing for Load Balancing on 802.3ad LAGs for MX Series Routers</i> |

pem (M320 Routers)

| | |
|---------------------------------|--|
| Syntax | <pre>pem { minimum <i>number</i>; }</pre> |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 7.4. |
| Description | Configure the minimum number of Power Entry Modules (PEMs) on an M320 router. With this configuration, PEM absent alarms are generated only if the PEM count falls below the minimum specified. |
| Options | minimum <i>number</i> —Minimum number of PEMs on the router. Range: 0 through 3 |
| 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"> • <i>Configuring the Junos OS to Support Entry-Level Configuration on an M320 Router with a Minimum Number of SIBs and PIMs</i> • sib on page 415 |

pem (T640, T1600, and T4000 Routers with Six-Input DC Power Supply)

| | |
|--------------------------|--|
| Syntax | <pre>pem { feeds number-of-input-feeds; input-current amps-in-each-feed; }</pre> |
| Hierarchy Level | [edit chassis] [edit chassis lcc <i>lcc-number</i>] (Routing Matrix) |
| Release Information | Statement introduced in Junos OS Release 12.1. Option feeds introduced in Junos OS Release 12.1. Option input-current introduced for T4000 routers in Junos OS Release 12.3. |
| Description | Configure the power supply parameters of the six-input DC power supply on T640, T1600, or T4000 routers. |
| Options | feeds <i>number-of-input-feeds</i> —Number of input feeds connected to the six-input DC power supply. (For T4000 routers only) input-current <i>amps-in-each-feed</i> —Input current (in amperes) in each feed. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Configuring the Six-Input DC Power Supply on T Series Routers on page 142 |

performance-mode

Syntax `performance-mode {
 number-of-ucode-workers number-of-ucode-workers;
 }`

Hierarchy Level `[edit chassis fpc 0]`

Release Information Statement introduced in Junos OS Release 15.1F4 and 16.1R1 for vMX routers. **number-of-ucode-workers** option introduced in Junos OS Release 15.1F6 and 16.2R1 for vMX routers.

Description (vMX routers only) Enables vMX to run in performance mode. Performance mode needs more vCPUs and memory to run at higher bandwidth.



NOTE: When you enable performance mode, make sure you have configured the proper number of vCPUs and memory for your VMs based on your use case. If you have not configured enough vCPUs, vMX runs in lite mode.

Starting with Junos OS Release 15.1F6, performance mode is enabled by default for vMX.



NOTE: The FPC reboots if you change this configuration.

You can tune performance mode for unicast traffic by changing the number of Workers dedicated to processing multicast and control traffic. Starting with Junos OS Release 17.2R1, you do not need to specify dedicated Workers for processing multicast traffic. The default specifies that all available Workers are used to process all traffic.

The number of dedicated Workers specified in relation to the number of available Workers results in the following behavior:

- If the number of dedicated Workers is greater than or equal to the number of available Workers, then all available Workers are used to process all traffic.
- If the number of dedicated Workers is less than the number of available Workers, then the first set of available Workers (equal to the specified number of dedicated Workers) is used to process multicast and control traffic while the remaining available Workers are used to process flow cache traffic.

Options **performance-mode**—Enables performance mode.

To disable performance mode, enable lite mode by including the **lite-mode** statement at the **[edit chassis fpc 0]** hierarchy level.

number-of-ucode-workers *number-workers*—Specifies the number of dedicated Workers for processing multicast and control traffic.

Range: 0 through 15

Default: 0 specifies that all available Workers are used to process all traffic.

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

Related Documentation

- [lite-mode on page 339](#)

phy-timestamping

Syntax phy-timestamping

Hierarchy Level [edit protocols ptp]

Release Information Statement introduced in Junos OS Release 17.1R1.

Description Configure timestamping of the IEEE 1588 event packets at the physical layer. Timestamping the packet at the physical layer, also known as PHY timestamping, eliminates the noise or the packet delay variation (PDV) that is introduced by the Packet Forwarding Engine.

By default PHY timestamping is disabled.



NOTE: MX104 does not support PHY timestamping in WAN PHY mode. For PHY timestamping to work on MX104, the packet forwarding engine must come up in LAN PHY mode after a reboot. If the interface framing is changed from LAN PHY mode to WAN PHY mode or WAN PHY mode to LAN PHY mode, a reboot is required.

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

Related Documentation

- *Precision Time Protocol Overview*

pic (M Series and T Series Routers)

```
Syntax  pic pic-number {
        cel {
            e1 port-number {
                channel-group group-number timeslots slot-number;
            }
        }
        ct3 {
            port port-number {
                t1 link-number {
                    channel-group group-number timeslots slot-number;
                }
            }
        }
        framing (sdh | sonet);
        idle-cell format {
            itu-t;
            payload-pattern payload-pattern-byte;
        }
        inline-services {
            bandwidth (1g | 10g);
        }
        max-queues-per-interface (8 | 4);
        no-concatenate;
    }
```

Hierarchy Level [edit chassis fpc *slot-number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure properties for an individual PIC.

Options *pic-number*—Slot number in which the PIC is installed.

Range: 0 through 3

The remaining statements are explained separately. Search for a statement in [CLI Explorer](#) or click a linked statement in the Syntax section for details.

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

Related Documentation

- *Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs*
- *Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized (Multiplexed) Mode*
- *Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots*

- *Configuring the Junos OS to Support Channel Groups and Time Slots for Channelized E1 PICs*

pic (MX Series Routers)

```
Syntax  pic pic-number {
    account-layer2-overhead;
    adaptive-services {
        (layer-2 | layer-3);
    }
    aggregate-ports;
    cel {
        el port-number {
            channel-group group-number timeslots slot-number;
        }
    }
    channelization;
    ct3 {
        port port-number {
            tl link-number {
                channel-group group-number timeslots slot-number;
            }
        }
    }
    egress-policer-overhead bytes;
    framing (sdh | sonet);
    idle-cell format {
        itu-t;
        payload-pattern payload-pattern-byte;
    }
    ingress-policer-overhead bytes;
    inline-services {
        bandwidth (1g | 10g);
    }
    max-queues-per-interface (8 | 4);
    mlfr-uni-nni-bundles number;
    mlfr-uni-nni-bundles-inline number;
    multi-link-layer-2-inline;
    no-concatenate;
    no-multi-rate;
    pic-type OID of PIC type;
    sparse-dlcis;
    tunnel-services (Chassis) {
        bandwidth (1g | 10g | 20g | 40g);
        tunnel-only;
    }
    vtmapping (klm | itu-t);
}
```

Hierarchy Level [edit chassis fpc *slot-number*]

Release Information Statement introduced before Junos OS Release 7.4.
multi-link-layer-2-inline and **mlfr-uni-nni-bundles-inline** options introduced in Junos OS Release 14.1.

| | |
|---------------------------------|---|
| Description | Configure properties for an individual PIC. |
| Options | <i>pic-number</i> —Slot number in which the PIC is installed. Range: 0 through 3 The remaining statements are explained separately. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs</i>• <i>Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized (Multiplexed) Mode</i>• <i>Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots</i>• <i>Configuring the Junos OS to Support Channel Groups and Time Slots for Channelized E1 PICs</i>• <i>Enabling Inline Service Interfaces</i> |

pic (TX Matrix and TX Matrix Plus Routers)

Syntax

```

pic pic-number {
    aggregate-ports;
    atm-cell-relay-accumulation;
    atm-l2circuit-mode (cell | aal5 | trunk trunk);
    egress-policer-overhead (count);
    framing (sdh | sonet);
    idle-cell-format {
        itu-t;
        payload-pattern payload-pattern-byte;
    }
    ingress-policer-overhead (count);
    max-queues-per-interface (8 | 4);
    no-concatenate;
    no-mcast-replication;
    q-pic-large-buffer (large-scale | small-scale);
}

```

Hierarchy Level [edit chassis lcc *number* fpc *slot-number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description On a TX Matrix or TX Matrix Plus router, configure properties for an individual PIC.

Options *pic-number*—Slot number in which the PIC is installed.

Range: 0 through 3

The remaining statements are explained separately.

Required Privilege Level

| |
|---|
| interface—To view this statement in the configuration. |
| interface-control—To add this statement to the configuration. |

Related Documentation

- *TX Matrix Router and T640 Router Configuration Overview*
- *TX Matrix Plus Router Configuration Overview*
- *Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs*

pic-mode

| | |
|----------------------------|---|
| Syntax | <code>pic-mode <i>pic-speed</i>;</code> |
| Hierarchy Level | <code>[edit chassis (EX Series) fpc slot pic <i>pic-number</i>]</code> |
| Release Information | <p>Statement introduced in Junos OS Release 15.1F4 for MX Series routers with the MPC7E-MRATE MPC.</p> <p>Statement introduced in Junos OS Release 15.1F5 for MX Series routers with the MIC-MRATE MIC.</p> <p>Statement introduced in Junos OS Release 17.3R1 for MX10003 routers with the MX10003 MPC.</p> <p>Statement introduced in Junos OS Release 17.4R1 for MX204 Universal Routing Platforms.</p> |
| Description | <p>Configure the operating speed of all ports on the MPC7E-MRATE MPC, MIC-MRATE MIC, MX10003 MPC, and MX204 routers.</p> <p>(MX240, MX480, MX960, MX2010, and MX2020 routers with MPC7E-MRATE) To configure 100 Gbps, 10 Gbps, and 40 Gbps speed on all supported ports, specify 100G, 10G, or 40G, respectively, as the speed for the specified PIC. All the six ports of PIC 0 and PIC 1 of an MPC7E-MRATE MPC support 10-Gbps and 40-Gbps speeds. However, only ports 2 and 5 of PIC 0 and PIC 1 support 100-Gbps speed. Therefore, if you configure 100G as the operating speed of a PIC, the PIC is rebooted and the ports 0, 1, 3, and 4 are disabled.</p> <p>(MX2010 and MX2020 routers with MIC-MRATE on MPC8E and MPC9E) To configure the port speed at MIC level or on all supported ports, specify 100G, 10G, or 40G, respectively, as the speed for the MIC-MRATE MIC on MPC8E and MPC9E. All the twelve ports of MIC-MRATE MIC support 10 Gbps and 40 Gbps speeds. When you configure the port speed as 100 Gbps at the PIC level for MPC8E, you can configure only 4 ports of the 12 MIC-MRATE ports on MPC8E to operate at 100 Gbps port speed. The other ports are disabled. Therefore, if you configure 100G as the operating speed for ports 0, 1, 6, and 7, the other ports are disabled on MPC8E. Similarly, when you configure the port speed as 100 Gbps at the PIC level you can configure only 8 ports of the 12 MIC-MRATE ports on MPC9E with 100 Gbps port speed. Therefore, if you configure 100G as the operating speed for ports 0, 1, 2, 3, 6, 7, 8, and 9, the other ports can support only 40 Gbps or 10 Gbps. However, enabling port speed of 40 Gbps or 10 Gbps at the PIC level, enables all ports and sets the desired port speed on all ports.</p> <p>(MX10003 routers with MX10003 MPC) To configure 100 Gbps, 10 Gbps, and 40 Gbps speed on all supported ports, specify 100G, 10G, or 40G, respectively, as the speed for the specified PIC. All the six ports of the fixed port PIC support 10-Gbps and 40-Gbps speeds. All the 12 ports of the Multi-rate MIC support 100-Gbps, 10-Gbps and 40-Gbps speeds. To configure all ports to operate at the same speed, configure rate selectability at the PIC level, in which case you cannot configure the speed of individual ports. To configure rate selectability at the PIC level, use the pic-mode statement and specify the port speed. For more information see “MX10003 MPC on MX10003 Router Overview” on</p> |

[page 52](#) and *Supported Active Physical Ports for Configuring Rate Selectability to Prevent Oversubscription on MX10003 MPC*.

(MX204 routers) To configure all ports to operate at the same speed, configure rate selectability at the PIC level, in which case you cannot configure the speed of individual ports. To configure rate selectability at the PIC level, use the **pic-mode** statement and specify the port speed. The MX204 has four rate-selectable ports (referred to as PIC 0 ports) that can be configured as 100-Gigabit Ethernet ports or 40-Gigabit Ethernet port, or each port can be configured as four 10-Gigabit Ethernet ports (by using a breakout cable). The MX204 also has eight 10-Gigabit Ethernet ports (referred to as PIC 1 ports).

The MX204 router does not support heterogeneous mode. That is, in PIC mode if 40-Gbps or 100-Gbps speed is configured on PIC 0, then the [number-of-ports](#) on PIC 1 must be configured to 0 only. For more information, see “[MX204 Router Overview](#)” on [page 57](#) and *Supported Active Physical Rate-Selectable Ports to Prevent Oversubscription on MX204 Router*.

Options *pic-speed*—Operating speed of the interfaces configured on the ports of an MPC7E-MRATE MPC.

100G—Supported ports operate at 100 Gbps speed.

10G—Supported ports operate at 10 Gbps speed.

40G—Supported ports operate at 40 Gbps speed.

Default: 10G

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

Related Documentation

- *Configuring Rate Selectability on MPC7E (Multi-Rate) to Enable Different Port Speeds*
- *Configuring Rate Selectability on MIC-MRATE to Enable Different Port Speeds*
- *Configuring Rate Selectability on MX10003 MPC to Enable Different Port Speeds*
- *Configuring Rate Selectability on MX204 to Enable Different Port Speeds*
- *Understanding Rate Selectability*

policer-drop-probability-low

| | |
|---------------------------------|---|
| Syntax | <code>policer-drop-probability-low;</code> |
| Hierarchy Level | <code>[edit chassis]</code> |
| Release Information | Statement introduced in Junos OS Release 11.4R1. |
| Description | <p>Reduces the possibility that policers configured on the router might drop packets. For some Juniper Networks routers, policers can mark packets as out-of-specification in accordance with TCP. By default, these policers begin to randomly drop packets when the current credit exceeds the credit limit. In the context of TCP, this random drop mechanism helps to smooth the flow of traffic. The policer-drop-probability-low statement causes the policers to operate as strict rate limiters and to ignore the standard TCP behavior.</p> <p>The policer-drop-probability-low statement is applicable to the following routing platforms:</p> <ul style="list-style-type: none">• M7i• M10i• M120• M320• MX Series |
| 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">• show pfe cfeb on page 1618• show pfe feb on page 1622• show pfe fpc on page 1628 |


port (Chassis)

| | |
|---------------------------------|--|
| Syntax | <code>port <i>port-number</i>;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> ct3]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure the channelized T3 port number on the PIC. |
| Options | <i>port-number</i> —Port number. Range: 0 through 1 |
| 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"> • <i>Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots</i> |

port auxiliary time-of-day-format

| | |
|---------------------------------|--|
| Syntax | <code>port auxiliary time-of-day-format ascii <i>string</i>;</code> |
| Hierarchy Level | <code>[edit chassis synchronization source interfaces (external-a external-b interface <i>interface-name</i>)]</code> <code>[edit chassis synchronization source interfaces (external interface <i>interface-name</i>)]</code> <code>[edit chassis synchronization source interfaces (external-0/0 external-1/0 interface <i>interface-name</i>)]</code> |
| Release Information | Statement introduced in Junos OS Release 13.3 for MX Series routers. |
| Description | Configure the time-of-day message format as ASCII on the auxiliary port that receives the external clock signals. |
| Options | <i>string</i> —Set the message format in ASCII characters. |
| 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"> • synchronization (MX Series) on page 434 |

speed

| | |
|--|--|
| Syntax | <code>speed [10G 40G 100G];</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number port port-number]</code> |
| Release Information | Statement introduced in Junos OS Release 15.1F3 and 16.1R2 for PTX5000 routers. Statement introduced in Junos OS Release 15.1F6 and 16.1R2 for PTX3000 routers. Statement introduced in Junos OS Release 16.1X65 for PTX1000 routers. |
| Description | Configure the port speed on interface modules that support multiple port speeds. To check the port speed, use the show interfaces command. To determine whether a PIC has specific port speed configuration requirements, see the PIC's description in <i>PTX Series Interface Module Reference</i> . |
| Options | 10G —10 Gbps 40G —40 Gbps 100G —100 Gbps |
| <div>  NOTE: For PTX 1000 routers, the default port speed is 10 Gbps. </div> | |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> <i>Modes of Operation of 10-Gigabit Ethernet PICs</i> <i>Configuring Mixed-Rate Mode Operation</i> mixed-rate-mode on page 352 |

power

| | |
|---------------------|---|
| Syntax | <code>power (off on);</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pfe slot-number]</code> <code>[edit chassis fpc slot-number]</code> <code>[edit chassis fpc name pic],</code> <code>[edit chassis lcc name fpc name pic name],</code> <code>[edit chassis member name fpc name pic]</code> |
| Release Information | <p>The <code>edit chassis fpc slot-number</code> statement introduced before Junos OS Release 7.4.</p> <p>The <code>edit chassis fpc slot-number pic pic-number power off</code> introduced in Junos OS Release 13.3R2.</p> <p>Statement introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.</p> |
| Description | The <code>edit chassis fpc slot-number</code> command configures the Flexible PIC Concentrator (FPC) to stay offline or to come online automatically. |



NOTE: In Junos Node Slicing, issuing the command `set chassis fpc slot-number power off` on the BSYS (base system) powers off even those FPCs that are assigned to the Guest Network Functions (GNFs) in which unified in-service software upgrade (ISSU) is in progress. Learn more about [Junos Node Slicing](#).

The `edit chassis fpc slot-number pic pic-number power off` command turns off the power to the PIC in the specified FPC.



NOTE: `power off` command is applicable only to the fixed-configuration MPC with six 40-Gigabit Ethernet ports and twenty-four 10-Gigabit Ethernet ports (MPC5E-40G10G). For other PICs, it is ignored with a syslog message.


For platforms running Junos OS Evolved Release 19.1R1 (PTX10003), although the `power off` command is supported, the `power on` command is not. The only way to bring up an offline FPC is to delete the `power off` configuration and reboot the chassis.

Starting in Junos OS Evolved Release 19.1R1, on the PTX10003-80C, PTX10003-160C routers, deleting the FPC power off configuration during run time might trigger the FPC to go online and that might result in a system crash. This is because these routers do not support taking FPC online (using the command `request chassis fpc <slot> online`). We recommend that you delete the `power-off` configuration when you are ready to reboot the router (that is, delete the configuration just before rebooting the router).

Default `on`

| | |
|---------------------------------|--|
| Options | off —Take the FPC offline, and configure it to stay offline, as, for example, after a system reboot. |
| | on —Bring the FPC online, and configure it to come online automatically, as, for example, after a system reboot. |
| | off —Take the PIC in the specified FPC offline, and configure it to stay offline, as, for example, after a system reboot. |
| | on —Bring the PIC in the specified FPC online, and configure it to come online automatically, as, for example, after a system reboot. |
| 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">• Managing Power on page 135 |

preserve-fpc-poweron-sequence

| | |
|---|---|
| Syntax | <code>preserve-fpc-poweron-sequence;</code> |
| Hierarchy Level | <code>[edit chassis]</code> |
| Release Information | <p>Statement introduced in Junos OS Release 15.1 for MX Series routers.</p> <p>Statement introduced in Junos OS Release 17.2R1 for EX9200 switches.</p> <p>Statement introduced in Junos OS Release 18.2R1 for MX10008 Universal Routing Platforms.</p> |
| Description | <p>Preserve the sequence in which the line cards—specifically, MPCs on MX series routers—on a router or switch are powered on when the device is restarted. During a system reboot, the line cards are brought online in the sequence specified in the system log file <code>/var/log/fpc_poweron_seq.log</code>. When a line card goes offline, its entry is removed from the log file. You can use the <code>show chassis power sequence</code> command to view the configured power-on sequence.</p> |
| <div>  NOTE: <ul style="list-style-type: none"> If both <code>preserve-fpc-poweron-sequence</code> and <code>fru-poweron-sequence</code> statements are configured, then the power-on sequence specified in the <code>fru-poweron-sequence</code> statement takes precedence. If <code>preserve-fpc-poweron-sequence</code> is configured and <code>fru-poweron-sequence</code> not configured, then the line cards are powered on in the sequence preserved in the system log file <code>/var/log/fpc_poweron_seq.log</code>. If neither of these statements is configured, then the line cards are powered on in the ascending order of their slot numbers. Line cards whose slot numbers are not specified in the log file are powered on in the ascending order of their slot numbers. </div> | |
| Required Privilege Level | <p>chassis—To view this statement in the configuration.</p> <p>chassis-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> fru-poweron-sequence on page 316 show chassis power sequence on page 1468 Understanding How Dynamic Power Management Enables Better Utilization of Power on page 135 |

primary

| | |
|---------------------------------|--|
| Syntax | <code>primary interface name;</code> |
| Hierarchy Level | <code>[edit protocols ptp slave interface interface-name],</code> <code>[edit protocols ptp master interface interface-name]</code> |
| Release Information | Statement introduced in Junos OS Release 17.2R1. |
| Description | Configure the primary member link in an aggregated Ethernet bundle to enable Precision Time Protocol (PTP) over a link aggregation group. PTP master streams are created on the FPC on which the primary interface is present. Announce and sync packets are transmitted on this primary PTP Aggregated Ethernet link. |
| 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">• <i>Configuring Precision Time Protocol</i>• <i>Example: Configuring Precision Time Protocol</i>• <i>Precision Time Protocol Overview</i> |

priority1

| | |
|---------------------------------|---|
| Syntax | <code>priority1 <i>priority1-value</i>;</code> |
| Hierarchy Level | <code>[edit protocols ptp]</code> |
| Release Information | <p>Statement introduced in Junos OS Release 12.2.</p> <p>Statement introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers.</p> <p>Statement introduced in Junos OS Release 17.3 for the QFX Series.</p> |
| Description | <p>Configure the priority as one of the following:</p> <ul style="list-style-type: none"> • In the slave, the priority value is set to select the best master clock. Note that in order to select a particular master clock, the priority value in the master clock's announce message must be equal to or lower than the configured <i>priority1-value</i>. • In the master, the priority value is set to represent itself in the announce message to other slaves. • In the boundary node, the slave uses this value to determine the best master clock, whereas the master uses this value from the announce message of the selected master clock. <p>Note that the lower value takes precedence.</p> |
| Options | <p><i>priority1-value</i>—The priority value of the clock.</p> <p>Range: 0 through 255</p> <p>Default: 128</p> |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Precision Time Protocol</i> • <i>Precision Time Protocol Overview</i> • <i>IEEE 1588v2 Precision Timing Protocol (PTP)</i> |

priority2

| | |
|--------------------------|---|
| Syntax | <code>priority2 priority2-value;</code> |
| Hierarchy Level | <code>[edit protocols ptp]</code> |
| Release Information | Statement introduced in Junos OS Release 12.2. Statement introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers. Statement introduced in Junos OS Release 17.3 for the QFX Series. |
| Description | Configure the priority2 value. This value is used to differentiate and prioritize the master clocks to avoid confusion when the priority1-value is the same for different master clocks in a network. Note that the lower value takes precedence. |
| Options | priority2-value —The priority value of the clock. Range: 0 through 255 Default: 128 |
| 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">• <i>Configuring Precision Time Protocol</i>• <i>Example: Configuring Precision Time Protocol</i>• <i>Precision Time Protocol Overview</i>• <i>IEEE 1588v2 Precision Timing Protocol (PTP)</i> |

priority (Clock Synchronization)

| | |
|---------------------------------|---|
| Syntax | <code>priority <i>number</i>;</code> |
| Hierarchy Level | <code>[edit chassis synchronization source interfaces (external-a external-b interface <i>interface-name</i>)]</code> <code>[edit chassis synchronization source interfaces (external interface <i>interface-name</i>)]</code> <code>[edit chassis synchronization source interfaces (external-0/0 external-1/0 interface <i>interface-name</i>)]</code> |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | <p>Configure the priority of a clock source in relationship to other clock sources to define a network synchronization flow and to help prevent timing loops.</p> <p>When the priority is not specified, the external-a interface has higher default priority than the external-b interface, and the external-b interface has higher default priority than other Gigabit Ethernet or 10-Gigabit Ethernet clock sources, which have the lowest default priority. Any priority you configure is higher than any default priority.</p> |
| Options | <p><i>number</i>—Set the priority level of the clock source.</p> <p>Range: 1 through 5</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"> • synchronization (MX Series) on page 434 |

profile-type

| | |
|--|---|
| QFX Series (AES67 Profile) | profile-type aes67 |
| QFX Series (AES67+SMPTE Profile) | profile-type aes67-smppte |
| List of Syntax | QFX Series (AES67 Profile) on page 390 QFX Series (AES67+SMPTE Profile) on page 390 MX Series on page 390 QFX Series (Enterprise Profile) on page 390 QFX Series (G.8275.2 Enhanced Profile) on page 390 QFX Series (SMPTE Profile) on page 390 |
| MX Series | profile-type (g.8275.1 g.8275.1.enh) |
| QFX Series (Enterprise Profile) | profile-type enterprise-profile |
| QFX Series (G.8275.2 Enhanced Profile) | profile-type g.8275.1.enh |
| QFX Series (SMPTE Profile) | profile-type smppte |
| Hierarchy Level | [edit protocols ptp] |
| Release Information | <p>Statement introduced in Junos OS Release 17.1R1.</p> <p>Statement introduced in Junos OS Release 17.3 for the QFX Series.</p> |
| Description | <p>On the MX Series, configure the G.8275.1 or the enhanced G.8275.1 PTP profile for applications that require accurate phase and time synchronization. This profile supports the architecture defined in ITU-T G.8275 to enable the distribution of phase and time with full timing support and is based on the second version of PTP defined in IEEE 1588.</p> <p>On QFX Series switches that support the enterprise-profile feature, you can configure the enterprise profile, which supports IEEE 1588 PTPv2 transport over multicast IPv4. If you do not specify a profile, the IEEE 1588 default profile is enabled by default.</p> <p>On QFX Series switches that support the G.8275.2 enhanced profile feature, you can configure the G.8275.2 enhanced profile, which supports telecom applications that require accurate phase and time synchronization for phase alignment and time of day synchronization over a wide area network. This profile supports PTP over IPv4 unicast, ordinary and boundary clocks, and unicast negotiation.</p> |

On QFX Series switches that support the media profile, you can configure the SMPTE, AES67, and the AES67+SMPTE profiles to support video applications for capture (for example, cameras), video edit, and playback to be used in professional broadcast environments. The standard allows multiple video sources to stay in synchronization across various equipment by providing time and frequency synchronization to all devices. This profile supports PTP over IPv4 multicast and ordinary and boundary clocks.

Options **aes67**—Enable the AES67 PTP profile.

aes67-smp**te**—Enable the AES67+SMPTE PTP profile.

enterprise-profile—Enable the enterprise profile. The enterprise profile supports IEEE 1588 PTPv2 transport over multicast IPv4. When the enterprise profile is enabled, no other profiles can be enabled. Also, unicast negotiation is disabled when you enable the enterprise profile.

g.8275.1—Enable the G.8275.1 PTP profile.

g.8275.1.enh—Enable the enhanced G.8275.1 PTP profile. This profile supports PTP over IPv4.

g.8275.2.enh—Enable the enhanced G.8275.2 PTP profile. This profile supports PTP over IPv4 unicast.

smp**te**—Enable the SMPTE PTP profile.

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



Related Documentation

- *Precision Time Protocol Overview*
- *Configuring the Precision Time Protocol Enterprise Profile*
- *Configuring the Precision Time Protocol G.8275.2 Enhanced Profile (Telecom Profile)*

pulse-per-second-enable

| | |
|---------------------------------|---|
| Syntax | pulse-per-second-enable; |
| Hierarchy Level | [edit chassis synchronization interfaces external] [edit chassis synchronization interfaces (external-0/0 external-1/0)] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the external interface to receive the pulse per second (PPS) signal on the GPS interface of the router. |
| 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">• synchronization on page 434 |

q-pic-large-buffer

| | |
|---------------------------------|--|
| Syntax | <code>q-pic-large-buffer (large-scale small-scale);</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number]</code> <code>[edit chassis lcc number fpc slot-number pic pic-number (Routing Matrix)]</code> |
| Release Information | <p>Statement introduced in Junos OS Release 7.4.</p> <p>Support for TX Matrix and TX Matrix Plus hierarchy added in Junos OS Release 9.6.</p> |
| Description | <p>Configure delay buffers.</p> <p> NOTE: When you commit the configuration after including the <code>q-pic-large-buffer</code> statement for a PIC, the Junos OS temporarily takes the PIC offline and brings it back online before the new configuration is activated and becomes the current operational configuration.</p> |
| Default | <code>small-scale</code> |
| Options | <p>large-scale—(Optional) Set the average packet size used to calculate the number of notification queue entries in the IQ PIC to 256 bytes. Useful for slower interfaces (T1, E1, and NxDS0 interfaces configured on Channelized IQ PICs and Gigabit Ethernet VLANs configured on Gigabit Ethernet IQ PICs).</p> <p>small-scale—(Optional) Set the average packet size used to calculate the number of notification queue entries in the IQ PIC to 40 bytes.</p> <p> NOTE: You cannot configure the <code>large-scale</code> and the <code>small-scale</code> options on MX Series routers. Include only the <code>q-pic-large-buffer</code> statement to enable the large delay buffer size on Enhanced Queuing DPCs on MX Series routers.</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>Configuring the Junos OS to Enable Larger Delay Buffers for T1, E1, and DS0 Interfaces Configured on Channelized IQ PICs</i> <i>Configuring Schedulers</i> |

quality-level (Clock Synchronization)

| | |
|---------------------------------|--|
| Syntax | quality-level (prc prs sec smc ssu-a ssu-b st2 st3 st3e st4 stu tnc); |
| Hierarchy Level | [edit chassis synchronization source interfaces (external-a external-b interface <i>interface-name</i>)] [edit chassis synchronization source interfaces (external interface <i>interface-name</i>)] [edit chassis synchronization source interfaces (external-0/0 external-1/0 interface <i>interface-name</i>)] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | <p>Configure the quality level for a timing source so that the router knows the best available source with which to synchronize. The quality level specifies the accuracy level of the clock and is transmitted across the network through Synchronization Status Messages (SSMs) over the Ethernet Synchronization Messaging Channel (ESMC), or through SSMs contained in SONET/SDH frames.</p> <p>SONET SSM messages are either Generation 1 or Generation 2. Generation 1 is the first and most widely deployed SSM message set. Generation 2 is a newer version. Quality level options are available for both Generation 1 and Generation 2.</p> |
| Options | prs—Primary reference source—Stratum 1 st2—Stratum 2 tnc—Transit node clock st3e—Stratum 3E st3—Stratum 3 smc—SONET minimum clock st4—Stratum 4 prc—Primary reference clock ssu-a—Synchronization supply unit A ssu-b—Synchronization supply unit B sec—SDH equipment clock |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |

Related Documentation

- [synchronization \(MX Series\) on page 434](#)

quality-level (hybrid)

| | |
|---------------------------------|---|
| Syntax | <code>quality-level (prs st2 tnc st3e st3 smc st4) (prc ssu-a ssu-b sec);</code> |
| Hierarchy Level | <code>[edit protocols ptp slave clock-class-to-quality-level-mapping]</code> |
| Release Information | Statement introduced in Junos OS Release 12.2R2. |
| Description | Configure the quality level for the timing source so that the router knows the best available source with which to synchronize. The quality level specifies the accuracy level of the clock. |
| Options | <p>prs—Primary reference source—Stratum 1</p> <p>st2—Stratum 2</p> <p>tnc—Transit node clock</p> <p>st3e—Stratum 3E</p> <p>st3—Stratum 3</p> <p>smc—SONET minimum clock</p> <p>st4—Stratum 4</p> <p>prc—Primary reference clock</p> <p>ssu-a—Synchronization supply unit A</p> <p>ssu-b—Synchronization supply unit B</p> <p>sec—SDH equipment clock</p> |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Example: Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Understanding Hybrid Mode</i> • <i>Precision Time Protocol Overview</i> • <i>Synchronous Ethernet Overview</i> |

quality-mode-enable (MX)

| | | |
|---|--|-----------------------------|
| Syntax | quality-mode-enable; | |
| Hierarchy Level | [edit chassis synchronization] | |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. | |
| Description | <p>Enable Synchronous Ethernet ESMC quality mode. The quality level parameter for a Synchronous Ethernet interface is optional when the quality-mode-enable and the selection-mode received-quality statements are included at the [edit chassis synchronization] hierarchy level.</p> <p>The default quality level for a Synchronous Ethernet interface is based on the value of network option: The option-1 statement, when set, selects the sec quality level; and the option-2 statement, when set, selects the st3 quality level.</p> <p>Table 29 on page 396 shows whether SSM quality level is supported for a given external interface signal type and framing. The default setting is disabled.</p> | |
| <i>Table 29: SSM-Quality Level Support by Signal Type and Framing</i> | | |
| Signal Type | Framing | SSM Quality Level Supported |
| E1 | G.704 | yes |
| E1 | G.704 no CRC4 | no |
| T1 | ESF | yes |
| T1 | SF | no |
| 2048 KHz | Not applicable | no |
| | | |
| Default | By default, this statement is disabled. | |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. | |
| Related Documentation | <ul style="list-style-type: none">synchronization (MX Series) on page 434show chassis synchronization on page 1544 | |


quality-mode-enable (PTX)

| | |
|---------------------------------|--|
| Syntax | quality-mode-enable; |
| Hierarchy Level | [edit chassis synchronization (PTX Series)] |
| Release Information | Statement introduced in Junos OS Release 14.2R1 for PTX Series routers. |
| Description | <p>Enable Synchronous Ethernet ESMC quality mode. The quality level parameter for a Synchronous Ethernet interface is optional when the quality-mode-enable and the selection-mode received-quality statements are included at the [edit chassis synchronization] hierarchy level.</p> <p>The default quality level for a Synchronous Ethernet interface is based on the value of the network option: The option-1 statement, when included, selects the sec quality level; and the option-2 statement, when included, selects the st3 quality level.</p> |
| Default | By default, this statement is not included. |
| 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"> • synchronization (PTX Series) on page 442 • <i>Synchronizing Internal Stratum 3 Clock to External Clock Sources on PTX Series Routers</i> • show chassis synchronization on page 1544 |

recovered-clock

| | |
|---------------------------------|---|
| Syntax | <pre>recovered-clock { port <i>port-number</i>; }</pre> |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>] |
| Release Information | Statement introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers. |
| Description | Select the port where the synchronous clock may be recovered. |
| Options | <i>port-number</i> —Port number where the synchronous clock may be recovered. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Clock Sources for PTX Series Packet Transport Routers</i>• <i>Synchronizing Internal Stratum 3 Clock to External Clock Sources on PTX Series Routers</i>• synchronization (PTX Series) on page 442 |

red-buffer-occupancy

| | |
|--------------------------|--|
| Syntax | <pre>red-buffer-occupancy { weighted-averaged [instant-usage-weight-exponent <i>exponent-value</i>]; }</pre> |
| Hierarchy Level | <pre>[edit chassis fpc <i>slot-number</i> pic <i>pic-number</i>], [edit chassis lcc <i>number</i> fpc <i>slot-number</i> pic <i>pic-number</i>]</pre> |
| Release Information | Statement introduced in Junos OS Release 8.3. |
| Description | <p>Configure the IQ PIC to base random early detection (RED) queue management on a <i>simple moving average</i> buffer occupancy calculation. If you do not include this statement, the IQ PIC bases RED on an <i>instantaneous</i> buffer occupancy value. As an option, you can specify that the IQ PIC bases RED on a <i>weighted moving average</i> of buffer occupancy values.</p> <p>If you configure this feature on a channelized OC12 intelligent queuing (IQ) PIC, the PIC reboots.</p> |
| Options | <p>weighted-averaged—Configure the IQ PIC to base RED processing on a simple moving average of instantaneous buffer occupancy values instead of an instantaneous buffer occupancy.</p> <p>instant-usage-weight-exponent <i>exponent-value</i>—(Optional) Specify the integer to be used as the negative exponent of 2 to express a weight value. The PIC performs weighted RED (WRED) by based on a calculation of average buffer occupancy that applies the specified weight value to the instantaneous buffer occupancy and then factors the weighted value into the calculation of average buffer occupancy. Valid exponent range is from 1 through 31 (weight values from 2^{-1} through 2^{-31}). If you do not specify this option, the default exponent value is 0, which results in a weight value of $2^0 = 1$. With a weight value of 1, the calculation of weighted average buffer occupancy yields the same value as the simple average buffer occupancy.</p> |
| | <p> NOTE: You can specify an exponent value greater than 31, and the value displays in the output of <code>show</code> commands. However, the PIC replaces the out-of-range value with the <i>operational</i> value of 31, which results in a weight value of $2^{-31} = 1 / 2^{31} = 0.0000000004656612873077392578125$.</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**
- [Managing Transient Traffic Bursts by Configuring Weighted RED Buffer Occupancy](#)
 - [Example: Managing Transient Traffic Bursts by Configuring Weighted RED Buffer Occupancy](#)

redundancy-mode

| | |
|---------------------------------|---|
| Syntax | redundancy-mode (increased-bandwidth redundant) |
| Hierarchy Level | [edit chassis fabric] |
| Release Information | Statement introduced in Junos OS Release 12.2. |
| Description | (MX240, MX480, and MX960 routers only) Configure the active control boards to be in redundancy mode or increased fabric bandwidth mode. In increased fabric bandwidth mode, which is the default behavior for MX Series routers with Switch Control Board (SCB), the maximum number of available fabric planes are used. The MX Series routers that contain the Enhanced SCB—SCBE—and the MPC3E, the control boards operate in redundancy fabric mode (all the FPCs use 4 fabric planes as active planes) by default. |
| Options | <p>increased-bandwidth—Enable increased fabric bandwidth mode for the control boards, which causes all the available fabric planes to be used.</p> <p>redundant—Enable redundancy mode for the control boards, which causes all the FPCs to use 4 fabric planes as active planes.</p> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers on page 102• Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers on page 98• MX Series Routers Fabric Resiliency on page 100• show chassis fabric redundancy-mode on page 1196• Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers on page 84 |

request (Clock Synchronization)

| | |
|---------------------------------|--|
| Syntax | <code>request (force-switch lockout);</code> |
| Hierarchy Level | <code>[edit chassis synchronization source interfaces (external-a external-b interface <i>interface-name</i>)]</code> <code>[edit chassis synchronization source interfaces (external interface <i>interface-name</i>)]</code> <code>[edit chassis synchronization source interfaces (external-0/0 external-1/0 interface <i>interface-name</i>)]</code> |
| Release Information | Statement introduced in Junos OS Release 11.2 R4 for MX Series routers. |
| Description | Specify the clock selection request criterion. |
| Options | <p>force-switch—Force switching to a clock source, provided the clock source is enabled and not locked out. Only one configured source may be force-switched.</p> <p>lockout—Clock source is not considered by the selection process. Lockout may be configured for any source.</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"> synchronization (MX Series) on page 434 |

restart chassis-control

List of Syntax [Syntax on page 402](#)
 [Syntax \(MX Series Routers\) on page 402](#)
 [Syntax \(PTX Series\) on page 402](#)

Syntax restart chassis-control
 <lcc *number* | sfc *number*>
 <gracefully | immediately | soft>

Syntax (MX Series Routers) restart chassis-control
 <gracefully | immediately | soft>

Syntax (PTX Series) restart chassis-control
 <gracefully | immediately | soft>

Release Information Command introduced before JUNOS Release 7.4.
 Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.
 Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.

Description Restart the chassis management process.



NOTE: When GRES is configured and the **restart chassis-control** command is executed on a TX Matrix Plus router with 3D SIBs, we cannot ascertain which Routing Engine becomes a master. This is due to the chassisd restart. The chassis process or chassisd is responsible for maintaining and retaining mastership and when it is restarted, the new chassisd is processed based on the router load. This results in one of the Routing Engines being made master.

Options **lcc *number***—(Routing matrix only) (Optional) Restart the software process for a specific T640 routing node that is connected to a TX Matrix platform. Replace ***number*** with a value from 0 through 3.

sfc *number*—(TX Matrix Plus routers only) (Optional) Restart the software process on the TX Matrix Plus router (or switch-fabric chassis). Replace ***number*** with 0.

gracefully—(Optional) Restart the software process.

immediately—(Optional) Immediately restart the software process.



NOTE: For PTX Series routers, when the `restart chassis-control` command is executed with the `immediately` option set, the PFE's state will be reset to enabled regardless of whether or not the PFE's state is set to disabled when the action occurs.

soft—(Optional) Reread and reactivate the configuration without completely restarting the software processes. For example, Border Gateway Protocol (BGP) peers stay up and the routing table stays constant. Omitting this option results in a graceful restart of the software process.

Required Privilege Level reset

Related Documentation • *restart*

List of Sample Output [restart chassis-control gracefully on page 403](#)
[restart chassis-control soft on page 403](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

`restart chassis-control gracefully`

```
user@host> restart chassis-control gracefully
Chassis control process started, pid 1631
```

`restart chassis-control soft`

```
user@host> restart chassis-control soft
Chassis control process started, pid 1653
```

retry-count

| | |
|---------------------------------|--|
| Syntax | <code>retry-count <i>number</i>;</code> |
| Hierarchy Level | <code>[edit chassis cfeb <i>slot-number</i>]</code> <code>[edit chassis cluster redundancy-group <i>group-number</i> ip-monitoring]</code> <code>[edit chassis feb <i>slot-number</i>]</code> <code>[edit chassis fpc <i>slot-number</i> sanity-poll]</code> <code>[edit chassis lcc <i>number</i> fpc <i>number</i> sanity-poll]</code> (Routing Matrix) |
| Release Information | Statement introduced in Junos OS Release 11.4. Statement introduced in Junos OS Release 15.1 on M7i, M10, M120, and M320 routers. |
| Description | Number of times sanity polling periodically checks for an error condition in the FPC. |
| Options | <i>number</i> —Number of times sanity polling is allowed to check for an error condition. Range: 1 through 30 Default: 10 |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Configuring Sanity Polling on page 162• sanity-poll on page 409• on-error on page 363 |

route (chassis)

| | |
|---------------------------------|---|
| Syntax | <code>route;</code> |
| Hierarchy Level | <code>[edit chassis memory-enhanced]</code> |
| Release Information | Statement added in Junos OS Release 10.4. |
| Description | Allocate more jtree memory for routing tables over firewall filters. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Configuring the Junos OS to Allocate More Memory for Routing Tables, Firewall Filters, and Layer 3 VPN Labels |

routing-engine (Chassis)

| | |
|---------------------------------|--|
| Syntax | <pre>routing-engine { on-disk-failure { disk-failure-action (halt reboot); } }</pre> |
| Hierarchy Level | <code>[edit chassis]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. The disk-failure-action statement added in Junos OS Release 9.0. |
| Description | Configure a Routing Engine to halt or reboot automatically when a hard disk error occurs. A hard disk error may cause a Routing Engine to enter a state in which it responds to local pings and interfaces remain up, but no other processes are responding. Rebooting or halting prevents this. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Enabling a Routing Engine to Reboot on Hard Disk Errors on page 166 |

route-localization

| | |
|---------------------------------|--|
| Syntax | <pre>route-localization { inet; inet6; }</pre> |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure FIB localization for IPv4 and IPv6 routes. |
| Options | <p>inet—Configure FIB localization for IPv4 routes.</p> <p>inet6—Configure FIB localization for IPv6 routes.</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>Example: Configuring Packet Forwarding Engine FIB Localization</i> |

sabit

| | |
|---------------------------------|--|
| Syntax | <code>sabit <i>bit</i>;</code> |
| Hierarchy Level | [edit chassis synchronization interfaces external e1-options] [edit chassis synchronization interfaces (external-0/0 external-1/0) e1-options] [edit chassis synchronization interfaces bits e1-options] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. Statement introduced in Junos OS Release 16.1 for the MX104 router. |
| Description | Configure the SA bit for exchanging the SSM quality on the E1 interface. |
| Options | <i>bit</i> —SA bit value. Range: 4 through 8. |
| 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">• synchronization on page 434 |

sampling-instance

| | |
|---------------------------------|---|
| Syntax | <code>sampling-instance <i>instance-name</i>;</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>slot-number</i>],</code> <code>[edit chassis lcc <i>number</i> fpc <i>slot-number</i>] (Routing Matrix),</code> <code>[edit chassis member <i>member-number</i> fpc slot <i>slot-number</i>]</code> |
| Release Information | Statement introduced in Junos OS Release 9.6. Support at the <code>[edit chassis member <i>member-number</i> fpc slot <i>slot-number</i>]</code> hierarchy level introduced in Junos OS Release 14.1. Statement introduced in Junos OS Release 14.1R3 for EX Series switches. |
| Description | Associate a defined sampling instance with a specific FPC, MPC, or DPC for active sampling instances configured at the <code>[edit forwarding-options sampling]</code> hierarchy level. For M120 routers with FEB, this statement must also be configured under <code>[edit chassis feb <i>slot-number</i>]</code> , in addition to the <code>[edit forwarding-options sampling]</code> hierarchy level. In a two-member MX Series Virtual Chassis, the master router (member 0) uses FPC slot numbers 0 through 11 with no offset; the backup router (member 1) uses FPC slot numbers 12 through 23, with an offset of 12. |
| 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"> <i>Associating Sampling Instances for Active Flow Monitoring with a Specific FPC, MPC, or DPC</i> <i>Inline Flow Monitoring for Virtual Chassis Overview</i> |

sanity-poll

Syntax

```
sanity-poll {
  retry-count number;
  on-error {
    raise-alarm;
    power (cycle | off);
    write-coredump;
  }
}
```

Hierarchy Level

```
[edit chassis cfeb slot-number]
[edit chassis feb slot-number]
[edit chassis fpc slot-number]
[edit chassis lcc number fpc number] (Routing Matrix)
```

Release Information Statement introduced in Junos OS Release 11.4.
Statement introduced in Junos OS Release 15.1 on M7i, M10, M120, and M320 routers.

Description Enable sanity polling and start periodic sanity checking for a particular FPC. The periodic sanity check includes checking for error conditions such as “register sanity issues,” “high temperature,” “hardware failure,” and so on in the FPC.



NOTE: Currently, periodic sanity check is performed only on the routing chip register.

Options The remaining statements are explained separately. See [CLI Explorer](#).

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


Related Documentation

- [Configuring Sanity Polling on page 162](#)
- [retry-count on page 404](#)
- [on-error on page 363](#)

secondary

| | |
|---------------------------------|--|
| Syntax | <code>secondary interface-name;</code> |
| Hierarchy Level | [edit protocols ptp slave interface <i>interface-name</i>], [edit protocols ptp master interface <i>interface-name</i>] |
| Release Information | Statement introduced in Junos OS Release 17.2R1. |
| Description | Configure the secondary member link in an aggregated Ethernet bundle to enable Precision Time Protocol (PTP) over a link aggregation group. PTP switches over to the secondary member in the aggregated Ethernet bundle when the primary aggregated Ethernet link is down. |
| 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">• <i>Configuring Precision Time Protocol</i>• <i>Example: Configuring Precision Time Protocol</i>• <i>Precision Time Protocol Overview</i> |

selection-mode

| | |
|---------------------------------|--|
| Syntax | <code>selection-mode (configured-quality received-quality);</code> |
| Hierarchy Level | <code>[edit chassis synchronization]</code> |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | Specify whether the clock source selection must use the configured or the received ESMC or SSM quality level for a qualifying interface. In both the selection modes, the interface qualifies for clock source selection only when the received ESMC or SSM quality level on the interface is equal to or greater than the configured ESMC or SSM quality level for the interface. |
| Options | <p>configured-quality—Set this option to let the clock source selection algorithm to use the ESMC or SSM quality level that is configured for a qualifying interface.</p> <p>received-quality—Set this option to let the clock source selection algorithm to use the ESMC or SSM quality level that is received on the qualifying interface.</p> |
| | <p> NOTE: For the <code>selection-mode</code> statement configuration to take effect, you must set the <code>quality-mode-enable</code> statement at the <code>[edit chassis synchronization]</code> hierarchy level.</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"> • synchronization on page 434 |

service-package

| | |
|---------------------------------|--|
| Syntax | <pre> service-package { extension-provider { control-cores <i>control-number</i>; data-cores <i>data-number</i>; data-flow-affinity { hash-key (layer-3 layer-4); } forwarding-db-size <i>size</i>; object-cache-size <i>size</i>; package <i>package-name</i>; policy-db-size <i>size</i>; syslog { facility { severity; destination <i>destination</i>; } } wired-max-processes <i>num-procs</i>; wired-process-mem-size <i>mem-size</i>; } layer-2; layer-3; } </pre> |
| Hierarchy Level | [edit chassis fpc <i>slot-number</i> pic <i>pic-number</i> adaptive-services] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced on MX Series 5G Universal Routing Platforms with MS-DPCs in Junos OS Release 9.6.</p> |
| Description | For adaptive services and multi-services interfaces, enable a service package on the specified Physical Interface Card (PIC). |
| Options | <p>layer-2—Enable a Layer 2 service package on the specified PIC.</p> <p>layer-3—Enable a Layer 3 service package on the specified PIC.</p> <p>The remaining statements are explained separately. See CLI Explorer.</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>Enabling Service Packages</i> • <i>Configuring MS-MPC-Based, Static HTTP Redirect Services</i> • <i>Configuring MS-MPC-Based, Converged HTTP Redirect Services</i> |

session-offload

| | |
|---------------------------------|---|
| Syntax | <code>session-offload;</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic number adaptive-services service-package extension-provider]</code> |
| Release Information | Statement introduced on MX Series 5G Universal Routing Platforms with MS-DPCs in Junos OS Release 9.6. |
| Description | Enable session offloading on a per-PIC basis for a Multiservices PIC. |
| Default | Session offloading is disabled. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> <i>Configuring the Junos OS to Enable Session Offloading on MX Series 5G Universal Routing Platforms with MS-DPCs</i> |

sfm (Chassis)

| | |
|--------------------------|---|
| Syntax | <code>sfm slot-number power off;</code> |
| Hierarchy Level | <code>[edit chassis]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | <p>For routers with SFMs, configure an SFM to stay offline.</p> <p>By default, if you use the request chassis sfm CLI command to take an SFM offline, the SFM will attempt to restart when you enter a commit CLI command. To prevent a restart, configure an SFM to stay offline. This feature is useful for repair situations. The SFM remains offline until you delete this statement.</p> |
| Options | <p>slot-number—Slot number in which the SFM is installed.</p> <p>power off—Take the SFM offline and configure it to remain offline.</p> |
| Required Privilege Level | <p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none">• Configuring an SFM to Stay Offline on page 165• <i>High Availability Feature Guide</i> |

sib

| | |
|---------------------------------|---|
| Syntax | <pre>sib { minimum <i>number</i>; }</pre> |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 7.4. |
| Description | Configure the minimum number of SIBs on an M320 router. With this configuration, SIB absent alarms are generated only if the SIB count falls below the minimum specified. |
| Options | <i>number</i> —Minimum number of SIBs on the router. Range: 0 through 3 |
| 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">• <i>Configuring the Junos OS to Support Entry-Level Configuration on an M320 Router with a Minimum Number of SIBs and PIMs</i>• pem on page 369 |

signal-type

| | |
|---------------------------------|--|
| Syntax | signal-type (1hz 5mhz 10mhz 2048mhz e1 t1); |
| Hierarchy Level | [edit chassis synchronization interfaces external] [edit chassis synchronization interfaces (external-0/0 external-1/0)] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the frequency for the provided reference clock. |
| Options | <p>1mhz—Set the signal with a clock frequency of 1 MHz.</p> <p>5mhz—Set the signal with a clock frequency of 5 MHz.</p> <p>10mhz—Set the signal with a clock frequency of 10 MHz.</p> <p>2048khz—Set the signal as an E1 unframed 2048 kHz G.703 signal.</p> <p>e1—Set the signal as an E1-coded 2048-kHz signal on a 120-ohm balanced line.</p> <p>t1—Set the signal as a T1-coded 1.544-MHz signal on a 100-ohm balanced line.</p> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• synchronization on page 434 |

switchover-mode

| | |
|---------------------------------|---|
| Syntax | switchover-mode (non-revertive revertive); |
| Hierarchy Level | [edit chassis synchronization] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | Specify whether the router must switch from a lower-quality clock source to a higher-quality clock source or use the current clock source only. |
| Default | revertive |
| Options | <p>non-revertive—Set this option so that the router continues to use the current clock source as long as it is valid.</p> <p>revertive—Set the option so that the router automatically switches from a lower to a higher quality clock source whenever the higher clock source becomes available.</p> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• synchronization (MX Series) on page 434• synchronization (PTX Series) on page 442 |

slow-pfe-alarm

| | |
|---------------------------------|---|
| Syntax | slow-pfe-alarm; |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced in Junos OS Release 12.1R6, 12.2R5, 12.3R3, 13.1R2, and 13.2R1. |
| Description | Enable the slow Packet Forwarding Engine alarm on a M Series, MX Series, or a T Series router. |
| 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 Slow Packet Forwarding Engine Alarm on page 215 |

sonet

| | |
|---------------------------------|--|
| Syntax | <pre>sonet { device-count number; }</pre> |
| Hierarchy Level | [edit chassis aggregated-devices] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure properties for SONET/SDH aggregated devices on the router. |
| Options | The remaining statements are explained separately. See CLI Explorer . |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Configuring Junos OS for Supporting Aggregated Devices |

slave

List of Syntax [MX Series on page 419](#)
[QFX Series on page 419](#)

MX Series

```
slave {
  announce-interval announce-interval-value
  announce-timeout announce-timeout-value;
  delay-request delay-request-value;
  frequency-only;
  hybrid
  interface interface-name {
    unicast-mode {
      transport ipv4;
      clock-source ip-address {
        local-ip-address local-ip-address {
        }
      }
    }
    multicast-mode {
      hybrid
      transport 802.3 link-local;
    }
  }
  sync-interval interval;
}
```

QFX Series

```
slave {
  interface interface-name {
    unicast-mode {
      transport ipv4;
      clock-client ip-address {
        local-ip-address local-ip-address;
      }
    }
  }
  multicast-mode {
    transport (ipv4 | ieee-802.3)
    local-ip-address local-ip-address;
    local-priority local-ip-address;
  }
  max-announce-interval max-announce-interval;
  max-delay-response-interval max-delay-response-interval;
  max-sync-interval max-sync-interval;
  min-announce-interval min-announce-interval;
  min-delay-response-interval min-delay-response-interval;
  min-sync-interval min-sync-interval;
  sync-interval sync-interval;
}
```

Hierarchy Level [\[edit protocols ptp\]](#)

Release Information Statement introduced in Junos OS Release 12.2.
Statement introduced in Junos OS Release 17.3 for the QFX Series.

Description Configure the slave with parameters.



.....
NOTE: Multicast mode is not supported on the QFX Series.
.....

- Options**
- announce-interval**—Configure the logarithmic mean interval for the announce messages to be sent by the master.
 - announce-timeout**—Specify the number of announce messages a slave must miss before an announce-timeout is declared.
 - delay-request**—Configure the logarithmic mean interval in seconds between the delay request messages sent by the slave to the master.
 - frequency-only**—Configure frequency synchronization.
 - hybrid**—Configure the timing and synchronization feature to operate in Sync-E assisted PTP mode of operation.
 - unicast-mode**—Configure the slave in unicast mode.
 - clock-source**—Configure the IP address of the master.
 - multicast-mode**—Configure multicast transmission of PTP packets between the master node and the slave node.
 - transport 802.3**—Configure Ethernet as the encapsulation type for transport of PTP packets.
 - sync-interval**—Configure the logarithmic mean interval for sync interval messages to be sent by the master.
 - unicast-mode**—Configure the master in unicast mode.
 - clock-client**—Configure the IP address of the slave
 - transport**—Configure the encapsulation type for PTP packet transport.
 - local-ip-address**—Configure the IP address of the interface acting as the slave or the master.
 - local-priority**—Configure a clock's local priority to be used as a tie-breaker in the dataset comparison algorithm, if all other attributes of the datasets being compared are equal.
 - max-announce-interval**—Configure the maximum log mean interval between announce messages.
 - max-delay-response-interval**—Configure the maximum log mean interval between delay-response messages.
 - max-sync-interval**—Configure the maximum log mean interval between synchronization messages.
 - min-announce-interval**—Configure the minimum log mean interval between announce messages.
 - min-delay-response-interval**—Configure the minimum log mean interval between delay-response messages.

min-sync-interval—Configure the minimum log mean interval between synchronization messages.

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

Related Documentation

- *Configuring Precision Time Protocol*
- *Example: Configuring Precision Time Protocol*
- *Precision Time Protocol Overview*
- *Configuring the Precision Time Protocol G.8275.2 Enhanced Profile (Telecom Profile)*

source-mode

Syntax source-mode (chassis | line);

Hierarchy Level [edit chassis [synchronization](#) output interfaces external]
[edit chassis [synchronization](#) output interfaces (external-0/0 | external-1/0)]

Release Information Statement introduced in Junos OS Release 12.3 for MX Series routers.

Description Configure the source mode for selecting a clock source as either a chassis clock or the best line clock source as output for the configured BITS interface.

Options **chassis**—Set the chassis clock for output.
line—Set the best line clock source for output.

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

Related Documentation

- [synchronization on page 434](#)

source interfaces

| | |
|---------------------------------|---|
| Syntax | <pre>source interfaces (external <i>interface-name</i>) hold-off-time <i>time</i>; priority <i>number</i>; quality-level (prc prs sec smc ssu-a ssu-b st2 st3 st3e st4 stu tnc); request (force-switch lockout); wait-to-restore <i>minutes</i>; }</pre> |
| Hierarchy Level | [edit chassis synchronization] |
| Release Information | Statement introduced in Junos OS Release 11.2R4 for MX Series routers. |
| Description | <p>Configure the clock source that is used by the clock selection process on an interface.</p> <ul style="list-style-type: none"> • (SCB only) Specify the primary clock source as the external-a interface and the secondary clock source as the external-b interface. The clock source is chosen using the clock selection process. • (SCBE only) Specify the external interface to select the external clock source. • (SCBE2 only) Specify the external-0/0 interface or the external-1/0 interface to select the external clock source. |
| Options | The remaining statements are explained separately. See CLI Explorer . |
| 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"> • synchronization (MX Series) on page 434 |

sparse-dlcis

| | |
|---------------------------------|---|
| Syntax | <code>sparse-dlcis;</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number];</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Support a full data-link connection identifier (DLCI) range (1 through 1022). This enables you to use circuit cross-connect (CCC) and translation cross-connect (TCC) features by means of Frame Relay on T1 and E1 interfaces. |
| 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">• <i>Configuring the Junos OS to Support the Sparse DLCI Mode on Channelized STM1 or Channelized DS3 PICs</i> |

speed

| | |
|----------------------------|--|
| Syntax | <code>speed (oc3-stm1 oc12-stm4 oc48-stm16 100G 10G 40G);</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number port port-number]</code> |
| Release Information | <p>Statement introduced in Junos OS Release 11.2.</p> <p>Support for MPC7E (Multi-Rate) introduced in Junos OS Release 15.1F4.</p> <p>Support for MX10003 MPC introduced in Junos OS Release 17.3R1.</p> <p>Support for MX204 routers introduced in Junos OS Release 17.4R1.</p> |
| Description | Configure the port speed on MX Series routers. This statement is supported only on MPC7E (Multi-Rate) MPC, SONET/SDH (Multi-Rate) MICs with SFP, Channelized SONET/SDH OC3/STM1 (Multi-Rate) MICs with SFP, ATM MICs, and MX204 routers. |
| Default | <code>oc3-stm1</code> |
| Options | <p><code>oc3-stm1</code>—Supported ports operate at OC3 or STM1 speed.</p> <p><code>oc12-stm4</code>—Supported ports operate at OC12 or STM4 speed.</p> <p><code>oc48-stm16</code>—Supported ports operate at OC48 or STM16 speed.</p> <p><code>100G</code>—Supported ports operate at 100-Gbps speed.</p> <p><code>10G</code>—Supported ports operate at 10-Gbps speed.</p> <p><code>40G</code>—Supported ports operate at 40-Gbps speed.</p> |



NOTE: You can configure the `oc12-stm4`, `oc3-stm1`, and `oc48-stm16` port speed options for SONET/SDH OC3/STM1 (Multi-Rate) MICs. However, for Channelized SONET/SDH OC3/STM1 (Multi-Rate) MICs with SFP and ATM MICs, you can configure only the `oc12-stm4` and `oc3-stm1` port speed options.

(MX Series with MPCs and ATM MICs with SFP) To configure up to OC12 CBR bandwidth speed per virtual circuit (VC) on an ATM MIC with SFP (MIC-3D-8OC3-2OC12-ATM), specify `oc12-stm4` as the speed for the specified port. You can configure the `oc12-stm4` port speed option only for ports 0 and 4 on an ATM MIC. If you configure the `oc12-stm4` port speed option for port 0, then ports 1, 2, and 3 are disabled. Similarly, if you configure the `oc12-stm4` port speed for port 4, then ports 5, 6, and 7 are disabled.

(MX Series with MPC7E-MRATE) To configure 100-Gbps, 10-Gbps, or 40-Gbps speed per port on an MPC7E (Multi-Rate) MPC, specify `100G`, `10G`, or `40G`, respectively, as the speed for the specified port. You can configure `10G` and `40G` port speed options

on all the six ports of PIC 0 and PIC 1 of an MPC7E-MRATE MPC. However, you can configure the **100G** port speed option only for ports 2 and 5 of PIC 0 and PIC 1 of an MPC7E-MRATE MPC.

(MX10003 routers with MX10003 MPC) To configure 100 Gbps, 10 Gbps, and 40 Gbps speed on all supported ports, specify 100G, 10G, or 40G, respectively, as the speed for the specified PIC. All the six ports of the fixed port PIC support 10-Gbps and 40-Gbps speeds. All the 12 ports of the Multi-rate MIC support 100-Gbps, 10-Gbps and 40-Gbps speeds. For more information see [“MX10003 MPC on MX10003 Router Overview” on page 52](#) and *Supported Active Physical Ports for Configuring Rate Selectability to Prevent Oversubscription on MX10003 MPC*.

(MX204 Routers) The MX204 has four rate-selectable ports (referred to a PIC 0 ports) that can be configured as 100-Gigabit Ethernet ports or 40-Gigabit Ethernet port, or each port can be configured as four 10-Gigabit Ethernet ports (by using a breakout cable). The MX204 also has eight 10-Gigabit Ethernet ports (referred to as PIC 1 ports). For more information, see [“MX204 Router Overview” on page 57](#) and *Supported Active Physical Rate-Selectable Ports to Prevent Oversubscription on MX204 Router*

| | |
|---------------------------------|---|
| 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">• <i>Configuring Port Speed on Multi-Rate MICs</i>• <i>Configuring Rate Selectability on MPC7E (Multi-Rate) to Enable Different Port Speeds</i>• <i>Configuring Rate Selectability on MX10003 MPC to Enable Different Port Speeds</i>• <i>Configuring Rate Selectability on MX204 to Enable Different Port Speeds</i>• speed (Gigabit Ethernet interface) on page 427 |
|------------------------------|---|

speed (Gigabit Ethernet interface)

| | |
|----------------------------|--|
| Syntax | <code>speed (1G 10G);</code> |
| Hierarchy Level | [edit interfaces <i>intf-name</i> together-options] |
| Release Information | Statement introduced in Junos OS Release 18.1R1 for MX10003 and MX204 routers. |
| Description | <p>Starting in Junos OS Release 18.1R1, on MX10003 and MX204 routers, the 10-Gbps port can operate in 1-Gbps mode also. On MX10003 and MX204 routers, when the port operates in 10-Gbps speed, you can change the operating speed to 1Gbps using the configuration speed 1G in this configuration statement. Once you commit this configuration, the operating speed of the 10-Gbps port changes to 1-Gbps speed.</p> <p>On fixed-port PIC and non-MACsec MIC of MX10003 router, you can configure one or all 10-Gbps port operating in 4X10-Gbps speed to operate in 1-Gbps speed.</p> <p>On MX204 routers, you can configure the 4X10-Gbps port on one of the fixed-port PICs to operate in 1-Gbps mode. And on the other fixed-port PIC, you can configure the 10-Gbps port to 1-Gbps speed.</p> <p>See <i>MX10003 MPC Rate-Selectability Overview</i> and <i>MX204 Router Rate-Selectability Overview</i> for more details.</p> <p>On MX10003 and MX204 routers, 1-Gbps speed is supported with speed 1g configuration. The 1-Gbps speed is only supported in non-autonegotiation mode. For optics other than SFP-T, in 1-Gbps mode, the peer interfaces must be configured to non-autonegotiation mode.</p> |



NOTE:

- On the MX10003 router, the MACsec MIC does not provide 1-Gbps speed. If you attempt to change the operating speed to 1-Gbps, syslog displays that this feature is not supported on the MACsec MIC.
- On MX10003 and MX204 routers, rate selectability at PIC level and port level does not support 1-Gbps speed.
- On MX10003 and MX204 routers, the interface name prefix must be xe.
- On MX10003 and MX204 routers, even after configuring 1-Gbps speed, the protocol continues to advertise the bandwidth as 10-Gigabit Ethernet.
- On MX10003 and MX204 routers, Link Aggregation Group (LAG) is supported on 10-Gbps speed only. It is not supported on 1-Gbps speed.

To view the speed configured for the interface, execute the *show interfaces extensive* command. The **Speed Configuration** output parameter in the command output indicates

the current operation speed of the interface. If the interface is configured with 1-Gbps speed, then **Speed Configuration** displays 1G; if the interface is configured with 10-Gbps speed, Speed Configuration displays AUTO.

Default 10G

Options 1G—Supported ports operate at 1-Gbps speed.

10G—Supported ports operate at 10-Gbps speed.

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

Related Documentation

- *Configuring Port Speed on Multi-Rate MICs*
- *MX10003 MPC Rate-Selectability Overview*
- *Configuring Rate Selectability on MX204 to Enable Different Port Speeds*
- *Configuring Rate Selectability on MX10003 MPC to Enable Different Port Speeds*

speed (24-port and 12-port 10 Gigabit Ethernet PIC)

Syntax speed 1G | 10G

Hierarchy Level [edit chassis fpc *slot-number* pic *pic-number*]
 [edit chassis fpc *slot-number* pic *pic-number* port *port-number*]
 [edit chassis lcc *number* fpc *slot-number* pic *pic-number* mixed-rate-mode] (Routing Matrix)

Release Information Statement introduced in Junos OS Release 13.3.
 Statement introduced in Junos OS Release 15.1 for the PTX Series.

Description Configure the port speed on the following interface modules:

- PF-24XGE-SFPP or the PF-12XGE-SFPP PIC on a T4000 standalone router or on an LCC in a TX Matrix Plus routing matrix with 3D SIBs



NOTE: To change the port speed from 10 Gbps to 1 Gbps on PF-24XGE-SFPP and PF-12XGE-SFPP PICs, SFP optics is required.

- P1-PTX-24-10GE-SFPP PIC on the PTX3000 router
- P1-PTX-24-10GE-SFPP PIC with the FPC2-PTX-P1A on the PTX5000 router

Dual-rate support for the P1-PTX-24-10GE-SFPP enables you to switch all port speeds to either 1 Gbps or 10 Gbps. The default is 10 Gbps. All ports are configured to the same speed; there is no mixed-rate-mode capability. Changing the port speed causes the PIC to reboot.

To return all ports to the 10-Gbps port speed, use the **delete chassis fpc *fpc-number* pic *pic-number* speed 1G** statement. To check the port speed, use the **show interfaces** command.



NOTE: For the 1-Gbps port speed on the P1-PTX-24-10GE-SFPP PIC, you can use either the SFP-1GE-SX or the SFP-1GE-LX transceiver.

Options 1 G—1 Gbps
 10 G—10 Gbps

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

- Related Documentation**
- *Modes of Operation of 10-Gigabit Ethernet PICs*
 - *Configuring Mixed-Rate Mode Operation*
 - [mixed-rate-mode on page 352](#)

stateful (MX Series)

Syntax

```
stateful {  
  interface interface-name {  
    multicast-mode  
      local-priority  
      transport 802.3 ( link-local ) ;  
      asymmetry number;  
  }  
}
```

Hierarchy Level [edit protocols ptp]

Release Information Statement introduced in Junos OS Release 17.1R1.

Description Configure the stateful port or bidirectional port with parameters. A stateful port is useful when you configure PTP over Ethernet for multicast mode of transmission of PTP traffic.

For PTP over Ethernet, you can configure a port to function as both a slave port and a master port. This type of port is called a dynamic port, a stateful port, or a bidirectional port. Such a dynamic port enables the transfer of frequency for synchronization services, in addition to time and phase alignment, when PTP functionality is not hop-by-hop and you have provisioned master and slave roles or interfaces.

Options The remaining statements are explained separately. See [CLI Explorer](#).

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

- Related Documentation**
- *Precision Time Protocol Overview*
 - *Guidelines for Configuring PTP over Ethernet*
 - *Configuring PTP Multicast Master and Slave Ports for Ethernet Encapsulation*
 - *Configuring PTP Dynamic Ports for Ethernet Encapsulation*

symmetric-hash

| | |
|---------------------------------|---|
| Syntax | <pre>symmetric-hash { complement; }</pre> |
| Hierarchy Level | [edit chassis fpc slot-number pic slot-number hash-key family inet], [edit chassis fpc slot-number pic slot-number hash-key family multiservice] |
| Release Information | Statement introduced in Junos OS Release 9.6. |
| Description | (MX Series 5G Universal Routing Platforms only) Configure the symmetric hash or symmetric hash complement at the PIC level for configuring symmetrical load balancing on an 802.3ad Link Aggregation Group. |
| Options | complement —Include the complement of the symmetric hash in the hash key. |
| 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">• <i>Configuring PIC-Level Symmetrical Hashing for Load Balancing on 802.3ad LAGs for MX Series Routers</i> |

synchronization (M Series and T Series)

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

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

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

Default: t1

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

Default: non-revertive

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

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

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

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

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

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

Related Documentation • *Configuring Junos OS to Support an External Clock Synchronization Interface for M Series, MX Series, and T Series Routers*

synchronization (MX Series)

```

Syntax synchronization {
  clock-mode (auto-select | free-run);
  esmc-transmit {
    interfaces (all | interface-name);
  }
  hold-interval {
    configuration-change seconds;
    restart seconds;
    switchover seconds;
  }
  interfaces {
    external | (external-0/0 | external-1/0) {
      e1-options {
        framing (g704 | g704-no-crc4);
        line-encoding (ami | hdb3);
        sabit number;
      }
      pulse-per-second-enable;
      signal-type (2048khz | e1 | t1);
      t1-options {
        framing (esf | sf);
        line-encoding (ami | b8zs);
      }
    }
    bits {
      e1-options {
        framing (g704 | g704-no-crc4);
        sabit number;
      }
    }
  }
}
max-transmit-quality-level quality-level
network-option (option-1 | option-2);
output {
  interfaces (external | (external-0/0 | external-1/0)) {
    holdover-mode-disable;
    minimum-quality (prc | prs | sec | smc | ssu-a | ssu-b | st2 | st3 | st3e | st4 | stu | tnc);
    source-mode (chassis | line);
    tx-dnu-to-line-source-enable;
    wander-filter-disable;
  }
}
port auxiliary client {
  time-of-day-format {
    ascii <string>;
  }
}
quality-mode-enable;
selection-mode (configured-quality | received-quality);
source {

```

```

interfaces (interface-name | (bits | external | (external-0/0 | external-1/0))) {
    priority number;
    quality-level (prc | prs | sec | smc | ssu-a | ssu-b | st2 | st3 | st3e | st4 | stu | tnc);
    request (force-switch | lockout);
}
}
switchover-mode (revertive | non-revertive);
}

```

Hierarchy Level [edit chassis]

Release Information Statement introduced in Junos OS Release 10.4.
Statement introduced in Junos OS Release 17.3R1 for MX10003 router.
Options **interfaces**, **output**, and **source interfaces external** introduced in Junos OS Release 12.3.

Description (MX5-T, MX10-T, MX40-T, MX80-T, MX240, MX480, MX960 , and MX10003 routers)
Configure Synchronous Ethernet parameters. For configuration details, see *Configuring Clock Synchronization Interface on MX Series Routers*.

(MX240, MX480, MX960, and MX2020 routers with SCBE or SCBE2) Configure centralized clocking parameters.

- Starting in Junos 12.2, configure distribution of the selected chassis clock source to downstream network elements through supported line interfaces.
- Starting in Junos 12.3, configure an external building-integrated timing supply (BITS) timing source. You can also configure the selected chassis clock, or an incoming Synchronous Ethernet or PTP line source for transmission out the external interface.
- Starting in Junos 16.1 for the MX104 routers, SSM is supported on the BITS interface and can be configured at the [edit chassis **synchronization** interfaces bits e1-options] hierarchy level.

For configuration details, see *Example: Configuring Centralized Clocking on the Enhanced MX Switch Control Board*.



NOTE:

- Unified ISSU is not supported when clock synchronization is configured for Synchronous Ethernet.
- The commit operation fails if you configure bits as source, without first configuring bits interface.

Options **clock-mode (auto-select | free-run)**—Specify the mode of operation to select the clock source either from a free-run local oscillator or from an external qualified clock. On MX240, MX480, and MX960 routers with enhanced MPCs, the free-run clock is provided by a local oscillator. On other MX Series routers, the free-run clock is provided by the SCB. The default setting is auto-select mode.

esmc-transmit interfaces (all | interface-name)—Enable Ethernet Synchronization Message Channel (ESMC) packet transmission.

hold-interval (configuration-change | restart | switchover) seconds—Specify the chassis synchronization hold interval type and clock selection wait time:

- **configuration-change**—Clock select wait time after change in configuration. The range is 15 through 60 seconds.
- **restart**—Clock select wait time after reboot. The range is 60 through 180 seconds. The default is 120 seconds.
- **switchover**—Switchover wait time after clock recovery. The range is 30 to 60 seconds. The default is 30 seconds.

interfaces (external | (external-0/0 | external-1/0))—Configure the external interface for operating with a connected external device. This interface can be configured as a clock source, which then becomes a candidate for selection as the chassis clock source by the clock source selection algorithm.

- **signal-type (1mhz | 5mhz | 10mhz | 2048khz | e1 | t1)**—Specify the external interface signal type:
 - a. **1mhz**—Set the signal with a clock frequency of 1 MHz.
 - b. **5mhz**—Set the signal with a clock frequency of 5 MHz.
 - c. **10mhz**—Set the signal with a clock frequency of 10 MHz.
 - d. **2048khz**—Set the signal with a clock frequency of 2048 kHz.
 - e. **e1**—Set the signal as an E1-coded 2048 kHz signal on a 120-ohm balanced line.
 - f. **t1**—Set the signal as a T1-coded 1.544 MHz signal on a 100-ohm balanced line.
- **e1-options**—Specify the E1 options:
 - a. **framing (g704 | g704-no-crc4)**—Specify the framing format:
 - **g704**—G.704 framing format for E1 interfaces
 - **g704-no-crc4**—G.704 framing with no CRC4 for E1 interfaces
 - b. **line-encoding (ami | hdb3)**—Specify the line encoding:
 - **ami**—Alternate mark inversion (AMI)
 - **hdb3**—High-density bipolar 3 code (HDB3)
 - c. **sabit number**—Specify the San synchronization status bit used for exchanging SSN quality. The value can be 4, 5, 6, 7, or 8. The default is 4.

- **t1-options**—Specify the T1 options:
 - a. **framing (esf | sf)**—Specify the framing format:
 - **esf**—Extended superframe (ESF)
 - **sf**—Superframe (SF)
 - b. **line-encoding (ami | b8zs)**—Specify the line encoding:
 - **ami**— Alternate mark inversion (AMI)
 - **b8zs**—8-bit zero suppression, bipolar with 8-zero substitution (B8ZS)
- max-transmit-quality-level**—Specify the threshold quality level for the entire system. If the received quality level is below the threshold quality level then the router will send out a received quality level of SEC. The available quality levels are **PRC**, **PRS**, **SEC**, **SMC**, **SSU-A** **SSU-B** **ST2**, **ST3**, **ST3E**, **ST4**, **STU**, and **TNC**.
- network-option (option-1 | option-2)**—Specify the synchronization networking:
- **option-1**— EEC-1 maps to G.813 option 1 clock
 - **option-2**—EEC-2 maps to G.812 type IV clock

output interfaces external—(SCBE only) Specify the properties of the external output interface:

output interfaces (external-0/0 | external-1/0)—(SCBE2 only) Specify the properties of the external output interface:

- **holdover-mode-disable**—Disable holdover.
- **minimum-quality (prc | prs | sec | smc | ssu-a | ssu-b | st2 | st3 | st3e | st4 | stu | tnc)**—Specify the minimum quality level threshold for selection of this clock (see [Table 27 on page 347](#)). If the quality level of the output clock source drops below the configured minimum quality level threshold, the external output clock is squelched.

Table 30: Quality Levels

| Quality Level | Description |
|---------------|--|
| prc | Timing quality of a primary reference clock (option-1 only). |
| prs | Clock traceable to a primary reference source (option-2 only). |
| sec | Timing quality of an SDH equipment clock (option-1 only). |
| smc | Clock traceable to a self-timed SONET (option-2 only). |
| ssu-a | Timing quality of a type I or IV slave clock (option-1 only). |
| ssu-b | Timing quality of a type VI slave clock (option-1 only). |
| st2 | Clock traceable to Stratum 2 (option-2 only). |
| st3 | Clock traceable to Stratum 3 (option-2 only). |
| st3e | Clock traceable to Stratum 3E (option-2 only). |
| st4 | Clock traceable to Stratum 4 free-run (option-2 only). |
| stu | Clock traceable to an unknown quality (option-2 only). |
| tnc | Clock traceable to a transit node clock (option-2 only). |

- **source-mode (chassis | line)**—Specify source mode for selecting source to output:
 - a. **chassis**—Chassis clock for output
 - b. **line**—Best line clock source for output
- **tx-dnu-to-line-source-enable**—Set Tx quality level to DNU/DUS on line source interface that has been selected as the external output source.
- **wander-filter-disable**—Disable wander filtering.

quality-mode-enable—Specify the clock selection, quality level, and priority setting. The quality level parameter for a Synchronous Ethernet interface is optional when quality mode is enabled and the selection mode is set to **received-quality**. The default quality level for a Synchronous Ethernet interface is based on the value of **network-option**: **option-1** selects **SEC** and **option-2** selects **ST3**. Table 29 on page 396 shows whether SSM quality level is supported for a given external interface signal type and framing. The default setting is disabled.

Table 31: SSM-Quality Level Support by Signal Type and Framing

| Signal Type | Framing | SSM Quality Level Supported |
|-------------|----------------|-----------------------------|
| E1 | G.704 | yes |
| E1 | G.704 no CRC4 | no |
| T1 | ESF | yes |
| T1 | SF | no |
| 2048 KHz | Not applicable | no |

selection-mode (configured-quality | received-quality)—Specify whether the clock source selection should use the configured or received ESMC or SSM quality level for a qualifying interface. In both selection modes, the interface qualifies for clock source selection only when the received ESMC or SSM quality level on the interface is equal to or greater than the configured ESMC or SSM quality level for the interface.



NOTE: For the **selection-mode** statement configuration to take effect, you must set the **quality-mode-enable** statement at the [edit chassis synchronization] hierarchy level.

- a. **configured-quality**—The clock source selection algorithm uses the ESMC or SSM quality level configured for a qualifying interface.
- b. **received-quality**—The clock source selection algorithm uses the ESMC or SSM quality level received on the qualifying interface.

source (external-a | external-b | interfaces (*interface-name*) | external | (external-0/0 | external-1/0))—Specify clock sources.

(SCB only) The primary clock source is external-a interface, the secondary clock source is external-b interface. The clock source is chosen using the clock selection process.

(SCBE only) Specify the external interface to select the external clock source.

(SCBE2 only) Specify the external-0/0 interface or external-1/0 interface to select the external clock source.

- **priority *number***—Specify a priority level from 1 to 5. When not specified, **external-a** has higher default priority than external-b interface, and external-b interface has higher default priority than other Gigabit Ethernet or 10-Gigabit Ethernet clock sources, which have the lowest default priority. Any priority you configure is higher than any default priority.
- **quality-level (prc | prs | sec | smc | ssu-a | ssu-b | st2 | st3 | st3e | st4 | stu | tnc)**—Specify the **quality-level** option based on the configured **network-option**. For quality level details, see [Table 27 on page 347](#).



NOTE: Starting with Junos OS Release 12.2R1, the **quality-level** parameter for a Synchronous Ethernet interface is optional when quality mode is enabled and the selection mode is set to received quality. The default quality level for a Synchronous Ethernet interface is SEC for the option-1 network type and ST3 for the option-2 network type.

Both option I and option II SSM quality levels are supported:

- For option-1, quality level must be configured for external clocks (**external-a** or **external-b**) whether or not quality level is enabled.
 - For option-2, the default quality level for external clocks is QL_STU whether or not quality level is enabled.
 - Quality level is set to DNU for network-option 1 and set to DUS for network-option 2, if quality-level is not configured and no ESMC messages are received.
 - On the selected active source (primary or secondary, whichever is active), even if ESMC transmit is not enabled, a DNU ESMC will be sent out if network-option is 1, and DUS ESMC will be sent out if network-option is 2. This is applicable only for sources of Ethernet interface type to avoid source looping.
- **request force-switch**—Force a switch to this source if the source is enabled and not locked out. You can configure only one source to be force-switched.
 - **request lockout**—You can configure lockout for any source. When configured, this source is not considered by the clock selection process.

switchover-mode (revertive | non-revertive)—Specify revertive or non-revertive switchover mode:

- In revertive mode (the default), the system switches from a lower to a higher quality clock source whenever the higher quality clock source becomes available.
- In non-revertive mode, the system continues to use the current clock source as long as it is valid.

port auxiliary time-of-day-format ascii *string*—Specify time of day (TOD) format as a string of ASCII characters.

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

Related Documentation

- *Synchronous Ethernet Overview*
- [show chassis synchronization \(MX Series Routers\) on page 1552](#)
- *Configuring Clock Synchronization Interface on MX Series Routers*
- *Example: Configuring Framing Mode for Synchronous Ethernet on MX Series Routers with 10-Gigabit Ethernet MIC*
- *Example: Configuring Centralized Clocking on the Enhanced MX Switch Control Board*
- *Example: Configuring Centralized Clocking on an MX2020*
- [request chassis synchronization mode on page 547](#)
- *Clock Sources for PTX Series Packet Transport Routers*

synchronization (PTX Series)

```
Syntax synchronization {
  clock-mode (auto-select | free-run);
  esmc-transmit {
    interfaces (all | interface-name);
  }
  global-wait-to-restore minutes;
  hold-interval {
    configuration-change seconds;
    restart seconds;
    switchover seconds;
  }
  interfaces (bits-a | bits-b | gps-0 | gps-1) (pulse-per-second-enable | signal-type
    (5mhz|10mhz|e1|t1));
  max-transmit-quality-level (prc | prs | sec | ssu-a | ssu-b | st2 | st3e | stu | tnc);
  network-option (option-1 | option-2);
  primary (fpc-slot-number | gps-0 | gps-1 | bits-a | bits-b);
  quality-mode-enable;
  secondary (fpc-slot-number | gps-0 | gps-1 | bits-a | bits-b);
  selection-mode (configured-quality | received-quality);
  source (bits-a | bits-b | gps-0 | gps-1) {
    priority number;
    quality-level (prc | prs | sec | smc | ssu-a | ssu-b | st2 | st3 | st3e | st4 | stu | tnc);
    request (force-switch | lockout);
  }
  switchover-mode (revertive | non-revertive);
}
```

Hierarchy Level [edit chassis]

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

Description Configure Synchronous Ethernet parameters.

Options The remaining statements are explained separately. See [CLI Explorer](#).

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

Related Documentation

- *Synchronous Ethernet Overview*
- *Synchronizing Internal Stratum 3 Clock to External Clock Sources on PTX Series Routers*
- [request chassis synchronization switch on page 549](#)
- *Clock Sources for PTX Series Packet Transport Routers*
- *Understanding Clock Synchronization*

synchronous-ethernet-mapping

| | |
|---------------------------------|--|
| Syntax | <pre>synchronous-ethernet-mapping { clock-source ip-address { interface interface1-name; interface interface2-name; } }</pre> |
| Hierarchy Level | [edit protocols ptp slave hybrid] |
| Release Information | Statement introduced in Junos OS Release 12.2R2. |
| Description | <p>Configure the Synchronous Ethernet mapping for hybrid mode.</p> <p>The remaining statements are explained separately. See CLI Explorer.</p> |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Example: Configuring Hybrid Mode and ESMC Quality Level Mapping</i> • <i>Understanding Hybrid Mode</i> • <i>Precision Time Protocol Overview</i> • <i>Synchronous Ethernet Overview</i> |

system-priority

| | |
|---------------------------------|--|
| Syntax | <code>system-priority <i>priority</i>;</code> |
| Hierarchy Level | [edit chassis aggregated-devices ethernet lacp] |
| Release Information | Statement introduced in Junos OS Release 9.3. Statement introduced in Junos OS Release 11.4 for EX Series switches. |
| Description | <p>Define LACP system priority for aggregated Ethernet interfaces at the global (chassis) level.</p> <p>The device with the lower system priority value determines which links between LACP partner devices are active and which are in standby for each LACP group. The device on the controlling end of the link uses port priorities to determine which ports are bundled into the aggregated bundle and which ports are put in standby mode. Port priorities on the other device (the noncontrolling end of the link) are ignored. In priority comparisons, numerically lower values have higher priority. Therefore, the system with the numerically lower value (higher priority value) for LACP system priority becomes the controlling system. If both devices have the same LACP system priority (for example, they are both configured with the default setting of 127), the device MAC address determines which switch is in control.</p> |
| Options | <p><i>priority</i>—Priority for the aggregated Ethernet system. A smaller value indicates a higher priority.</p> <p>Range: 0 through 65535</p> <p>Default: 127</p> |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Junos OS for Supporting Aggregated Devices</i>• <i>Configuring LACP Link Protection of Aggregated Ethernet Interfaces for Switches</i> |


t1

| | |
|---------------------------------|--|
| Syntax | <code>t1 link-number { channel-group channel-number timeslots slot-number; }</code> |
| Hierarchy Level | <code>[edit chassis fpc slot-number pic pic-number ct3 port port-number];</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure channelized T1 port and channel specifications. |
| Options | <p><i>link-number</i>—T1 link.</p> <p>Range: 0 through 27 for DS0 naming</p> <p>The remaining statements are explained separately.</p> |
| Required Privilege Level | <p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots</i> |

t1-options

| | |
|---------------------------------|--|
| Syntax | <pre>t1-options { framing (esf sf); line-encoding (ami b8zs); }</pre> |
| Hierarchy Level | <pre>[edit chassis synchronization interfaces external] [edit chassis synchronization interfaces (external-0/0 external-1/0) e1-options]</pre> |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the T1 interface options. |
| Options | The remaining statements are explained separately. See CLI Explorer . |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• synchronization on page 434 |

threshold

| | |
|---------------------------------|--|
| Syntax | <code>threshold <i>threshold-value</i>;</code> |
| Hierarchy Level | <p>[edit chassis <code>fpc slot-number error fatal</code>]</p> <p>[edit chassis <code>fpc slot-number error major</code>]</p> <p>[edit chassis <code>fpc slot-number error minor</code>]</p> <p>[edit chassis <code>error fatal</code>]</p> <p>[edit chassis <code>error major</code>]</p> <p>[edit chassis <code>error minor</code>]</p> |
| Release Information | <p>Statement introduced for PTX Series routers in Junos OS Release 13.3.</p> <p>Statement introduced for MX240, MX480 MX960, and MX2020 routers in Junos OS Release 14.2.</p> |
| Description | <p>Configure the threshold value at which to take action. If the severity level of the error is fatal, the action is carried out only once when the total number of errors crosses the threshold value. If the severity level of the error is major, the action is carried out once after the occurrence crosses the threshold. If the severity level is minor, the action is carried out as many times as the value specified by the threshold. For example, when the severity level is minor, and you have configured the threshold value as 10, the action is carried out after the tenth occurrence.</p> |
| | <p> NOTE: You can set the threshold value to 0 for errors with severity level as minor. This implies that no action is taken for that error. You cannot set the threshold value to 0 for errors with severity level as major or fatal.</p> |
| Default | By default, the error count for fatal and major actions is 1. The default error count for minor actions is 10. |
| Options | <p><i>number</i>—Specify the threshold of error counts at which to take action.</p> <p>Range: 0 through 4,294,967,295</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**
- [Fabric Resiliency and Degradation on page 96](#)
 - [show chassis fpc errors on page 1363](#)
 - [Configuring FPC Error Levels and Actions on page 155](#)

traffic-manager

- List of Syntax**
- Syntax (MX Series, PTX Series) Configure Queue Monitoring on page 449
 - Syntax (MX Series, T Series) on page 449
 - Syntax (M Series) on page 449
 - Syntax (QFX Series) on page 450
 - Syntax (vSRX) on page 450

Syntax (MX Series, PTX Series) Configure Queue Monitoring

```
traffic-manager {
  egress-shaping-overhead number;
  ingress-shaping-overhead number;
  mode {
    egress-only;
    ingress-and-egress;
    session-shaping;
  }
  enhanced-priority-mode;
  no-enhanced-priority-mode;
  packet-timestamp {
    enable;
  }
  queue-threshold {
    fabric-queue {
      priority high/low {
        threshold threshold-percentage;
      }
    }
    wan-queue {
      priority high/medium-high/medium-low/low {
        threshold threshold-percentage;
      }
    }
  }
}
```

Syntax (MX Series, T Series)

```
traffic-manager {
  egress-shaping-overhead number;
  ingress-shaping-overhead number;
  mode {
    egress-only;
    ingress-and-egress;
  }
}
```

Syntax (M Series)

```
traffic-manager {
  egress-shaping-overhead number;
  ingress-shaping-overhead number;
  mode {
    egress-only;
    ingress-and-egress;
  }
}
```

```

    session-shaping;
  }
}

```

Syntax (QFX Series)

```

traffic-manager {
  buffer-monitor-enable;
  packet-timestamp {
    enable;
  }
  queue-threshold {
    fabric-queue {
      priority high/low {
        threshold threshold-percentage;
      }
    }
    wan-queue {
      priority high/medium-high/medium-low/low {
        threshold threshold-percentage;
      }
    }
  }
}

```

Syntax (vSRX)

```

traffic-manager {
  egress-shaping-overhead number;
}

```

Hierarchy Level

[edit chassis fpc *slot-number*],
 [edit chassis fpc *slot-number* pic *pic-number*],
 [edit chassis lcc *number* fpc *slot-number* pic *pic-number*] (Routing Matrix)

Release Information

Statement introduced in Junos OS Release 8.3.

Description

Enable CoS queuing, scheduling, and shaping on an L2TP session.



NOTE: Committing changes to `traffic-manager` automatically restarts any necessary components (PICs, DPCs, or FPCs).

Options **buffer-monitor-enable**—QFX5000 Series only. Enable port buffer monitoring. Buffer utilization data is collected in one-second intervals and compared with the data from the previous interval. The larger value is kept to keep track of peak buffer occupancy for each queue or priority group.

queue-threshold—Enable monitoring of Fabric and WAN queues. When the **fabric-queue** statement is configured, an SNMP trap is generated whenever the fabric power utilization exceeds the configured threshold value.

When **wan-queue** is configured, an SNMP trap is generated whenever the WAN queue depth exceeds the configured threshold value.

egress-shaping-overhead number—When traffic management (queueing and scheduling) is configured on the egress side, the number of CoS shaping overhead bytes to add to the packets on the egress interface.

Replace **number** with a value from -63 through 192 bytes.

For vSRX, replace **number** with a value from -62 through 192 bytes.



NOTE: The L2 headers (DA/SA + VLAN tags) are automatically a part of the shaping calculation.

ingress-shaping-overhead number—When L2TP session shaping is configured, the number of CoS shaping overhead bytes to add to the packets on the ingress side of the L2TP tunnel to determine the shaped session packet length.

When session shaping is not configured and traffic management (queueing and scheduling) is configured on the ingress side, the number of CoS shaping overhead bytes to add to the packets on the ingress interface.

Replace **number** with a value from -63 through 192 bytes.

mode—Configure CoS traffic manager mode of operation. This option has the following suboptions:

- **egress-only**—Enable CoS queueing and scheduling on the egress side for the PIC that houses the interface. This is the default mode for an Enhanced Queueing (EQ) DPC on MX Series routers.



NOTE: If ingress packet drops are observed at a high rate for an IQ2 or IQ2E PIC, configure the **traffic-manager** statement to work in the **egress-only** mode.

- **ingress-and-egress**—Enable CoS queueing and scheduling on both the egress and ingress sides for the PIC. This is the default mode for IQ2 and IQ2E PICs on M Series and T Series routers.

**NOTE:**

- For EQ DPCs, you must configure the **traffic-manager** statement with **ingress-and-egress** mode to enable ingress CoS on the EQ DPC.
- EQ DPCs have 250 ms of buffering, with only egress queueing (default mode). When **ingress-and-egress** is configured, the buffer is partitioned as 50 ms for the ingress direction and 200 ms for the egress direction.

- **session-shaping**—(M Series routers only) Configure the **IQ2 PIC** mode for session-aware traffic shaping to enable L2TP session shaping.

enhanced-priority-mode—Enable the enhanced priority mode. When you enable the enhanced priority mode, the scheduler supports four additional per-priority shaping rates and two additional excess priorities at the interface and interface set level. The four additional per-priority shaping rates are: Guaranteed Strict-high, Guaranteed Medium-low, Excess medium-high, and Excess medium-low. The two additional excess priorities are: Excess-rate Medium-high and Excess-rate Medium-low. This is the default mode for PTX Series routers.

no-enhanced-priority-mode—Disable the enhanced priority mode. This is the default mode for MX Series routers.



NOTE: The line card reboots when you enable or disable the enhanced priority mode feature.

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

Related Documentation

- *Configuring CoS for L2TP Tunnels on ATM Interfaces*
- *Enabling a Timestamp for Ingress and Egress Queue Packets*
- *show interfaces queue*

transport-type

| | |
|---------------------------------|--|
| Syntax | <code>transport-type type;</code> |
| Hierarchy Level | <code>[edit services hosted-services server-profile <i>server-profile-name</i>]</code> |
| Release Information | Statement introduced in Junos OS Release 13.2. |
| Description | Configure the transport type. |
| Options | <i>type</i> —Transport type. Range: GRE, TCP, or UDP |
| 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">• <i>Configuring Active Flow Monitoring on PTX Series Packet Transport Routers</i> |

tunnel-services (Chassis)

Syntax

```
tunnel-services {
  bandwidth bandwidth-value;
  tunnel-only;
}
```

Hierarchy Level [edit chassis fpc slot-number pic number]

Release Information Statement introduced in Junos OS Release 8.2.
Statement introduced in Junos OS Release 12.3X54 for ACX Series routers.

Description For MX Series 5G Universal Routing Platforms, configure the amount of bandwidth for tunnel services.

For ACX Series routers, configure the amount of bandwidth for tunnel services. Only bandwidths of 1 Gbps and 10 Gbps are supported for ACX routers.

For M7i, M10i, M120, M320, T Series and TX Matrix routers with IQ2 PICs and IQ2E PICs, configure support for per unit scheduling for GRE tunnels. You can specify the IQ2 and IQ2E PICs to work exclusively in tunnel mode or as a regular PIC. The default setting uses IQ2 and IQ2E PICs as a regular PIC. If you do not configure the **tunnel-only** option, the IQ2 and IQ2E PICs operate as regular PICs. For M7i, M10i, M120, M320, T Series and TX Matrix routers with IQ2 PICs and IQ2E PICs, you can use the **tunnel-only** option to specify that an IQ2 or IQ2E PIC work in tunnel mode only.



NOTE: Bandwidth rates of 20 gigabits per second and 40 gigabits per second require use of an MX Series router with the 100-Gigabit Ethernet Modular Port Concentrator (MPC) and the 100-Gigabit CFP MIC.



NOTE: On MX80 routers and MX Series routers with Trio-based FPCs, when ingress queuing is enabled for a PIC, tunnel services and inline services are not supported on the same PIC.

Options **tunnel-only** (Optional)—For M7i, M10i, M120, M320, T Series and TX Matrix routers with IQ2 PICs and IQ2E PICs, specify that an IQ2 or IQ2E PIC work in tunnel mode only.


The remaining statements are explained separately. Search for a statement in [CLI Explorer](#) or click a linked statement in the Syntax section for details.

| | |
|---------------------------------|---|
| 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"> • <i>Example: Configuring Tunnel Interfaces on a Gigabit Ethernet 40-Port DPC</i> • <i>Example: Configuring Tunnel Interfaces on a 10-Gigabit Ethernet 4-Port DPC</i> • <i>Example: Configuring Tunnel Interfaces on the MPC3E</i> • bandwidth (Tunnel Services) on page 259 |

tx-dnu-to-line-source-enable

| | |
|---------------------------------|---|
| Syntax | tx-dnu-to-line-source-enable; |
| Hierarchy Level | [edit chassis synchronization output interfaces external] [edit chassis synchronization output interfaces (external-0/0 external-1/0)] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Configure the transmitting quality level to DNU or DUS on the line source interface that has been selected as the external output source. |
| 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"> • synchronization on page 434 |


ucode-imem-remap

| | |
|--------------------------|---|
| Syntax | ucode-imem-remap; |
| Hierarchy Level | [edit chassis feb slot <i>number</i>] |
| Release Information | Statement introduced in Junos OS Release 10.4R2. |
| Description | <p>M120 routers with a single type-1 FPC mapped to an FEB support a microcode remap feature to resolve microcode overflow resulting in bad PIC combinations.</p> <p>You can enable the microcode remap by using the ucode-imem-remap statement at the [edit chassis feb slot <i>number</i>] hierarchy level. The default microcode map will continue to be available if the ucode-imem-remap statement is not configured.</p> <div><div></div><div><p>NOTE: On M120 routers, the FEB is automatically restarted once the ucode-imem-remap statement is configured and committed.</p></div></div> |
| Required Privilege Level | <p>interfaces—To view this statement in the configuration.</p> <p>interfaces-control—To add this statement to the configuration.</p> |

unicast-mode (slave)

| | |
|---------------------------------|--|
| Syntax | <pre> unicast-mode { clock-source <i>ip-address</i> { local-ip-address <i>local-ip-address</i>; asymmetry <i>number</i>; } transport ipv4; clock-ipv6-source (slave) <i>master-ipv6-address</i> { local-ip-address <i>local-ip-address</i>; } transport ipv6; } </pre> |
| Hierarchy Level | [edit protocols ptp slave interface <i>interface-name</i>] |
| Release Information | Statement introduced in Junos OS Release 12.2. |
| Description | <p>Configure the slave in unicast mode. You can set this option when PTP unicast mode of messaging is needed.</p> <p>The remaining statements are explained separately. See CLI Explorer.</p> |
| Required Privilege Level | <p>routing—To view this statement in the configuration.</p> <p>routing-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Precision Time Protocol</i> • <i>Example: Configuring Precision Time Protocol</i> • <i>Precision Time Protocol Overview</i> • <i>IEEE 1588v2 Precision Timing Protocol (PTP)</i> |

unicast-negotiation

| | |
|---|---|
| Syntax | unicast-negotiation; |
| Hierarchy Level | [edit protocols ptp] |
| Release Information | Statement introduced in Junos OS Release 12.2. Statement introduced in Junos OS Release 17.3 for the QFX Series. |
| Description | Configure unicast negotiation. Unicast negotiation is a method by which the announce, synchronization, and delay response packet rates are negotiated between the master and the slave before a PTP session is established. |
| <div> NOTE: When unicast negotiation is enabled, you cannot commit any packet rate–related configuration.</div> | |
| 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">• <i>Configuring Precision Time Protocol</i>• <i>Example: Configuring Precision Time Protocol</i>• <i>Precision Time Protocol Overview</i>• <i>IEEE 1588v2 Precision Timing Protocol (PTP)</i> |

upgrade-mode

| | |
|---------------------------------|--|
| Syntax | <code>upgrade-mode (3d-fabric default t4000);</code> |
| Hierarchy Level | <code>[edit chassis fabric],</code> <code>[edit chassis member <i>name</i> fabric]</code> |
| Release Information | Statement introduced in Junos OS Release 7.5. Statement introduced in Junos OS Release 15.1F3 for PTX Series Routers with third-generation FPCs. |
| Description | Configures upgrade mode for SIBs and forces them to operate in the same mode until the upgrade is complete. Upgrade mode is used so that two different types of SIBs can be installed in an operational router or routing matrix. After you upgrade the SIBs delete the upgrade-mode statement from the configuration. See the hardware installation guide for your router for more information about upgrading SIBs in an operational router or routing matrix. |
| Options | <p>3d-fabric—Enables the TX Matrix Plus router to upgrade to a TX Matrix Plus router with 3D SIBs. On the SFC, enables setting proper support for mixed SIBs (TXP-F13 SIB and TXP-F13-3D SIB). On the T640 or T1600 or T4000 routers in a routing matrix enables support for mixed SIBs (TXP-T1600 SIB and TXP-3D-LCC SIBs on the T1600 router and SIB-I-T4000 and TXP-3D-LCC SIBs on the T4000 router).</p> <p>default—Enables support for mixed SIBs when upgrading SIBs in the PTX3000 and PTX5000 routers.</p> <p>t4000—Enables support for mixed SIBs when upgrading to SIB-I-T4000 SIBs in a T640 or T1600.</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>TX Matrix Router and T640 Router Configuration Overview</i> • <i>Configuring Junos OS to Upgrade a T4000 Router to LCC 0 of a TX Matrix Plus Router with 3D SIBs</i> • <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC 0 of a TX Matrix Plus Router with 3D SIBs</i> • <i>Upgrading an Operational Standalone Router and Integrating It into a TX Matrix Plus Routing Matrix with 3D SIBs</i> • <i>Upgrading to SIB3-SFF-PTX SIBs in an Operational PTX3000</i> • <i>Upgrading the FPCs in an Operational PTX5000</i> |


vpn-label

| | |
|---------------------------------|--|
| Syntax | vpn-label; |
| Hierarchy Level | [edit chassis memory-enhanced] |
| Release Information | Statement added in Junos OS Release 10.4. |
| Description | Allocate more jtree memory for Layer 3 VPN labels. |
| 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">• <i>Configuring the Junos OS to Allocate More Memory for Routing Tables, Firewall Filters, and Layer 3 VPN Labels</i> |


vrf-mtu-check

| | |
|---------------------------------|--|
| Syntax | vrf-mtu-check; |
| Hierarchy Level | [edit chassis] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 11.1 for EX Series switches. |
| Description | On M Series routers (except the M120 and M320 router) and on EX Series 8200 switches, configure path maximum transmission unit (MTU) checks on the outgoing interface for unicast traffic routed on a virtual private network (VPN) routing and forwarding (VRF) instance. |
| Default | Disabled. |
| Required Privilege Level | interface—To view this statement in the configuration. interface-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Path MTU Checks for VPN Routing Instances</i>• <i>Configuring the Junos OS to Enable MTU Path Check for a Routing Instance on M Series Routers</i> |

vtmapping

| | |
|---------------------------------|--|
| Syntax | <code>vtmapping (itu-t klm);</code> |
| Hierarchy Level | <code>[edit chassis fpc <i>number</i> pic <i>number</i>],</code> <code>[edit interfaces <i>interface-name</i> sonet-options]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | <p>For the Channelized STM1 IQ PIC or Channelized STM1 PIC, configure virtual tributary mapping.</p> <p>For the Channelized STM1 PIC, you configure virtual tributary mapping at the <code>[edit chassis fpc <i>number</i> pic <i>number</i>]</code> hierarchy level.</p> |
| | <div>  <p>NOTE: The <code>vtmapping</code> statement is not supported for <code>cau4</code> interfaces on the Channelized OC3/STM1 (Multi-Rate) Circuit Emulation MIC with SFP (H).</p> </div> |
| Options | <p><code>itu-t</code>—International Telephony Union standard.</p> <p><code>klm</code>—KLM standard.</p> <p>Default: <code>klm</code></p> |
| Required Privilege Level | <p><code>interface</code>—To view this statement in the configuration.</p> <p><code>interface-control</code>—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> <i>Configuring Virtual Tributary Mapping of Channelized STM1 Interfaces</i> <i>Configuring the Junos OS to Support Channelized STM1 Interface Virtual Tributary Mapping</i> |

wait-to-restore

| | |
|---------------------------------|--|
| Syntax | <code>wait-to-restore <i>minutes</i>;</code> |
| Hierarchy Level | <code>[edit chassis source interfaces (external-a external-b interface <i>interface-name</i>)]</code> <code>[edit chassis source interfaces (external interface <i>interface-name</i>)]</code> <code>[edit chassis source interfaces (external-0/0 external-1/0 interface <i>interface-name</i>)]</code> |
| Release Information | Statement introduced in Junos OS Release 14.2 for MX Series routers. |
| Description | <p>Configure the time in minutes for each port to be up before opening the Ethernet Synchronization Message Channel (ESMC) for messages. When a port's signal transitions out of the signal fail state, it must be fault-free for the wait-to-restore time before it is again considered by the clock selection process.</p> |
| | <p> NOTE: When you perform GRES on MX Series routers, you must execute the <code>clear synchronous-ethernet wait-to-restore operational mode</code> command on the new master Routing Engine to clear the wait-to-restore timer on it. This is because the <code>clear synchronous-ethernet wait-to-restore operational mode</code> command clears the wait-to-restore timer only on the local Routing Engine.</p> |
| Options | <p><i>minutes</i>—Set the time for the port signal to be up before the port is opened to receive and transmit ESMC messages.</p> <p>Range: 0 through 12 minutes</p> <p>Default: 5 minutes</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"> • synchronization (MX Series) on page 434 • synchronization (PTX Series) on page 442 • global-wait-to-restore on page 317 |

wander-filter-disable

| | |
|---------------------------------|---|
| Syntax | wander-filter-disable; |
| Hierarchy Level | [edit chassis synchronization output interfaces external] [edit chassis synchronization output interfaces (external-0/0 external-1/0)] |
| Release Information | Statement introduced in Junos OS Release 12.3 for MX Series routers. |
| Description | Disable the wander filter on the output interface. |
| 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">• synchronization on page 434 |

CHAPTER 11

Administrative Commands

- clear chassis alarms fabric degraded
- clear chassis display message
- clear chassis fpc errors
- clear synchronous-ethernet esmc statistics
- clear synchronous-ethernet wait-to-restore
- request chassis afeb
- request chassis cb
- request chassis ccg
- request chassis cfeb
- request chassis cip
- request chassis clock master switch
- request chassis fabric guided-cabling disable
- request chassis fabric guided-cabling enable
- request chassis fabric plane
- request chassis fabric pfe
- request chassis feb
- request chassis fpc
- request chassis fpm resync
- request chassis lcc
- request chassis mcs
- request chassis mic
- request chassis optics
- request chassis pcg
- request chassis pic
- request chassis port-led
- request chassis redundancy feb slot
- request chassis routing-engine master
- request chassis scg

- request chassis sfb
- request chassis sfm master switch
- request chassis sfm
- request chassis sib
- request chassis sib f13 train-link-receive slot
- request chassis sib f13 train-link-transmit slot
- request chassis sib optics lcc
- request chassis sib optics sfc
- request chassis sib train-link-receive slot
- request chassis sib train-link-transmit slot
- request chassis spmb restart
- request chassis synchronization mode
- request chassis synchronization switch
- set chassis display message

clear chassis alarms fabric degraded

| | |
|--|--|
| Syntax (TX Matrix Plus Router with 3D SIBs) | <code>clear chassis alarms fabric degraded lcc <i>number</i> fpc <i>number</i></code> |
| Release Information | Command introduced in Junos OS Release 13.2 for a routing matrix with a TX Matrix Plus routers and 3D SIBs. |
| Description | Clear the fabric degraded alarm for an FPC. |
| Options | <p>lcc <i>number</i>—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 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. <p>fpc <i>number</i>—Flexible PIC Concentrator (FPC) slot number. On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, specify the number of a T1600 or T4000 router by using the lcc <i>number</i> option and replace fpc <i>number</i> with a value from 0 through 7.</p> |
| Required Privilege Level | clear |
| Related Documentation | <ul style="list-style-type: none"> <code>show system alarms</code> |

Sample Output

show system alarms (TX Matrix Plus router with 3D SIBs)

```

user@host> show system alarms

sfc0-re0:
-----
2 alarms currently active
Alarm time           Class  Description
2013-05-08 18:13:58 UTC Major  LCC 0 Major Errors
2013-05-08 17:48:46 UTC Major  LCC 7 Major Errors

lcc0-re1:
-----
3 alarms currently active
Alarm time           Class  Description
2013-05-08 17:35:34 UTC Minor  SIB 3 Not Online
2013-05-08 17:35:34 UTC Minor  SIB 2 Not Online

```

```
2013-05-08 18:19:24 UTC Major FPC 5 degraded fabric condition detected
```

```
user@host> clear chassis alarms fabric degraded lcc 0 fpc 5
```

```
lcc0-re1:
```

```
user@host> show system alarms
```

```
sfc0-re0:
```

```
-----  
2 alarms currently active
```

| Alarm time | Class | Description |
|-------------------------|-------|--------------------|
| 2013-05-08 18:13:58 UTC | Major | LCC 0 Major Errors |
| 2013-05-08 17:48:46 UTC | Major | LCC 7 Major Errors |

```
lcc0-re1:
```

```
-----  
2 alarm currently active
```

| Alarm time | Class | Description |
|-------------------------|-------|------------------|
| 2013-05-08 17:36:34 UTC | Minor | SIB 3 Not Online |
| 2013-05-08 17:36:34 UTC | Minor | SIB 2 Not Online |

clear chassis display message

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 469 Syntax (TX Matrix Router) on page 469 Syntax (TX Matrix Plus Router) on page 469 Syntax (QFabric Systems) on page 469 |
| Syntax | clear chassis display message |
| Syntax (TX Matrix Router) | clear chassis display message <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | clear chassis display message <lcc <i>number</i> sfc <i>number</i> > |
| Syntax (QFabric Systems) | clear chassis display message <node-device <i>name</i> interconnect-device <i>name</i> > |
| Release Information | <p>Command introduced in Junos OS Release 7.5.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option for the TX Matrix Plus routers introduced in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> |
| Description | <p>(M40e, M160, M320, T Series routers, EX Series, and QFabric systems only) Clear or stop a text message on the craft interface display, which is on the front of the router or switch or on the LCD panel display on the router or switch. The craft interface alternates the display of text messages with standard craft interface messages, switching between messages every 2 seconds. By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.</p> |
| Options | <p>none—Clear or stop a text message on the craft interface display.</p> <p>interconnect-device <i>name</i>—(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Interconnect device.</p> <p>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.

node-device *name*—(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Node device in a Node group.

scc—(TX Matrix routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

Required Privilege Level clear

Related Documentation

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\)](#)
- [set chassis display message on page 551](#)
- [show chassis craft-interface on page 588](#)

List of Sample Output [clear chassis display message on page 470](#)

Output Fields See [show chassis craft-interface](#) for an explanation of output fields.

Sample Output

clear chassis display message

The following example displays and then clears the text message on the craft interface display:

```
user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
```

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

```

```
Red .....
```

```
LCD screen:
```

```
+-----+
|NOC contact Dusty |
|(888) 526-1234    |
+-----+
```

```
user@host> clear chassis display message
```

```
user@host> show chassis craft-interface
```

```
Red alarm:      LED off, relay off
```

```
Yellow alarm:   LED off, relay off
```

```
Host OK LED:    On
```

```
Host fail LED:  Off
```

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

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

```

```
Red .....
```

```
LCD screen:
```

```
+-----+
|host      |
|Up: 0+17:05:47|
|          |
|Temperature OK|
+-----+
```

clear chassis fpc errors

| | |
|--------------------------|---|
| Syntax | <code>clear chassis fpc errors fpc-slot <i>fpc-slot</i> (all error-id <i>error-id</i>)</code> |
| Release Information | Command introduced in Junos OS Release 18.2R1. |
| Description | Clear the chassis FPC errors. You can choose to clear a particular error or all errors on the FPC. |
| Options | fpc-slot <i>fpc-slot</i> —The slot number of the FPC in which you want to run this command. all —Clear all the errors on the FPC. error-id <i>error-id</i> —Clear a particular error identified by an error-id. An <i>error-id</i> , a unique error identifier, is represented as a Uniform Resource Identifier (URI). For example, "/cpu/0/memory/0/memory-uncorrected-error" is an error-id that indicates an uncorrectable error under CPU memory module instance 0. |
| Required Privilege Level | clear |
| Related Documentation | <ul style="list-style-type: none">• fpc error on page 306 |
| List of Sample Output | clear chassis fpc errors on page 472 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

clear chassis fpc errors

```
user@host> clear chassis fpc errors fpc-slot 1 all
```

```
Clearing error(s) on fpc 1, option all
```

clear synchronous-ethernet esmc statistics

| | |
|--------------------------|---|
| Syntax | <code>clear synchronous-ethernet esmc statistics <interface-name></code> |
| Release Information | Command introduced before Junos OS Release 10.4. |
| Description | Clear the ESMC statistics for all the interfaces. |
| Options | <i>interface-name</i> —(Optional) Clear ESMC statistics for the specified interface. |
| Required Privilege Level | clear |
| Related Documentation | <ul style="list-style-type: none">• <i>Example: Configuring Synchronous Ethernet on MX Series Routers</i>• <i>Synchronous Ethernet Overview</i>• show synchronous-ethernet esmc statistics on page 1671 |
| List of Sample Output | clear synchronous-ethernet esmc statistics on page 473 |

Sample Output

clear synchronous-ethernet esmc statistics

The following example displays the message after the **clear synchronous-ethernet esmc statistics** command is entered:

```
user@host> clear synchronous-ethernet esmc statistics
Cleared ESMC statistics for all interfaces
```

clear synchronous-ethernet wait-to-restore

Syntax `clear synchronous-ethernet wait-to-restore
<interface interface-name>`

Release Information Command introduced in Junos OS Release 14.2.

Description Clear the wait-to-restore timer for all the interfaces in an MX Series router.



NOTE: When you perform GRES on MX Series routers, you must execute the `clear synchronous-ethernet wait-to-restore` operational mode command on the new master Routing Engine to clear the wait-to-restore timer on it. This is because the `clear synchronous-ethernet wait-to-restore` operational mode command clears the wait-to-restore timer only on the local Routing Engine.

Options `interface interface-name`—(Optional) Clear wait to restore timer for the specified interface.

Required Privilege Level clear

Related Documentation

- *Example: Configuring Synchronous Ethernet on MX Series Routers*
- *Synchronous Ethernet Overview*

List of Sample Output [clear synchronous-ethernet wait-to-restore interface <interface-name> on page 474](#)

Sample Output

`clear synchronous-ethernet wait-to-restore interface <interface-name>`

The following example displays the message after the `clear synchronous-ethernet wait-to-restore interface ge-2/1/6` command is entered in operational mode command:

```
user@host> clear synchronous-ethernet wait-to-restore interface ge-2/1/6
Cleared wait-to-restore timer for interface ge-2/1/6
```

request chassis afeb

| | |
|---------------------------------|---|
| Syntax | request chassis afeb (offline online restart) |
| Release Information | Command introduced in Junos OS Release 13.2. |
| Description | Control the operation of the compact Forwarding Engine Board (FEB). |
| Options | offline —Take the FEB offline. online —Bring the FEB online. restart —Restart the FEB. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • show chassis afeb on page 561 |
| List of Sample Output | request chassis afeb online (MX104 Router) on page 475 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis afeb online (MX104 Router)

```
user@host> request chassis afeb online
AFEB is already online
```

request chassis cb

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 476 Syntax (TX Matrix Router) on page 476 Syntax (TX Matrix Plus Router) on page 476 Syntax (QFabric System) on page 476 Syntax (EX9253 Switches) on page 476 |
| Syntax | <code>request chassis cb (offline online) slot <i>slot-number</i></code> |
| Syntax (TX Matrix Router) | <code>request chassis cb (offline online) <slot <i>slot-number</i> lcc <i>number</i> slot <i>cb-slot-number</i> scc <i>number</i> slot <i>cb-slot-number</i>></code> |
| Syntax (TX Matrix Plus Router) | <code>request chassis cb (offline online) <slot <i>slot-number</i> lcc <i>number</i> slot <i>cb-slot-number</i> sfc <i>number</i> slot <i>cb-slot-number</i>></code> |
| Syntax (QFabric System) | <code>request chassis cb (offline online) interconnect-device <i>name</i> slot <i>slot-number</i></code> <code><interconnect-device <i>name</i> slot <i>slot-number</i> (offline online)></code> |
| Syntax (EX9253 Switches) | <code>request chassis cb (offline online) <i>name</i> slot <i>slot-number</i></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS 9.4 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS 11.3 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</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 MX10003 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Series Switches.</p> |
| Description | (M120, M320, and MX Series routers and T Series routers, QFabric systems, and EX8200 switches only) Control the operation of the Control Board (CB). |
| Options | offline —Take the Control Board offline. |



NOTE: On a QFabric system, to bring the backup Control Board on a QFX3008-I Interconnect device offline, issue the `request chassis cb slot backup-slot-number offline` command.



NOTE: Only backup Control Board can be turned offline or online. To turn a Control Board offline or to bring it back online, the Routing Engine should be turned offline first.

online—Bring the Control Board online.

interconnect-device *name*—(QFabric systems only) (Optional) Bring the QFX3008-I Interconnect device Control Board either offline or online:

slot *slot-number*—Control Board slot number:

- (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, if you specify the number of the T640 router by using the *lcc number* option (the recommended method), replace *cb-slot-number* with a value from 0 through 1.

Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 or T4000 router by using the *lcc number* option (the recommended method), replace *cb-slot-number* with a value from 0 through 1.
- M320 router—Replace *slot-number* with a value from 0 through 1.
- MX480/MX240 routers—Replace *slot-number* with a value from 0 through 1.
- MX960 router—Replace *slot-number* with a value from 0 through 2.
- MX2020, MX2010, and MX2008 routers—Replace *slot-number* with 0 or 1.
- EX8208 switch—Replace *slot-number* with a value from 0 through 2.
- EX8216 switch—Replace *slot-number* with a value from 0 through 1.
- QFabric System—Replace *slot-number* with a value from 0 through 1.

lcc *number*—(TX Matrix, TX Matrix Plus routers only) (Optional) Line-card chassis number.

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

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

sfc *number*—(TX Matrix Plus routers only) (Optional) Change the CB status for the TX Matrix Plus router (switch-fabric chassis). Replace *number* with 0.

Required Privilege Level maintenance

Related Documentation

- [show chassis environment cb on page 704](#)
- *Understanding Switching Control Board Redundancy*

List of Sample Output

[request chassis cb on page 478](#)
[request chassis cb interconnect-device \(QFabric System\) on page 478](#)
[request chassis cb \(MX2020 Router\) on page 478](#)
[request chassis cb \(MX2010 Router\) on page 478](#)
[request chassis cb \(MX2008 Router\) on page 478](#)
[request chassis cb \(MX10003 Router\) on page 478](#)
[request chassis cb \(EX9253 Switch\) on page 479](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request chassis cb](#)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

[request chassis cb interconnect-device \(QFabric System\)](#)

```
user@switch> request chassis cb interconnect-device interconnect1 offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

[request chassis cb \(MX2020 Router\)](#)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

[request chassis cb \(MX2010 Router\)](#)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

[request chassis cb \(MX2008 Router\)](#)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

[request chassis cb \(MX10003 Router\)](#)

```
user@host> request chassis cb online slot 1
CB 1 appears to be online already
```

request chassis cb (EX9253 Switch)

```
user@switch>request chassis cb offline slot 1
```

```
Offline initiated, use "show chassis environment cb" to verify
```

request chassis ccg

| | |
|---------------------------------|---|
| Syntax | <code>request chassis ccg (offline online) slot <i>slot-number</i></code> |
| Release Information | Command introduced in Junos OS 12.1x48 for the PTX5000 Packet Transport Routers. |
| Description | (PTX5000 Packet Transport Routers) Control the operation of the Centralized Clock Generator (CCG). |
| Options | offline —Take the CCG offline. online —Bring the CCG online. slot <i>slot-number</i> —CCG slot number. Replace <i>slot-number</i> with a value from 0 through 1. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"><i>Clock Sources for PTX Series Packet Transport Routers</i>show chassis environment ccg on page 731 |
| List of Sample Output | request chassis ccg on page 480 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis ccg

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

request chassis cfep

| | |
|---------------------------------|--|
| Syntax | <code>request chassis cfep (offline online restart)</code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M7i and M10i routers only) Control the operation of the Compact Forwarding Engine Board (CFEB). |
| Options | <p>offline—Take the CFEB offline.</p> <p>online—Bring the CFEB online.</p> <p>restart—Restart the CFEB.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • show chassis cfep on page 583 • <i>Configuring CFEB Redundancy on the M10i Router</i> • <i>CFEB Overview</i> |
| List of Sample Output | request chassis cfep on page 481 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis cfep

```
user@host> request chassis cfep offline
CFEB Offlined
```

request chassis cip

| | |
|---------------------------------|--|
| Syntax | <code>request chassis cip (offline online) slot <i>slot-number</i></code> |
| Release Information | Command introduced for the TX Matrix Plus router in Junos OS Release 9.6. |
| Description | (TX Matrix Plus routers only) Control the operation of the Connector Interface Panel (CIP). |
| Options | <p>offline—Take the CIP offline.</p> <p>online—Bring the CIP online.</p> <p>slot <i>slot-number</i>—CIP slot number. Replace <i>slot-number</i> with a value ranging from 0 through 1.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis cip on page 585• <i>Installing a T1600 CIP</i>• <i>Installing a T640 CIP</i>• <i>Installing a TX-CIP</i>• <i>Installing an M320 CIP</i>• <i>Installing the M40e CIP</i>• <i>Installing the T320 CIP</i>• <i>CIP Overview</i> |
| List of Sample Output | request chassis cip offline slot (TX Matrix Plus Router) on page 482 request chassis cip offline slot (TX Matrix Plus Router) on page 482 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis cip offline slot (TX Matrix Plus Router)

```
user@host > request chassis cip offline slot 0
CIP 0 offline done
```

request chassis cip offline slot (TX Matrix Plus Router)

```
user@host > request chassis cip online slot 0
```

CIP 0 online done

request chassis clock master switch

| | |
|---------------------------------|--|
| Syntax | request chassis clock master switch |
| Release Information | Command introduced in Junos OS Release 12.1. |
| Description | (PTX Series Packet Transport Routers only) Control which Centralized Clock Generator (CCG) is the master. |
| Options | This command has no options. |
| Additional Information | <p>By default, the CCG in slot 0 (CCG0) is the master and the CCG in slot 1 (CCG1) is the backup. If you use this command to change the master, and then restart the chassis software for any reason, the master reverts to the default setting. To change the default master CCG, include the ccg statement at the [edit chassis redundancy] hierarchy level in the configuration. For more information, see the <i>Junos OS Administration Library</i>.</p> <p>The configurations on the two CCGs do not have to be the same, and they are not automatically synchronized. If you configure both CCGs as masters, when the chassis software restarts for any reason, the CCG in slot 0 becomes the master and the one in slot 1 becomes the backup.</p> <p>The switchover from the primary CCG to the backup CCG is immediate.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis environment on page 607 |
| List of Sample Output | request chassis clock master switch on page 484 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis clock master switch

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


request chassis fabric guided-cabling disable

| | |
|---------------------------------|--|
| Syntax | <code>request chassis fabric guided-cabling disable (all-lcc lcc <i>lcc-number</i>)</code> |
| Release Information | Command introduced in Junos OS Release 14.1 for TX Matrix Plus routers with 3D SIBs. |
| Description | Disable the guided cabling operation. |
| Options | <p>all-lcc—Disable the guided cabling operation for all the LCCs.</p> <p>lcc <i>lcc-number</i>—Disable the guided cabling operation for the specified LCC.</p> |
| Required Privilege Level | admin |
| Related Documentation | <ul style="list-style-type: none"> • request chassis fabric guided-cabling enable on page 486 |
| List of Sample Output | request chassis fabric guided-cabling disable all-lcc on page 485 request chassis fabric guided-cabling disable lcc 7 on page 485 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis fabric guided-cabling disable all-lcc

```
user@host> request chassis fabric guided-cabling disable all-lcc
Guided Cabling disable initiated
```

request chassis fabric guided-cabling disable lcc 7

```
user@host> request chassis fabric guided-cabling disable lcc 7
Guided Cabling disable initiated
```

request chassis fabric guided-cabling enable

| | |
|---------------------------------|---|
| Syntax | <code>request chassis fabric guided-cabling enable (plane-by-plane port-by-port) (all-lcc lcc <i>lcc-number</i>)</code> |
| Release Information | Command introduced in Junos OS Release 14.1 for TX Matrix Plus routers with 3D SIBs. |
| Description | Enable the guided cabling operation by using blinking LEDs on the ports to be connected on the LCC and the SFC. |
| Options | <p>plane-by-plane—Enable blinking of CBL LEDs for all the unconnected ports on a TXP-F13-3D SIB and a TXP-LCC-3D SIB for a particular fabric plane. After you connect all the cables on a TXP-F13-3D SIB and a TXP-LCC-3D SIB, all CBL LEDs blink on the fabric plane that need to be subsequently connected. The operation continues until all the cables are connected for all available fabric planes.</p> <p>port-by-port—Enable blinking of the CBL LED for an unconnected port on a TXP-F13-3D SIB and a TXP-LCC-3D SIB. After you connect the cable to a port on a TXP-F13-3D SIB and a TXP-LCC-3D SIB, the CBL LED blinks on the next unconnected port on a TXP-F13-3D SIB and a TXP-LCC-3D SIB.</p> <p>all-lcc—Enable the guided cabling operation for all the LCCs.</p> <p>lcc <i>lcc-number</i>—Enable the guided cabling operation for the specified LCC.</p> |
| Required Privilege Level | admin |
| Related Documentation | <ul style="list-style-type: none"> request chassis fabric guided-cabling disable on page 485 |
| List of Sample Output | request chassis fabric guided-cabling enable plane-by-plane all-lcc on page 486 request chassis fabric guided-cabling enable port-by-port all-lcc on page 487 request chassis fabric guided-cabling enable plane-by-plane lcc 7 on page 487 request chassis fabric guided-cabling enable port-by-port lcc 7 on page 487 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis fabric guided-cabling enable plane-by-plane all-lcc

```
user@host> request chassis fabric guided-cabling enable plane-by-plane all-lcc
Guided Cabling enable initiated
```

request chassis fabric guided-cabling enable port-by-port all-lcc

```
user@host> request chassis fabric guided-cabling enable port-by-port all-lcc
Guided Cabling enable initiated
```

request chassis fabric guided-cabling enable plane-by-plane lcc 7

```
user@host> request chassis fabric guided-cabling enable plane-by-plane lcc 7
Guided Cabling enable initiated
```

request chassis fabric guided-cabling enable port-by-port lcc 7

```
user@host> request chassis fabric guided-cabling enable port-by-port lcc 7
Guided Cabling enable initiated
```

request chassis fabric plane

List of Syntax [Syntax on page 488](#)
 [Syntax \(EX9253 Switches\) on page 488](#)

Syntax request chassis fabric plane *plane-number* (offline | online)

Syntax (EX9253 Switches) request chassis fabric plane *plane-number* (offline | online)

Release Information Command introduced in Junos OS Release 8.0.
 Command introduced in Junos OS Release 9.4 for EX Series switches.
 Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.
 Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.
 Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Description (M120 and MX Series routers and EX8200 switches only) Control the operation of the specified fabric plane.

On an MX480 or MX240 series router, you can configure the active control board for redundancy mode or increased bandwidth mode. When running in increased bandwidth mode, MX series routers with Trio chips and the MPC3E will use all eight active fabric planes.

To take both plane 0 and plane 1 offline on a MX480 and MX240 series routers with one or more MPC4E MICs installed, a X86 Media Service Blade, and/or 100G PFE, and where redundancy-mode is configured for "increased-bandwidth", Juniper recommends taking plane 1 offline before plane 0. Likewise, when the router is configured for increased-bandwidth mode, taking fabric planes 0, 2, 4, and 6 offline can cause the chassis to run in a reduced fabric bandwidth mode. Plane 7 may remain in a "spare" state (as seen in the "show chassis fabric summary" command output) until plane 3 is taken offline and then brought back up.

Options **offline**—Take the fabric plane offline. Use the **request chassis fabric plane *plane-number* offline** command to clear a FAULT state on a fabric plane. To bring the fabric plane back online, use the **request chassis fabric plane *plane-number* online** command.

online—Bring the fabric plane online.

plane *plane-number*—Fabric plane number.

- For the M120 router, replace *plane-number* with a value from 0 through 3.
- For the MX480 and MX240 routers, replace *plane-number* with a value from 0 through 7.

- For the MX2020, MX2010, and MX2008 routers, replace *plane-number* with a value from 0 through 7.
- For the MX960 router, replace *plane-number* with a value from 0 through 5.
- For the EX8208 switch, replace *plane-number* with a value from 0 through 11.
- For the EX8216 switch, replace *plane-number* with a value from 0 through 7.

Required Privilege Level maintenance

Related Documentation

- [show chassis fabric plane on page 1130](#)
- [show chassis fabric plane-location on page 1185](#)
- [show chassis fabric summary on page 1219](#)

List of Sample Output

- [request chassis fabric plane 0 online on page 489](#)
- [request chassis fabric plane 0 offline on page 489](#)
- [request chassis fabric plane 0 online \(EX8200 switch\) on page 489](#)
- [request chassis fabric plane \(MX2020 Router\) on page 490](#)
- [request chassis fabric plane \(MX2010 Router\) on page 490](#)
- [request chassis fabric plane \(MX2008 Router\) on page 490](#)
- [request chassis fabric plane \(MX10003 Router\) on page 490](#)
- [request chassis fabric plane \(EX9253 Switch\) on page 490](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis fabric plane 0 online

```
user@host> request chassis fabric plane 0 online
Online initiated, use "show chassis fabric plane" to verify
```

request chassis fabric plane 0 offline

```
user@host> request chassis fabric plane 0 offline
Offline initiated, use "show chassis fabric plane" to verify
```

request chassis fabric plane 0 online (EX8200 switch)

```
user@host> request chassis fabric plane 0 online
Plane 0 is already active
```

request chassis fabric plane (MX2020 Router)

```
user@host> request chassis fabric plane 2 online  
Plane 2 is already active
```

request chassis fabric plane (MX2010 Router)

```
user@host> request chassis fabric plane 4 online  
Plane 4 is already active
```

request chassis fabric plane (MX2008 Router)

```
user@host>request chassis fabric plane 4 online  
Plane 4 is already active
```

request chassis fabric plane (MX10003 Router)

```
user@host>request chassis fabric plane 4 online  
Plane 4 is already active
```

request chassis fabric plane (EX9253 Switch)

```
user@switch>request chassis fabric plane 0 online  
Plane 0 is already active
```

request chassis fabric pfe

Syntax `request chassis fabric pfe pfe-number fpc fpc-number offline`

Release Information Command introduced in Junos OS Release 17.2.

Description Make a specified fabric of the packet forwarding engine (PFE) offline.

This command makes only the specified PFE of the FPC offline and rest of the PFEs of the FPC are not affected. If a PFE of an FPC is affected because of fabric path wedge errors, the affected PFE is disabled and the associated fabric goes offline as part of fabric hardening actions. The output of the **show chassis fabric fpcs** and **show chassis fabric plane** commands show a new state for the PFE as **Fabric Disabled**.

Fabric stream wedge occurs when the ASIC of the FPC is in the stuck state, and the ingress PFE fails to send traffic to the destination PFE. You can use the request **chassis fabric pfe *pfe-number* fpc *fpc-number* offline** command to make any PFE offline.



NOTE: This statement does not have an option to bring the PFE back online. You must restart the FPC to bring the PFE back online.

Options `pfe-number—[0–3]`

`pc-number—[0–11] or [0–5] or [0–19] or [0–2], depending on the type of the chassis.`

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

Related Documentation

- [show chassis fabric plane on page 1130](#)
- [show chassis fabric fpcs on page 1060](#)

request chassis feb

| | |
|-----------------------------|--|
| List of Syntax | Syntax on page 492 Syntax (ACX Series Routers) on page 492 |
| Syntax | <code>request chassis feb (offline online restart) slot <i>slot-number</i></code> |
| Syntax (ACX Series Routers) | <code>request chassis feb restart slot <i>slot-number</i></code> |
| Release Information | Command introduced in Junos OS Release 8.0. Command introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers. |
| Description | (M120 router only) Control the operation of the specified Forwarding Engine Board (FEB). (ACX Series routers) Restart the specified FEB. |
| Options | offline —Take the specified FEB offline. online —Bring the specified FEB online. restart —Restart the specified FEB. slot <i>slot-number</i> —FEB slot number. Replace <i>slot-number</i> with a value from 0 through 5. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis feb on page 1286• show chassis fabric feb on page 1053• show chassis fpc-feb-connectivity on page 1366• feb• Understanding Switching Control Board Redundancy |
| List of Sample Output | request chassis feb offline slot 0 on page 492 request chassis feb online slot 0 on page 493 request chassis feb restart slot 0 on page 493 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

request chassis feb (M120 Router)

request chassis feb offline slot 0

```
user@host> request chassis feb offline slot 0
```


Offline initiated, use “show chassis feb” to verify

request chassis feb online slot 0

```
user@host> request chassis feb online slot 0
```

Online initiated, use “show chassis feb” to verify

request chassis feb restart slot 0

```
user@host> request chassis feb restart slot 0
```

Restart initiated, use “show chassis feb” to verify

request chassis feb (ACX Series Routers)

```
user@host> request chassis feb restart slot 0
```

FEB will be restarted NOW.

request chassis fpc

| | |
|--|--|
| List of Syntax | Syntax on page 494 Syntax (TX Matrix and TX Matrix Plus Routers) on page 494 Syntax (MX Series Routers) on page 494 Syntax (MX2020 Universal Routing Platforms) on page 494 Syntax (MX204, MX2010, MX2008, and MX10003 Universal Routing Platforms) on page 494 Syntax (EX9200, EX9251, EX9253 Switches) on page 494 Syntax (QFabric System) on page 494 Syntax (PTX Series Packet Transport Routers) on page 494 |
| Syntax | <code>request chassis fpc (offline online restart) slot <i>slot-number</i></code> |
| Syntax (TX Matrix and TX Matrix Plus Routers) | <code>request chassis fpc (offline online restart) slot <i>slot-number</i> <lcc <i>number</i>></code> |
| Syntax (MX Series Routers) | <code>request chassis fpc (offline online restart) slot <i>slot-number</i></code> <code><all-members></code> <code><local></code> <code><member <i>member-id</i>></code> |
| Syntax (MX2020 Universal Routing Platforms) | <code>request chassis fpc (offline online restart) slot <i>slot-number</i></code> |
| Syntax (MX204, MX2010, MX2008, and MX10003 Universal Routing Platforms) | <code>request chassis fpc (offline online restart) slot <i>slot-number</i></code> |
| Syntax (EX9200, EX9251, EX9253 Switches) | <code>request chassis fpc (offline online restart) slot <i>slot-number</i></code> |
| Syntax (QFabric System) | <code>request chassis fpc</code> <code><interconnect-device <i>name</i> slot <i>slot-number</i> (offline online)></code> <code><(offline online) interconnect-device <i>name</i> slot <i>slot-number</i>></code> <code><slot <i>slot-number</i> interconnect-device <i>name</i> (offline online)></code> |
| Syntax (PTX Series Packet Transport Routers) | <code>request chassis fpc (offline online restart) slot <i>slot-number</i></code> |

| | |
|----------------------------|---|
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS 11.3 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 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 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 16.1R1 for EX9200 switches.</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 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> |
| Description | <p>(M20, M40, M40e, M120, M160, M320, MX Series, and T Series routers, QFabric systems, EX Series switches, and PTX Series Packet Transport Routers only) Control the operation of the Flexible PIC Concentrator (FPC).</p> |



NOTE: Starting with Junos OS Release 12.3, it is possible that FPCs brought offline by using the `request chassis fpc slot fpc-slot offline operational-mode` CLI command can come online during a configuration commit or power-supply replacement procedure. As an alternative, use the `set fpc fpc-slot power off configuration-mode` command at the `[edit chassis]` hierarchy level to ensure that the FPCs remain offline.



NOTE: In releases earlier than Junos OS Release 15.1F3 and Junos OS Release 16.1, offline FPCs in the PTX5000 router might be powered on by the router during a reboot, or when triggered by other power management events on the router, such as when you take another FPC offline.

Starting with Junos OS Release 15.1F3 and Junos OS Release 16.1, offline FPCs do not come online during reboots or other power management events. To bring such an FPC online:

1. Delete the `fpc fpc-slot power off` statement from the `[edit chassis]` hierarchy level, if that statement is configured, and commit the configuration.
2. Either issue the `request chassis fpc online slot fpc-slot operational-mode` CLI command or press and hold the FPC ONLINE/OFFLINE button for about 5 seconds until the green OK LED next to the button lights steadily.



NOTE: If a CLI-based firmware upgrade is in progress, the specified FPC does not restart. Starting with Junos OS Release 15.1, the following message is displayed when this occurs:

```
user@host> request chassis fpc slot 0 restart
FPC 0 Firmware update in progress. Wait!!!
```



NOTE: The command `request chassis fpc (offline | online) slot slot-number` is not supported on PTX1000 router. Whereas, `request chassis fpc restart slot slot-number` is supported on PTX1000 router

Options **offline**—Take the FPC offline.

online—Bring the FPC online.

interconnect-device *name*—(QFabric systems only) Bring the FPC on the QFX3008-I Interconnect device either offline or online:

- (QFabric System) On a QFabric system, specify the name of the QFX3008-I Interconnect device containing the FPC you want to bring either offline or online.

restart—Restart the FPC.

slot *slot-number*—FPC slot number:

- M20 router—0 through 3.
- M120 router—0 through 5.
- MX240 router—0 through 2. On the MX240 router, slot-number corresponds to the (DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number.
- MX480 router—0 through 5. On the MX480 router, slot-number corresponds to the DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number.
- MX960 router—0 through 11. On the MX960 router, slot-number corresponds to the DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number.
- MX2020 router—0 through 19.
- MX2010 router—0 through 9.
- MX2008 router—0 through 9.

- TX Matrix and TX Matrix Plus routers only—On the TX Matrix router, if you specify the number of the T640 router by using the *lcc number* option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31.

Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 or T4000 router by using the *lcc number* option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31. In case of TX Matrix Plus router with 3D SIBs, replace *slot-number* with a value from 0 through 63. For example, the following commands have the same result:

```
user@host> request chassis fpc lcc 1 slot 1 offline
user@host> request chassis fpc slot 9 offline
```

- Other routers—0 through 7.
- QFabric System—Replace *slot-number* with a value from 0 through 2.
- EX Series switches:
 - EX4200 switches in a Virtual Chassis configuration—Replace *slot-number* with a value from 0 through 9.
 - EX6210 switches—Replace *slot-number* with a value from 0 through 9.



NOTE: These commands are not supported for slots 4 and 5 when a Switch Fabric and Routing Engine (SRE) module is installed in those slots. These commands are supported for slots 4 and 5 only if a line card is installed in them.

- EX8208 switches—Replace *slot-number* with a value from 0 through 7.
- EX8216 switches—Replace *slot-number* with a value from 0 through 15.
- EX9204 switches—Replace *slot-number* with a value from 0 through 2.
- EX9208 switches—Replace *slot-number* with a value from 0 through 5.
- EX9214 switches—Replace *slot-number* with a value from 0 through 11.
- PTX5000 Packet Transport Router—Replace *slot-number* with a value from 0 through 7.

all-members—(MX Series routers only) (Optional) Change FPC status of all members of the Virtual Chassis configuration.

local—(MX Series routers only) (Optional) Change FPC status of the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Change FPC status of the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

lcc *number*—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

Required Privilege Level maintenance

Related Documentation

- [show chassis fpc on page 1309](#)
- [show chassis fpc-feb-connectivity on page 1366](#)
- [show chassis fabric fpcs on page 1060](#)
- [Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online on page 166](#)
- [MX960 Flexible PIC Concentrator Description](#)

List of Sample Output

[request chassis fpc on page 499](#)
[request chassis fpc \(MX Series Routers with Media Services Blade \[MSB\]\) on page 499](#)
[request chassis fpc \(MX2020 Router\) on page 499](#)
[request chassis fpc \(MX2010 Router\) on page 499](#)
[request chassis fpc \(MX2008 Router\) on page 499](#)
[request chassis fpc \(MX10003 Router\) on page 499](#)
[request chassis fpc \(MX204 Router\) on page 499](#)
[request chassis fpc \(EX9200 Switch\) on page 499](#)
[request chassis fpc \(EX9251 Switch\) on page 500](#)
[request chassis fpc \(EX9253 Switch\) on page 500](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis fpc

```
user@host> request chassis fpc online slot 0
FPC 0 already online
```

request chassis fpc (MX Series Routers with Media Services Blade [MSB])

```
user@host> request chassis fpc slot 0
Possible completions:
offline           Take FPC offline
online            Bring FPC online
restart           Restart FPC
```

request chassis fpc (MX2020 Router)

```
user@host >request chassis fpc online slot 2
FPC 2 already online
```

request chassis fpc (MX2010 Router)

```
user@host >request chassis fpc offline slot 5
Offline initiated, use "show chassis fpc" to verify
```

request chassis fpc (MX2008 Router)

```
user@host >request chassis fpc online slot 5
FPC 5 already online
```

request chassis fpc (MX10003 Router)

```
user@host>request chassis fpc online slot 1
FPC 1 already online
```

request chassis fpc (MX204 Router)

```
user@host>request chassis fpc online slot 0
FPC 0 already online
```

request chassis fpc (EX9200 Switch)

```
user@host> request chassis fpc slot 0
Possible completions:
offline           Take FPC offline
online            Bring FPC online
restart           Restart FPC
```

request chassis fpc (EX9251 Switch)

```
user@switch> request chassis fpc online slot 0  
FPC 0 already online
```

request chassis fpc (EX9253 Switch)

```
user@switch> request chassis online fpc slot 0  
FPC 0 already online
```


request chassis fpm resync

| | |
|--|---|
| List of Syntax | Syntax on page 501 Syntax (TX Matrix Routers) on page 501 Syntax (TX Matrix Plus Routers) on page 501 Syntax (MX Series Routers) on page 501 Syntax (MX2010 Universal Routing Platforms) on page 501 Syntax (MX2020 Universal Routing Platforms) on page 501 |
| Syntax | request chassis fpm resync |
| Syntax (TX Matrix Routers) | request chassis fpm resync (<i>lcc number</i> <i>scc</i>) |
| Syntax (TX Matrix Plus Routers) | request chassis fpm resync (<i>lcc number</i> <i>sfc number</i>) |
| Syntax (MX Series Routers) | request chassis fpm resync <all-members> <local> <member <i>member-id</i> > |
| Syntax (MX2010 Universal Routing Platforms) | request chassis fpm resync |
| Syntax (MX2020 Universal Routing Platforms) | request chassis fpm resync |
| Release Information | Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. |
| Description | (M40e, M120, M160, M320, MX Series, and T Series routers only) Resynchronize the craft interface status. |
| Options | all-members —(MX Series routers only) (Optional) Resynchronize the craft interface status on all members of the Virtual Chassis configuration. 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) Resynchronize the craft interface status on the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Resynchronize the craft interface status on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

scc—(TX Matrix routers only) Resynchronize the craft interface status on the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) Resynchronize the craft interface status on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

Required Privilege Level maintenance

Related Documentation

- [show chassis environment fpm on page 797](#)
- [Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online on page 166](#)

List of Sample Output [request chassis fpm resync on page 502](#)
[request chassis fpm resync \(MX2010 Router\) on page 502](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

`request chassis fpm resync`

```
user@host> request chassis fpm resync
Front Panel resynced
```

`request chassis fpm resync (MX2010 Router)`

```
user@host > request chassis fpm resync
```

Front Panel resynced.

request chassis lcc

| | |
|--|--|
| Syntax (TX Matrix and TX Matrix Plus Routers) | <code>request chassis lcc (offline online) slot <i>slot-number</i></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, control the operation of a T640 LCC that is connected to the TX Matrix router. On a TX Matrix Plus router, control the operation of a LCC that is connected to the TX Matrix Plus router. |
| Options | <p>offline—On a routing matrix based on the TX Matrix router (switch-card chassis), take the T640 router (line-card chassis) offline. On a routing matrix based on a TX Matrix Plus router (switch-fabric chassis), take the router (line-card chassis) offline.</p> <p>online—On a routing matrix based on the TX Matrix router (switch-card chassis), bring the T640 router (line-card chassis) online. On a routing matrix based on a TX Matrix Plus router (switch-fabric chassis), bring the router (line-card chassis) online.</p> <p>slot <i>slot-number</i>—On a TX Matrix router (switch-card chassis), the slot number of a T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router (switch-fabric chassis), the slot number of a router (line-card chassis) that is connected to the TX Matrix Plus (switch-fabric chassis) router.</p> <p><i>slot-number</i> has the following values depending on the LCC configuration</p> <p>Replace <i>slot-number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • show chassis lccs on page 1388 • <i>Configuring Line-Card Upgrade Groups for Nonstop Software Upgrade</i> • <i>fpc</i> |

List of Sample Output [request chassis lcc on page 505](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request chassis lcc](#)

```
user@host> request chassis lcc offline slot 0
```

request chassis mcs

| | |
|--------------------------|---|
| Syntax | <code>request chassis mcs (offline online restart) slot <i>slot-number</i></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers only) Control the operation of the Miscellaneous Control Subsystem (MCS). |
| Options | offline —Take the MCS offline. online —Bring the MCS online. restart —Restart the MCS. slot <i>slot-number</i> —MCS slot number. Replace <i>slot-number</i> with 0 or 1. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis environment mcs on page 826 |
| List of Sample Output | request chassis mcs on page 506 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis mcs

```
user@host> request chassis mcs online slot 0
MCS 0 appears to be online already
```

request chassis mic

Syntax `request chassis mic (offline | online) fpc-slot slot-number mic-slot slot-number`

Release Information Command introduced in Junos OS Release 10.1.
 Command introduced in Junos OS Release 12.3 for ACX4000 Series Router.
 Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.
 Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.
 Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.

Description (MX Series routers only) Control the operation of the Modular Interface Cards (MICs) installed on a Modular Port Concentrator (MPC).



NOTE: On MX960 routers, if the MIC is not functioning correctly, you should take the MPC offline, replace it with a new MPC, and reinstall the MIC. On MX104 routers, the `request chassis mic` command is not supported on FPC slot 2 and MIC slot 0.

Options **offline**—Take the MIC offline.

online—Bring the MIC online.

fpc-slot *slot-number*—FPC slot number where the MIC is installed:

- ACX4000 router—Replace **fpc-slot** with the value 0 or 1.
- MX80 router—Replace **fpc-slot** with the value 1. This command is not supported on FPC slot 0.
- MX104—Replace **fpc-slot** with the value from 0 through 2.
- MX240 router—Replace **fpc-slot** with a value from 0 through 2.
- MX480 router—Replace **fpc-slot** with a value from 0 through 5.
- MX960 router—Replace **fpc-slot** with a value from 0 through 11.
- MX2020 router—Replace **fpc-slot** with a value from 0 through 19.
- MX2010 router—Replace **fpc-slot** with a value from 0 through 9.
- MX2008 router—Replace **fpc-slot** with a value from 0 through 9.

mic-slot *slot-number*—MIC slot number. Replace **slot-number** with 0 or 1.

Required Privilege Level maintenance

Related Documentation • [show chassis hardware on page 1369](#)

List of Sample Output [request chassis mic online on page 508](#)
[request chassis mic \(MX Routers with Media Services Blade \[MSB\]\) on page 508](#)
[request chassis mic offline \(MX104 Router\) on page 508](#)
[request chassis mic online \(MX2010 Router\) on page 508](#)
[request chassis mic online \(MX2008 Router\) on page 508](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request chassis mic online](#)

```
user@host> request chassis mic online fpc-slot 1 mic-slot 1
```

[request chassis mic \(MX Routers with Media Services Blade \[MSB\]\)](#)

```
user@host> request chassis mic fpc-slot 1 mic-slot 0
```

Possible completions:

| | |
|---------|------------------|
| offline | Take MIC offline |
| online | Bring MIC online |

[request chassis mic offline \(MX104 Router\)](#)

```
user@host > request chassis mic mic-slot 0 fpc-slot 1 offline
```

```
fpc 1 mic 0 offline initiated, use "show chassis fpc pic-status 1" to verify
```

[request chassis mic online \(MX2010 Router\)](#)

```
user@host> request chassis mic online fpc-slot 1 mic-slot 0
```

```
FPC 1, MIC 0 is already online
```

[request chassis mic online \(MX2008 Router\)](#)

```
user@host>request chassis mic online fpc-slot 0 mic-slot 0
```

```
FPC 0 is not online
```


request chassis optics

| | |
|----------------------------------|--|
| Syntax | <code>request chassis optics fpc-slot <i>fpc-slot-number</i> reactivate</code> |
| Syntax (EX9253 Switches) | <code>request chassis optics fpc-slot <i>fpc-slot-number</i> reactivate</code> |
| Release Information | <p>Command introduced in Junos OS Release 12.3 for MX240, MX480, and MX960 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> |
| Description | (MX240, MX480, and MX960 routers) Control the status of the optical transceiver. |
| Options | <p>fpc-slot <i>fpc-slot-number</i>—Slot number of the line card that houses the optical transceiver.</p> <ul style="list-style-type: none"> MX240 router—Replace <i>fpc-slot-number</i> with a value from 0 through 2. MX480 router—Replace <i>fpc-slot-number</i> with a value from 0 through 5. MX960 router—Replace <i>fpc-slot-number</i> with a value from 0 through 11. <p>reactivate—Reactivate the optical transceiver.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> <i>Determining Transceiver Support and Specifications for M Series and T Series Routers</i> |
| List of Sample Output | request chassis optics (MX480 router) on page 509 request chassis optics (MX10003 router) on page 510 request chassis optics (EX9251 switch) on page 510 request chassis optics (EX9253 switch) on page 510 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis optics (MX480 router)

```
user@host> request chassis optics fpc-slot 5 reactivate
Enable FPC 5 non-nebs optics.
```

request chassis optics (MX10003 router)

```
user@host>request chassis optics fpc-slot 1 reactivate  
Enable FPC 1 non-nebs optics.
```

request chassis optics (EX9251 swich)

```
user@switch>request chassis optics fpc-slot 0 reactivate  
Enable FPC 0 non-nebs optics.
```

request chassis optics (EX9253 swich)

```
user@switch>request chassis optics fpc-slot 1 reactivate  
Enable FPC 1 non-nebs optics.
```

request chassis pcg

| | |
|---------------------------------|---|
| Syntax | <code>request chassis pcg (offline online) slot <i>slot-number</i></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers) Control the operation of the Packet Forwarding Engine (PFE) clock generator (PCG). |
| Options | <p>offline—Take the PCG offline.</p> <p>online—Bring the PCG online.</p> <p>slot <i>slot-number</i>—PCG slot number. Replace <i>slot-number</i> with 0 or 1.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • show chassis environment pcg on page 851 |
| List of Sample Output | request chassis pcg on page 511 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis pcg

```
user@host> request chassis pcg online slot 0
PCG 1 appears to be already online
```

request chassis pic

| | |
|--|---|
| List of Syntax | Syntax on page 512 Syntax (ACX4000 Series Routers) on page 512 Syntax (MX Series Routers) on page 512 Syntax (TX Matrix and TX Matrix Plus Routers) on page 512 |
| Syntax | <code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code> |
| Syntax (ACX4000 Series Routers) | <code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code> |
| Syntax (MX Series Routers) | <code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> <member <i>member-id</i>></code> |
| Syntax (TX Matrix and TX Matrix Plus Routers) | <code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> <lcc <i>number</i>></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.3 for ACX4000 Routers.</p> <p>Command introduced in Junos OS Release 13.2 for the QFX Series.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Option member introduced in Junos OS Release 14.2 for MX Series routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> |
| Description | Control the operation of the PIC. |



NOTE: Starting with Junos OS Release 12.3, it is possible that PICs brought offline by using the `request chassis fpc slot fpc-slot pic pic-slot offline` operational mode command can come online during a configuration commit or power-supply replacement procedure. (See the following note about difference in behavior on Junos OS Evolved.) As an alternative, use the `set fpc fpc-slot pic pic-slot power off` configuration mode command at the [edit chassis] hierarchy level to ensure that PICs remain offline.



NOTE: On Junos OS Evolved, a PIC does not restart when you enter a commit command that configures an element of that PIC.



NOTE: The `request chassis pic (offline | online) fpc-slot slot number pic-slot slot-number` command is not supported for built-in PICs on MX Series routers.

To view a list of built-in PICs on the router or switch chassis, use the `show chassis hardware` command.



NOTE: This command is not supported on MX960 and MX2020 routers with MPC5EQ.



NOTE: T1600 routers and TX Matrix Plus routers with 100-Gigabit Ethernet PICs require two adjacent PIC slots, 0 and 1, for each PIC. Therefore, only online and offline command options to PIC slot 0 are allowed. Use of the online and offline command options for PIC slot 1 with the described router and PIC combination is not allowed.



NOTE: In T Series routers, when the PIC state is set from offline to online or vice-versa before the processing is complete for the previous command, you are provided feedback on the status of your request. The following sample messages are displayed if you try to set a PIC offline or online:

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 online
```

```
fpc 1 pic 0 online initiated, use "show chassis fpc pic-status" to verify
```

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 online
```

```
FPC 1 PIC 0 already transitioning to online
```

When the same PIC is set to a different state while the transition is in progress, you are provided feedback on the status of your request.

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 offline
```

```
FPC 1, PIC 0 already transitioning to online. Please retry later.
```



NOTE: If a CLI-based firmware upgrade is in progress, it prevents the specified PIC from restarting. Starting in Junos OS Release 15.1, the following message is displayed:

```
user@host> request chassis pic fpc-slot 0 pic-slot 1 offline
PIC's Firmware update in progress. Wait!!!
```

Options **offline**—Take the PIC offline.

online—Bring the PIC online.

fpc-slot**slot-number**—Flexible PIC Concentrator (FPC) slot number. Replace **slot-number** with a value appropriate for your router or switch:

- ACX4000 routers—1 or 2.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—0.
 - EX4200 switches in a Virtual Chassis configuration—0 through 9 (switch's member ID).
 - EX8208 switches—0 through 7 (line card).
 - EX8216 switches—0 through 15 (line card).
- M5, M7i, M10, and M10i routers—0 or 1.
- M20 routers—0 through 3.
- M40 and M40e routers—0 through 7.
- M120 routers—0 through 5.
- M160 routers—0 through 7.
- M320 routers—0 through 7.
- MX 5, MX10, and MX40 routers—0 or 1.
- MX80 routers—0 or 1.
- MX240 routers—0 through 2
- MX480 routers—0 through 5
- MX2020 routers—0 through 19.
- MX2010 routers—0 through 9.
- MX960 routers—0 through 11.
- MX10003 routers—0 or 1.
- MX204 routers—0.

- PTX5000 routers—0 or 1.
- T Series routers—0 through 7.
- TX Matrix and TX Matrix Plus routers only—On a TX Matrix router, if you specify the number of the T640 router by using the **lcc number** option (the recommended method), replace **slot-number** with a value from 0 through 7. Otherwise, replace **slot-number** with a value from 0 through 31.

Likewise, on a TX Matrix Plus router, if you specify the **number** of the T1600 or T4000 router by using the lcc number option (the recommended method), replace **slot-number** with a value from 0 through 7. Otherwise, for the FPC slot number, replace **slot-number** with a value from 0 through 31. On a TX Matrix Plus router with 3D SIBs to assign the FPC slot number, replace **slot-number** with a value from 0 through 63. For example, the following commands have the same result:

```
user@host> request chassis pic fpc-slot 1 lcc 1 pic-slot 0 offline
user@host> request chassis pic fpc-slot 9 pic-slot 0 offline
```

- QFX5100 standalone switches—0.

lcc number—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

member member-id—(MX Series routers only) (Optional) Change the PIC status on the specified member of the Virtual Chassis configuration. Replace **member-id** with the value that is assigned to the specified member.

offline—Take the PIC offline.

online—Bring the PIC online.

pic-slot slot-number—PIC slot number.

- EX3200 and EX4200 switches—0 for built-in network interfaces and 1 for interfaces on uplink modules.
- EX8208 and EX8216 switches—0.
- M Series routers—0, 1, 2, or 3

- MX960 router—**slot-number** corresponds to the slot number of the Packet Forwarding Engine.
- MX204 router—0 or 1.
- PTX5000 routers—0 or 1.
- T320 router—0 or 1.
- T640 router—0, 1, 2, or 3.
- T1600 router —0, 1, 2, or 3.
- T4000 router—0, 1, 2, or 3.
- QFX5100 standalone switches—0, 1, or 2. PIC 0 is used for all interfaces that are not configured on expansion modules, and PIC 1 and PIC 2 are used for interfaces configured on expansion modules.

Required Privilege Level maintenance

Related Documentation

- [show chassis hardware on page 1369](#)
- [show chassis pic on page 1410](#)

List of Sample Output

- [request chassis pic on page 516](#)
- [request chassis pic online member \(MX Series Routers\) on page 516](#)
- [request chassis pic offline member \(MX Series Routers\) on page 516](#)
- [request chassis pic \(MX10003 Router\) on page 517](#)
- [request chassis pic online member \(PTX10008 Router\) on page 517](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

`request chassis pic`

```
user@host> request chassis pic pic-slot 0 online fpc-slot 0
FPC 0, PIC 0 is already online
```

`request chassis pic online member (MX Series Routers)`

```
user@host> request chassis pic online member 1 fpc-slot 11 pic-slot 3
fpc 11 pic 3 online initiated
```

`request chassis pic offline member (MX Series Routers)`

```
user@host> request chassis pic offline member 1 fpc-slot 11 pic-slot 3
fpc 11 pic 3 offline initiated
```


request chassis pic (MX10003 Router)

```
user@host> request chassis pic online pic-slot 1 fpc-slot 0  
FPC 0 is not online
```

request chassis pic online member (PTX10008 Router)

```
user@host> request chassis pic online pic-slot 1 fpc-slot 0  
FPC 0, PIC 1 is empty
```

request chassis port-led

Syntax `request chassis port-led (start | stop) fpc-slot fpc-slot-number pic-slot pic-slot-number port (port-number | all-10g | all-40g | all-100g | all-port) duration duration`

Release Information Command introduced in Junos OS Release 15.1F4 for MPC7E-MRATE, MPC8E, and MPC9E. 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 Switch. Command introduced in Junos OS Release 18.2R1 for JNP10K-LC2101 on MX10008 Universal Routing Platforms.

Description Enable remote port identification of the Modular Interface Card (MIC) or PIC by making the LED of the appropriate active port blink for a duration of time. You can also make the LEDs of all active ports, specific active ports, and specific port types blink. For instance, on MX480 routers with MPC7E-MRATE, you can make the LED of all active ports that support port speeds of 100 Gbps blink. Enabling remote port identification provides cabling assistance and reduces cabling mistakes.



NOTE: You can stop a LED from blinking before the end of duration. After the LED stops blinking, it resumes its normal operation of indicating current link status of the port.

Options **start**—Start blinking of the LEDs of the specified ports.

stop—Stop the LEDs of the specified ports from blinking.

fpc-slot *fpc-slot-number*—(MX Series routers) Modular Port Concentrator (MPC) slot number. Replace *fpc-slot-number* with a value appropriate for your router:

- MX240 routers—0 through 2.
- MX480 routers—0 through 5.
- MX960 routers—0 through 11.
- MX2010 routers—0 through 9.
- MX2020 routers—0 through 19.
- MX10003 routers—0 through 1.
- MX10008 routers—0 through 6.

pic-slot *pic-slot-number*—(MX Series routers) MIC slot number. Replace *pic-slot-number* with a value from 0 through 3. For MX10008 routers with JNP10K-LC2101 MPC only, replace *pic-slot-number* with a value from 0 through 5.

port *port-number*—Port number. Replace *port-number* with a value appropriate for your MPC or line card:

- MIC-MRATE—0 through 11.
- MX10003 MPC—0 through 5 for PIC 0 and 0 through 11 for PIC1
- JNP10K-LC2101 MPC—0 through 3 per PIC. JNP110K-LC2101 supports 6 built-in PICs and each PIC supports 4 ports.

all-10g—Active ports that support port speed of 10 Gbps.

all-40g—Active ports that support port speed of 40 Gbps.

all-100g—Active ports that support port speed of 100 Gbps.

all-ports—All active ports.

duration *duration*—Duration, in seconds, to perform LED blinking. Replace *duration* with a value from 0 through 65,535. The default duration is 5 minutes (300 seconds).

Required Privilege Level

view

Related Documentation

- [Remote Port Identification using LEDs for Cabling Assistance on page 222](#)

List of Sample Output

[request chassis port-led \(MX2020 Routers with MPC8E\) on page 519](#)
[request chassis port-led \(MX480 Routers with MPC7E-MRATE\) on page 519](#)
[request chassis port-led \(MX10003 Router\) on page 520](#)
[request chassis port-led \(MX10003 Router for all active 100GE ports\) on page 520](#)
[request chassis port-led \(MX10003 Router for all active 40GE ports\) on page 520](#)
[request chassis port-led \(MX10003 Router for all the active ports in a PIC\) on page 520](#)
[request chassis port-led \(MX204 Router for all the active ports in a PIC\) on page 520](#)
[request chassis port-led \(EX9251 Switch\) on page 520](#)
[request chassis port-led \(MX10008 Router with JNP10K-LC2101\) on page 520](#)

Output Fields

When you enter this command, you are asked to verify the LED status based on your request.

Sample Output

[request chassis port-led \(MX2020 Routers with MPC8E\)](#)

```
user@host> request chassis port-led start fpc-slot 3 pic-slot 0 port all-10g duration 5
Command sent to FPC_3. Check physically about LED status on the PIC_0 ports.
```

[request chassis port-led \(MX480 Routers with MPC7E-MRATE\)](#)

```
user@host> request chassis port-led start fpc-slot 3 pic-slot 0 port 2 duration 5
```

```
Command sent to FPC_3. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (MX10003 Router)

```
user@host> request chassis port-led start fpc-slot 1 pic-slot 1 port 0 duration 5
```

```
Command sent to FPC_1. Check physically about LED status on the PIC_1 ports.
```

request chassis port-led (MX10003 Router for all active 100GE ports)

```
user@host> request chassis port-led start fpc-slot 1 pic-slot 1 port all-100g duration 5
```

```
Command sent to FPC_1. Check physically about LED status on the PIC_1 ports.
```

request chassis port-led (MX10003 Router for all active 40GE ports)

```
user@host> request chassis port-led start fpc-slot 0 pic-slot 1 port all-40g duration 5
```

```
Command sent to FPC_0. Check physically about LED status on the PIC_1 ports.
```

request chassis port-led (MX10003 Router for all the active ports in a PIC)

```
user@host> request chassis port-led start fpc-slot 0 pic-slot 0 port all-ports duration 5
```

```
Command sent to FPC_0. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (MX204 Router for all the active ports in a PIC)

```
user@host> request chassis port-led start fpc-slot 0 pic-slot 0 port all-ports duration 5
```

```
Command sent to FPC_0. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (EX9251 Switch)

```
user@switch> request chassis port-led start fpc-slot 0 pic-slot 0 port all-ports duration 5
```

```
Command sent to FPC_0. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (MX10008 Router with JNP10K-LC2101)

```
user@host>request chassis port-led start fpc-slot 0 pic-slot 2 all-ports duration 15
```

```
Command sent to FPC_0. Check physically about LED status on the PIC_2 ports.
```

request chassis redundancy feb slot

| | |
|---------------------------------|--|
| Syntax | <code>request chassis redundancy feb slot <i>slot-number</i> (switch-to-backup revert-from-backup)</code> |
| Release Information | Command introduced in Junos OS Release 8.2. |
| Description | (M120 routers only) Control the operation of the specified Forwarding Engine Board (FEB) in a redundancy group. |
| Options | <p><i>slot-number</i>—FEB slot number. Replace <i>slot-number</i> with a value from 0 through 5.</p> <p><i>switch-to-backup</i>—Initiate a switchover from the specified active FEB to the backup FEB for the redundancy group.</p> <p><i>revert-from-backup</i>—Initiate a revert to the specified FEB following a switchover from the backup FEB for a redundancy group.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • show chassis redundancy feb on page 1472 • <i>Configuring FEB Redundancy on the M120 Router</i> • <i>Understanding Switching Control Board Redundancy</i> |
| List of Sample Output | request chassis redundancy feb slot 2 switch-to-backup on page 521 request chassis redundancy feb slot 3 revert-from-backup on page 521 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis redundancy feb slot 2 switch-to-backup

```
user@host> request chassis redundancy feb slot 2 switch-to-backup
Switch initiated, use "show chassis redundancy febs" to verify
```

request chassis redundancy feb slot 3 revert-from-backup

```
user@host> request chassis redundancy feb slot 3 revert-from-backup
Revert initiated, use "show chassis redundancy febs" to verify
```

request chassis routing-engine master

| | |
|---|--|
| List of Syntax | Syntax on page 522 Syntax (M Series, MX Series, T Series Routers) on page 522 Syntax (TX Matrix Routers) on page 522 Syntax (TX Matrix Plus Routers) on page 522 Syntax (MX Series Virtual Chassis) on page 522 Syntax (QFX Series) on page 522 |
| Syntax | request chassis routing-engine master (acquire release switch) <no-confirm> |
| Syntax (M Series, MX Series, T Series Routers) | request chassis routing-engine master (acquire release switch) <no-confirm> <check> |
| Syntax (TX Matrix Routers) | request chassis routing-engine master (acquire release switch) (lcc <i>number</i> scc all-chassis) <no-confirm> |
| Syntax (TX Matrix Plus Routers) | request chassis routing-engine master (acquire release switch) (lcc <i>number</i> sfc all-chassis all-lcc) <no-confirm> |
| Syntax (MX Series Virtual Chassis) | request chassis routing-engine master (acquire release switch) <all-members> <check> <local> <member <i>member-id</i> > <no-confirm> |
| Syntax (QFX Series) | request chassis routing-engine master (release switch) <check> <interconnect-device <i>name</i> > <node-group <i>name</i> > <no-confirm> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>all-chassis option added in Junos OS Release 8.0.</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 11.3 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> |

Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
 Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Description For routers or switches with multiple Routing Engines, control which Routing Engine is the master.



CAUTION: (Routing matrix based on the TX Matrix or TX Matrix Plus routers only) Within the routing matrix, we recommend that all Routing Engines run the same Junos OS Release. If you run different releases on the Routing Engines and a change in mastership occurs on any backup Routing Engine in the routing matrix, one or all routers (in a routing matrix based on the TX Matrix router or in a routing matrix based on a TX Matrix Plus router) might become logically disconnected from the TX Matrix router and cause data loss. For more information, see the [TX Matrix Router Hardware Guide](#) or the [High Availability Feature Guide](#).



NOTE: Successive graceful Routing Engine switchover events must be a minimum of 240 seconds (4 minutes) apart after both Routing Engines have come up.

If the router or switch displays a warning message similar to “Standby Routing Engine is not ready for graceful switchover. Packet Forwarding Engines that are not ready for graceful switchover might be reset,” do not attempt switchover. If you choose to proceed with switchover, only the Packet Forwarding Engines that were not ready for graceful switchover are reset. None of the Flexible PIC concentrators (FPCs) should spontaneously restart. We recommend that you wait until the warning no longer appears and then proceed with the switchover.

You will receive an error message stating “Command aborted. Not ready for mastership switch, try after n seconds” when this command is re-entered before 240 seconds have elapsed on EX Series switches.



NOTE: On a QFabric system, to avoid traffic loss on the network Node group, switch mastership of the routing engine to the backup routing engine, and then reboot.

Options **acquire**—(Not available for Junos OS Evolved) Attempt to become the master Routing Engine.

release—(Not available for Junos OS Evolved) Request that the other Routing Engine become the master.

switch—Toggle mastership between Routing Engines.



NOTE: The **acquire** option should be used with caution because acquiring a Routing Engine may result in a corrupted database. If possible, use the **switch** option instead.

The **acquire**, **release**, and **switch** options have the following suboptions:

all-chassis—(TX Matrix and TX Matrix Plus routers only) On a routing matrix composed of a TX Matrix router and the attached T640 routers, switch mastership on all the Routing Engines in the routing matrix. Likewise, on a routing matrix composed of a TX Matrix Plus router and the attached T1600 or T4000 routers, switch mastership on all the Routing Engines in the routing matrix.

all-lcc—(TX Matrix Plus routers only) Request to acquire mastership for all line-card chassis (LCC).

all-members—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines in all member routers of the Virtual Chassis configuration.

check—(QFabric systems, MX104, MX480, MX960, MX2010, MX2020, and MX2008 routers, and PTX5000 routers only) (Optional) Available with the **switch**, **release**, and **acquire** options. Check graceful switchover status of the standby Routing Engine before toggling mastership between Routing Engines.

interconnect-device *name*—(QFabric systems only) (Optional) Control Routing Engine mastership on the Routing Engines on an Interconnect device.

lcc *number*—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

local—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines of the specified member in the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

no-confirm—(Optional) Do not request confirmation for the switch.

node-group *name*—(QFabric systems only) (Optional) Control Routing Engine mastership on the Routing Engines on a Node group.

scc—(TX Matrix routers only) TX Matrix (switch-card chassis).

sfc—(TX Matrix Plus routers only) TX Matrix Plus router (or switch-fabric chassis).

Additional Information Because both Routing Engines are always running, the transition from one to the other as the master Routing Engine is immediate. However, the changeover interrupts communication to the System and Switch Board (SSB). The SSB takes several seconds to reinitialize the Flexible PIC Concentrators (FPCs) and restart the PICs. Interior gateway protocol (IGP) and BGP convergence times depend on the specific network environment.

By default, the Routing Engine in slot 0 (**RE0**) is the master and the Routing Engine in slot 1 (**RE1**) is the backup. To change the default master Routing Engine, include the **routing-engine** statement at the **[edit chassis redundancy]** hierarchy level in the configuration. For more information, see the *Junos OS Administration Library*

To have the backup Routing Engine become the master Routing Engine, use the **request chassis routing-engine master switch** command. If you use this command to change the master and then restart the chassis software for any reason, the master reverts to the default setting.



NOTE: Although the configurations on the two Routing Engines do not have to be the same and are not automatically synchronized, we recommend making both configurations the same.

Required Privilege Level maintenance

Related Documentation

- [show chassis routing-engine on page 1475](#)
- *Configuring Routing Engine Redundancy*
- *Switching the Global Master and Backup Roles in a Virtual Chassis Configuration*

List of Sample Output

- [request chassis routing-engine master acquire on page 526](#)
- [request chassis routing-engine master switch on page 526](#)
- [request chassis routing-engine master switch \(Junos OS Evolved\) on page 526](#)
- [request chassis routing-engine master switch check on page 527](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis routing-engine master acquire

```
user@host> request chassis routing-engine master acquire
```

```
warning: Traffic will be interrupted while the PFE is re-initialized
```

```
warning: The other routing engine's file system could be corrupted
```

```
Reset other routing engine and become master ? [yes,no] (no)
```

request chassis routing-engine master switch

```
user@host> request chassis routing-engine master switch
```

```
warning: Traffic will be interrupted while the PFE is re-initialized
```

```
Toggle mastership between Routing Engines ? [yes,no] (no) yes
```

```
Resolving mastership...
```

```
Complete. The other Routing Engine becomes the master.
```

Switch mastership back to the local Routing Engine:

```
user@host> request chassis routing-engine master switch
```

```
warning: Traffic will be interrupted while the PFE is re-initialized
```

```
Toggle mastership between routing engines ? [yes,no] (no) yes
```

```
Resolving mastership...
```

```
Complete. The local routing engine becomes the master.
```

request chassis routing-engine master switch (Junos OS Evolved)

```
user@host> request chassis routing-engine master switch
```

```
Resolving mastership...
```

```
Complete. The other Routing Engine becomes the master.
```

Switching back to primary router:

```
user@host> request chassis routing-engine master switch
```

```
Resolving mastership...
```

```
Complete. The local Routing Engine becomes the master.
```

If you did not switch back and tried to enter configuration mode, you would get the following error message:

```
user@host> configure
```

```
error: unknown command: configure
```

```
Configuration is allowed only from the master Routing Engine.
```

request chassis routing-engine master switch check

Usage shown for M Series, MX Series, and T Series routers.

```
{master}[edit]
```

```
user@host> request chassis routing-engine master switch check
```

```
warning: Standby Routing Engine is not ready for graceful switchover.
```

```
{master}[edit]
```

```
user@host> request chassis routing-engine master switch check
```

```
Switchover Ready
```

You can similarly check the backup Routing Engine.

request chassis scg

| | |
|---|--|
| List of Syntax | Syntax on page 528 Syntax (TX Matrix and TX Matrix Plus Routers) on page 528 |
| Syntax | <code>request chassis scg (offline online) slot <i>slot-number</i></code> |
| Syntax (TX Matrix and TX Matrix Plus Routers) | <code>request chassis scg lcc <i>number</i> (offline online) slot <i>slot-number</i></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (T Series routers only) Control the operation of the specified SONET Clock Generator (SCG). |
| Options | <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. <p>offline—Take the SCG offline. When you change the SCG status to offline, the unit is not powered down.</p> <p>online—Bring the SCG online.</p> <p>slot <i>slot-number</i>—SCG slot number. Replace <i>slot-number</i> with 0 or 1.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis environment scg on page 896• <i>Configuring the Clock Source</i>• <i>T320 SONET Clock Generator (SCG) Description</i> |

List of Sample Output [request chassis scg on page 529](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request chassis scg](#)

```
user@host> request chassis scg online slot 0
```

```
Online initiated, use "show chassis environment scg" to verify
```

request chassis sfb

| | |
|---------------------------------|---|
| Syntax | request chassis sfb (offline online) slot <i>slot-number</i> <all-members> <local> <member <i>member-id</i> > |
| Release Information | Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. all-members , local , and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers. Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms. |
| Description | Control the operation of the Switch Fabric Board (SFB). |
| Options | <p>all-members—(Optional) Control the operation of the SFB in all members of the Virtual Chassis configuration.</p> <p>local—(Optional) Control the operation of the SFB in the local Virtual Chassis member.</p> <p>member <i>member-id</i>—(Optional) Control the operation of the SFB in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> <p>offline—Take the Switch Fabric Board offline.</p> <p>online—Bring the Switch Fabric Board online.</p> <p>slot <i>slot-number</i>—Switch Fabric Board slot number. Replace <i>slot-number</i> with a value of 0 through 7.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • show chassis sfb on page 1507 |
| List of Sample Output | request chassis sfb on page 530 request chassis sfb (MX2010 Routers) on page 531 request chassis sfb (MX2008 Routers) on page 531 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis sfb

```
user@host> request chassis sfb offline slot 1
Backup SFB 1 cannot be set offline, backup RE is online
```

request chassis sfb (MX2010 Routers)

```
user@host> request chassis sfb offline slot 7
```

```
Offline initiated, use "show chassis sfb" to verify
```

request chassis sfb (MX2008 Routers)

```
user@host>request chassis sfb offline slot 1
```

```
Offline initiated, use "show chassis sfb" to verify
```

request chassis sfm master switch

| | |
|--------------------------|--|
| Syntax | request chassis sfm master switch <no-confirm> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers only) Control which Switching and Forwarding Module (SFM) is master. |
| Options | no-confirm —(Optional) Do not display a switch warning or query. |
| Additional Information | <p>By default, the SFM in slot 0 (SFM0) is the master and the SFM in slot 1 (SFM1) is the backup. If you use this command to change the master, and then restart the chassis software for any reason, the master reverts to the default setting. To change the default master SFM, include the sfm statement at the [edit chassis redundancy] hierarchy level in the configuration. For more information, see the <i>Junos OS Administration Library</i>.</p> <p>All installed SFMs are always working together to forward packets. If an SFM fails, the other SFMs take over and traffic continues to flow uninterrupted.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis sfm on page 1512• <i>Switching the Global Master and Backup Roles in a Virtual Chassis Configuration</i> |
| List of Sample Output | request chassis sfm master switch on page 532 request chassis sfm master switch no-confirm on page 533 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis sfm master switch

```
user@host> request chassis sfm master switch

warning: Traffic will be interrupted while the PFE is re-initialized
Toggle mastership between system forwarding module? [yes,no] (no) yes

Switch initiated, use "show chassis sfm" to verify
```


request chassis sfm master switch no-confirm

```
user@host> request chassis sfm master switch no-confirm
```

```
Switch initiated, use "show chassis sfm" to verify
```

request chassis sfm

| | |
|--------------------------|--|
| Syntax | <code>request chassis sfm (offline online restart) slot <i>slot-number</i></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers only) Control the operation of the specified Switching and Forwarding Module (SFM). |
| Options | offline —Take the SFM offline. online —Bring the SFM online. restart —Restart the SFM. slot <i>slot-number</i> —SFM slot number. Replace <i>slot-number</i> with a value from 0 through 3. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis sfm on page 1512• <i>Configuring SFM Redundancy on M40e and M160 Routers</i>• <i>M40e Switching and Forwarding Module (SFM) Description</i> |
| List of Sample Output | request chassis sfm (M40e) on page 534 request chassis sfm (M160) on page 534 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis sfm (M40e)

```
user@host> request chassis sfm slot 1 restart
M40e router:
error: SFM 0 is transitioning to online state.
```

request chassis sfm (M160)

```
user@host> request chassis sfm slot 1 restart
M160 router:
Restart initiated, use "show chassis sfm" to verify
```

request chassis sib

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 535 Syntax (TX Matrix Router) on page 535 Syntax (TX Matrix Plus Router) on page 535 |
| Syntax | <code>request chassis sib (offline online) slot <i>slot-number</i></code> |
| Syntax (TX Matrix Router) | <code>request chassis sib (all-chassis lcc <i>number</i> scc) (offline online) slot <i>slot-number</i> (start-receiver <i>number</i> stop-receiver <i>number</i>)</code> |
| Syntax (TX Matrix Plus Router) | <code>request chassis sib (all-lcc f13 <i>slot-number</i> f2s <i>sib-slot/sib-f2s-slot-number</i> lcc <i>number</i> (offline online) slot <i>slot-number</i>)</code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>f13 and f2s options for the TX Matrix Plus router introduced in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> |
| Description | (M320 routers and T Series routers only) Control the operation of the specified Switch Interface Board (SIB). |
| Options | <p>all-chassis—(TX Matrix routers only) Control the status of the specified SIB.</p> <p>all-lcc—(TX Matrix Plus router only) On TX Matrix Plus router, control the operation of the SIB on all routers connected to the TX Matrix Plus router.</p> <p>f13 <i>slot-number</i>—Control the operation of F13 SIBs. Replace <i>slot-number</i> with a value 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12.</p> <p>f2s <i>sib-slot/sib-f2s-slot-number</i>—(TX Matrix Plus routers only) (Optional) Control the operation of the SIB F2s. Replace <i>sib-slot</i> with a value from 0 through 4, followed by a <i>sib-f2s-slot-number</i> value 0, 2, 4 or 6.</p> <p>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.

scc—(TX Matrix router only) TX Matrix router (switch-card chassis) on a routing matrix.

offline—Take the SIB offline.



NOTE: In PTX Series (PTX3000 and PTX5000) and T Series (T640 and T1600) Routers with active PFE interfaces, when the last SIB is taken offline, a message displays that if no SIB is brought online within 10 seconds, the system will take action to address the fabric black hole condition. Taking all SIBs offline in these PTX Series or T Series Routers with active PFE interfaces results in traffic black hole condition, and the software takes action to rectify this condition if it persists for more than 10 seconds. If these routers do not have active PFE interfaces, taking all SIBs offline does not result in black hole condition, and the message is not displayed when the last active SIB is taken offline. For details on black hole condition, see [“Fabric Resiliency and Degradation” on page 96](#).

online—Bring the SIB online.

slot *slot-number*—SIB slot number. For the T320 router, replace *slot-number* with a value from 0 through 2. For the T640 router, TX Matrix router, and T1600 router in a routing matrix, replace *slot-number* with a value from 0 through 4.

start-receiver *number*—(TX Matrix routers only) Start the SIB optical receiver. Replace *number* with a value from 0 through 3.

stop-receiver *number*—(TX Matrix routers only) Stop the SIB optical receiver. Replace *number* with a value from 0 through 3.

Required Privilege Level maintenance

Related Documentation

- [show chassis sibs on page 1515](#)
- [show chassis environment sib on page 919](#)
- *Configuring Junos OS to Upgrade and Downgrade Switch Interface Boards on a TX Matrix Router*
- *M320 SIB Description*

List of Sample Output [request chassis sib on page 537](#)

[request chassis sib on page 537](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request chassis sib](#)

```
user@host> request chassis sib slot 0 online
Online initiated, use "show chassis sibs" to verify
```

[request chassis sib](#)

```
user@host> request chassis sib f13 slot 0 offline
Offline initiated, use "show chassis sibs" to verify
```

request chassis sib f13 train-link-receive slot

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 538 Syntax (TX Matrix Plus Router) on page 538 |
| Syntax | <code>request chassis sib f13 train-link-receive slot <i>SFC-SIB-F13-slot-num</i></code> |
| Syntax (TX Matrix Plus Router) | <code>request chassis sib f13 train-link-receive slot <i>SFC-SIB-F13-slot-num</i></code> |
| Release Information | Command introduced in Junos OS Release 10.1. |
| Description | (TX Matrix Plus router only) Control the receiving link of the specified Switch Interface Board (SIB) of the SFC. |
| Options | <code>slot <i>SFC-SIB-F13-slot-num</i></code> — SFC SIB slot number. Replace it with 0, 3, 6, 8 or 11. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• request chassis sib f13 train-link-transmit slot on page 539• <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i> |
| List of Sample Output | request chassis sib f13 train-link-receive slot on page 538 |
| Output Fields | When you enter this command, the SFC is ready to receive traffic from the T1600 or T4000 router (LCC). |

Sample Output

request chassis sib f13 train-link-receive slot

```
user@host> request chassis sib f13 train-link-receive slot 0
```

request chassis sib f13 train-link-transmit slot

| | |
|---------------------------------|---|
| Syntax | <code>request chassis sib f13 train-link-transmit slot <i>SFC-SIB-F13-slot-num</i></code> |
| Release Information | Command introduced in Junos OS Release 10.1. |
| Description | (TX Matrix Plus router only) Control the transmission link of the specified Switch Interface Board (SIB) of the SFC. |
| Options | slot <i>SFC-SIB-F13-slot-num</i> —SFC SIB slot number. Replace it with 0, 3, 6, 8 or 11. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • request chassis sib f13 train-link-receive slot on page 538 • <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i> |
| List of Sample Output | request chassis sib f13 train-link-transmit slot on page 539 |
| Output Fields | When you enter this command, the SFC is ready to transmit traffic to the T1600 or T4000 router (LCC). |

Sample Output

request chassis sib f13 train-link-transmit slot

```
user@host> request chassis sib f13 train-link-transmit slot 0
```

request chassis sib optics lcc

| | |
|---------------------------------|---|
| Syntax | <code>request chassis sib optics lcc <i>number</i> sib-slot <i>number</i> optics-slot <i>number</i> (enable disable)</code> |
| Release Information | Command introduced in Junos OS Release 13.1 for TX Matrix Routers with 3D SIBs. |
| Description | (TX Matrix Plus routers with 3D SIBs only) Control the operation of the high-speed links on the LCCs by enabling or disabling the high-speed links. |
| Options | <p>lcc <i>number</i>—Line-card chassis number. Replace the <i>number</i> with the following values depending on the LCC configuration.</p> <ul style="list-style-type: none"> 0 through 7, T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. <p>sib-slot <i>number</i>—SIB slot number. Replace the <i>number</i> with a value from 0 to 15.</p> <p>optics-slot <i>number</i>—Optics slot number for high-speed link cable. Replace the <i>number</i> with a value from 0 to 15.</p> <p>enable—Start the high-speed linkss on the cables and enable the FPCs.</p> <p>disable—Disable the FPCs and stop the high-speed links on the cables.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> <i>show chassis fabric optical-links</i> |
| List of Sample Output | request chassis sib optics lcc on page 540 request chassis sib optics lcc on page 541 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis sib optics lcc

```
user@host> request chassis sib optics lcc 7 optics-slot 6 sib-slot 6 enable
Optics 6 enable initiated, use "show chassis fabric optical-links detail" to
verify
```


request chassis sib optics lcc

```
user@host> request chassis sib optics lcc 7 optics-slot 6 sib-slot 6 disable
```

```
Optics 6 disable initiated, use "show chassis fabric optical-links detail" to  
verify
```

request chassis sib optics sfc

| | |
|--------------------------|--|
| Syntax | <code>request chassis sib optics sfc <i>slot-number</i> sib-slot <i>number</i> optics-slot <i>number</i> (enable disable)</code> |
| Release Information | Command introduced in Junos OS Release 13.1 for TX Matrix Routers with 3D SIBs. |
| Description | (TX Matrix Plus routers with 3D SIBs only) Control the operation of the high-speed links on the SIBs by enabling or disabling the high-speed links. |
| Options | <p>sfc <i>slot-number</i>—SFC slot number. Replace the <i>slot-number</i> with 0.</p> <p>sib-slot <i>number</i>—SIBslot number. Replace the <i>number</i> with a value from 0 to 15.</p> <p>optics-slot <i>number</i>—Optics slot number for high-speed link cable. Replace the <i>number</i> with a value from 0 to 15.</p> <p>enable—Start the high-speed links on the cables and enable the FPCs.</p> <p>disable—Disable the FPCs and stop the HSLs on the cables.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• show chassis fabric optical-links |
| List of Sample Output | request chassis sib optics sfc on page 542 request chassis sib optics sfc on page 542 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request chassis sib optics sfc

```
user@host> request chassis sib optics sfc 0 optics-slot 6 sib-slot 6 enable
Optics 6 enable initiated, use "show chassis fabric optical-links detail" to
verify
```

request chassis sib optics sfc

```
user@host> request chassis sib optics sfc 0 optics-slot 6 sib-slot 6 disable
Optics 6 disable initiated, use "show chassis fabric optical-links detail" to
verify
```

request chassis sib train-link-receive slot

| | |
|---------------------------------|--|
| Syntax | <code>request chassis sib train-link-receive slot <i>LCC-SIB-ST-SIB-L-slot-num</i></code> |
| Release Information | Command introduced in Junos OS Release 10.1. |
| Description | (T1600 Router (LCC), T4000 Router (LCC), and TX Matrix Plus router only) Control the receiving link of the specified Switch Interface Board (SIB) of the LCC. |
| Options | slot <i>LCC-SIB-ST-SIB-L-slot-num</i> — LCC SIB slot number. Replace it with a value from 0 through 4. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • request chassis sib train-link-transmit slot on page 544 • <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i> |
| List of Sample Output | request chassis sib train-link-receive slot on page 543 |
| Output Fields | When you enter this command, the LCC is ready to receive traffic from the SFC. |

Sample Output

request chassis sib train-link-receive slot

```
user@host> request chassis sib train-link-receive slot 0
```

request chassis sib train-link-transmit slot

| | |
|---|--|
| List of Syntax | Syntax on page 544 Syntax (TX Matrix Plus Routing Platform) on page 544 |
| Syntax | <code>request chassis sib train-link-transmit slot <i>LCC-SIB-ST-SIB-L-slot-num</i></code> |
| Syntax (TX Matrix Plus Routing Platform) | <code>request chassis sib train-link-receive slot <i>LCC-SIB-ST-SIB-L-slot-num</i></code> |
| Release Information | Command introduced in Junos OS Release 10.1. |
| Description | (T1600 Router (LCC), T4000 (LCC) and TX Matrix Plus router only) Control the transmission link of the specified Switch Interface Board (SIB) of the LCC. |
| Options | slot <i>LCC-SIB-ST-SIB-L-slot-num</i> — LCC SIB slot number. Replace it with a value from 0 through 4. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• request chassis sib train-link-receive slot on page 543• <i>Configuring Junos OS to Upgrade the T1600 Router Chassis to LCC0 of a TX Matrix Plus Routing Platform</i> |
| List of Sample Output | request chassis sib train-link-transmit slot on page 544 |
| Output Fields | When you enter this command, the LCC is ready to transmit traffic to the SFC. |

Sample Output

request chassis sib train-link-transmit slot

```
user@host> request chassis sib train-link-transmit slot 0
```

request chassis spmb restart

| | |
|--|--|
| List of Syntax | Syntax on page 545 Syntax (MX2020, MX2010, and 2008 Routers) on page 545 Syntax (TX Matrix Router) on page 545 Syntax (TX Matrix Plus Router) on page 545 |
| Syntax | <code>request chassis spmb restart slot <i>slot-number</i></code> |
| Syntax (MX2020, MX2010, and 2008 Routers) | <code>request chassis spmb restart slot <i>slot-number</i></code> <code><all-members></code> <code><local></code> <code><member <i>member-id</i>></code> |
| Syntax (TX Matrix Router) | <code>request chassis spmb restart (lcc <i>number</i> scc) slot <i>slot-number</i></code> |
| Syntax (TX Matrix Plus Router) | <code>request chassis spmb restart (lcc <i>number</i> sfc <i>number</i>) slot <i>slot-number</i></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>sfc option for the TX Matrix Plus router introduced in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 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> |
| Description | Restart the specified Switch Processor Mezzanine Board (SPMB) on the Control Board (CB). |
| Options | <p>all-members—(MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in all members of the Virtual Chassis configuration.</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—(MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in the local Virtual Chassis member.

member *member-id*—(MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in the specified member of the Virtual Chassis. Replace *member-id* with the value 0 or 1.

scc—(TX Matrix routers only) TX Matrix router (switch-card chassis) in the routing matrix.

sfc *number*—(TX Matrix Plus routers only) The switch-fabric chassis number of the TX Matrix Plus router. Replace the *number* variable with a value 0.

slot *slot-number*—The SPMB slot number. Replace *slot-number* with 0 or 1.

Required Privilege Level maintenance

Related Documentation

- [show chassis spmb on page 1527](#)
- [show chassis spmb sibs on page 1538](#)

List of Sample Output

- [request chassis spmb restart on page 546](#)
- [request chassis spmb restart \(MX2010 Router\) on page 546](#)
- [request chassis spmb restart \(MX2008 Router\) on page 546](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request chassis spmb restart](#)

```
user@host> request chassis spmb restart slot 0
```

[request chassis spmb restart \(MX2010 Router\)](#)

```
user@host> request chassis spmb restart slot 0
Restart initiated, use "show chassis spmb" to verify
```

[request chassis spmb restart \(MX2008 Router\)](#)

```
user@host>request chassis spmb restart slot 0
Restart initiated, use "show chassis spmb" to verify
```

request chassis synchronization mode

| | |
|---------------------------------|---|
| Syntax | <code>request chassis synchronization mode (free-run holdover auto-select)</code> |
| Release Information | Command introduced in Junos OS Release 11.2R4 for MX Series 5G Universal Routing Platforms. |
| Description | (MX5-T, MX10-T, MX40-T, MX80, MX80-T, MX240, MX480, and MX960 routers only) Change the chassis synchronization source used for Synchronous Ethernet configuration. |
| Options | <p>freerun—Change chassis synchronization to free-run mode.</p> <p>holdover—Change chassis synchronization to holdover mode.</p> <p>auto-select—Change chassis synchronization to auto-select mode.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • <i>Synchronous Ethernet Overview</i> • <i>Configuring an External Clock Synchronization Interface for MX Series Routers</i> |
| List of Sample Output | request chassis synchronization mode freerun on page 547 request chassis synchronization mode holdover on page 547 request chassis synchronization mode auto-select on page 548 |
| Output Fields | <p>When you enter this command, the current status of your request is displayed.</p> <ul style="list-style-type: none"> • Not configured—Indicates that the source is not configured. • Present—Indicates that the source is configured and present. • Qualified—Indicates that the source is being used for synchronization. |

Sample Output

request chassis synchronization mode freerun

```
user@host> request chassis synchronization mode freerun
mode is freerun, status: qualified
```

Sample Output

request chassis synchronization mode holdover

```
user@host> request chassis synchronization mode holdover
```

```
mode is holdover, status: qualified
```

Sample Output

request chassis synchronization mode auto-select

```
user@host> request chassis synchronization mode auto-select  
mode is auto-select, status: qualified
```


request chassis synchronization switch

List of Syntax [Syntax on page 549](#)
 [Syntax \(M Series, T Series\) on page 549](#)
 [Syntax \(PTX Series\) on page 549](#)

Syntax request chassis synchronization switch

Syntax (M Series, T Series) request chassis synchronization switch (external-a | external-b)

Syntax (PTX Series) request chassis synchronization switch (bits-a | bits-b | fpc-slot-number | gps-0 | gps-1)

Release Information Command introduced in Junos OS Release 7.6.
 Command introduced in Junos OS Release 8.3 for M40e routers.
 Command introduced in Junos OS Release 9.3 for M120 routers.
 Command introduced in Junos OS Release 10.2 for T320, T640, and T1600 routers.
 Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Description (M320, M40e, M120, T320, T640, and T1600 routers and PTX Packet Transport Routers only) Change the external clock source used for chassis synchronization.

Options **external-a**—(Routing matrix only) Change the synchronization source to external source A.

external-b—(Routing matrix only) Change the synchronization source to external source B.

bits-a—(PTX Series only) Change the synchronization source to the BITS external source A.

bits-b—(PTX Series only) Change the synchronization source to the BITS external source B.

fpc-slot-number—(PTX Series only) Change the synchronization source to an FPC in the slot specified. For the PTX5000 Packet Transport Router, replace *slot-number* with a value from 0 through 7.

gps-0-10mhz—(PTX Series only) Change the synchronization source to the 10 MHz GPS source on CCG port 0.

gps-0-5mhz—(PTX Series only) Change the synchronization source to the 5 MHz GPS source on CCG port 0.

gps-1-10mhz—(PTX Series only) Change the synchronization source to the 10 MHz GPS source on CCG port 1.

gps-1-5mhz—(PTX Series only) Change the synchronization source to the 5 MHz GPS source on CCG port 1.

Required Privilege Level maintenance

Related Documentation

- [show chassis synchronization on page 1544](#)
- *Configuring Clock Synchronization Interface on MX Series Routers*
- *Supported Time Synchronization Standard*

List of Sample Output [request chassis synchronization switch \(M Series, T Series\) on page 550](#)
[request chassis synchronization switch \(PTX Series\) on page 550](#)

Output Fields When you enter this command, you are provided feedback on the status of your request. **Not configured** indicates that the source is not configured. **Present** indicates that the source is configured and present. **Qualified** indicates that the source is being used for synchronization.

Sample Output


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

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

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

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

set chassis display message

| | |
|---|--|
| List of Syntax | Syntax on page 551 Syntax (TX Matrix Router) on page 551 Syntax (TX Matrix Plus Router) on page 551 |
| Syntax | <pre>set chassis display message "message" <permanent></pre> |
| Syntax (TX Matrix Router) | <pre>set chassis display message "message" (lcc number scc) <permanent></pre> |
| Syntax (TX Matrix Plus Router) | <pre>set chassis display message "message" (fpc-slot slot-number lcc number sfc number) <permanent></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 for TX Matrix Plus router introduced in Junos OS Release 9.6.</p> |
| Description | <p>Display or stop a text message on the craft interface display, which is on the front of the router, or on the LCD panel display on the switch. The craft interface alternates the display of text messages with standard craft interface messages three times, switching between messages every 60 seconds.</p> |
| <div>  <p>NOTE: On T Series routers, when this command is executed with the permanent option, the display of the text message alternates with that of the standard craft interface message continuously every 60 seconds.</p> </div> | |
| <p>By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.</p> | |
| Options | <p>"message"—Message to display. On the craft interface display, if the message is longer than 20 characters, it wraps onto the next line. If a word does not fit on one line, the entire word moves down to the next line. Any portion of the message that does not fit on the display is truncated. An empty pair of quotation marks (" ") deletes the text message from the craft interface display. On the LCD panel display, the message is limited to 16 characters.</p> <p>fpc-slot slot-number—(TX Matrix Plus routers and EX4200 and QFX Series only) On the router or switch, display the text message on the craft interface for a specific Flexible PIC Concentrator (FPC). Replace slot-number with a value from 0 through 31. On the switch, display the text message for a specific member of a Virtual Chassis, where</p> |

fpc-slot *slot-number* corresponds to the member ID. Replace *slot-number* with a value from 0 through 9. On the QFX Series, the *slot-number* is always 0. On a TX Matrix Plus router with 3D SIBs replace *slot-number* with a value from 0 through 63.

lcc number—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

permanent—(Optional) Display a text message on the craft interface display or LCD panel display permanently.

scc—(TX Matrix routers only) Display the text message on the craft interface display of the TX Matrix router (switch-card chassis).

sfc number—(TX Matrix Plus routers only) Display the text message on the craft interface display of the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level clear

Related Documentation

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\)](#)
- [clear chassis display message on page 469](#)
- [show chassis craft-interface on page 588](#)

List of Sample Output [set chassis display message \(Creating\) on page 552](#)
[set chassis display message \(Deleting\) on page 553](#)

Output Fields See [show chassis craft-interface](#) for an explanation of output fields.

Sample Output

set chassis display message (Creating)

The following example shows how to set the display message and verify the result:

```
user@host> set chassis display message "NOC contact Dusty (888) 555-1234"
```

```
message sent
```

```
user@host> show chassis craft-interface
```

```
Red alarm:    LED off, relay off
Yellow alarm: LED off, relay off
Host OK LED:  On
Host fail LED: Off
FPCs         0 1 2 3 4 5 6 7
```

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

```
Red .....
```

```
LCD screen:
```

```
+-----+
|NOC contact Dusty |
|(888) 555-1234    |
+-----+
```

set chassis display message (Deleting)

The following example shows how to delete the display message and verify that the message is removed:

```
user@host> set chassis display message ""
```

```
message sent
```

```
user@host> show chassis craft-interface
```

```
Red alarm:    LED off, relay off
Yellow alarm: LED off, relay off
Host OK LED:  On
Host fail LED: Off
FPCs         0 1 2 3 4 5 6 7
```

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

```
Red .....
```

```
LCD screen:
```

```
+-----+
|host      |
|Up: 0+17:05:47|
|          |
|Temperature OK|
+-----+
```


CHAPTER 12

Monitoring Commands

- `show chassis adc`
- `show chassis afeb`
- `show chassis alarms`
- `show chassis cfeb`
- `show chassis cip`
- `show chassis craft-interface`
- `show chassis environment`
- `show chassis environment adc`
- `show chassis environment cb`
- `show chassis environment ccg`
- `show chassis environment fan`
- `show chassis environment fpc`
- `show chassis environment fpm`
- `show chassis environment monitored`
- `show chassis environment mcs`
- `show chassis environment monitored`
- `show chassis environment pcg`
- `show chassis environment pdu`
- `show chassis environment pem`
- `show chassis environment psu`
- `show chassis environment psm`
- `show chassis environment routing-engine`
- `show chassis environment scg`
- `show chassis environment sfb`
- `show chassis environment sfm`
- `show chassis environment sib`
- `show chassis ethernet-switch`
- `show chassis fan`

- [show chassis fabric degraded-fabric-reachability](#)
- [show chassis fabric destinations](#)
- [show chassis fabric faults recovery-actions](#)
- [show chassis fabric feb](#)
- [show chassis fabric errors](#)
- [show chassis fabric fpcs](#)
- [show chassis fabric map](#)
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- [show chassis fabric plane](#)
- [show chassis fabric plane-location](#)
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- [show chassis fabric topology](#)
- [show chassis fabric unreachable-destinations](#)
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- [show chassis feb](#)
- [show chassis firmware](#)
- [show chassis forwarding](#)
- [show chassis fpc](#)
- [show chassis fpc errors](#)
- [show chassis fpc-feb-connectivity](#)
- [show chassis hardware](#)
- [show chassis in-service-upgrade](#)
- [show chassis lccs](#)
- [show chassis lcc-mode](#)
- [show chassis location](#)
- [show chassis mac-addresses](#)
- [show chassis network-services](#)
- [show chassis oss-map](#)
- [show chassis pic](#)
- [show chassis power](#)
- [show chassis power sequence](#)
- [show chassis psd](#)
- [show chassis redundancy feb](#)
- [show chassis routing-engine](#)

- `show chassis scb`
- `show chassis sfb`
- `show chassis sfb errors`
- `show chassis sfm`
- `show chassis sibs`
- `show chassis spmb`
- `show chassis spmb sibs`
- `show chassis synchronization`
- `show chassis synchronization (MX Series Routers)`
- `show chassis temperature-thresholds`
- `show chassis zones (PTX Series Packet Transport Routers)`
- `show chassis zones`
- `show pfe cfeb`
- `show pfe feb`
- `show pfe fpc`
- `show fib-local-accounting ip`
- `show ptp aggregated-ethernet interfaces`
- `show ptp clock`
- `show ptp hybrid`
- `show ptp lock-status`
- `show ptp master`
- `show ptp path-trace detail`
- `show ptp phy-timestamping-interfaces`
- `show ptp port`
- `show ptp slave`
- `show ptp stateful detail`
- `show synchronous-ethernet esmc statistics`
- `show synchronous-ethernet esmc transmit`
- `show synchronous-ethernet global-information`
- `show system errors active`
- `show system errors count`
- `show system errors error-id`
- `show system errors fru`

show chassis adc

| | |
|---------------------------------|---|
| Syntax | <pre>show chassis adc <all-members> <local> <member <i>member-id</i>></pre> |
| Release Information | <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> |
| Description | Display chassis information about the adapter cards (ADCs). |
| Options | <p>none—Display information about all adapter cards.</p> <p>all-members—(Optional) Display information about the adapter cards (ADCs) in all members of the Virtual Chassis configuration.</p> <p>local—(Optional) Display information about the ADCs in the local member of the Virtual Chassis.</p> <p>member <i>member-id</i>—(Optional) Display information about the ADCs in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> show chassis environment adc on page 692 |
| List of Sample Output | <p>show chassis adc (MX2020 Router) on page 559</p> <p>show chassis adc (MX2010 Router) on page 559</p> <p>show chassis adc (MX2008 Router) on page 560</p> <p>show chassis adc (Node Slicing) on page 560</p> |
| Output Fields | Table 32 on page 558 lists the output fields for the show chassis adc command. Output fields are listed in the approximate order in which they appear. |

Table 32: show chassis adc Output Fields

| Field Name | Field Description |
|------------|-------------------|
| Slot | Slot number. |

Table 32: show chassis adc Output Fields (continued)

| Field Name | Field Description |
|---------------------------|---|
| State | Status of the adapter card. <ul style="list-style-type: none"> • Online—The adapter card is online and running. • Offline—Adapter card is powered down. |
| Uptime | How long the Routing Engine has been connected to the adapter card and, therefore, how long the adapter card has been up and running. |
| GNF (Node slicing) | GNF identifier for each ADC. |

Sample Output

show chassis adc (MX2020 Router)

```
user@host> show chassis adc
```

| Slot | State | Uptime |
|------|--------|--------------------------------|
| 0 | Online | 1 hour, 21 minutes, 7 seconds |
| 1 | Online | 1 hour, 21 minutes, 3 seconds |
| 2 | Online | 1 hour, 20 minutes, 59 seconds |
| 3 | Online | 1 hour, 20 minutes, 54 seconds |
| 4 | Online | 1 hour, 20 minutes, 50 seconds |
| 5 | Online | 1 hour, 20 minutes, 46 seconds |
| 6 | Online | 1 hour, 20 minutes, 42 seconds |
| 7 | Online | 1 hour, 20 minutes, 37 seconds |
| 8 | Online | 1 hour, 20 minutes, 33 seconds |
| 9 | Online | 1 hour, 20 minutes, 28 seconds |
| 10 | Online | 1 hour, 20 minutes, 24 seconds |
| 11 | Online | 1 hour, 20 minutes, 19 seconds |
| 12 | Online | 1 hour, 20 minutes, 15 seconds |
| 13 | Online | 1 hour, 20 minutes, 8 seconds |
| 14 | Online | 1 hour, 20 minutes, 4 seconds |
| 15 | Online | 1 hour, 19 minutes, 59 seconds |
| 16 | Online | 1 hour, 19 minutes, 55 seconds |
| 17 | Online | 1 hour, 19 minutes, 50 seconds |
| 18 | Online | 1 hour, 19 minutes, 45 seconds |
| 19 | Online | 1 hour, 19 minutes, 39 seconds |

show chassis adc (MX2010 Router)

```
user@host > show chassis adc
```

| Slot | State | Uptime |
|------|--------|----------------------------------|
| 0 | Online | 12 hours, 17 minutes, 38 seconds |
| 1 | Online | 12 hours, 17 minutes, 30 seconds |
| 2 | Online | 12 hours, 17 minutes, 22 seconds |
| 3 | Online | 12 hours, 17 minutes, 14 seconds |
| 4 | Online | 12 hours, 17 minutes, 6 seconds |
| 5 | Online | 12 hours, 16 minutes, 58 seconds |
| 6 | Online | 12 hours, 16 minutes, 49 seconds |
| 7 | Online | 12 hours, 16 minutes, 41 seconds |
| 8 | Online | 12 hours, 16 minutes, 33 seconds |
| 9 | Online | 12 hours, 16 minutes, 25 seconds |

show chassis adc (MX2008 Router)

```
user@host > show chassis adc
```

| Slot | State | Uptime |
|------|--------------------------------|--------------------------------|
| 0 | Empty --- Native line card --- | |
| 1 | Empty --- Native line card --- | |
| 2 | Empty | |
| 3 | Empty | |
| 4 | Empty | |
| 5 | Empty | |
| 6 | Empty | |
| 7 | Online | 1 hour, 14 minutes, 32 seconds |
| 8 | Empty | |
| 9 | Empty | |

show chassis adc (Node Slicing)

```
user@router> show chassis adc
```

| Slot | State | Uptime | GNF |
|------|--------|----------------------------------|-----|
| 0 | Online | 12 hours, 57 minutes, 46 seconds | 3 |
| 1 | Empty | --- Native line card --- | 2 |
| 2 | Online | 12 hours, 57 minutes, 18 seconds | 3 |
| 3 | Online | 11 minutes, 23 seconds | 6 |
| 4 | Empty | --- Native line card --- | 6 |
| 5 | Empty | --- Native line card --- | 4 |
| 6 | Online | 13 hours, 38 minutes, 58 seconds | 1 |
| 7 | Online | 13 hours, 3 minutes, 40 seconds | 5 |
| 8 | Empty | --- Native line card --- | 5 |
| 9 | Empty | --- Native line card --- | 5 |

show chassis afeb

| | |
|---------------------------------|--|
| Syntax | show chassis afeb |
| Release Information | Command introduced in Junos OS Release 13.2. |
| Description | Display compact Forwarding Engine Board status. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis afeb on page 475 |
| List of Sample Output | show chassis afeb (MX104 Router) on page 562 |
| Output Fields | Table 33 on page 561 lists the output fields for the show chassis afeb command. Output fields are listed in the approximate order in which they appear. |

Table 33: show chassis afeb

| Field Name | Field Description |
|------------------------------|--|
| State | <p>State of the compact Forwarding Engine Board:</p> <ul style="list-style-type: none"> • Offline—FEB is powered down. • Online—FEB is operational and running. • Check—FEB is in alarmed state because of the following reasons: <ul style="list-style-type: none"> • Hardware error. • PFE is unable to boot. |
| Temperature | Temperature of the air passing by the FEB, in degrees Celsius or in both degrees Celsius and degrees Fahrenheit. |
| CPU Utilization | Total percentage of CPU being used. |
| Interrupt Utilization | Of the total CPU being used by the FEB processor, the percentage being used for interrupts. |
| Heap Utilization | Percentage of heap space (dynamic memory) being used by the FEB processor. If this number exceeds 80 percent, you might experience a software problem (memory leak). |
| Buffer Utilization | Percentage of buffer space being used by the FEB processor for buffering internal messages. |
| Total CPU DRAM | Total DRAM, in megabytes, available to the FEB processor. |
| Start time | Time when the Routing Engine detected that the FEB was running. |

Table 33: show chassis afeb (continued)

| Field Name | Field Description |
|---------------|---|
| Uptime | How long the Routing Engine has been connected to the FEB and, therefore, how long the compact Forwarding Engine Board has been up and running. |

Sample Output

show chassis afeb (MX104 Router)

```
user@host> show chassis afeb
FEB status:
Slot 0 information:
  State                Online
  Temperature          31 degrees C / 87 degrees F
  CPU utilization       3 percent
  Interrupt utilization 0 percent
  Heap utilization      11 percent
  Buffer utilization     13 percent
  Total CPU DRAM        2048 MB
  Start time:           2013-05-27 08:50:03 IST
  Uptime:               3 hours, 29 minutes, 34 seconds
```

show chassis alarms

List of Syntax [Syntax on page 563](#)
 [Syntax \(TX Matrix Routers\) on page 563](#)
 [Syntax \(TX Matrix Plus Routers\) on page 563](#)
 [Syntax \(MX Series Routers\) on page 563](#)
 [Syntax \(MX104, MX2010, MX2020, and MX2008 Universal Routing Platforms\) on page 563](#)
 [Syntax \(MX10003, MX204, and MX10008\) on page 563](#)
 [Syntax \(QFX Series\) on page 563](#)
 [Syntax \(OCX Series\) on page 563](#)
 [Syntax \(PTX Series Packet Transport Routers\) on page 564](#)
 [Syntax \(ACX Series Universal Metro Routers\) on page 564](#)
 [Syntax \(EX9251, EX9253 Switches\) on page 564](#)

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 | <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 introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.2 for the ACX Series Universal Metro 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 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 for Junos Fusion.</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 17.3 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 | Display information about the conditions that have been configured to trigger alarms. |
| Options | <p>none—Display information about the conditions that have been configured to trigger alarms.</p> <p>all-members—(MX Series routers only) (Optional) Display information about alarm conditions for all the member routers of the Virtual Chassis configuration.</p> <p>interconnect-device <i>name</i>—(QFabric systems only) (Optional) Display information about alarm conditions 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 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 **1000101111**. The LSB in this case is 1, which means that this is a major alarm. After removing the LSB, you are left with **100010111**, which is equal to 279 in decimal. This is the actual error code, its meaning can be found from the following list:

| Chip Type: L Chip | Code |
|--|------|
| CMALARM_LCHIP_LOUT_DESRD_PARITY_ERR | 1 |
| CMALARM_LCHIP_LOUT_DESRD_UNINIT_ERR | 2 |
| CMALARM_LCHIP_LOUT_DESRD_ILLEGALLINK_ERR | 3 |
| CMALARM_LCHIP_LOUT_DESRD_ILLEGALSIZE_ERR | 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 |

| Chip Type: M Chip | Code |
|---------------------------------|------|
| CMALARM_MCHIP_ECC_UNCORRECT_ERR | 128 |

| 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 = $(\text{Error Code})/2$



NOTE: Starting in Junos OS Release 18.2R1, on MX Series routers, the **show chassis alarms** output does not display error codes for PFE-related errors. You can use the following commands to view more details of the errors that caused the alarms:

- **show chassis errors active**
- **show chassis errors active detail**

Required Privilege Level view

Related Documentation

- [Configuring an RMON Alarm Entry and Its Attributes](#)
- [Chassis Conditions That Trigger Alarms on page 174](#)

| | |
|------------------------------|---|
| List of Sample Output | show chassis alarms (Alarms Active) on page 571 |
| | show chassis alarms (No Alarms Active) on page 571 |
| | show chassis alarms (Fan Tray) on page 571 |
| | show chassis alarms (MX150) on page 571 |
| | show chassis alarms (MX104 Router) on page 571 |
| | show chassis alarms (MX2010 Router) on page 572 |
| | show chassis alarms (MX2020 Router) on page 572 |
| | show chassis alarms (MX10003 Router) on page 572 |
| | show chassis alarms (MX204 Router) on page 572 |
| | show chassis alarms (MX2008 Router) on page 572 |
| | show chassis alarms (MX960, MX480, and MX240 Routers showing Major CB Failure) on page 573 |
| | show chassis alarms (PTX10008 Router) on page 573 |
| | show chassis alarms (T4000 Router) on page 573 |
| | show chassis alarms (Unreachable Destinations Present on a T Series Router) on page 574 |
| | show chassis alarms (FPC Offline Due to Unreachable Destinations on a T Series Router) on page 574 |
| | show chassis alarms (SCG Absent on a T Series Router) on page 574 |
| | show chassis alarms (Alarms Active on a TX Matrix Router) on page 574 |
| | show chassis alarms (TX Matrix Plus router with 3D SIBs) on page 575 |
| | show chassis alarms (Alarms on a T4000 Router After the enhanced-mode Statement is Enabled) on page 577 |
| | show chassis alarms (Backup Routing Engine) on page 577 |
| | show chassis alarms (EX Series Switch) on page 577 |
| | show chassis alarms (Alarms Active on the QFX Series and OCX Series Switches) on page 577 |
| | show chassis alarms node-device (Alarms Active on the QFabric System) on page 577 |
| | show chassis alarms (Alarms Active on the QFabric System) on page 578 |
| | show chassis alarms (Alarms Active on an EX8200 Switch) on page 578 |
| | show chassis alarms (EX9251 Switch) on page 578 |
| | show chassis alarms (EX9253 Switch) on page 579 |
| | show chassis alarms (Alarms Active on a PTX5000 Packet Transport Router) on page 579 |
| | show chassis alarms (Mix of PDUs Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A) on page 579 |
| | show chassis alarms (PDU Converter Failed Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A) on page 579 |
| | show chassis alarms (No Power for System Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A) on page 580 |
| | show chassis alarms (Alarms Active on an ACX2000 Universal Metro Router) on page 580 |
| | show chassis alarms (Active Alarm to Indicate Status of the Bad SCB Clock on MX Series) on page 580 |
| | show chassis alarms (Alarms active on a PTX1000 Packet Transport Router) on page 580 |
| | show chassis alarms (MX10003 Router) on page 581 |
| | show chassis alarms (Alarms active on a MX10008 Router) on page 582 |

Output Fields Table 34 on page 571 lists the output fields for the **show chassis alarms** command. Output fields are listed in the approximate order in which they appear.

Table 34: show chassis alarms Output Fields

| Field Name | Field Description |
|-------------|---|
| Alarm time | Date and time the alarm was first recorded. |
| Class | Severity class for this alarm: Minor or Major . |
| Description | Information about the alarm. |

Sample Output

show chassis alarms (Alarms Active)

```
user@host> show chassis alarms

3 alarms are currently active
Alarm time      Class  Description
2000-02-07 10:12:22 UTC Major fxp0: ethernet link down
2000-02-07 10:11:54 UTC Minor YELLOW ALARM - PEM 1 Removed
2000-02-07 10:11:03 UTC Minor YELLOW ALARM - Lower Fan Tray Removed
```

show chassis alarms (No Alarms Active)

```
user@host> show chassis alarms

No alarms are currently active
```

show chassis alarms (Fan Tray)

```
user@host> show chassis alarms

4 alarms currently active
Alarm time      Class  Description
2010-11-11 20:27:38 UTC Major Side Fan Tray 7 Failure
2010-11-11 20:27:13 UTC Minor Side Fan Tray 7 Overspeed
2010-11-11 20:27:13 UTC Major Side Fan Tray 5 Failure
2010-11-11 20:27:13 UTC Major Side Fan Tray 0 Failure
```

show chassis alarms (MX150)

```
user@host > show chassis alarms

1 alarms currently active
Alarm time      Class  Description
2016-06-04 01:49:43 PDT Major Fan Tray 1 Fan 0 failed
```

show chassis alarms (MX104 Router)

```
user@host > show chassis alarms
```

```

1 alarms currently active
Alarm time      Class  Description
2013-06-05 14:43:31 IST  Minor  Backup RE Active

```

show chassis alarms (MX2010 Router)

```

user@host> show chassis alarms

7 alarms currently active
Alarm time      Class  Description
2012-08-07 00:46:06 PDT  Major  Fan Tray 2 Failure
2012-08-06 18:24:36 PDT  Minor  Redundant feed missing for PSM 6
2012-08-06 07:41:04 PDT  Minor  Redundant feed missing for PSM 8
2012-08-04 02:42:06 PDT  Minor  Redundant feed missing for PSM 5
2012-08-03 21:14:24 PDT  Minor  Loss of communication with Backup RE
2012-08-03 12:26:03 PDT  Minor  Redundant feed missing for PSM 4
2012-08-03 10:40:18 PDT  Minor  Redundant feed missing for PSM 7

```

show chassis alarms (MX2020 Router)

```

user@host> show chassis alarms

1 alarms currently active
Alarm time Class Description
2012-10-03 12:14:59 PDT Minor Plane 0 not online

```

show chassis alarms (MX10003 Router)

```

user@host> show chassis alarms

9 alarms currently active
Alarm time      Class  Description
2017-07-13 21:50:31 PDT  Major  FPC 1 Temperature Hot
2017-07-13 21:50:04 PDT  Minor  FPC 1 PIC 1 Invalid port profile configuration
2017-07-13 21:49:13 PDT  Minor  FPC 1 PIC 0 Invalid port profile configuration
2017-07-13 21:48:54 PDT  Major  FPC 0 Temperature Hot
2017-07-13 21:43:57 PDT  Minor  PEM 5 Not Present
2017-07-13 21:43:57 PDT  Minor  PEM 4 Not Present
2017-07-13 21:43:54 PDT  Minor  CB 1 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:54 PDT  Minor  CB 0 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:31 PDT  Minor  Loss of communication with Backup RE

```

show chassis alarms (MX204 Router)

```

user@host> show chassis alarms

1 alarms currently active
Alarm time      Class  Description
2017-11-05 22:13:03 PST  Major  PEM 0 Not Present

```

show chassis alarms (MX2008 Router)

```

user@host>show chassis alarms

No alarms currently active

```


show chassis alarms (MX960, MX480, and MX240 Routers showing Major CB Failure)

A major CB 0 failure alarm occurs in the event of a bad CB (unknown or mismatched CBs do not trigger this alarm in Junos Release OS 12.3R9 and later). Following GRES or recovery, if the hardware issue persists, the traffic moves to the good CB and continues. If the alarm was triggered by something transient like a power zone budget on GRES, bringing the CB back online can clear the alarm. Otherwise, replace the bad CB. Note that fabric link speed is not impacted by an offline SCB. The alarm might be raised on CB0, CB1, and CB2.

```
user@host> show chassis alarms
```

```
6 alarms currently active
Alarm time      Class Description
2014-10-31 16:49:41 EDT Major PEM 3 Not OK
2014-10-31 16:49:41 EDT Major PEM 2 Not OK
2014-10-31 16:49:31 EDT Major CB 0 Failure
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 0 Not Online
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 1 Not Online
2014-10-31 16:49:31 EDT Minor Backup RE Active
```

show chassis alarms (PTX10008 Router)

```
user@host>show chassis alarms
```

```
12 alarms currently active
Alarm time      Class Description
2017-05-09 01:38:55 PDT Minor Loss of communication with Backup RE
2017-05-05 06:49:57 PDT Major FPC 5 LCPU Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 PE2 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE1 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PEO Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-C Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-B Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-A Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Intake-B Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 Intake-A Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 5 running at lower speed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 4 running at lower speed
```

show chassis alarms (T4000 Router)

```
user@host> show chassis alarms
```

```
9 alarms currently active
Alarm time      Class Description
2007-06-02 01:41:10 UTC Minor RE 0 Not Supported
2007-06-02 01:41:10 UTC Minor CB 0 Not Supported
2007-06-02 01:41:10 UTC Minor Mixed Master and Backup RE types
2007-05-30 19:37:33 UTC Major SPMB 1 not online
2007-05-30 19:37:29 UTC Minor Front Bottom Fan Tray Absent
2007-05-30 19:37:13 UTC Major PEM 1 Input Failure
2007-05-30 19:37:13 UTC Major PEM 0 Not OK
2007-05-30 19:37:03 UTC Major PEM 0 Improper for Platform
2007-05-30 19:37:03 UTC Minor Backup RE Active
```

show chassis alarms (Unreachable Destinations Present on a T Series Router)

```

user@host> show chassis alarms

10 alarms currently active
Alarm time      Class Description
2011-08-30 18:43:53 PDT Major FPC 7 has unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 has unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online
2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online
2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

show chassis alarms (FPC Offline Due to Unreachable Destinations on a T Series Router)

```

user@host> show chassis alarms

10 alarms currently active
Alarm time      Class Description
2011-08-30 18:43:53 PDT Major FPC 7 offline due to unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online
2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online
2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

show chassis alarms (SCG Absent on a T Series Router)

```

user@host> show chassis alarms

4 alarms currently active
Alarm time      Class Description
2011-01-23 21:42:46 PST Major SCG 0 NO EXT CLK MEAS-BKUP SCG ABS

```

show chassis alarms (Alarms Active on a TX Matrix Router)

```

user@host> show chassis alarms

scc-re0:
-----
8 alarms currently active
Alarm time      Class Description
2004-08-05 18:43:53 PDT Minor LCC 0 Minor Errors
2004-08-05 18:43:53 PDT Minor SIB 3 Not Online
2004-08-05 18:43:52 PDT Major SIB 2 Absent
2004-08-05 18:43:52 PDT Major SIB 1 Absent
2004-08-05 18:43:52 PDT Major SIB 0 Absent
2004-08-05 18:43:33 PDT Major LCC 2 Major Errors
2004-08-05 18:43:28 PDT Major LCC 0 Major Errors
2004-08-05 18:43:05 PDT Minor LCC 2 Minor Errors
lcc0-re0:
-----

```

```

5 alarms currently active
Alarm time          Class  Description
2004-08-05 18:43:53 PDT  Minor SIB 3 Not Online
2004-08-05 18:43:49 PDT  Major SIB 2 Absent
2004-08-05 18:43:49 PDT  Major SIB 1 Absent
2004-08-05 18:43:49 PDT  Major SIB 0 Absent
2004-08-05 18:43:28 PDT  Major PEM 0 Not OK
lcc2-re0:

```

```

-----
5 alarms currently active
Alarm time          Class  Description
2004-08-05 18:43:35 PDT  Minor SIB 3 Not Online
2004-08-05 18:43:33 PDT  Major SIB 2 Absent
2004-08-05 18:43:33 PDT  Major SIB 1 Absent
2004-08-05 18:43:33 PDT  Major SIB 0 Absent
2004-08-05 18:43:05 PDT  Minor PEM 1 Absent

```

show chassis alarms (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis alarms
```

```

sfc0-re0:
-----
Alarm time          Class  Description
2014-04-08 14:35:13 IST  Minor FPM 0 SFC Config Size Changed
2014-04-08 14:32:58 IST  Major Fan Tray Failure
2014-04-08 14:31:53 IST  Major SIB F13 6 Fault
2014-04-08 14:31:43 IST  Major SIB F13 11 Fault
2014-04-08 14:31:08 IST  Minor Check SIB F13 12 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 12 CXP 8 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 12 CXP 3 Fbr Cbl
2014-04-08 14:31:08 IST  Major SIB F13 12 CXP 15 fault
2014-04-08 14:31:08 IST  Minor SIB F13 12 CXP 14 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 12 CXP 14
2014-04-08 14:31:08 IST  Major SIB F13 12 CXP 10 fault
2014-04-08 14:31:08 IST  Minor SIB F13 12 CXP 8 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 12 CXP 8
2014-04-08 14:31:08 IST  Major SIB F13 12 CXP 7 fault
2014-04-08 14:31:08 IST  Major SIB F13 12 CXP 4 fault
2014-04-08 14:31:08 IST  Minor SIB F13 12 CXP 3 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 12 CXP 3
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 12 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 8 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 6 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 4 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 2 Fbr Cbl
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 0 Fbr Cbl
2014-04-08 14:31:08 IST  Minor SIB F13 6 CXP 14 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 14
2014-04-08 14:31:08 IST  Minor SIB F13 6 CXP 12 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 12
2014-04-08 14:31:08 IST  Major SIB F13 6 CXP 10 fault
2014-04-08 14:31:08 IST  Minor SIB F13 6 CXP 8 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 8
2014-04-08 14:31:08 IST  Minor SIB F13 6 CXP 6 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 6
2014-04-08 14:31:08 IST  Minor SIB F13 6 CXP 4 LOL
2014-04-08 14:31:08 IST  Minor Check SIB F13 6 CXP 4

```

```

2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 2 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 0 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 XC HSL Link Error
2014-04-08 14:29:27 IST Minor LCC 0 Minor Errors
2014-04-08 14:28:37 IST Major LCC 0 Major Errors
2014-04-08 14:28:37 IST Major LCC 2 Major Errors
2014-04-08 14:28:37 IST Minor LCC 2 Minor Errors
2014-04-08 14:28:24 IST Major SIB F2S 4/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/0 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/0 Absent
2014-04-08 14:28:24 IST Major SIB F13 9 Absent
2014-04-08 14:28:24 IST Major SIB F13 8 Absent
2014-04-08 14:28:24 IST Major SIB F13 7 Absent
2014-04-08 14:28:24 IST Major SIB F13 4 Absent
2014-04-08 14:28:24 IST Major SIB F13 1 Absent
2014-04-08 14:28:22 IST Major PEM 0 Input Failure
2014-04-08 14:28:22 IST Major PEM 0 Not OK

```

lcc0-re0:

12 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|---|
| 2014-04-08 14:36:08 IST | Minor | CB 1 M/S Switch Changed |
| 2014-04-08 14:36:08 IST | Minor | CB 1 CHASSIS ID Changed |
| 2014-04-08 14:35:43 IST | Minor | CB 0 M/S Switch Changed |
| 2014-04-08 14:35:43 IST | Minor | CB 0 CHASSIS ID Changed |
| 2014-04-08 14:29:30 IST | Minor | SIB 4 Not Online |
| 2014-04-08 14:29:30 IST | Minor | SIB 3 Not Online |
| 2014-04-08 14:29:30 IST | Minor | SIB 2 Not Online |
| 2014-04-08 14:29:24 IST | Major | Rear Fan Tray Failure |
| 2014-04-08 14:29:24 IST | Major | Front Bottom Fan Tray Improper for Platform |
| 2014-04-08 14:29:24 IST | Major | Front Top Fan Tray Improper for Platform |
| 2014-04-08 14:28:37 IST | Major | SIB 4 Absent |
| 2014-04-08 14:28:37 IST | Major | SIB 3 Absent |

lcc2-re0:

12 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|---|
| 2014-04-08 14:36:02 IST | Minor | CB 1 M/S Switch Changed |
| 2014-04-08 14:36:02 IST | Minor | CB 1 CHASSIS ID Changed |
| 2014-04-08 14:35:42 IST | Minor | CB 0 M/S Switch Changed |
| 2014-04-08 14:34:42 IST | Minor | CB 0 CHASSIS ID Changed |
| 2014-04-08 14:29:29 IST | Minor | SIB 0 CXP 7 Unsupported Optics |
| 2014-04-08 14:29:27 IST | Major | Front Bottom Fan Tray Improper for Platform |
| 2014-04-08 14:29:27 IST | Major | Front Top Fan Tray Improper for Platform |
| 2014-04-08 14:29:25 IST | Minor | SIB 4 Not Online |
| 2014-04-08 14:29:25 IST | Minor | SIB 3 Not Online |
| 2014-04-08 14:28:47 IST | Major | PEM 0 Not OK |
| 2014-04-08 14:28:36 IST | Major | SIB 2 Absent |
| 2014-04-08 14:28:36 IST | Minor | Host 0 Boot from alternate media |

lcc6-re0:

```
-----
2 alarms currently active
Alarm time           Class  Description
2013-11-06 04:03:56 PST  Minor SIB 1 CXP 0 XC HSL Link Error
2013-11-06 03:49:32 PST  Major PEM 1 Not OK
```

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

To enable improved virtual private LAN service (VPLS) MAC address learning on T4000 routers, you must include the **enhanced-mode** statement at the **[edit chassis network-services]** hierarchy level and reboot the router. When router reboots, only the T4000 Type 5 FPCs are required to be present on the router. If there are any other FPCs (apart from T4000 Type 5 FPCs) on the T4000 router, such FPCs become offline, and FPC misconfiguration alarms are generated. The **show chassis alarm** command output displays FPC misconfiguration (**FPC *fpc-slot* misconfig**) as the reason for the generation of the alarms.

```
user@host> show chassis alarms

2 alarms currently active
Alarm time           Class  Description
2011-10-22 10:10:47 PDT  Major FPC 1 misconfig
2011-10-22 10:10:46 PDT  Major FPC 0 misconfig
```

show chassis alarms (Backup Routing Engine)

```
user@host> show chassis alarms

2 alarms are currently active
Alarm time           Class  Description
2005-04-07 10:12:22 PDT  Minor Host 1 Boot from alternate media
2005-04-07 10:11:54 PDT  Major Host 1 compact-flash missing in Boot List
```

show chassis alarms (EX Series Switch)

```
user@switch> show chassis alarms

4 alarms currently active
Alarm time           Class  Description
2014-03-12 15:36:09 UTC  Minor Require a Fan Tray upgrade
2014-03-12 15:00:02 UTC  Major PEM 0 Input Failure
2014-03-12 15:00:02 UTC  Major PEM 0 Not OK
2014-03-12 14:59:51 UTC  Minor Host 1 Boot from alternate media
```

show chassis alarms (Alarms Active on the QFX Series and OCX Series Switches)

```
user@switch> show chassis alarms

1 alarms currently active
Alarm time           Class  Description
2012-03-05 2:10:24 UTC  Major FPC 0 PEM 0 Airflow not matching Chassis Airflow
```

show chassis alarms node-device (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms node-device Test
```

```
node-device ED3694
3 alarms currently active
Alarm time          Class Description
2011-08-24 16:04:15 UTC Major Test:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC Major Test:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC Major Test PEM 0 is not supported/powerd
```

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/powerd |

```
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/powerd |

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-PIA)

```

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 cfeb

| | |
|---------------------------------|---|
| Syntax | show chassis cfeb |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M7i and M10i routers only) Display status information about the Compact Forwarding Engine Board (CFEB). |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis cfeb on page 481 • <i>Configuring CFEB Redundancy on the M10i Router</i> • <i>CFEB Overview</i> |
| List of Sample Output | show chassis cfeb (M7i) on page 584 show chassis cfeb (M10i) on page 584 |
| Output Fields | Table 35 on page 583 lists the output fields for the show chassis cfeb command. Output fields are listed in the approximate order in which they appear. |

Table 35: show chassis cfeb Output Fields

| Field Name | Field Description |
|------------------------------|---|
| State | Status of the CFEB: <ul style="list-style-type: none"> • Online—CFEB is online and running. • Offline—CFEB is powered down. |
| Intake Temperature | Temperature of the air before flowing past the CFEB. |
| Exhaust Temperature | Temperature of the air after flowing past the CFEB. |
| CPU utilization | Percentage of CPU being used by the CFEB processor. |
| Interrupt utilization | Of the total CPU being used by the CFEB processor, the percentage being used for interrupts |
| Heap Utilization | Percentage of heap space (dynamic memory) being used by the CFEB processor. If this number exceeds 80 percent, there may be a software problem (memory leak). |

Table 35: show chassis cfep Output Fields (continued)

| Field Name | Field Description |
|------------------------------|--|
| Buffer Utilization | Percentage of buffer space being used by the CFEB processor for buffering internal messages |
| Total CPU DRAM | Amount of DRAM available to the CFEB CPU. |
| Internet Processor II | Information about the CFEB processor. |
| Start time | Time when the Routing Engine detected that the CFEB was running. |
| Uptime | How long the Routing Engine has been connected to the CFEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running. |

Sample Output

show chassis cfep (M7i)

```
user@host> show chassis cfep
```

```
CFEB status:
  State                Online
  Intake Temperature   27 degrees C / 80 degrees F
  Exhaust Temperature  33 degrees C / 91 degrees F
  CPU utilization       3 percent
  Interrupt utilization 0 percent
  Heap utilization      8 percent
  Buffer utilization     21 percent
  Total CPU DRAM       128 MB
  Internet Processor II Version 1, Foundry IBM, Part number 164
  Start time:          2003-06-11 11:41:22 PDT
  Uptime:               1 hour, 39 minutes, 31 seconds
```

show chassis cfep (M10i)

```
user@host> show chassis cfep
```

```
CFEB status:
Slot 0 information:
  StateMaster
  Intake temperature   35 degrees C / 95 degrees F
  Exhaust temperature  43 degrees C / 109 degrees F
  CPU utilization       3 percent
  Interrupt utilization 0 percent
  Heap utilization      10 percent
  Buffer utilization     22 percent
  Total CPU DRAM       128 MB
  Internet Processor II Version 1, Foundry IBM, Part number 164
  Start time:          2004-11-01 03:24:15 PST
  Uptime:               12 hours, 56 minutes, 18 seconds
Slot 1 information:
  State                Backup
```

show chassis cip

| | |
|---------------------------------------|---|
| Syntax (TX Matrix Plus Router) | show chassis cip |
| Release Information | Command introduced in Junos OS Release 9.6. |
| Description | (TX Matrix Plus routers only) Display environmental information about the Connector Interface Panel (CIP) that provides Ethernet Control Plane connectivity to line-card chassis (LCCs), switch fabric chassis, and other devices. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis cip on page 482 • <i>Installing a T1600 CIP</i> • <i>Installing a T640 CIP</i> • <i>Installing a TX-CIP</i> • <i>Installing an M320 CIP</i> • <i>Installing an M320 CIP</i> • <i>Installing the T320 CIP</i> • <i>CIP Overview</i> |
| Output Fields | Table 36 on page 585 lists the output fields for the show chassis cip command. Output fields are listed in the approximate order in which they appear. |

Table 36: show chassis cip Output Fields

| Field Name | Field Description |
|------------|---|
| Eswitch | Ethernet switch used to connect to the LCC or to a JCS1200: 0 or 1. |

Table 36: show chassis cip Output Fields (continued)

| Field Name | Field Description |
|---------------------|--|
| Port | Physical port number of the Ethernet switch: <ul style="list-style-type: none"> Port numbers: 4 to 8 on Ethernet switch 0 can be used to connect up to four (reserved for future use) other SFCs or optional JCS1200s. NOTE: The current configuration of the routing matrix based on a TX Matrix Plus router supports only one SFC. Port numbers 0 to 15 on Ethernet switch 1 can be used to connect up to 16 LCCs. NOTE: The current configuration of a routing matrix based on a TX Matrix Plus router supports only up to eight LCCs. You can connect LCCs to the port numbers corresponding to LCC0 to LCC7 (0 to 15) on the Ethernet switch 1. |
| Type | Type of CIP: <ul style="list-style-type: none"> XE—Ethernet switch 0 ports used for connections to the SFC control plane or other devices such as JCS1200. GE—Ethernet switch 1 ports used for connections to the LCC control plane. |
| Connected-to | Show control plane connection to a specific LCC or SFC. |
| Link | State of the connection to an LCC control plane, SFC control plane, or other devices: Up or Down . |
| Speed | Ethernet link speed. |
| Duplex | Type of Ethernet link: Full or Half Duplex . |
| Auto-neg | Status of autonegotiation for the CIP connection to the LCC, SFC, or other devices: On or Off . |

show chassis cip (TX Matrix Plus Router)

user@host> show chassis cip

sfc0-cip0

| Eswitch | Port | Type | Connected-to | Link | Speed | Duplex | Auto-Neg |
|---------|------|------|--------------|------|----------|--------|----------|
| 0 | 4 | XE | SFC1 | Down | 0 | Full | Off |
| 0 | 5 | XE | SFC0 | Down | 0 | Full | Off |
| 0 | 6 | XE | SFC3 | Down | 0 | Full | Off |
| 0 | 7 | XE | SFC2 | Down | 0 | Full | Off |
| 0 | 8 | XE | SFC4 | Down | 0 | Full | Off |
| 1 | 0 | GE | LCC0 | Up | 1000Mbps | Full | On |
| 1 | 1 | GE | LCC8 | Down | 0 | Half | On |
| 1 | 2 | GE | LCC1 | Up | 1000Mbps | Full | On |
| 1 | 3 | GE | LCC9 | Down | 0 | Half | On |
| 1 | 4 | GE | LCC2 | Up | 1000Mbps | Full | On |
| 1 | 5 | GE | LCC10 | Down | 0 | Half | On |
| 1 | 6 | GE | LCC3 | Up | 1000Mbps | Full | On |
| 1 | 7 | GE | LCC11 | Down | 0 | Half | On |
| 1 | 8 | GE | LCC4 | Down | 0 | Half | On |
| 1 | 9 | GE | LCC12 | Down | 0 | Half | On |
| 1 | 10 | GE | LCC5 | Down | 0 | Half | On |
| 1 | 11 | GE | LCC13 | Down | 0 | Half | On |

| | | | | | | | |
|---|----|----|-------|------|----------|------|----|
| 1 | 12 | GE | LCC6 | Down | 0 | Half | On |
| 1 | 13 | GE | LCC14 | Down | 0 | Half | On |
| 1 | 14 | GE | LCC7 | Down | 0 | Half | On |
| 1 | 15 | GE | LCC15 | Down | 0 | Half | On |
| 1 | 16 | GE | GE17 | Up | 1000Mbps | Full | On |
| 1 | 17 | GE | GE16 | Down | 0 | Half | On |

show chassis craft-interface

| | |
|---|---|
| List of Syntax | Syntax on page 588 Syntax (MX Series Routers) on page 588 Syntax (MX104, MX2010, MX2020, and MX2008 Universal Routing Platforms) on page 588 Syntax (TX Matrix Routers) on page 588 Syntax (TX Matrix Plus Routers) on page 588 Syntax (ACX Series Universal Metro Routers) on page 588 |
| Syntax | show chassis craft-interface |
| Syntax (MX Series Routers) | show chassis craft-interface <all-members> <local> <member <i>member-id</i> > |
| Syntax (MX104, MX2010, MX2020, and MX2008 Universal Routing Platforms) | show chassis craft-interface |
| Syntax (TX Matrix Routers) | show chassis craft-interface <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Routers) | show chassis craft-interface <lcc <i>number</i> sfc <i>number</i> > |
| Syntax (ACX Series Universal Metro Routers) | show chassis craft-interface |
| Release Information | Command introduced before Junos OS Release 7.4. sfc option for the TX Matrix Plus router introduced in Junos OS Release 9.6. Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers. Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms. Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms. Command introduced in Junos OS Release 17.3 for MX150 Router Appliance. |
| Description | For routers or switches that have a display on the craft interface, show the messages that are currently displayed. On all routers except for the M20 router, you must enter this command on the master Routing Engine. |

Options **none**—(TX Matrix, TX Matrix Plus routers, MX104, MX2010, MX2020, and MX2008 routers, and ACX Series routers only) On a TX Matrix router, show messages that are currently displayed on the craft interface on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, show messages that are currently displayed on the craft interface on the TX Matrix Plus router and its attached routers.

all-members—(MX Series routers only) (Optional) Display information currently on the craft interface for all members of the Virtual Chassis configuration.

lcc *number*—(TX Matrix, TX Matrix Plus routers only) (Optional) On a TX Matrix router, show messages that are currently displayed on the craft interface for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, show messages that are currently displayed on the craft interface for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Display information currently on the craft interface for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display information currently on the craft interface for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

scc—(TX Matrix router only) (Optional) Show messages that are currently displayed on the craft interface for the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router only) (Optional) Show messages that are currently displayed on the craft interface for the respective TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

Required Privilege Level view

Related Documentation

- [clear chassis display message on page 469](#)
- [set chassis display message on page 551](#)

List of Sample Output

- [show chassis craft-interface \(M20 Router\) on page 591](#)
- [show chassis craft-interface \(M40 Router\) on page 592](#)
- [show chassis craft-interface \(M120 Router\) on page 592](#)
- [show chassis craft-interface \(M160 Router\) on page 593](#)
- [show chassis craft-interface \(MX150\) on page 593](#)
- [show chassis craft-interface \(MX104 Router\) on page 594](#)
- [show chassis craft-interface \(MX2010 Router\) on page 594](#)
- [show chassis craft-interface \(MX2020 Router\) on page 595](#)
- [show chassis craft-interface \(MX2008 Router\) on page 596](#)
- [show chassis craft-interface \(T4000 Router\) on page 597](#)
- [show chassis craft-interface \(TX Matrix Routing Matrix\) on page 598](#)
- [show chassis craft-interface \(TX Matrix Plus Routing Matrix\) on page 600](#)
- [show chassis craft-interface \(TX Matrix Plus router with 3D SIBs\) on page 603](#)
- [show chassis craft-interface \(ACX2000 Universal Metro Router\) on page 605](#)
- [show chassis craft-interface \(ACX500 Router\) on page 605](#)

Output Fields [Table 37 on page 590](#) lists the output fields for the **show chassis craft-interface** command. Output fields are listed in the approximate order in which they appear.

Table 37: show chassis craft-interface Output Fields

| Field Name | Field Description |
|--|---|
| LCD screen or FPM Display Contents | <p>Contents of the Front Panel Module display:</p> <ul style="list-style-type: none"> router-name—Name of the router. Up—How long the router has been operational, in days, hours, minutes, and seconds. message—Information about the router traffic load, the power supply status, the fan status, and the temperature status. The display of this information changes every 2 seconds. If a text message has been created with the set chassis display command, this message appears on all four lines of the craft interface display. The display alternates between the text message and the standard system status messages every 2 seconds. |
| SFC Front Panel Switch Settings | <p>(TX Matrix Plus Routers)—Display the SFC front panel switch settings:</p> <p>SFC Chassis Number and Config Size are settings on physical switches located on the left side of the craft interface of the TX Matrix Plus router.</p> <ul style="list-style-type: none"> SFC Chassis Number—This field always displays the value 00. Config Size—The value of this field is 0 for the TX Matrix Plus router. The value of this field is 3 for TX Matrix Plus router with 3D SIBs. |
| Front Panel System LEDs | <p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the Front Panel System LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.</p> |
| Front Panel Alarm Indicators | <p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Alarm indicators. A dot (.) indicates the relay is off. An asterisk (*) indicates the relay is active.</p> |
| Input Relay | <p>Status of the configured input relay ports—0 through 3. The mode is normally open or closed. The status is clear or raised.</p> |
| Output Relay | <p>Status of the configured output ports—0 or 1. The mode is normally open or closed. The status is clear or raised.</p> |

Table 37: show chassis craft-interface Output Fields (continued)

| Field Name | Field Description |
|---------------------------------|---|
| Front Panel FPC LEDs | (MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Flexible PIC Concentrator (FPC) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. On MX2010 and MX2008 routers, there are 10 (0-9) FPCs LEDs. On MX2020 routers, there are 20 (0-9 and 10-19) FPCs LEDs. |
| CB LEDs | Status of the Control Board (CB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. |
| PS LEDs | (MX2010, MX2020, and MX2008 Routers) Status of the Power Supply (PS) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. On MX2010 and MX2008 routers, there are 9 (0-8) PS LEDs. On MX2020 routers, there are 18 (0-8 and 9-17) PS LEDs. |
| PS Status | (MX104 Routers) Status of the Power Supply (PS). Green indicates that the power supply is functioning. Red indicates that the power supply is not functioning. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. |
| FAN Tray LEDs | (MX2010, MX2020, and MX2008 Routers) Status of the Fan Tray LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. |
| Front Panel SFB LEDs | (MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Switch Fabric Boards (SFB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. |
| Front Panel Chassis Info | (MX2010, MX2020, and MX2008 Routers) Information about the chassis such as the chassis number and role. User can set the chassis number in multi-chassis configurations. |
| MCS and SFM LEDs | Status of the Miscellaneous Control Subsystem (MCS) and Switching and Forwarding Module (SFM) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. When neither a dot nor an asterisk is displayed, there is no board in that slot. |
| SIB LEDs | Status of the Switch Interface Board (SIB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. |
| SCG LEDs | Status of the SONET Clock Generator (SCG) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. |

Sample Output

show chassis craft-interface (M20 Router)

```
user@host> show chassis craft-interface
```

```
Red alarm:    LED off, relay off
Yellow alarm: LED on, relay on
Host OK LED:  On
Host fail LED: Off
FPCs         0  1  2  3
-----
Green  .  *  *.
Red    ...
LCD screen:
      +-----+
```

```

|host
|1 Alarm active
|Y: FERF
|
+-----+

```

show chassis craft-interface (M40 Router)

```
user@host> show chassis craft-interface
```

```

Front Panel LCD Display: enabled
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host Fail LED:  Off
NICs      0  1  2  3  4  5  6  7
-----

```

```
Green  *.  *.  *.  *.

```

```
Red    .....

```

```
LCD Screen:
```

```

+-----+
|host
|Up: 27+18:52:37
|
|52.649kpps Load
|
+-----+

```

show chassis craft-interface (M120 Router)

```
user@host> show chassis craft-interface
```

```
Front Panel System LEDs:
```

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

```

```
OK              *  .

```

```
Fail            .  .

```

```
Master          *  .

```

```
Front Panel Alarm Indicators:
```

```
Red LED         *
```

```
Yellow LED      .
```

```
Major relay     *
```

```
Minor relay     .
```

```
Front Panel FPC LEDs:
```

```
FPC      0  1  2  3  4  5
-----

```

```
Red      .  .  .  .  .  .

```

```
Green    .  *  .  *  *  *
```

```
CB LEDs:
```

```
CB      0  1
-----

```

```
Amber    .  .

```

```
Green    *  *
```

```
PS LEDs:
```

```
PS      0  1
```

```

-----
Red      .      .
Green    *      *

FEB LEDs:
  FEB    0      1      2      3      4      5
-----
Red      .      .      .      .      .      .
Green    .      .      .      *      *      *
Active   .      .      .      *      *      *

```

show chassis craft-interface (M160 Router)

```

user@host> show chassis craft-interface

FPM Display contents:
+-----+
| hosts                |
| Up: 1+16:46          |
|                      |
| Fans OK              |
+-----+

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

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

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

MCS and SFM LEDs:
MCS        0      1      SFM    0      1      2      3
-----
Amber      .      .      .      .      .      .      .
Green      .      .      .      .      .      .      .
Blue       *      *      .      .      .      .      .

```

show chassis craft-interface (MX150)

```

user@host > show chassis craft-interface

LED status for: FPC 0
-----
LEDs status:
  Alarm LED : Off
  System LED: Green

```

| Master LED: Green | | |
|-------------------|------------|-------------------|
| Interface | STATUS LED | LINK/ACTIVITY LED |
| ge-0/0/0 | N/A | (null) |
| lc-0/0/0 | (null) | (null) |
| ge-0/0/10 | N/A | (null) |
| gr-0/0/10 | N/A | (null) |
| ip-0/0/10 | N/A | (null) |
| vt-0/0/10 | N/A | (null) |
| ge-0/0/11 | N/A | (null) |

show chassis craft-interface (MX104 Router)

```
user@host > show chassis craft-interface
```

```
Front Panel System LEDs:
Routing Engine    0    1
```

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

```
Front Panel Alarm Indicators:
```

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

```
Input relay:
```

```
-----
Port  Mode   Status
0     Open   Clear
1     Open   Clear
2     Open   Clear
3     Open   Clear
```

```
Output relay:
```

```
-----
Port  Mode   Status
0     Open   Clear
1     Open   Clear
```

```
PS Status:
```

```
PS    0    1
```

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

show chassis craft-interface (MX2010 Router)

```
user@host > show chassis craft-interface
```

```
Front Panel System LEDs:
Routing Engine    0    1
```

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

```

Master          *      .

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

Front Panel FPC LEDs:
FPC    0    1    2    3    4    5    6    7    8    9
-----
Red     .    .    .    .    .    .    .    .    .    .
Green  *    *    .    .    .    .    .    .    *    *

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

PS LEDs:
PS     0    1    2    3    4    5    6    7    8
-----
Red     .    .    .    .    .    .    .    .    .
Green   .    .    .    .    *    *    *    *    *

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

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

Front Panel Chassis Info:
Chassis Number    0x0
Chassis Role      S

```

show chassis craft-interface (MX2020 Router)

```
user@host > show chassis craft-interface
```

```

Front Panel System LEDs:
Routing Engine 0 1
-----
OK * *
Fail . .
Master * .
Front Panel Alarm Indicators:
-----
Red LED .
Yellow LED .
Major relay .
Minor relay .

```

```

Front Panel FPC LEDs:
FPC 0 1 2 3 4 5 6 7 8 9
-----
Red . . . . .
Green * * * * *
Front Panel FPC LEDs:
FPC 10 11 12 13 14 15 16 17 18 19
-----
Red . . . . .
Green * * * * *
CB LEDs:
CB 0 1
-----
Amber . .
Green * *
PS LEDs:
PS 0 1 2 3 4 5 6 7 8
-----
Red . . . . .
Green * * * * * . * *
PS LEDs:
PS 9 10 11 12 13 14 15 16 17
-----
Red . . . . .
Green * * * * *
Fan Tray LEDs:
FT 0 1 2 3
-----
Red . . . .
Green * * * *
Front Panel SFB LEDs:
SFB 0 1 2 3 4 5 6 7
-----
Red . . . . .
Green * * * * *
Front Panel Chassis Info:
Chassis Number 0x57
Chassis Role M

```

show chassis craft-interface (MX2008 Router)

```

user@host> show chassis craft-interface

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

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

Front Panel FPC LEDs:
FPC  0  1  2  3  4  5  6  7  8  9
-----

```



```

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

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

PS LEDs:
  PS      0      1      2      3      4      5      6      7      8
-----
Red       .      .      .      .      .      .      .      .      .
Green     .      *      *      *      *      *      *      *      .

Fan Tray LEDs:
  FT      0      1
-----
Red       .      .
Green     *      *

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

Front Panel Chassis Info:
Chassis Number    0x36
Chassis Role      M

```

show chassis craft-interface (T4000 Router)

```
user@host> show chassis craft-interface
```

```

FPM Display contents:
+-----+
|stymphalian      |
|2 Alarms active  |
|R: Front Top Fan Tra|
|Y: PEM 1 Absent  |
+-----+

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

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

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

```

```

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

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

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

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

```

show chassis craft-interface (TX Matrix Routing Matrix)

```
user@host> show chassis craft-interface
```

```
scc-re0:
```

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

```

+-----+
|bradley      |
|8 Alarms active|
|R: SIB 2 Absent|
|R: SIB 1 Absent|
+-----+

```

```
Front Panel System LEDs:
```

```
Routing Engine    0  1
```

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

```

```
Front Panel Alarm Indicators:
```

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

```

```
CB LEDs:
```

```
  CB    0  1
```

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

```

```
SIB LEDs:
```

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

```

-----
Fail . . . . .
OK . . . . . *
Active . . . . . *

lcc0-re0:
-----
FPM Display contents:
+-----+
|hybrid          |
|5 Alarms active |
|R: SIB 2 Absent |
|R: SIB 1 Absent |
+-----+
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                * .
Fail              . .
Master            * .

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

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

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

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

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

lcc2-re0:
-----
FPM Display contents:
+-----+
|prius           |
|5 Alarms active |
+-----+

```

```

|R: SIB 2 Absent      |
|R: SIB 1 Absent      |
+-----+

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

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

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

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

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

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

```

show chassis craft-interface (TX Matrix Plus Routing Matrix)

```
user@host> show chassis craft-interface
```

```
sfc0-re0:
```

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

```

+-----+
|noname      |
|12 Alarms active |
|R: SIB F13 12 Absent|
|R: SIB F13 9 Absent |
+-----+

```

```

SFC Front Panel Switch Settings:
SFC Chassis Number : 00

```

```

Config Size           : 1

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

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

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

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

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

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

1cc0-re0:
-----
FPM Display contents:
+-----+
|noname1          |
|1 Alarm active    |
|R: PEM 1 Not OK   |
|                  |
+-----+

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

Front Panel Alarm Indicators:

```

```

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

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

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

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

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

lcc1-re0:
-----
FPM Display contents:
+-----+
|noname2      |
|2 Alarms active|
|R: FPC 0 PIC 0 Failu|
|R: PEM 1 Not OK   |
+-----+

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

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

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

```

```
Green * * * . . * . .
```

```
CB LEDs:
```

```
CB 0 1
```

```
Amber . .
```

```
Green * *
```

```
Blue * .
```

```
SCG LEDs:
```

```
SCG 0 1
```

```
Amber . .
```

```
Green * *
```

```
Blue * .
```

```
SIB LEDs:
```

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

```
Red . . . . .
```

```
Green * * * * *
```

show chassis craft-interface (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis craft-interface
```

```
sfc0-re0:
```

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

```
+-----+  
|noname      |  
|48 Alarms active |  
|R: LCC 2 Major Error|  
|R: LCC 0 Major Error|  
+-----+
```

```
SFC Front Panel Switch Settings:
```

```
SFC Chassis Number : 00
```

```
Config Size : 3
```

```
Front Panel System LEDs:
```

```
Routing Engine 0 1
```

```
-----  
OK * *
```

```
Fail . .
```

```
Master * .
```

```
Front Panel Alarm Indicators:
```

```
-----  
Red LED *
```

```
Yellow LED *
```

```
Major relay *
```

```
Minor relay *
```

```
Front Panel F13 SIB LEDs:
```

```
SIB 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
```

```
-----  
Fail . . . . .
```

```
OK * . . * . * . . . . . . . . . .
```

```
Active * . . * . * . . . . . . . . . .
```

PS LEDs:

| | | |
|----|---|---|
| PS | 0 | 1 |
|----|---|---|

Red * .

Green . *

Fan Tray LEDs:

| | | | | | | |
|----|---|---|---|---|---|---|
| FT | 0 | 1 | 2 | 3 | 4 | 5 |
|----|---|---|---|---|---|---|

Red *

Green * * * * * .

CB LEDs:

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

Amber . .

Green * *

Blue * .

lcc0-re0:

FPM Display contents:

```

+-----+
|noname1      |
|14 Alarms active|
|R: PEM 1 Not OK|
|R: FPC 7 misconfig|
+-----+

```

Front Panel System LEDs:

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

OK * *

Fail . .

Master * .

Front Panel Alarm Indicators:

Red LED *

Yellow LED *

Major relay *

Minor relay *

Front Panel FPC LEDs:

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

Red

Green * . . .

CB LEDs:

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

Amber . .

Green * *

Blue * .

SCG LEDs:

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

```

Amber . .
Green * *
Blue * .

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

```

show chassis craft-interface (ACX2000 Universal Metro Router)

```
user@host> show chassis craft-interface
```

```

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

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

Input relay:
-----
Port   Mode   Status
0      Open   Clear
1      Open   Clear
2      Open   Clear
3      Open   Clear

Output relay:
-----
Port   Mode   Status
0      Open   Clear
1      Open   Clear

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

```

show chassis craft-interface (ACX500 Router)

```
user@host> show chassis craft-interface
```

```

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

Front Panel Alarm Indicators:

```

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

Input relay:
-----
Port    Mode    Status
0       Open    Clear
1       Open    Clear
2       Open    Clear
3       Open    Clear

Output relay:
-----
Port    Mode    Status
0       Open    Clear
1       Open    Clear

PS Status:
  PS    0    1
-----
Red      .    .
Green    *    *
```

show chassis environment

| | |
|-----------------------|---|
| List of Syntax | Syntax on page 607 |
| | Syntax (T320, T640, T1600, and T4000 Routers) on page 607 |
| | Syntax (TX Matrix Routers) on page 607 |
| | Syntax (TX Matrix Plus Routers) on page 607 |
| | Syntax (MX Series Routers) on page 608 |
| | Syntax (MX104 Universal Routing Platforms) on page 608 |
| | Syntax (MX150 Router Appliance) on page 608 |
| | Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms) on page 608 |
| | Syntax (MX10003 and MX204 Universal Routing Platforms) on page 608 |
| | Syntax (EX8200 Switches) on page 608 |
| | Syntax (EX Series Switches except EX8200) on page 609 |
| | Syntax (QFX Series) on page 609 |
| | Syntax (OCX Series) on page 609 |
| | Syntax (PTX Series Packet Transport Routers) on page 609 |
| | Syntax (ACX Series Universal Metro Routers) on page 609 |
| | Syntax (ACX5048 and ACX5096 Routers) on page 609 |
| | Syntax (ACX500 Routers) on page 609 |

| | |
|---------------|--------------------------|
| 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) | <pre>show chassis environment <all-members> <local> <member <i>member-id</i>></pre> |
| Syntax (MX104 Universal Routing Platforms) | <pre>show chassis environment <cb> <pem <i>pem-slot-number</i>> <routing-engine <i>re-slot-number</i>></pre> |
| Syntax (MX150 Router Appliance) | <pre>show chassis environment <pem <i>pem-slot-number</i>> <routing-engine <i>re-slot-number</i>></pre> |
| Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms) | <pre>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>]]></pre> |
| Syntax (MX10003 and MX204 Universal Routing Platforms) | <pre>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>></pre> |
| Syntax (EX8200 Switches) | <pre>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>></pre> |

| | |
|--|---|
| Syntax (EX Series Switches except EX8200) | <pre> show chassis environment <all-members> <fpc fpc-slot-number> <local> <member member-id> <power-supply-unit> <routing-engine> <satellite [fpc-slot slot-id device-alias alias-name]> </pre> |
| Syntax (QFX Series) | <pre> show chassis environment <cb slot-number <interconnect-device name>> <fpc slot-number <interconnect-device name>> <interconnect-device name <slot-number> <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) | <pre> show chassis environment </pre> |
| 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> |

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
Command introduced in Junos OS Release 11.1 for QFX Series.
Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.
monitored option added in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.
Command introduced in Junos OS Release 12.1 for T4000 Core Routers.
Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.
Command introduced in Junos OS Release 12.3 for MX 2020 and MX2010 Universal Routing Platforms.
pem option introduced in Junos OS Release 12.3 for ACX4000 Universal Metro Routers.
satellite option introduced in Junos OS Release 14.2R3.
all-members, **local**, and **member** *member-id* options introduced in Junos OS Release 15.1 for MX2010 and MX2020 routers.
Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.
Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.
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 on page 692](#)
- [show chassis environment cb on page 704](#)
- [show chassis environment ccg on page 731](#)
- [show chassis environment cip](#)
- [show chassis environment fpc on page 737](#)
- [show chassis environment fpm on page 797](#)
- [show chassis environment lcc](#)
- [show chassis environment mcs on page 826](#)
- [show chassis environment monitored on page 804](#)
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- [show chassis environment pdu on page 854](#)
- [show chassis environment pem on page 860](#)
- [show chassis environment psm on page 877](#)
- [show chassis environment psu on page 875](#)
- [show chassis environment routing-engine on page 887](#)
- [show chassis environment scg on page 896](#)
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- [*show chassis environment sfc*](#)

List of Sample Output

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[show chassis environment \(M7i Router\) on page 617](#)
[show chassis environment \(M10 Router\) on page 618](#)
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[show chassis environment \(M20 Router\) on page 619](#)
[show chassis environment \(M40 Router\) on page 619](#)
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Output Fields [Table 38 on page 616](#) lists the output fields for the **show chassis environment** command. Output fields are listed in the approximate order in which they appear.

Table 38: 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 38: 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 |
| Fans | Routing Engine 1 | Testing | |
| | 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 |
| | Fan 1 | OK | Spinning at normal speed |
| Fans | 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 |

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)

user@host> show chassis environment

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PEM 0 | Absent | |
| | PEM 1 | Absent | |
| | PEM 2 | Check | |
| | PEM 3 | OK | 35 degrees C / 95 degrees F |
| | Routing Engine 0 | OK | 37 degrees C / 98 degrees F |
| | Routing Engine 1 | Absent | |
| | CB 0 Intake | OK | 24 degrees C / 75 degrees F |
| | CB 0 Exhaust A | OK | 30 degrees C / 86 degrees F |
| | CB 0 Exhaust B | OK | 27 degrees C / 80 degrees F |
| | CB 1 Intake | Absent | |
| | CB 1 Exhaust A | Absent | |
| | CB 1 Exhaust B | Absent | |
| | CB 1 ACBC | Absent | |
| | CB 1 SF A | Absent | |
| | CB 1 SF B | Absent | |
| | CB 2 Intake | Absent | |
| | CB 2 Exhaust A | Absent | |
| | CB 2 Exhaust B | Absent | |
| | CB 2 ACBC | Absent | |
| | CB 2 SF A | Absent | |
| | CB 2 SF B | Absent | |
| | FPC 4 Intake | OK | 24 degrees C / 75 degrees F |
| | FPC 4 Exhaust A | OK | 36 degrees C / 96 degrees F |
| | FPC 4 Exhaust B | OK | 38 degrees C / 100 degrees F |
| | FPC 7 Intake | OK | 24 degrees C / 75 degrees F |
| | FPC 7 Exhaust A | OK | 36 degrees C / 96 degrees F |
| | FPC 7 Exhaust B | OK | 42 degrees C / 107 degrees F |
| Fans | Top Fan Tray Temp | Failed | |
| | Top Tray Fan 1 | OK | Spinning at normal speed |
| | Top Tray Fan 2 | OK | Spinning at normal speed |
| | Top Tray Fan 3 | OK | Spinning at normal speed |
| | Top Tray Fan 4 | OK | Spinning at normal speed |
| | Top Tray Fan 5 | OK | Spinning at normal speed |
| | Top Tray Fan 6 | OK | Spinning at normal speed |
| | Bottom Fan Tray Temp | Failed | |
| | Bottom Tray Fan 1 | OK | Spinning at normal speed |
| | Bottom Tray Fan 2 | OK | Spinning at normal speed |

| | | |
|-------------------|----|--------------------------|
| Bottom Tray Fan 3 | OK | Spinning at normal speed |
| Bottom Tray Fan 4 | OK | Spinning at normal speed |
| Bottom Tray Fan 5 | OK | Spinning at normal speed |
| Bottom Tray Fan 6 | OK | Spinning at normal speed |

show chassis environment (MX960 Router with SCBE)

user@host> show chassis environment

| Class | Item | Status | Measurement |
|-------|-------------------------|--------|------------------------------|
| Temp | PEM 0 | Absent | |
| | PEM 1 | OK | 50 degrees C / 122 degrees F |
| | PEM 2 | OK | 50 degrees C / 122 degrees F |
| | PEM 3 | OK | 50 degrees C / 122 degrees F |
| | Routing Engine 0 | OK | 42 degrees C / 107 degrees F |
| | Routing Engine 0 CPU | OK | 51 degrees C / 123 degrees F |
| | Routing Engine 1 | OK | 39 degrees C / 102 degrees F |
| | Routing Engine 1 CPU | OK | 44 degrees C / 111 degrees F |
| | CB 0 Intake | OK | 35 degrees C / 95 degrees F |
| | CB 0 Exhaust A | OK | 36 degrees C / 96 degrees F |
| | CB 0 Exhaust B | OK | 43 degrees C / 109 degrees F |
| | CB 0 ACBC | OK | 38 degrees C / 100 degrees F |
| | CB 0 XF A | OK | 53 degrees C / 127 degrees F |
| | CB 0 XF B | OK | 47 degrees C / 116 degrees F |
| | CB 1 Intake | OK | 35 degrees C / 95 degrees F |
| | CB 1 Exhaust A | OK | 35 degrees C / 95 degrees F |
| | CB 1 Exhaust B | OK | 41 degrees C / 105 degrees F |
| | CB 1 ACBC | OK | 38 degrees C / 100 degrees F |
| | CB 1 XF A | OK | 52 degrees C / 125 degrees F |
| | CB 1 XF B | OK | 47 degrees C / 116 degrees F |
| | CB 2 Intake | OK | 32 degrees C / 89 degrees F |
| | CB 2 Exhaust A | OK | 30 degrees C / 86 degrees F |
| | CB 2 Exhaust B | OK | 35 degrees C / 95 degrees F |
| | CB 2 ACBC | OK | 33 degrees C / 91 degrees F |
| | CB 2 XF A | OK | 51 degrees C / 123 degrees F |
| | CB 2 XF B | OK | 50 degrees C / 122 degrees F |
| | FPC 0 Intake | OK | 35 degrees C / 95 degrees F |
| | FPC 0 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | FPC 0 Exhaust B | OK | 50 degrees C / 122 degrees F |
| | FPC 0 I3 0 TSensor | OK | 50 degrees C / 122 degrees F |
| | FPC 0 I3 0 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 0 I3 1 TSensor | OK | 47 degrees C / 116 degrees F |
| | FPC 0 I3 1 Chip | OK | 50 degrees C / 122 degrees F |
| | FPC 0 I3 2 TSensor | OK | 45 degrees C / 113 degrees F |
| | FPC 0 I3 2 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 0 I3 3 TSensor | OK | 41 degrees C / 105 degrees F |
| | FPC 0 I3 3 Chip | OK | 44 degrees C / 111 degrees F |
| | FPC 0 IA 0 TSensor | OK | 45 degrees C / 113 degrees F |
| | FPC 0 IA 0 Chip | OK | 45 degrees C / 113 degrees F |
| | FPC 0 IA 1 TSensor | OK | 44 degrees C / 111 degrees F |
| | FPC 0 IA 1 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 1 Intake | OK | 36 degrees C / 96 degrees F |
| | FPC 1 Exhaust A | OK | 47 degrees C / 116 degrees F |
| | FPC 1 Exhaust B | OK | 43 degrees C / 109 degrees F |
| | FPC 1 LU 0 TCAM TSensor | OK | 53 degrees C / 127 degrees F |
| | FPC 1 LU 0 TCAM Chip | OK | 57 degrees C / 134 degrees F |
| | FPC 1 LU 0 TSensor | OK | 53 degrees C / 127 degrees F |
| | FPC 1 LU 0 Chip | OK | 60 degrees C / 140 degrees F |
| | FPC 1 MQ 0 TSensor | OK | 53 degrees C / 127 degrees F |
| | FPC 1 MQ 0 Chip | OK | 56 degrees C / 132 degrees F |

| | | |
|-------------------------|----|------------------------------|
| FPC 1 LU 1 TCAM TSensor | OK | 51 degrees C / 123 degrees F |
| FPC 1 LU 1 TCAM Chip | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 1 TSensor | OK | 51 degrees C / 123 degrees F |
| FPC 1 LU 1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 1 MQ 1 TSensor | OK | 51 degrees C / 123 degrees F |
| FPC 1 MQ 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 2 Intake | OK | 35 degrees C / 95 degrees F |
| FPC 2 Exhaust A | OK | 39 degrees C / 102 degrees F |
| FPC 2 Exhaust B | OK | 54 degrees C / 129 degrees F |
| FPC 2 I3 0 TSensor | OK | 52 degrees C / 125 degrees F |
| FPC 2 I3 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 2 I3 1 TSensor | OK | 48 degrees C / 118 degrees F |
| FPC 2 I3 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 2 I3 2 TSensor | OK | 47 degrees C / 116 degrees F |
| FPC 2 I3 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 2 I3 3 TSensor | OK | 41 degrees C / 105 degrees F |
| FPC 2 I3 3 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 2 IA 0 TSensor | OK | 47 degrees C / 116 degrees F |
| FPC 2 IA 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 2 IA 1 TSensor | OK | 45 degrees C / 113 degrees F |
| FPC 2 IA 1 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 3 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 3 Exhaust A | OK | 34 degrees C / 93 degrees F |
| FPC 3 Exhaust B | OK | 47 degrees C / 116 degrees F |
| FPC 3 I3 0 TSensor | OK | 48 degrees C / 118 degrees F |
| FPC 3 I3 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 3 I3 1 TSensor | OK | 46 degrees C / 114 degrees F |
| FPC 3 I3 1 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 3 IA 0 TSensor | OK | 41 degrees C / 105 degrees F |
| FPC 3 IA 0 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 5 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 5 Exhaust A | OK | 42 degrees C / 107 degrees F |
| FPC 5 Exhaust B | OK | 53 degrees C / 127 degrees F |
| FPC 5 LU 0 TSensor | OK | 53 degrees C / 127 degrees F |
| FPC 5 LU 0 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 5 LU 1 TSensor | OK | 53 degrees C / 127 degrees F |
| FPC 5 LU 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 5 LU 2 TSensor | OK | 53 degrees C / 127 degrees F |
| FPC 5 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 5 LU 3 TSensor | OK | 53 degrees C / 127 degrees F |
| FPC 5 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 5 MQ 0 TSensor | OK | 47 degrees C / 116 degrees F |
| FPC 5 MQ 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 5 MQ 1 TSensor | OK | 47 degrees C / 116 degrees F |
| FPC 5 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 5 MQ 2 TSensor | OK | 47 degrees C / 116 degrees F |
| FPC 5 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 5 MQ 3 TSensor | OK | 47 degrees C / 116 degrees F |
| FPC 5 MQ 3 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 7 Intake | OK | 36 degrees C / 96 degrees F |
| FPC 7 Exhaust A | OK | 35 degrees C / 95 degrees F |
| FPC 7 Exhaust B | OK | 33 degrees C / 91 degrees F |
| FPC 7 QX 0 TSensor | OK | 42 degrees C / 107 degrees F |
| FPC 7 QX 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 7 LU 0 TCAM TSensor | OK | 42 degrees C / 107 degrees F |
| FPC 7 LU 0 TCAM Chip | OK | 44 degrees C / 111 degrees F |
| FPC 7 LU 0 TSensor | OK | 42 degrees C / 107 degrees F |
| FPC 7 LU 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 7 MQ 0 TSensor | OK | 42 degrees C / 107 degrees F |
| FPC 7 MQ 0 Chip | OK | 45 degrees C / 113 degrees F |

| | | | |
|------|----------------------|----|------------------------------|
| | FPC 8 Intake | OK | 33 degrees C / 91 degrees F |
| | FPC 8 Exhaust A | OK | 33 degrees C / 91 degrees F |
| | FPC 8 Exhaust B | OK | 36 degrees C / 96 degrees F |
| | FPC 8 I3 0 TSensor | OK | 38 degrees C / 100 degrees F |
| | FPC 8 I3 0 Chip | OK | 43 degrees C / 109 degrees F |
| | FPC 8 BDS 0 TSensor | OK | 37 degrees C / 98 degrees F |
| | FPC 8 BDS 0 Chip | OK | 36 degrees C / 96 degrees F |
| | FPC 8 IA 0 TSensor | OK | 37 degrees C / 98 degrees F |
| | FPC 8 IA 0 Chip | OK | 37 degrees C / 98 degrees F |
| | FPC 10 Intake | OK | 38 degrees C / 100 degrees F |
| | FPC 10 Exhaust A | OK | 36 degrees C / 96 degrees F |
| | FPC 10 Exhaust B | OK | 41 degrees C / 105 degrees F |
| | FPC 10 I3 0 TSensor | OK | 40 degrees C / 104 degrees F |
| | FPC 10 I3 0 Chip | OK | 42 degrees C / 107 degrees F |
| | FPC 10 I3 1 TSensor | OK | 40 degrees C / 104 degrees F |
| | FPC 10 I3 1 Chip | OK | 44 degrees C / 111 degrees F |
| | FPC 10 I3 2 TSensor | OK | 42 degrees C / 107 degrees F |
| | FPC 10 I3 2 Chip | OK | 43 degrees C / 109 degrees F |
| | FPC 10 I3 3 TSensor | OK | 39 degrees C / 102 degrees F |
| | FPC 10 I3 3 Chip | OK | 44 degrees C / 111 degrees F |
| | FPC 10 IA 0 TSensor | OK | 36 degrees C / 96 degrees F |
| | FPC 10 IA 0 Chip | OK | 36 degrees C / 96 degrees F |
| | 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)

user@host> show chassis environment

| Class | Item | Status | Measurement |
|-------|-------|--------|------------------------------|
| Temp | PSM 0 | Absent | |
| | PSM 1 | Absent | |
| | PSM 2 | OK | 41 degrees C / 105 degrees F |
| | PSM 3 | OK | 39 degrees C / 102 degrees F |

| | | |
|----------------------|--------|------------------------------|
| PSM 4 | OK | 39 degrees C / 102 degrees F |
| PSM 5 | OK | 38 degrees C / 100 degrees F |
| PSM 6 | OK | 38 degrees C / 100 degrees F |
| PSM 7 | OK | 38 degrees C / 100 degrees F |
| PSM 8 | OK | 37 degrees C / 98 degrees F |
| PSM 9 | Absent | |
| PSM 10 | Absent | |
| PSM 11 | OK | 47 degrees C / 116 degrees F |
| PSM 12 | OK | 45 degrees C / 113 degrees F |
| PSM 13 | OK | 44 degrees C / 111 degrees F |
| PSM 14 | OK | 44 degrees C / 111 degrees F |
| PSM 15 | OK | 43 degrees C / 109 degrees F |
| PSM 16 | OK | 42 degrees C / 107 degrees F |
| PSM 17 | OK | 41 degrees C / 105 degrees F |
| PDM 0 | OK | |
| PDM 1 | Absent | |
| PDM 2 | Absent | |
| PDM 3 | OK | |
| CB 0 IntakeA-Zone0 | OK | 45 degrees C / 113 degrees F |
| CB 0 IntakeB-Zone1 | OK | 34 degrees C / 93 degrees F |
| CB 0 IntakeC-Zone0 | OK | 48 degrees C / 118 degrees F |
| CB 0 ExhaustA-Zone0 | OK | 45 degrees C / 113 degrees F |
| CB 0 ExhaustB-Zone1 | OK | 37 degrees C / 98 degrees F |
| CB 0 TCBC-Zone0 | OK | 41 degrees C / 105 degrees F |
| CB 1 IntakeA-Zone0 | OK | 46 degrees C / 114 degrees F |
| CB 1 IntakeB-Zone1 | OK | 42 degrees C / 107 degrees F |
| CB 1 IntakeC-Zone0 | OK | 49 degrees C / 120 degrees F |
| CB 1 ExhaustA-Zone0 | OK | 46 degrees C / 114 degrees F |
| CB 1 ExhaustB-Zone1 | OK | 41 degrees C / 105 degrees F |
| CB 1 TCBC-Zone0 | OK | 46 degrees C / 114 degrees F |
| SPMB 0 Intake | OK | 33 degrees C / 91 degrees F |
| SPMB 1 Intake | OK | 42 degrees C / 107 degrees F |
| Routing Engine 0 | OK | 35 degrees C / 95 degrees F |
| Routing Engine 0 CPU | OK | 34 degrees C / 93 degrees F |
| Routing Engine 1 | OK | 44 degrees C / 111 degrees F |
| Routing Engine 1 CPU | OK | 42 degrees C / 107 degrees F |
| SFB 0 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 0 Exhaust-Zone1 | OK | 48 degrees C / 118 degrees F |
| SFB 0 IntakeA-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 0 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |
| SFB 0 Exhaust-Zone0 | OK | 52 degrees C / 125 degrees F |
| SFB 0 SFB-XF2-Zone1 | OK | 61 degrees C / 141 degrees F |
| SFB 0 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 0 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 1 Intake-Zone0 | OK | 56 degrees C / 132 degrees F |
| SFB 1 Exhaust-Zone1 | OK | 47 degrees C / 116 degrees F |
| SFB 1 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 1 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |
| SFB 1 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 1 SFB-XF2-Zone1 | OK | 62 degrees C / 143 degrees F |
| SFB 1 SFB-XF1-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 1 SFB-XF0-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 2 Intake-Zone0 | OK | 56 degrees C / 132 degrees F |
| SFB 2 Exhaust-Zone1 | OK | 47 degrees C / 116 degrees F |
| SFB 2 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 2 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |
| SFB 2 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 2 SFB-XF2-Zone1 | OK | 65 degrees C / 149 degrees F |
| SFB 2 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 2 SFB-XF0-Zone0 | OK | 70 degrees C / 158 degrees F |

| | | |
|---------------------|----|------------------------------|
| SFB 3 Intake-Zone0 | OK | 57 degrees C / 134 degrees F |
| SFB 3 Exhaust-Zone1 | OK | 48 degrees C / 118 degrees F |
| SFB 3 IntakeA-Zone0 | OK | 52 degrees C / 125 degrees F |
| SFB 3 IntakeB-Zone1 | OK | 41 degrees C / 105 degrees F |
| SFB 3 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 3 SFB-XF2-Zone1 | OK | 66 degrees C / 150 degrees F |
| SFB 3 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 3 SFB-XF0-Zone0 | OK | 71 degrees C / 159 degrees F |
| SFB 4 Intake-Zone0 | OK | 58 degrees C / 136 degrees F |
| SFB 4 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 4 IntakeA-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 4 IntakeB-Zone1 | OK | 42 degrees C / 107 degrees F |
| SFB 4 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 4 SFB-XF2-Zone1 | OK | 64 degrees C / 147 degrees F |
| SFB 4 SFB-XF1-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 4 SFB-XF0-Zone0 | OK | 71 degrees C / 159 degrees F |
| SFB 5 Intake-Zone0 | OK | 58 degrees C / 136 degrees F |
| SFB 5 Exhaust-Zone1 | OK | 50 degrees C / 122 degrees F |
| SFB 5 IntakeA-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 5 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 5 Exhaust-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 5 SFB-XF2-Zone1 | OK | 66 degrees C / 150 degrees F |
| SFB 5 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 5 SFB-XF0-Zone0 | OK | 74 degrees C / 165 degrees F |
| SFB 6 Intake-Zone0 | OK | 58 degrees C / 136 degrees F |
| SFB 6 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 6 IntakeA-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 6 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 6 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 6 SFB-XF2-Zone1 | OK | 65 degrees C / 149 degrees F |
| SFB 6 SFB-XF1-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 6 SFB-XF0-Zone0 | OK | 72 degrees C / 161 degrees F |
| SFB 7 Intake-Zone0 | OK | 57 degrees C / 134 degrees F |
| SFB 7 Exhaust-Zone1 | OK | 50 degrees C / 122 degrees F |
| SFB 7 IntakeA-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 7 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 7 Exhaust-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 7 SFB-XF2-Zone1 | OK | 68 degrees C / 154 degrees F |
| SFB 7 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 7 SFB-XF0-Zone0 | OK | 73 degrees C / 163 degrees F |
| FPC 0 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 0 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 0 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 0 LU 0 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 0 LU 1 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 0 LU 2 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 LU 3 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 0 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 0 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 3 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 1 Intake | OK | 40 degrees C / 104 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 1 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 1 Exhaust B | OK | 58 degrees C / 136 degrees F |
| FPC 1 LU 0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 1 LU 1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 1 LU 2 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 1 LU 3 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 1 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 1 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 3 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 2 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 2 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 2 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 2 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 2 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 1 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 2 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 2 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 2 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 2 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 2 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 2 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 3 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 3 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 3 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 3 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 3 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 3 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 3 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 3 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 3 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 3 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 4 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 4 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 4 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 4 LU 0 TSen | OK | 59 degrees C / 138 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 4 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 4 LU 1 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 1 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 4 LU 2 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 4 LU 3 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 4 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 4 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 4 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 4 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 5 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 5 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 5 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 5 LU 0 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 5 LU 1 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 1 Chip | OK | 66 degrees C / 150 degrees F |
| FPC 5 LU 2 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 5 LU 3 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 5 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 5 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 5 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 5 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 6 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 6 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 6 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 6 LU 0 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 0 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 6 LU 1 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 1 Chip | OK | 66 degrees C / 150 degrees F |
| FPC 6 LU 2 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 LU 3 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 6 MQ 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 6 MQ 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 6 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 6 MQ 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 6 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 6 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 7 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 7 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 7 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 7 LU 0 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 7 LU 1 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 1 Chip | OK | 65 degrees C / 149 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 7 LU 2 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 LU 3 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 7 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 8 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 8 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 8 LU 0 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 8 LU 1 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 8 LU 2 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 2 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 8 LU 3 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 8 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 8 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 8 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 8 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 9 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 9 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 9 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 9 LU 0 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 0 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 9 LU 1 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 1 Chip | OK | 67 degrees C / 152 degrees F |
| FPC 9 LU 2 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 LU 3 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 9 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 9 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 9 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 10 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 10 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 10 Exhaust B | OK | 55 degrees C / 131 degrees F |
| FPC 10 LU 0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 10 LU 1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 10 LU 2 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 2 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 10 LU 3 TSen | OK | 54 degrees C / 129 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 10 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 10 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 10 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 10 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 11 Intake | OK | 30 degrees C / 86 degrees F |
| FPC 11 Exhaust A | OK | 35 degrees C / 95 degrees F |
| FPC 11 Exhaust B | OK | 30 degrees C / 86 degrees F |
| FPC 11 LU 0 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 0 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 11 LU 1 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 11 LU 2 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 11 LU 3 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 11 MQ 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 1 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 11 MQ 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 11 MQ 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 12 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 12 Exhaust A | OK | 47 degrees C / 116 degrees F |
| FPC 12 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 12 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 12 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 12 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 12 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 12 MQ 0 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 1 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 12 MQ 2 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 12 MQ 3 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 13 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 13 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 13 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 13 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 13 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 13 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 0 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |

| | | |
|------------------------|----|------------------------------|
| FPC 13 MQ 1 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 13 MQ 2 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 13 MQ 3 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 14 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 14 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 14 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 14 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 14 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 14 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 14 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 14 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 14 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 14 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 15 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 15 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 15 Exhaust B | OK | 60 degrees C / 140 degrees F |
| FPC 15 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 15 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 2 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 15 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 3 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 15 XM 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 XM 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 15 XF 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 XF 0 Chip | OK | 68 degrees C / 154 degrees F |
| FPC 15 PLX Switch TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 PLX Switch Chip | OK | 56 degrees C / 132 degrees F |
| FPC 16 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 16 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 16 Exhaust B | OK | 53 degrees C / 127 degrees F |
| FPC 16 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 16 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 16 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 16 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 16 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 16 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 16 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |

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|------------------|----|------------------------------|
| 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 |

| | | | |
|------|------------------|----|------------------------------|
| Fans | 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 |
| | 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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user@host> show chassis environment
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| Class | Item | Status | Measurement |
|-------|----------------------|--------|-----------------------------|
| Temp | PSM 0 | OK | 7 degrees C / 44 degrees F |
| | PSM 1 | OK | 7 degrees C / 44 degrees F |
| | PSM 2 | OK | 7 degrees C / 44 degrees F |
| | PSM 3 | OK | 6 degrees C / 42 degrees F |
| | PSM 4 | OK | 6 degrees C / 42 degrees F |
| | PSM 5 | OK | 6 degrees C / 42 degrees F |
| | PSM 6 | OK | 6 degrees C / 42 degrees F |
| | PSM 7 | OK | 7 degrees C / 44 degrees F |
| | PSM 8 | OK | 7 degrees C / 44 degrees F |
| | PDM 0 | OK | |
| | PDM 1 | Absent | |
| | CB 0 IntakeA-Zone0 | OK | 14 degrees C / 57 degrees F |
| | CB 0 IntakeB-Zone1 | OK | 7 degrees C / 44 degrees F |
| | CB 0 IntakeC-Zone0 | OK | 22 degrees C / 71 degrees F |
| | CB 0 ExhaustA-Zone0 | OK | 14 degrees C / 57 degrees F |
| | CB 0 ExhaustB-Zone1 | OK | 9 degrees C / 48 degrees F |
| | CB 0 TCBC-Zone0 | OK | 11 degrees C / 51 degrees F |
| | CB 1 IntakeA-Zone0 | OK | 9 degrees C / 48 degrees F |
| | CB 1 IntakeB-Zone1 | OK | 5 degrees C / 41 degrees F |
| | CB 1 IntakeC-Zone0 | OK | 20 degrees C / 68 degrees F |
| | CB 1 ExhaustA-Zone0 | OK | 12 degrees C / 53 degrees F |
| | CB 1 ExhaustB-Zone1 | OK | 7 degrees C / 44 degrees F |
| | CB 1 TCBC-Zone0 | OK | 10 degrees C / 50 degrees F |
| | SPMB 0 Intake | OK | 5 degrees C / 41 degrees F |
| | SPMB 1 Intake | OK | 4 degrees C / 39 degrees F |
| | Routing Engine 0 | OK | 9 degrees C / 48 degrees F |
| | Routing Engine 0 CPU | OK | 9 degrees C / 48 degrees F |
| | Routing Engine 1 | OK | 6 degrees C / 42 degrees F |

| | | |
|----------------------|----|-----------------------------|
| Routing Engine 1 CPU | OK | 6 degrees C / 42 degrees F |
| SFB 0 Intake-Zone0 | OK | 26 degrees C / 78 degrees F |
| SFB 0 Exhaust-Zone1 | OK | 17 degrees C / 62 degrees F |
| SFB 0 IntakeA-Zone0 | OK | 16 degrees C / 60 degrees F |
| SFB 0 IntakeB-Zone1 | OK | 11 degrees C / 51 degrees F |
| SFB 0 Exhaust-Zone0 | OK | 18 degrees C / 64 degrees F |
| SFB 0 SFB-XF2-Zone1 | OK | 25 degrees C / 77 degrees F |
| SFB 0 SFB-XF1-Zone0 | OK | 23 degrees C / 73 degrees F |
| SFB 0 SFB-XF0-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 1 Intake-Zone0 | OK | 27 degrees C / 80 degrees F |
| SFB 1 Exhaust-Zone1 | OK | 15 degrees C / 59 degrees F |
| SFB 1 IntakeA-Zone0 | OK | 20 degrees C / 68 degrees F |
| SFB 1 IntakeB-Zone1 | OK | 10 degrees C / 50 degrees F |
| SFB 1 Exhaust-Zone0 | OK | 19 degrees C / 66 degrees F |
| SFB 1 SFB-XF2-Zone1 | OK | 26 degrees C / 78 degrees F |
| SFB 1 SFB-XF1-Zone0 | OK | 27 degrees C / 80 degrees F |
| SFB 1 SFB-XF0-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 2 Intake-Zone0 | OK | 21 degrees C / 69 degrees F |
| SFB 2 Exhaust-Zone1 | OK | 13 degrees C / 55 degrees F |
| SFB 2 IntakeA-Zone0 | OK | 18 degrees C / 64 degrees F |
| SFB 2 IntakeB-Zone1 | OK | 9 degrees C / 48 degrees F |
| SFB 2 Exhaust-Zone0 | OK | 16 degrees C / 60 degrees F |
| SFB 2 SFB-XF2-Zone1 | OK | 24 degrees C / 75 degrees F |
| SFB 2 SFB-XF1-Zone0 | OK | 21 degrees C / 69 degrees F |
| SFB 2 SFB-XF0-Zone0 | OK | 26 degrees C / 78 degrees F |
| SFB 4 Intake-Zone0 | OK | 28 degrees C / 82 degrees F |
| SFB 4 Exhaust-Zone1 | OK | 16 degrees C / 60 degrees F |
| SFB 4 IntakeA-Zone0 | OK | 18 degrees C / 64 degrees F |
| SFB 4 IntakeB-Zone1 | OK | 11 degrees C / 51 degrees F |
| SFB 4 Exhaust-Zone0 | OK | 19 degrees C / 66 degrees F |
| SFB 4 SFB-XF2-Zone1 | OK | 27 degrees C / 80 degrees F |
| SFB 4 SFB-XF1-Zone0 | OK | 27 degrees C / 80 degrees F |
| SFB 4 SFB-XF0-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 5 Intake-Zone0 | OK | 22 degrees C / 71 degrees F |
| SFB 5 Exhaust-Zone1 | OK | 14 degrees C / 57 degrees F |
| SFB 5 IntakeA-Zone0 | OK | 18 degrees C / 64 degrees F |
| SFB 5 IntakeB-Zone1 | OK | 10 degrees C / 50 degrees F |
| SFB 5 Exhaust-Zone0 | OK | 17 degrees C / 62 degrees F |
| SFB 5 SFB-XF2-Zone1 | OK | 22 degrees C / 71 degrees F |
| SFB 5 SFB-XF1-Zone0 | OK | 29 degrees C / 84 degrees F |
| SFB 5 SFB-XF0-Zone0 | OK | 27 degrees C / 80 degrees F |
| SFB 6 Intake-Zone0 | OK | 27 degrees C / 80 degrees F |
| SFB 6 Exhaust-Zone1 | OK | 13 degrees C / 55 degrees F |
| SFB 6 IntakeA-Zone0 | OK | 19 degrees C / 66 degrees F |
| SFB 6 IntakeB-Zone1 | OK | 10 degrees C / 50 degrees F |
| SFB 6 Exhaust-Zone0 | OK | 20 degrees C / 68 degrees F |
| SFB 6 SFB-XF2-Zone1 | OK | 24 degrees C / 75 degrees F |
| SFB 6 SFB-XF1-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 6 SFB-XF0-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 7 Intake-Zone0 | OK | 25 degrees C / 77 degrees F |
| SFB 7 Exhaust-Zone1 | OK | 13 degrees C / 55 degrees F |
| SFB 7 IntakeA-Zone0 | OK | 14 degrees C / 57 degrees F |
| SFB 7 IntakeB-Zone1 | OK | 8 degrees C / 46 degrees F |
| SFB 7 Exhaust-Zone0 | OK | 17 degrees C / 62 degrees F |
| SFB 7 SFB-XF2-Zone1 | OK | 21 degrees C / 69 degrees F |
| SFB 7 SFB-XF1-Zone0 | OK | 21 degrees C / 69 degrees F |
| SFB 7 SFB-XF0-Zone0 | OK | 33 degrees C / 91 degrees F |
| FPC 0 Intake | OK | 13 degrees C / 55 degrees F |
| FPC 0 Exhaust A | OK | 13 degrees C / 55 degrees F |
| FPC 0 Exhaust B | OK | 14 degrees C / 57 degrees F |

| | | |
|-----------------------|----|-----------------------------|
| FPC 0 LU 0 TSen | OK | 28 degrees C / 82 degrees F |
| FPC 0 LU 0 Chip | OK | 25 degrees C / 77 degrees F |
| FPC 0 LU 1 TSen | OK | 28 degrees C / 82 degrees F |
| FPC 0 LU 1 Chip | OK | 27 degrees C / 80 degrees F |
| FPC 0 LU 2 TSen | OK | 28 degrees C / 82 degrees F |
| FPC 0 LU 2 Chip | OK | 19 degrees C / 66 degrees F |
| FPC 0 LU 3 TSen | OK | 28 degrees C / 82 degrees F |
| FPC 0 LU 3 Chip | OK | 23 degrees C / 73 degrees F |
| FPC 0 XM 0 TSen | OK | 28 degrees C / 82 degrees F |
| FPC 0 XM 0 Chip | OK | 33 degrees C / 91 degrees F |
| FPC 0 XM 1 TSen | OK | 28 degrees C / 82 degrees F |
| FPC 0 XM 1 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 0 PLX Switch TSen | OK | 28 degrees C / 82 degrees F |
| FPC 0 PLX Switch Chip | OK | 26 degrees C / 78 degrees F |
| FPC 1 Intake | OK | 10 degrees C / 50 degrees F |
| FPC 1 Exhaust A | OK | 24 degrees C / 75 degrees F |
| FPC 1 Exhaust B | OK | 28 degrees C / 82 degrees F |
| FPC 1 LU 0 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 1 LU 0 Chip | OK | 31 degrees C / 87 degrees F |
| FPC 1 LU 1 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 1 LU 1 Chip | OK | 21 degrees C / 69 degrees F |
| FPC 1 LU 2 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 1 LU 2 Chip | OK | 25 degrees C / 77 degrees F |
| FPC 1 LU 3 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 1 LU 3 Chip | OK | 33 degrees C / 91 degrees F |
| FPC 1 XM 0 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 1 XM 0 Chip | OK | 30 degrees C / 86 degrees F |
| FPC 1 XF 0 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 1 XF 0 Chip | OK | 37 degrees C / 98 degrees F |
| FPC 1 PLX Switch TSen | OK | 22 degrees C / 71 degrees F |
| FPC 1 PLX Switch Chip | OK | 22 degrees C / 71 degrees F |
| FPC 2 Intake | OK | 9 degrees C / 48 degrees F |
| FPC 2 Exhaust A | OK | 10 degrees C / 50 degrees F |
| FPC 2 Exhaust B | OK | 10 degrees C / 50 degrees F |
| FPC 2 LU 0 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 2 LU 0 Chip | OK | 25 degrees C / 77 degrees F |
| FPC 2 LU 1 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 2 LU 1 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 2 LU 2 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 2 LU 2 Chip | OK | 17 degrees C / 62 degrees F |
| FPC 2 LU 3 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 2 LU 3 Chip | OK | 22 degrees C / 71 degrees F |
| FPC 2 XM 0 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 2 XM 0 Chip | OK | 34 degrees C / 93 degrees F |
| FPC 2 XM 1 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 2 XM 1 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 2 PLX Switch TSen | OK | 26 degrees C / 78 degrees F |
| FPC 2 PLX Switch Chip | OK | 20 degrees C / 68 degrees F |
| FPC 3 Intake | OK | 12 degrees C / 53 degrees F |
| FPC 3 Exhaust A | OK | 16 degrees C / 60 degrees F |
| FPC 3 Exhaust B | OK | 26 degrees C / 78 degrees F |
| FPC 3 LU 0 TSen | OK | 23 degrees C / 73 degrees F |
| FPC 3 LU 0 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 3 LU 1 TSen | OK | 23 degrees C / 73 degrees F |
| FPC 3 LU 1 Chip | OK | 27 degrees C / 80 degrees F |
| FPC 3 LU 2 TSen | OK | 23 degrees C / 73 degrees F |
| FPC 3 LU 2 Chip | OK | 22 degrees C / 71 degrees F |
| FPC 3 LU 3 TSen | OK | 23 degrees C / 73 degrees F |
| FPC 3 LU 3 Chip | OK | 21 degrees C / 69 degrees F |
| FPC 3 MQ 0 TSen | OK | 15 degrees C / 59 degrees F |

| | | |
|-----------------------|----|-----------------------------|
| FPC 3 MQ 0 Chip | OK | 18 degrees C / 64 degrees F |
| FPC 3 MQ 1 TSen | OK | 15 degrees C / 59 degrees F |
| FPC 3 MQ 1 Chip | OK | 20 degrees C / 68 degrees F |
| FPC 3 MQ 2 TSen | OK | 15 degrees C / 59 degrees F |
| FPC 3 MQ 2 Chip | OK | 17 degrees C / 62 degrees F |
| FPC 3 MQ 3 TSen | OK | 15 degrees C / 59 degrees F |
| FPC 3 MQ 3 Chip | OK | 16 degrees C / 60 degrees F |
| FPC 4 Intake | OK | 11 degrees C / 51 degrees F |
| FPC 4 Exhaust A | OK | 22 degrees C / 71 degrees F |
| FPC 4 Exhaust B | OK | 28 degrees C / 82 degrees F |
| FPC 4 LU 0 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 4 LU 0 Chip | OK | 33 degrees C / 91 degrees F |
| FPC 4 LU 1 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 4 LU 1 Chip | OK | 21 degrees C / 69 degrees F |
| FPC 4 LU 2 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 4 LU 2 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 4 LU 3 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 4 LU 3 Chip | OK | 33 degrees C / 91 degrees F |
| FPC 4 XM 0 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 4 XM 0 Chip | OK | 30 degrees C / 86 degrees F |
| FPC 4 XF 0 TSen | OK | 22 degrees C / 71 degrees F |
| FPC 4 XF 0 Chip | OK | 37 degrees C / 98 degrees F |
| FPC 4 PLX Switch TSen | OK | 22 degrees C / 71 degrees F |
| FPC 4 PLX Switch Chip | OK | 23 degrees C / 73 degrees F |
| FPC 5 Intake | OK | 12 degrees C / 53 degrees F |
| FPC 5 Exhaust A | OK | 12 degrees C / 53 degrees F |
| FPC 5 Exhaust B | OK | 12 degrees C / 53 degrees F |
| FPC 5 LU 0 TSen | OK | 27 degrees C / 80 degrees F |
| FPC 5 LU 0 Chip | OK | 28 degrees C / 82 degrees F |
| FPC 5 LU 1 TSen | OK | 27 degrees C / 80 degrees F |
| FPC 5 LU 1 Chip | OK | 27 degrees C / 80 degrees F |
| FPC 5 LU 2 TSen | OK | 27 degrees C / 80 degrees F |
| FPC 5 LU 2 Chip | OK | 19 degrees C / 66 degrees F |
| FPC 5 LU 3 TSen | OK | 27 degrees C / 80 degrees F |
| FPC 5 LU 3 Chip | OK | 22 degrees C / 71 degrees F |
| FPC 5 XM 0 TSen | OK | 27 degrees C / 80 degrees F |
| FPC 5 XM 0 Chip | OK | 36 degrees C / 96 degrees F |
| FPC 5 XM 1 TSen | OK | 27 degrees C / 80 degrees F |
| FPC 5 XM 1 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 5 PLX Switch TSen | OK | 27 degrees C / 80 degrees F |
| FPC 5 PLX Switch Chip | OK | 24 degrees C / 75 degrees F |
| FPC 6 Intake | OK | 12 degrees C / 53 degrees F |
| FPC 6 Exhaust A | OK | 17 degrees C / 62 degrees F |
| FPC 6 Exhaust B | OK | 28 degrees C / 82 degrees F |
| FPC 6 LU 0 TSen | OK | 24 degrees C / 75 degrees F |
| FPC 6 LU 0 Chip | OK | 29 degrees C / 84 degrees F |
| FPC 6 LU 1 TSen | OK | 24 degrees C / 75 degrees F |
| FPC 6 LU 1 Chip | OK | 30 degrees C / 86 degrees F |
| FPC 6 LU 2 TSen | OK | 24 degrees C / 75 degrees F |
| FPC 6 LU 2 Chip | OK | 24 degrees C / 75 degrees F |
| FPC 6 LU 3 TSen | OK | 24 degrees C / 75 degrees F |
| FPC 6 LU 3 Chip | OK | 22 degrees C / 71 degrees F |
| FPC 6 MQ 0 TSen | OK | 16 degrees C / 60 degrees F |
| FPC 6 MQ 0 Chip | OK | 19 degrees C / 66 degrees F |
| FPC 6 MQ 1 TSen | OK | 16 degrees C / 60 degrees F |
| FPC 6 MQ 1 Chip | OK | 20 degrees C / 68 degrees F |
| FPC 6 MQ 2 TSen | OK | 16 degrees C / 60 degrees F |
| FPC 6 MQ 2 Chip | OK | 17 degrees C / 62 degrees F |
| FPC 6 MQ 3 TSen | OK | 16 degrees C / 60 degrees F |
| FPC 6 MQ 3 Chip | OK | 16 degrees C / 60 degrees F |

| | | |
|-----------------------|----|------------------------------|
| FPC 7 Intake | OK | 10 degrees C / 50 degrees F |
| FPC 7 Exhaust A | OK | 10 degrees C / 50 degrees F |
| FPC 7 Exhaust B | OK | 11 degrees C / 51 degrees F |
| FPC 7 LU 0 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 7 LU 0 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 7 LU 1 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 7 LU 1 Chip | OK | 29 degrees C / 84 degrees F |
| FPC 7 LU 2 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 7 LU 2 Chip | OK | 19 degrees C / 66 degrees F |
| FPC 7 LU 3 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 7 LU 3 Chip | OK | 24 degrees C / 75 degrees F |
| FPC 7 XM 0 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 7 XM 0 Chip | OK | 34 degrees C / 93 degrees F |
| FPC 7 XM 1 TSen | OK | 26 degrees C / 78 degrees F |
| FPC 7 XM 1 Chip | OK | 32 degrees C / 89 degrees F |
| FPC 7 PLX Switch TSen | OK | 26 degrees C / 78 degrees F |
| FPC 7 PLX Switch Chip | OK | 22 degrees C / 71 degrees F |
| FPC 8 Intake | OK | 10 degrees C / 50 degrees F |
| FPC 8 Exhaust A | OK | 22 degrees C / 71 degrees F |
| FPC 8 Exhaust B | OK | 28 degrees C / 82 degrees F |
| FPC 8 LU 0 TSen | OK | 20 degrees C / 68 degrees F |
| FPC 8 LU 0 Chip | OK | 33 degrees C / 91 degrees F |
| FPC 8 LU 1 TSen | OK | 20 degrees C / 68 degrees F |
| FPC 8 LU 1 Chip | OK | 23 degrees C / 73 degrees F |
| FPC 8 LU 2 TSen | OK | 20 degrees C / 68 degrees F |
| FPC 8 LU 2 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 8 LU 3 TSen | OK | 20 degrees C / 68 degrees F |
| FPC 8 LU 3 Chip | OK | 33 degrees C / 91 degrees F |
| FPC 8 XM 0 TSen | OK | 20 degrees C / 68 degrees F |
| FPC 8 XM 0 Chip | OK | 29 degrees C / 84 degrees F |
| FPC 8 XF 0 TSen | OK | 20 degrees C / 68 degrees F |
| FPC 8 XF 0 Chip | OK | 38 degrees C / 100 degrees F |
| FPC 8 PLX Switch TSen | OK | 20 degrees C / 68 degrees F |
| FPC 8 PLX Switch Chip | OK | 24 degrees C / 75 degrees F |
| FPC 9 Intake | OK | 11 degrees C / 51 degrees F |
| FPC 9 Exhaust A | OK | 11 degrees C / 51 degrees F |
| FPC 9 Exhaust B | OK | 11 degrees C / 51 degrees F |
| FPC 9 LU 0 TSen | OK | 25 degrees C / 77 degrees F |
| FPC 9 LU 0 Chip | OK | 24 degrees C / 75 degrees F |
| FPC 9 LU 1 TSen | OK | 25 degrees C / 77 degrees F |
| FPC 9 LU 1 Chip | OK | 26 degrees C / 78 degrees F |
| FPC 9 LU 2 TSen | OK | 25 degrees C / 77 degrees F |
| FPC 9 LU 2 Chip | OK | 16 degrees C / 60 degrees F |
| FPC 9 LU 3 TSen | OK | 25 degrees C / 77 degrees F |
| FPC 9 LU 3 Chip | OK | 21 degrees C / 69 degrees F |
| FPC 9 XM 0 TSen | OK | 25 degrees C / 77 degrees F |
| FPC 9 XM 0 Chip | OK | 32 degrees C / 89 degrees F |
| FPC 9 XM 1 TSen | OK | 25 degrees C / 77 degrees F |
| FPC 9 XM 1 Chip | OK | 25 degrees C / 77 degrees F |
| FPC 9 PLX Switch TSen | OK | 25 degrees C / 77 degrees F |
| FPC 9 PLX Switch Chip | OK | 21 degrees C / 69 degrees F |
| ADC 0 Intake | OK | 12 degrees C / 53 degrees F |
| ADC 0 Exhaust | OK | 20 degrees C / 68 degrees F |
| ADC 0 ADC-XF1 | OK | 26 degrees C / 78 degrees F |
| ADC 0 ADC-XF0 | OK | 32 degrees C / 89 degrees F |
| ADC 1 Intake | OK | 11 degrees C / 51 degrees F |
| ADC 1 Exhaust | OK | 21 degrees C / 69 degrees F |
| ADC 1 ADC-XF1 | OK | 24 degrees C / 75 degrees F |
| ADC 1 ADC-XF0 | OK | 31 degrees C / 87 degrees F |
| ADC 2 Intake | OK | 14 degrees C / 57 degrees F |

| | | | |
|------|------------------|----|-----------------------------|
| | ADC 2 Exhaust | OK | 21 degrees C / 69 degrees F |
| | ADC 2 ADC-XF1 | OK | 28 degrees C / 82 degrees F |
| | ADC 2 ADC-XF0 | OK | 34 degrees C / 93 degrees F |
| | ADC 3 Intake | OK | 13 degrees C / 55 degrees F |
| | ADC 3 Exhaust | OK | 19 degrees C / 66 degrees F |
| | ADC 3 ADC-XF1 | OK | 24 degrees C / 75 degrees F |
| | ADC 3 ADC-XF0 | OK | 31 degrees C / 87 degrees F |
| | ADC 4 Intake | OK | 9 degrees C / 48 degrees F |
| | ADC 4 Exhaust | OK | 22 degrees C / 71 degrees F |
| | ADC 4 ADC-XF1 | OK | 28 degrees C / 82 degrees F |
| | ADC 4 ADC-XF0 | OK | 35 degrees C / 95 degrees F |
| | ADC 5 Intake | OK | 12 degrees C / 53 degrees F |
| | ADC 5 Exhaust | OK | 22 degrees C / 71 degrees F |
| | ADC 5 ADC-XF1 | OK | 28 degrees C / 82 degrees F |
| | ADC 5 ADC-XF0 | OK | 34 degrees C / 93 degrees F |
| | ADC 6 Intake | OK | 11 degrees C / 51 degrees F |
| | ADC 6 Exhaust | OK | 21 degrees C / 69 degrees F |
| | ADC 6 ADC-XF1 | OK | 26 degrees C / 78 degrees F |
| | ADC 6 ADC-XF0 | OK | 35 degrees C / 95 degrees F |
| | ADC 7 Intake | OK | 14 degrees C / 57 degrees F |
| | ADC 7 Exhaust | OK | 22 degrees C / 71 degrees F |
| | ADC 7 ADC-XF1 | OK | 26 degrees C / 78 degrees F |
| | ADC 7 ADC-XF0 | OK | 34 degrees C / 93 degrees F |
| | ADC 8 Intake | OK | 14 degrees C / 57 degrees F |
| | ADC 8 Exhaust | OK | 21 degrees C / 69 degrees F |
| | ADC 8 ADC-XF1 | OK | 24 degrees C / 75 degrees F |
| | ADC 8 ADC-XF0 | OK | 31 degrees C / 87 degrees F |
| | ADC 9 Intake | OK | 10 degrees C / 50 degrees F |
| | ADC 9 Exhaust | OK | 22 degrees C / 71 degrees F |
| | ADC 9 ADC-XF1 | OK | 28 degrees C / 82 degrees F |
| | ADC 9 ADC-XF0 | OK | 36 degrees C / 96 degrees F |
| Fans | Fan Tray 0 Fan 1 | OK | 3480 RPM |
| | Fan Tray 0 Fan 2 | OK | 3480 RPM |
| | Fan Tray 0 Fan 3 | OK | 3480 RPM |
| | Fan Tray 0 Fan 4 | OK | 3360 RPM |
| | Fan Tray 0 Fan 5 | OK | 3360 RPM |
| | Fan Tray 0 Fan 6 | OK | 3480 RPM |
| | Fan Tray 1 Fan 1 | OK | 3360 RPM |
| | Fan Tray 1 Fan 2 | OK | 3360 RPM |
| | Fan Tray 1 Fan 3 | OK | 3360 RPM |
| | Fan Tray 1 Fan 4 | OK | 3480 RPM |
| | Fan Tray 1 Fan 5 | OK | 3480 RPM |
| | Fan Tray 1 Fan 6 | OK | 3480 RPM |
| | Fan Tray 2 Fan 1 | OK | 3360 RPM |
| | Fan Tray 2 Fan 2 | OK | 3360 RPM |
| | Fan Tray 2 Fan 3 | OK | 3480 RPM |
| | Fan Tray 2 Fan 4 | OK | 3480 RPM |
| | Fan Tray 2 Fan 5 | OK | 3360 RPM |
| | Fan Tray 2 Fan 6 | OK | 3480 RPM |
| | Fan Tray 3 Fan 1 | OK | 3360 RPM |
| | Fan Tray 3 Fan 2 | OK | 3360 RPM |
| | Fan Tray 3 Fan 3 | OK | 3480 RPM |
| | Fan Tray 3 Fan 4 | OK | 3480 RPM |
| | Fan Tray 3 Fan 5 | OK | 3480 RPM |
| | Fan Tray 3 Fan 6 | OK | 3360 RPM |

show chassis environment (MX2008 Router)

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user@host>show chassis environment
```

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PSM 0 | Absent | |
| | PSM 1 | OK | 29 degrees C / 84 degrees F |
| | PSM 2 | OK | 30 degrees C / 86 degrees F |
| | PSM 3 | OK | 29 degrees C / 84 degrees F |
| | PSM 4 | OK | 29 degrees C / 84 degrees F |
| | PSM 5 | OK | 30 degrees C / 86 degrees F |
| | PSM 6 | OK | 29 degrees C / 84 degrees F |
| | PSM 7 | OK | 31 degrees C / 87 degrees F |
| | PSM 8 | Absent | |
| | PDM 0 | OK | |
| | PDM 1 | OK | |
| | CB 0 Inlet1 | OK | 37 degrees C / 98 degrees F |
| | CB 0 Inlet2 | OK | 45 degrees C / 113 degrees F |
| | CB 0 Inlet3 | OK | 44 degrees C / 111 degrees F |
| | CB 0 Inlet4 | OK | 41 degrees C / 105 degrees F |
| | CB 0 Exhaust1 | OK | 30 degrees C / 86 degrees F |
| | CB 0 Exhaust2 | OK | 40 degrees C / 104 degrees F |
| | CB 0 Exhaust3 | OK | 48 degrees C / 118 degrees F |
| | CB 0 Exhaust4 | OK | 46 degrees C / 114 degrees F |
| | CB 1 Inlet1 | OK | 30 degrees C / 86 degrees F |
| | CB 1 Inlet2 | OK | 31 degrees C / 87 degrees F |
| | CB 1 Inlet3 | OK | 29 degrees C / 84 degrees F |
| | CB 1 Inlet4 | OK | 32 degrees C / 89 degrees F |
| | CB 1 Exhaust1 | OK | 30 degrees C / 86 degrees F |
| | CB 1 Exhaust2 | OK | 33 degrees C / 91 degrees F |
| | CB 1 Exhaust3 | OK | 34 degrees C / 93 degrees F |
| | CB 1 Exhaust4 | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 0 | OK | |
| | Routing Engine 0 CPU | OK | 75 degrees C / 167 degrees F |
| | Routing Engine 1 | OK | |
| | Routing Engine 1 CPU | OK | 46 degrees C / 114 degrees F |
| | SFB 0 Inlet2 | OK | 44 degrees C / 111 degrees F |
| | SFB 0 Exhaust1 | OK | 39 degrees C / 102 degrees F |
| | SFB 0 Inlet1 | OK | 41 degrees C / 105 degrees F |
| | SFB 0 Exhaust2 | OK | 45 degrees C / 113 degrees F |
| | SFB 0 SFB2-PF-local | OK | 45 degrees C / 113 degrees F |
| | SFB 0 SFB2-PF-die | OK | 51 degrees C / 123 degrees F |
| | SFB 1 Inlet2 | OK | 30 degrees C / 86 degrees F |
| | SFB 1 Exhaust1 | OK | 27 degrees C / 80 degrees F |
| | SFB 1 Inlet1 | OK | 28 degrees C / 82 degrees F |
| | SFB 1 Exhaust2 | OK | 31 degrees C / 87 degrees F |
| | SFB 1 SFB2-PF-local | OK | 30 degrees C / 86 degrees F |
| | SFB 1 SFB2-PF-die | OK | 37 degrees C / 98 degrees F |
| | SFB 2 Inlet2 | OK | 28 degrees C / 82 degrees F |
| | SFB 2 Exhaust1 | OK | 26 degrees C / 78 degrees F |
| | SFB 2 Inlet1 | OK | 27 degrees C / 80 degrees F |
| | SFB 2 Exhaust2 | OK | 28 degrees C / 82 degrees F |
| | SFB 2 SFB2-PF-local | OK | 27 degrees C / 80 degrees F |
| | SFB 2 SFB2-PF-die | OK | 33 degrees C / 91 degrees F |
| | SFB 3 Inlet2 | OK | 28 degrees C / 82 degrees F |
| | SFB 3 Exhaust1 | OK | 26 degrees C / 78 degrees F |
| | SFB 3 Inlet1 | OK | 26 degrees C / 78 degrees F |
| | SFB 3 Exhaust2 | OK | 28 degrees C / 82 degrees F |
| | SFB 3 SFB2-PF-local | OK | 27 degrees C / 80 degrees F |
| | SFB 3 SFB2-PF-die | OK | 33 degrees C / 91 degrees F |
| | SFB 4 Inlet2 | OK | 28 degrees C / 82 degrees F |
| | SFB 4 Exhaust1 | OK | 26 degrees C / 78 degrees F |
| | SFB 4 Inlet1 | OK | 26 degrees C / 78 degrees F |
| | SFB 4 Exhaust2 | OK | 28 degrees C / 82 degrees F |

| | | |
|------------------------|----|------------------------------|
| SFB 4 SFB2-PF-local | OK | 27 degrees C / 80 degrees F |
| SFB 4 SFB2-PF-die | OK | 32 degrees C / 89 degrees F |
| SFB 5 Inlet2 | OK | 29 degrees C / 84 degrees F |
| SFB 5 Exhaust1 | OK | 27 degrees C / 80 degrees F |
| SFB 5 Inlet1 | OK | 28 degrees C / 82 degrees F |
| SFB 5 Exhaust2 | OK | 29 degrees C / 84 degrees F |
| SFB 5 SFB2-PF-local | OK | 28 degrees C / 82 degrees F |
| SFB 5 SFB2-PF-die | OK | 34 degrees C / 93 degrees F |
| SFB 6 Inlet2 | OK | 33 degrees C / 91 degrees F |
| SFB 6 Exhaust1 | OK | 32 degrees C / 89 degrees F |
| SFB 6 Inlet1 | OK | 32 degrees C / 89 degrees F |
| SFB 6 Exhaust2 | OK | 34 degrees C / 93 degrees F |
| SFB 6 SFB2-PF-local | OK | 33 degrees C / 91 degrees F |
| SFB 6 SFB2-PF-die | OK | 40 degrees C / 104 degrees F |
| SFB 7 Inlet2 | OK | 29 degrees C / 84 degrees F |
| SFB 7 Exhaust1 | OK | 28 degrees C / 82 degrees F |
| SFB 7 Inlet1 | OK | 29 degrees C / 84 degrees F |
| SFB 7 Exhaust2 | OK | 29 degrees C / 84 degrees F |
| SFB 7 SFB2-PF-local | OK | 28 degrees C / 82 degrees F |
| SFB 7 SFB2-PF-die | OK | 33 degrees C / 91 degrees F |
| FPC 0 Intake | OK | 29 degrees C / 84 degrees F |
| FPC 0 Exhaust A | OK | 42 degrees C / 107 degrees F |
| FPC 0 Exhaust B | OK | 42 degrees C / 107 degrees F |
| FPC 0 XL 0 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 0 XL 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 XL 0 XR2 0 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 0 XL 0 XR2 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 0 XL 0 XR2 1 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 0 XL 0 XR2 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 0 XL 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 0 XL 1 XR2 0 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 XL 1 XR2 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 0 XM 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 XM 1 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 2 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 2 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 3 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 3 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 0 PCIe Switch TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 PCIe Switch Chip | OK | 22 degrees C / 71 degrees F |
| FPC 1 Intake | OK | 29 degrees C / 84 degrees F |
| FPC 1 Exhaust A | OK | 52 degrees C / 125 degrees F |
| FPC 1 Exhaust B | OK | 44 degrees C / 111 degrees F |
| FPC 1 EA0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 1 EA0_XR0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA0_XR0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 1 EA0_XR1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA0_XR1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 1 EA1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 1 EA1_XR0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1_XR0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA1_XR1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1_XR1 Chip | OK | 58 degrees C / 136 degrees F |

| | | |
|--------------------------|----|------------------------------|
| FPC 1 PEX TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 PEX Chip | OK | 39 degrees C / 102 degrees F |
| FPC 1 EA2 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2 Chip | OK | 39 degrees C / 102 degrees F |
| FPC 1 EA2_XR0 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2_XR0 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 1 EA2_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2_XR1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 1 EA3 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 1 EA3_XR0 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3_XR0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 EA3_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3_XR1 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 1 EA0_HMC0 Logic die | OK | 60 degrees C / 140 degrees F |
| FPC 1 EA0_HMC0 DRAM botm | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA0_HMC1 Logic die | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA0_HMC1 DRAM botm | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA0_HMC2 Logic die | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA0_HMC2 DRAM botm | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1_HMC0 Logic die | OK | 65 degrees C / 149 degrees F |
| FPC 1 EA1_HMC0 DRAM botm | OK | 62 degrees C / 143 degrees F |
| FPC 1 EA1_HMC1 Logic die | OK | 64 degrees C / 147 degrees F |
| FPC 1 EA1_HMC1 DRAM botm | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA1_HMC2 Logic die | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA1_HMC2 DRAM botm | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA2_HMC0 Logic die | OK | 50 degrees C / 122 degrees F |
| FPC 1 EA2_HMC0 DRAM botm | OK | 47 degrees C / 116 degrees F |
| FPC 1 EA2_HMC1 Logic die | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA2_HMC1 DRAM botm | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA2_HMC2 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA2_HMC2 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA3_HMC0 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA3_HMC0 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA3_HMC1 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA3_HMC1 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA3_HMC2 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA3_HMC2 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 7 Intake | OK | 30 degrees C / 86 degrees F |
| FPC 7 Exhaust A | OK | 45 degrees C / 113 degrees F |
| FPC 7 Exhaust B | OK | 38 degrees C / 100 degrees F |
| FPC 7 QX 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 7 QX 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 7 LU 0 TCAM TSen | OK | 48 degrees C / 118 degrees F |
| FPC 7 LU 0 TCAM Chip | OK | 51 degrees C / 123 degrees F |
| FPC 7 LU 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 7 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 7 MQ 0 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 QX 1 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 7 QX 1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 7 LU 1 TCAM TSen | OK | 41 degrees C / 105 degrees F |
| FPC 7 LU 1 TCAM Chip | OK | 43 degrees C / 109 degrees F |
| FPC 7 LU 1 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 7 LU 1 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 7 MQ 1 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 7 MQ 1 Chip | OK | 47 degrees C / 116 degrees F |
| ADC 7 Intake | OK | 32 degrees C / 89 degrees F |
| ADC 7 Exhaust | OK | 39 degrees C / 102 degrees F |
| ADC 7 ADC-XF1 | OK | 46 degrees C / 114 degrees F |

| | | | |
|------|------------------|----|------------------------------|
| | ADC 7 ADC-XF0 | OK | 54 degrees C / 129 degrees F |
| Fans | Fan Tray 0 Fan 1 | OK | 6240 RPM |
| | Fan Tray 0 Fan 2 | OK | 6120 RPM |
| | Fan Tray 0 Fan 3 | OK | 6120 RPM |
| | Fan Tray 0 Fan 4 | OK | 5760 RPM |
| | Fan Tray 0 Fan 5 | OK | 5880 RPM |
| | Fan Tray 0 Fan 6 | OK | 6000 RPM |
| | Fan Tray 1 Fan 1 | OK | 5880 RPM |
| | Fan Tray 1 Fan 2 | OK | 5880 RPM |
| | Fan Tray 1 Fan 3 | OK | 6000 RPM |
| | Fan Tray 1 Fan 4 | OK | 6000 RPM |
| | Fan Tray 1 Fan 5 | OK | 6000 RPM |
| | Fan Tray 1 Fan 6 | OK | 6000 RPM |

show chassis environment (T320 Router)

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

| Class | Item | Status | Measurement |
|-------|-------------------------|--------|------------------------------|
| Power | PEM 0 | OK | |
| | PEM 1 | Absent | |
| Temp | SCG 0 | OK | 28 degrees C / 82 degrees F |
| | SCG 1 | OK | 28 degrees C / 82 degrees F |
| | Routing Engine 0 | OK | 31 degrees C / 87 degrees F |
| | Routing Engine 1 | OK | 30 degrees C / 86 degrees F |
| | CB 0 | OK | 32 degrees C / 89 degrees F |
| | CB 1 | OK | 32 degrees C / 89 degrees F |
| | SIB 0 | OK | 33 degrees C / 91 degrees F |
| | SIB 1 | OK | 33 degrees C / 91 degrees F |
| | SIB 2 | OK | 34 degrees C / 93 degrees F |
| | FPC 0 Top | OK | 38 degrees C / 100 degrees F |
| | FPC 0 Bottom | OK | 32 degrees C / 89 degrees F |
| | FPC 1 Top | OK | 38 degrees C / 100 degrees F |
| | FPC 1 Bottom | OK | 33 degrees C / 91 degrees F |
| | FPC 2 Top | OK | 36 degrees C / 96 degrees F |
| | FPC 2 Bottom | OK | 31 degrees C / 87 degrees F |
| | FPM GBUS | OK | 26 degrees C / 78 degrees F |
| | FPM Display | OK | 29 degrees C / 84 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |
| | Bottom Right Middle fan | OK | Spinning at normal speed |
| | Bottom Right Rear fan | OK | Spinning at normal speed |
| | Rear Tray Top fan | OK | Spinning at normal speed |
| | Rear Tray Second fan | OK | Spinning at normal speed |
| | Rear Tray Fourth fan | OK | Spinning at normal speed |
| | Rear Tray Bottom fan | OK | Spinning at normal speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

show chassis environment (MX10003 Router)

user@host> show chassis environment

| Class | Item | Status | Measurement |
|-------|-------------------------------|--------|------------------------------|
| Temp | CB 0 Exhaust Temp Sensor 0x49 | OK | 36 degrees C / 96 degrees F |
| | CB 0 Inlet Temp Sensor 0x49 | OK | 29 degrees C / 84 degrees F |
| | CB 1 Exhaust Temp Sensor 0x49 | OK | 36 degrees C / 96 degrees F |
| | CB 1 Inlet Temp Sensor 0x49 | OK | 31 degrees C / 87 degrees F |
| | FPC 0 Intake Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | FPC 0 Exhaust-A Temp Sensor | OK | 55 degrees C / 131 degrees F |
| | FPC 0 Exhaust-B Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 0 EA0 Chip | OK | 58 degrees C / 136 degrees F |
| | FPC 0 EA0-XR0 Chip | OK | 61 degrees C / 141 degrees F |
| | FPC 0 EA0-XR1 Chip | OK | 62 degrees C / 143 degrees F |
| | FPC 0 EA1 Chip | OK | 67 degrees C / 152 degrees F |
| | FPC 0 EA1-XR0 Chip | OK | 71 degrees C / 159 degrees F |
| | FPC 0 EA1-XR1 Chip | OK | 72 degrees C / 161 degrees F |
| | FPC 0 PEX Chip | OK | 75 degrees C / 167 degrees F |
| | FPC 0 EA2 Chip | OK | 49 degrees C / 120 degrees F |
| | FPC 0 EA2-XR0 Chip | OK | 55 degrees C / 131 degrees F |
| | FPC 0 EA2-XR1 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 0 PF Chip | OK | 68 degrees C / 154 degrees F |
| | FPC 0 EA0_HMC0 Logic die | OK | 72 degrees C / 161 degrees F |
| | FPC 0 EA0_HMC0 DRAM botm | OK | 69 degrees C / 156 degrees F |
| | FPC 0 EA0_HMC1 Logic die | OK | 72 degrees C / 161 degrees F |
| | FPC 0 EA0_HMC1 DRAM botm | OK | 69 degrees C / 156 degrees F |
| | FPC 0 EA0_HMC2 Logic die | OK | 75 degrees C / 167 degrees F |
| | FPC 0 EA0_HMC2 DRAM botm | OK | 72 degrees C / 161 degrees F |
| | FPC 0 EA1_HMC0 Logic die | OK | 81 degrees C / 177 degrees F |
| | FPC 0 EA1_HMC0 DRAM botm | OK | 78 degrees C / 172 degrees F |
| | FPC 0 EA1_HMC1 Logic die | OK | 79 degrees C / 174 degrees F |
| | FPC 0 EA1_HMC1 DRAM botm | OK | 76 degrees C / 168 degrees F |
| | FPC 0 EA1_HMC2 Logic die | OK | 82 degrees C / 179 degrees F |
| | FPC 0 EA1_HMC2 DRAM botm | OK | 79 degrees C / 174 degrees F |
| | FPC 0 EA2_HMC0 Logic die | OK | 61 degrees C / 141 degrees F |
| | FPC 0 EA2_HMC0 DRAM botm | OK | 58 degrees C / 136 degrees F |
| | FPC 0 EA2_HMC1 Logic die | OK | 62 degrees C / 143 degrees F |
| | FPC 0 EA2_HMC1 DRAM botm | OK | 59 degrees C / 138 degrees F |
| | FPC 0 EA2_HMC2 Logic die | OK | 64 degrees C / 147 degrees F |
| | FPC 0 EA2_HMC2 DRAM botm | OK | 61 degrees C / 141 degrees F |
| | FPC 1 Intake Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | FPC 1 Exhaust-A Temp Sensor | OK | 58 degrees C / 136 degrees F |
| | FPC 1 Exhaust-B Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | FPC 1 EA0 Chip | OK | 64 degrees C / 147 degrees F |
| | FPC 1 EA0-XR0 Chip | OK | 67 degrees C / 152 degrees F |
| | FPC 1 EA0-XR1 Chip | OK | 68 degrees C / 154 degrees F |
| | FPC 1 EA1 Chip | OK | 70 degrees C / 158 degrees F |
| | FPC 1 EA1-XR0 Chip | OK | 74 degrees C / 165 degrees F |
| | FPC 1 EA1-XR1 Chip | OK | 74 degrees C / 165 degrees F |
| | FPC 1 PEX Chip | OK | 88 degrees C / 190 degrees F |
| | FPC 1 EA2 Chip | OK | 50 degrees C / 122 degrees F |
| | FPC 1 EA2-XR0 Chip | OK | 54 degrees C / 129 degrees F |
| | FPC 1 EA2-XR1 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 1 PF Chip | OK | 71 degrees C / 159 degrees F |
| | FPC 1 EA0_HMC0 Logic die | OK | 74 degrees C / 165 degrees F |
| | FPC 1 EA0_HMC0 DRAM botm | OK | 71 degrees C / 159 degrees F |
| | FPC 1 EA0_HMC1 Logic die | OK | 78 degrees C / 172 degrees F |
| | FPC 1 EA0_HMC1 DRAM botm | OK | 75 degrees C / 167 degrees F |

| | | | |
|-------|--------------------------|--------|------------------------------|
| | FPC 1 EA0_HMC2 Logic die | OK | 78 degrees C / 172 degrees F |
| | FPC 1 EA0_HMC2 DRAM botm | OK | 75 degrees C / 167 degrees F |
| | FPC 1 EA1_HMC0 Logic die | OK | 84 degrees C / 183 degrees F |
| | FPC 1 EA1_HMC0 DRAM botm | OK | 81 degrees C / 177 degrees F |
| | FPC 1 EA1_HMC1 Logic die | OK | 81 degrees C / 177 degrees F |
| | FPC 1 EA1_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| | FPC 1 EA1_HMC2 Logic die | OK | 85 degrees C / 185 degrees F |
| | FPC 1 EA1_HMC2 DRAM botm | OK | 82 degrees C / 179 degrees F |
| | FPC 1 EA2_HMC0 Logic die | OK | 63 degrees C / 145 degrees F |
| | FPC 1 EA2_HMC0 DRAM botm | OK | 60 degrees C / 140 degrees F |
| | FPC 1 EA2_HMC1 Logic die | OK | 60 degrees C / 140 degrees F |
| | FPC 1 EA2_HMC1 DRAM botm | OK | 57 degrees C / 134 degrees F |
| | FPC 1 EA2_HMC2 Logic die | OK | 66 degrees C / 150 degrees F |
| | FPC 1 EA2_HMC2 DRAM botm | OK | 63 degrees C / 145 degrees F |
| Power | PEM 0 | OK | |
| | PEM 1 | OK | |
| | PEM 2 | OK | |
| | PEM 3 | OK | |
| | PEM 4 | Absent | |
| | PEM 5 | Absent | |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 3 | OK | Spinning at normal speed |

show chassis environment (MX10008 Router)

user@host> show chassis environment

| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| Temp | Routing Engine 0 CPU | OK | 41 degrees C / 105 degrees F |
| | Routing Engine 1 CPU | OK | 40 degrees C / 104 degrees F |
| | 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 |

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| | | |
|-------------------|----|------------------------------|
| 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 |

| | | | |
|-------|------------------|--------|------------------------------|
| | | | |
| | | OK | 47 degrees C / 116 degrees F |
| | | OK | 48 degrees C / 118 degrees F |
| | | OK | 47 degrees C / 116 degrees F |
| | | OK | 47 degrees C / 116 degrees F |
| | | OK | 47 degrees C / 116 degrees F |
| | | OK | 47 degrees C / 116 degrees F |
| | | OK | 47 degrees C / 116 degrees F |
| | | OK | 77 degrees C / 170 degrees F |
| | | OK | 74 degrees C / 165 degrees F |
| | | OK | 81 degrees C / 177 degrees F |
| | | OK | 78 degrees C / 172 degrees F |
| | | OK | 94 degrees C / 201 degrees F |
| | | OK | 64 degrees C / 147 degrees F |
| | | 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 | |
| Fans | FPM GBUS | OK | 23 degrees C / 73 degrees F |
| | FPM Display | Absent | |
| | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |

| | | | |
|------|-------------------------|----|--------------------------|
| | Bottom Right Middle fan | OK | Spinning at normal speed |
| | Bottom Right Rear fan | OK | Spinning at normal speed |
| | Fourth Blower from top | OK | Spinning at normal speed |
| | Bottom Blower | OK | Spinning at normal speed |
| | Middle Blower | OK | Spinning at normal speed |
| | Top Blower | OK | Spinning at normal speed |
| | Second Blower from top | OK | Spinning at normal speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

show chassis environment (T4000 Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 33 degrees C / 91 degrees F |
| | PEM 1 | Absent | |
| | SCG 0 | OK | 33 degrees C / 91 degrees F |
| | SCG 1 | OK | 33 degrees C / 91 degrees F |
| | Routing Engine 0 | OK | 33 degrees C / 91 degrees F |
| | Routing Engine 0 CPU | OK | 50 degrees C / 122 degrees F |
| | Routing Engine 1 | OK | 32 degrees C / 89 degrees F |
| | Routing Engine 1 CPU | OK | 46 degrees C / 114 degrees F |
| | CB 0 | OK | 32 degrees C / 89 degrees F |
| | CB 1 | OK | 33 degrees C / 91 degrees F |
| | SIB 0 | OK | 42 degrees C / 107 degrees F |
| | SIB 1 | OK | 42 degrees C / 107 degrees F |
| | SIB 2 | OK | 42 degrees C / 107 degrees F |
| | SIB 3 | OK | 43 degrees C / 109 degrees F |
| | SIB 4 | OK | 45 degrees C / 113 degrees F |
| | FPC 0 Fan Intake | OK | 34 degrees C / 93 degrees F |
| | FPC 0 Fan Exhaust | OK | 48 degrees C / 118 degrees F |
| | FPC 0 PMB | OK | 47 degrees C / 116 degrees F |
| | FPC 0 LMB0 | OK | 50 degrees C / 122 degrees F |
| | FPC 0 LMB1 | OK | 41 degrees C / 105 degrees F |
| | FPC 0 LMB2 | OK | 35 degrees C / 95 degrees F |
| | FPC 0 PFE1 LU2 | OK | 46 degrees C / 114 degrees F |
| | FPC 0 PFE1 LU0 | OK | 41 degrees C / 105 degrees F |
| | FPC 0 PFE0 LU0 | OK | 57 degrees C / 134 degrees F |
| | FPC 0 XF1 | OK | 46 degrees C / 114 degrees F |
| | FPC 0 XF0 | OK | 52 degrees C / 125 degrees F |
| | FPC 0 XM1 | OK | 41 degrees C / 105 degrees F |
| | FPC 0 XM0 | OK | 50 degrees C / 122 degrees F |
| | FPC 0 PFE0 LU1 | OK | 56 degrees C / 132 degrees F |
| | FPC 0 PFE0 LU2 | OK | 45 degrees C / 113 degrees F |
| | FPC 0 PFE1 LU1 | OK | 37 degrees C / 98 degrees F |
| | FPC 3 Fan Intake | OK | 36 degrees C / 96 degrees F |
| | FPC 3 Fan Exhaust | OK | 51 degrees C / 123 degrees F |
| | FPC 3 PMB | OK | 43 degrees C / 109 degrees F |
| | FPC 3 LMB0 | OK | 57 degrees C / 134 degrees F |
| | FPC 3 LMB1 | OK | 54 degrees C / 129 degrees F |
| | FPC 3 LMB2 | OK | 38 degrees C / 100 degrees F |
| | FPC 3 PFE1 LU2 | OK | 63 degrees C / 145 degrees F |
| | FPC 3 PFE1 LU0 | OK | 45 degrees C / 113 degrees F |
| | FPC 3 PFE0 LU0 | OK | 69 degrees C / 156 degrees F |
| | FPC 3 XF1 | OK | 62 degrees C / 143 degrees F |
| | FPC 3 XF0 | OK | 63 degrees C / 145 degrees F |
| | FPC 3 XM1 | OK | 43 degrees C / 109 degrees F |

| | | | |
|------|-------------------------|----|------------------------------|
| | FPC 3 XM0 | OK | 67 degrees C / 152 degrees F |
| | FPC 3 PFE0 LU1 | OK | 63 degrees C / 145 degrees F |
| | FPC 3 PFE0 LU2 | OK | 66 degrees C / 150 degrees F |
| | FPC 3 PFE1 LU1 | OK | 41 degrees C / 105 degrees F |
| | FPC 5 Top | OK | 39 degrees C / 102 degrees F |
| | FPC 5 Bottom | OK | 38 degrees C / 100 degrees F |
| | FPC 6 Fan Intake | OK | 33 degrees C / 91 degrees F |
| | FPC 6 Fan Exhaust | OK | 49 degrees C / 120 degrees F |
| | FPC 6 PMB | OK | 40 degrees C / 104 degrees F |
| | FPC 6 LMB0 | OK | 60 degrees C / 140 degrees F |
| | FPC 6 LMB1 | OK | 58 degrees C / 136 degrees F |
| | FPC 6 LMB2 | OK | 40 degrees C / 104 degrees F |
| | FPC 6 PFE1 LU2 | OK | 69 degrees C / 156 degrees F |
| | FPC 6 PFE1 LU0 | OK | 45 degrees C / 113 degrees F |
| | FPC 6 PFE0 LU0 | OK | 71 degrees C / 159 degrees F |
| | FPC 6 XF1 | OK | 58 degrees C / 136 degrees F |
| | FPC 6 XF0 | OK | 65 degrees C / 149 degrees F |
| | FPC 6 XM1 | OK | 39 degrees C / 102 degrees F |
| | FPC 6 XM0 | OK | 66 degrees C / 150 degrees F |
| | FPC 6 PFE0 LU1 | OK | 69 degrees C / 156 degrees F |
| | FPC 6 PFE0 LU2 | OK | 69 degrees C / 156 degrees F |
| | FPC 6 PFE1 LU1 | OK | 42 degrees C / 107 degrees F |
| | FPM GBUS | OK | 24 degrees C / 75 degrees F |
| | FPM Display | OK | 27 degrees C / 80 degrees F |
| Fans | Top Left Front fan | OK | Spinning at high speed |
| | Top Left Middle fan | OK | Spinning at high speed |
| | Top Left Rear fan | OK | Spinning at high speed |
| | Top Right Front fan | OK | Spinning at high speed |
| | Top Right Middle fan | OK | Spinning at high speed |
| | Top Right Rear fan | OK | Spinning at high speed |
| | Bottom Left Front fan | OK | Spinning at high speed |
| | Bottom Left Middle fan | OK | Spinning at high speed |
| | Bottom Left Rear fan | OK | Spinning at high speed |
| | Bottom Right Front fan | OK | Spinning at high speed |
| | Bottom Right Middle fan | OK | Spinning at high speed |
| | Bottom Right Rear fan | OK | Spinning at high speed |
| | Rear Tray Top fan | OK | Spinning at high speed |
| | Rear Tray Second fan | OK | Spinning at high speed |
| | Rear Tray Third fan | OK | Spinning at high speed |
| | Rear Tray Fourth fan | OK | Spinning at high speed |
| | Rear Tray Fifth fan | OK | Spinning at high speed |
| | Rear Tray Sixth fan | OK | Spinning at high speed |
| | Rear Tray Seventh fan | OK | Spinning at high speed |
| | Rear Tray Bottom fan | OK | Spinning at high speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

show chassis environment (TX Matrix Router)

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

| ----- | | | |
|-------|------------------|--------|-----------------------------|
| Class | Item | Status | Measurement |
| Temp | PEM 0 | Absent | |
| | PEM 1 | OK | 29 degrees C / 84 degrees F |
| | Routing Engine 0 | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 1 | OK | 34 degrees C / 93 degrees F |
| | CB 0 | OK | 32 degrees C / 89 degrees F |

| | | | |
|------|-------------------------|----|------------------------------|
| | CB 1 | OK | 32 degrees C / 89 degrees F |
| | SIB 0 | OK | 44 degrees C / 111 degrees F |
| | SIB 0 (B) | OK | 44 degrees C / 111 degrees F |
| | FPM GBUS | OK | 27 degrees C / 80 degrees F |
| | FPM Display | OK | 32 degrees C / 89 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |
| | Bottom Right Middle fan | OK | Spinning at normal speed |
| | Bottom Right Rear fan | OK | Spinning at normal speed |
| | Rear Tray Top fan | OK | Spinning at normal speed |
| | Rear Tray Second fan | OK | Spinning at normal speed |
| | Rear Tray Third fan | OK | Spinning at normal speed |
| | Rear Tray Fourth fan | OK | Spinning at normal speed |
| | Rear Tray Fifth fan | OK | Spinning at normal speed |
| | Rear Tray Sixth fan | OK | Spinning at normal speed |
| | Rear Tray Seventh fan | OK | Spinning at normal speed |
| | Rear Tray Bottom fan | OK | Spinning at normal speed |
| Misc | CIP 0 | OK | |
| | CIP 1 | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

1cc0-re0:

| Class | Item | Status | Measurement |
|-------|-------------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 29 degrees C / 84 degrees F |
| | PEM 1 | Absent | |
| | SCG 0 | OK | 35 degrees C / 95 degrees F |
| | SCG 1 | Absent | |
| | Routing Engine 0 | OK | 39 degrees C / 102 degrees F |
| | Routing Engine 1 | OK | 36 degrees C / 96 degrees F |
| | CB 0 | OK | 32 degrees C / 89 degrees F |
| | CB 1 | OK | 32 degrees C / 89 degrees F |
| | SIB 0 | OK | 40 degrees C / 104 degrees F |
| | SIB 0 (B) | OK | 51 degrees C / 123 degrees F |
| | FPC 0 Top | OK | 45 degrees C / 113 degrees F |
| | FPC 0 Bottom | OK | 31 degrees C / 87 degrees F |
| | FPC 1 Top | OK | 34 degrees C / 93 degrees F |
| | FPC 1 Bottom | OK | 31 degrees C / 87 degrees F |
| | FPM GBUS | OK | 30 degrees C / 86 degrees F |
| | FPM Display | OK | 34 degrees C / 93 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |
| | Bottom Right Middle fan | OK | Spinning at normal speed |

| | Bottom Right Rear fan | OK | Spinning at normal speed |
|-----------|-----------------------|--------|------------------------------|
| | Rear Tray Top fan | OK | Spinning at normal speed |
| | Rear Tray Second fan | OK | Spinning at normal speed |
| | Rear Tray Third fan | OK | Spinning at normal speed |
| | Rear Tray Fourth fan | OK | Spinning at normal speed |
| | Rear Tray Fifth fan | OK | Spinning at normal speed |
| | Rear Tray Sixth fan | OK | Spinning at normal speed |
| | Rear Tray Seventh fan | OK | Spinning at normal speed |
| | Rear Tray Bottom fan | OK | Spinning at normal speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |
| lcc2-re0: | | | |
| Class | Item | Status | Measurement |
| Temp | PEM 0 | OK | 29 degrees C / 84 degrees F |
| | PEM 1 | Absent | |
| | SCG 0 | OK | 32 degrees C / 89 degrees F |
| | SCG 1 | Absent | |
| | Routing Engine 0 | OK | 31 degrees C / 87 degrees F |
| | Routing Engine 1 | OK | 32 degrees C / 89 degrees F |
| | CB 0 | OK | 30 degrees C / 86 degrees F |
| | SIB 0 | OK | 38 degrees C / 100 degrees F |
| | SIB 0 (B) | OK | 49 degrees C / 120 degrees F |
| | FPC 0 Top | OK | 45 degrees C / 113 degrees F |
| | FPC 0 Bottom | OK | 33 degrees C / 91 degrees F |
| | FPC 1 Top | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Bottom | OK | 33 degrees C / 91 degrees F |
| | FPM GBUS | OK | 30 degrees C / 86 degrees F |
| | FPM Display | OK | 34 degrees C / 93 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| ... | | | |

show chassis environment (T1600 Router)

user@host> show chassis environment

| Class | Item | Status | Measurement |
|-------|------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 27 degrees C / 80 degrees F |
| | PEM 1 | Absent | |
| | SCG 0 | OK | 31 degrees C / 87 degrees F |
| | SCG 1 | OK | 35 degrees C / 95 degrees F |
| | Routing Engine 0 | OK | 30 degrees C / 86 degrees F |
| | Routing Engine 1 | OK | 30 degrees C / 86 degrees F |
| | CB 0 | OK | 31 degrees C / 87 degrees F |
| | CB 1 | OK | 31 degrees C / 87 degrees F |
| | SIB 0 | OK | 41 degrees C / 105 degrees F |
| | SIB 0 (B) | OK | 34 degrees C / 93 degrees F |
| | SIB 1 | OK | 0 degrees C / 32 degrees F |
| | SIB 1 (B) | OK | 0 degrees C / 32 degrees F |
| | SIB 2 | OK | 0 degrees C / 32 degrees F |
| | SIB 2 (B) | OK | 0 degrees C / 32 degrees F |
| | SIB 3 | OK | 0 degrees C / 32 degrees F |
| | SIB 3 (B) | OK | 0 degrees C / 32 degrees F |
| | SIB 4 | OK | 0 degrees C / 32 degrees F |
| | SIB 4 (B) | OK | 0 degrees C / 32 degrees F |
| | FPC 0 Top | OK | 49 degrees C / 120 degrees F |
| | FPC 0 Bottom | OK | 50 degrees C / 122 degrees F |

| | | | |
|------|-------------------------|----|------------------------------|
| Fans | 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 |
| | 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 |
| Misc | 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 |
| | 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 |
| Fans | FPC 0 Uplink Conn | OK | 29 degrees C / 84 degrees F |
| | FPC 0 Fan 1 | OK | Spinning at normal speed |

| | | |
|-------------|----|--------------------------|
| FPC 0 Fan 2 | OK | Spinning at normal speed |
| FPC 0 Fan 3 | OK | Spinning at normal speed |

show chassis environment (EX8216 Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|---------------|--------|------------------------------|
| Power | PSU 0 | OK | |
| | PSU 1 | OK | |
| | PSU 2 | OK | |
| | PSU 3 | Check | |
| | PSU 4 | Absent | |
| | PSU 5 | Absent | |
| Temp | CB 0 Intake | OK | 23 degrees C / 73 degrees F |
| | CB 0 Exhaust | OK | 26 degrees C / 78 degrees F |
| | CB 1 Intake | OK | 22 degrees C / 71 degrees F |
| | CB 1 Exhaust | OK | 25 degrees C / 77 degrees F |
| | FPC 4 Intake | OK | 49 degrees C / 120 degrees F |
| | FPC 4 Exhaust | OK | 59 degrees C / 138 degrees F |
| | SIB 5 Intake | OK | 25 degrees C / 77 degrees F |
| | SIB 5 Exhaust | OK | 35 degrees C / 95 degrees F |
| | SIB 6 Intake | OK | 25 degrees C / 77 degrees F |
| | SIB 6 Exhaust | OK | 38 degrees C / 100 degrees F |
| Fans | Top Fan 1 | OK | Spinning at normal speed |
| | Top Fan 2 | OK | Spinning at normal speed |
| | Top Fan 3 | OK | Spinning at normal speed |
| | Top Fan 4 | OK | Spinning at normal speed |
| | Top Fan 5 | OK | Spinning at normal speed |
| | Top Fan 6 | OK | Spinning at normal speed |
| | Top Fan 7 | OK | Spinning at normal speed |
| | Top Fan 8 | OK | Spinning at normal speed |
| | Top Fan 9 | OK | Spinning at normal speed |
| | Bottom Fan 1 | OK | Spinning at normal speed |
| | Bottom Fan 2 | OK | Spinning at normal speed |
| | Bottom Fan 3 | OK | Spinning at normal speed |
| | Bottom Fan 4 | OK | Spinning at normal speed |
| | Bottom Fan 5 | OK | Spinning at normal speed |
| | Bottom Fan 6 | OK | Spinning at normal speed |
| | Bottom Fan 7 | OK | Spinning at normal speed |
| | Bottom Fan 8 | OK | Spinning at normal speed |
| | Bottom Fan 9 | OK | Spinning at normal speed |

show chassis environment (EX9200 Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PEM 0 | Check | |
| | PEM 1 | OK | 40 degrees C / 104 degrees F |
| | PEM 2 | OK | 40 degrees C / 104 degrees F |
| | PEM 3 | Absent | |
| | Routing Engine 0 | OK | 35 degrees C / 95 degrees F |
| | Routing Engine 0 CPU | OK | 33 degrees C / 91 degrees F |
| | Routing Engine 1 | OK | 38 degrees C / 100 degrees F |
| | Routing Engine 1 CPU | OK | 33 degrees C / 91 degrees F |
| | CB 0 Intake | OK | 35 degrees C / 95 degrees F |
| | CB 0 Exhaust A | OK | 33 degrees C / 91 degrees F |
| | CB 0 Exhaust B | OK | 40 degrees C / 104 degrees F |

| | | |
|--------------------------|----|--------------------------------|
| CB 0 ACBC | OK | 39 degrees C / 102 degrees F |
| CB 0 XF A | OK | 49 degrees C / 120 degrees F |
| CB 0 XF B | OK | 46 degrees C / 114 degrees F |
| CB 1 Intake | OK | 37 degrees C / 98 degrees F |
| CB 1 Exhaust A | OK | 32 degrees C / 89 degrees F |
| CB 1 Exhaust B | OK | 39 degrees C / 102 degrees F |
| CB 1 ACBC | OK | 41 degrees C / 105 degrees F |
| CB 1 XF A | OK | 49 degrees C / 120 degrees F |
| CB 1 XF B | OK | 49 degrees C / 120 degrees F |
| FPC 2 Intake | OK | 37 degrees C / 98 degrees F |
| FPC 2 Exhaust A | OK | 40 degrees C / 104 degrees F |
| FPC 2 Exhaust B | OK | 34 degrees C / 93 degrees F |
| FPC 2 LU 0 TCAM TSen | OK | 44 degrees C / 111 degrees F |
| FPC 2 LU 0 TCAM Chip | OK | 48 degrees C / 118 degrees F |
| FPC 2 LU 0 TSen | OK | 44 degrees C / 111 degrees F |
| FPC 2 LU 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 2 MQ 0 TSen | OK | 44 degrees C / 111 degrees F |
| FPC 2 MQ 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 3 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 3 Exhaust A | OK | 51 degrees C / 123 degrees F |
| [...Output truncated...] | | |
| Fans Top Rear Fan | OK | Spinning at intermediate-speed |
| Bottom Rear Fan | OK | Spinning at intermediate-speed |
| Top Middle Fan | OK | Spinning at intermediate-speed |
| Bottom Middle Fan | OK | Spinning at intermediate-speed |
| Top Front Fan | OK | Spinning at intermediate-speed |
| Bottom Front Fan | OK | Spinning at intermediate-speed |

show chassis environment (EX9251 Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|-------------------------------|--------|------------------------------|
| Temp | CB 0 Top Right Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Left Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Right Exhaust Sensor | OK | 40 degrees C / 104 degrees F |
| | CB 0 Top Left Exhaust Sensor | OK | 59 degrees C / 138 degrees F |
| | CB 0 CPU Core-0 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-1 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-2 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-3 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-4 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-5 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-6 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-7 Temp | OK | 43 degrees C / 109 degrees F |
| Power | PEM 0 | Check | |
| | PEM 1 | OK | 36 degrees C / 96 degrees F |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 0 | Absent | |
| | Fan Tray 2 Fan 1 | Absent | |

show chassis environment (EX9253 Switch)

```
user@switch> show chassis environment
```


| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| Temp | CB 0 Exhaust Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | CB 0 Inlet Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | CB 0 CPU DIE Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | CB 1 Exhaust Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | CB 1 Inlet Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | CB 1 CPU DIE Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | FPC 0 Intake Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | FPC 0 Exhaust-A Temp Sensor | OK | 58 degrees C / 136 degrees F |
| | FPC 0 Exhaust-B Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 1 Intake Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | FPC 1 Exhaust-A Temp Sensor | OK | 59 degrees C / 138 degrees F |
| | FPC 1 Exhaust-B Temp Sensor | OK | 48 degrees C / 118 degrees F |
| Power | PEM 0 | OK | 54 degrees C / 129 degrees F |
| | PEM 1 | Check | |
| | PEM 2 | Absent | |
| | PEM 3 | Absent | |
| | PEM 4 | Check | |
| | PEM 5 | OK | 61 degrees C / 141 degrees F |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 3 | OK | Spinning at normal speed |

show chassis environment (QFX Series and OCX Series)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|-------------------------------|--------|------------------------------|
| Temp | CB 0 Top Right Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Left Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Right Exhaust Sensor | OK | 40 degrees C / 104 degrees F |
| | CB 0 Top Left Exhaust Sensor | OK | 59 degrees C / 138 degrees F |
| | CB 0 CPU Core-0 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-1 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-2 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-3 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-4 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-5 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-6 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-7 Temp | OK | 43 degrees C / 109 degrees F |
| Power | PEM 0 | Check | |
| | PEM 1 | OK | 36 degrees C / 96 degrees F |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |

| | |
|------------------|--------|
| Fan Tray 2 Fan 0 | Absent |
| Fan Tray 2 Fan 1 | Absent |

show chassis environment interconnect-device (QFabric System)

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

| Class | Item | Status | Measurement |
|-------|---------------------------|--------|------------------------------|
| | CB 0 | | |
| | CB 0 L Intake | OK | 30 degrees C / 86 degrees F |
| | CB 0 R Intake | OK | 31 degrees C / 87 degrees F |
| | CB 0 L Exhaust | OK | 32 degrees C / 89 degrees F |
| | CB 0 R Exhaust | OK | 33 degrees C / 91 degrees F |
| | Routing Engine 0 CPU temp | OK | 51 degrees C / 123 degrees F |
| | CB 1 | | |
| | CB 1 L Intake | OK | 27 degrees C / 80 degrees F |
| | CB 1 R Intake | OK | 29 degrees C / 84 degrees F |
| | CB 1 L Exhaust | OK | 31 degrees C / 87 degrees F |
| | CB 1 R Exhaust | OK | 32 degrees C / 89 degrees F |
| | Routing Engine 1 CPU temp | OK | 40 degrees C / 104 degrees F |
| | FC 0 FPC 0 | | |
| | FPC 0 L Intake | OK | 25 degrees C / 77 degrees F |
| | FPC 0 R Intake | OK | 28 degrees C / 82 degrees F |
| | FPC 0 L Exhaust | OK | 28 degrees C / 82 degrees F |
| | FPC 0 R Exhaust | OK | 29 degrees C / 84 degrees F |
| | FC 7 FPC 7 | | |
| | FPC 7 L Intake | OK | 25 degrees C / 77 degrees F |
| | FPC 7 R Intake | OK | 26 degrees C / 78 degrees F |
| | FPC 7 L Exhaust | OK | 28 degrees C / 82 degrees F |
| | FPC 7 R Exhaust | OK | 29 degrees C / 84 degrees F |
| | RC 0 FPC 8 | | |
| | FPC 8 L Intake | OK | 25 degrees C / 77 degrees F |
| | FPC 8 R Intake | OK | 26 degrees C / 78 degrees F |
| | FPC 8 L Exhaust | OK | 32 degrees C / 89 degrees F |
| | FPC 8 R Exhaust | OK | 30 degrees C / 86 degrees F |
| | RC 7 FPC 15 | | |
| | FPC 15 L Intake | OK | 24 degrees C / 75 degrees F |
| | FPC 15 R Intake | OK | 25 degrees C / 77 degrees F |
| | FPC 15 L Exhaust | OK | 33 degrees C / 91 degrees F |
| | FPC 15 R Exhaust | OK | 31 degrees C / 87 degrees F |
| Fans | TFT 0 Fan 0 | OK | Spinning at normal speed |
| Fans | TFT 0 Fan 1 | OK | Spinning at normal speed |
| Fans | TFT 0 Fan 2 | OK | Spinning at normal speed |
| Fans | TFT 0 Fan 3 | OK | Spinning at normal speed |
| Fans | TFT 0 Fan 4 | OK | Spinning at normal speed |
| Fans | TFT 0 Fan 5 | OK | Spinning at normal speed |
| Fans | BFT 1 Fan 0 | OK | Spinning at normal speed |
| Fans | BFT 1 Fan 1 | OK | Spinning at normal speed |
| Fans | BFT 1 Fan 2 | OK | Spinning at normal speed |
| Fans | BFT 1 Fan 3 | Check | |
| Fans | BFT 1 Fan 4 | OK | Spinning at normal speed |
| Fans | BFT 1 Fan 5 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 0 Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 0 Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 1 Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 1 Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 2 Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 2 Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 3 Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 0 Fan 3 Rotor 1 | OK | Spinning at normal speed |

| | | | | | |
|-------|-------|-------|---------|--------|-----------------------------|
| Fans | SFT 1 | Fan 0 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 1 | Fan 0 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 1 | Fan 1 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 1 | Fan 1 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 1 | Fan 2 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 1 | Fan 2 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 1 | Fan 3 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 1 | Fan 3 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 0 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 0 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 1 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 1 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 2 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 2 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 3 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 2 | Fan 3 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 0 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 0 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 1 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 1 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 2 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 2 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 3 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 3 | Fan 3 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 0 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 0 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 1 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 1 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 2 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 2 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 3 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 4 | Fan 3 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 0 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 0 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 1 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 1 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 2 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 2 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 3 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 5 | Fan 3 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 0 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 0 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 1 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 1 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 2 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 2 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 3 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 6 | Fan 3 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 0 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 0 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 1 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 1 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 2 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 2 | Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 3 | Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 7 | Fan 3 | Rotor 1 | OK | Spinning at normal speed |
| Power | PEM 0 | | | OK | 30 degrees C / 86 degrees F |
| Power | PEM 1 | | | OK | 30 degrees C / 86 degrees F |
| Power | PEM 2 | | | OK | 30 degrees C / 86 degrees F |
| Power | PEM 3 | | | Absent | |

| | | |
|-------|-------|--------|
| Power | PEM 4 | Absent |
| Power | PEM 5 | Absent |

show chassis environment node-device (QFabric System)

```
user@switch> show chassis environment node-device node1
```

| Class | Item | Status | Measurement |
|-------|----------------------|---------|-------------|
| Power | node1 Power Supply 0 | Absent | |
| | node1 Power Supply 1 | Absent | |
| Fans | node1 Fan Tray 0 | Testing | |
| | node1 Fan Tray 1 | Testing | |
| | node1 Fan Tray 2 | Testing | |

show chassis environment pem node-device (QFabric System)

```
user@switch> show chassis environment pem node-device node1
```

```
FPC 0 PEM 0 status:
  State           Check
  Airflow         Front to Back
  Temperature      OK
  AC Input:        OK
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   12          10       120     18

FPC 0 PEM 1 status:
  State           Online
  Airflow         Back to Front
  Temperature      OK
  AC Input:        OK
  DC Output        Voltage(V) Current(A) Power(W) Load(%)
                   11          10       110     17
```

show chassis environment (PTX5000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PDU 0 | OK | |
| | PDU 0 PSM 0 | OK | 36 degrees C / 96 degrees F |
| | PDU 0 PSM 1 | OK | 38 degrees C / 100 degrees F |
| | PDU 0 PSM 2 | OK | 38 degrees C / 100 degrees F |
| | PDU 0 PSM 3 | OK | 37 degrees C / 98 degrees F |
| | PDU 1 | Absent | |
| | CCG 0 | OK | 44 degrees C / 111 degrees F |
| | CCG 1 | OK | 44 degrees C / 111 degrees F |
| | Routing Engine 0 | OK | 62 degrees C / 143 degrees F |
| | Routing Engine 0 CPU | OK | 75 degrees C / 167 degrees F |
| | Routing Engine 1 | OK | 51 degrees C / 123 degrees F |
| | Routing Engine 1 CPU | OK | 64 degrees C / 147 degrees F |
| | CB 0 Intake | OK | 38 degrees C / 100 degrees F |
| | CB 0 Exhaust A | OK | 46 degrees C / 114 degrees F |
| | CB 0 Exhaust B | OK | 42 degrees C / 107 degrees F |
| | CB 1 Intake | OK | 35 degrees C / 95 degrees F |
| | CB 1 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | CB 1 Exhaust B | OK | 36 degrees C / 96 degrees F |
| | SIB 0 Exhaust | OK | 47 degrees C / 116 degrees F |
| | SIB 0 Junction | OK | 45 degrees C / 113 degrees F |
| | SIB 1 Exhaust | OK | 44 degrees C / 111 degrees F |

| | | |
|-----------------|--------|------------------------------|
| SIB 1 Junction | OK | 43 degrees C / 109 degrees F |
| SIB 2 Exhaust | OK | 47 degrees C / 116 degrees F |
| SIB 2 Junction | OK | 42 degrees C / 107 degrees F |
| SIB 3 Exhaust | OK | 43 degrees C / 109 degrees F |
| SIB 3 Junction | OK | 43 degrees C / 109 degrees F |
| SIB 4 Exhaust | OK | 47 degrees C / 116 degrees F |
| SIB 4 Junction | OK | 42 degrees C / 107 degrees F |
| SIB 5 Exhaust | OK | 42 degrees C / 107 degrees F |
| SIB 5 Junction | OK | 40 degrees C / 104 degrees F |
| SIB 6 Exhaust | OK | 46 degrees C / 114 degrees F |
| SIB 6 Junction | OK | 42 degrees C / 107 degrees F |
| SIB 7 Exhaust | OK | 43 degrees C / 109 degrees F |
| SIB 7 Junction | OK | 39 degrees C / 102 degrees F |
| SIB 8 Exhaust | OK | 44 degrees C / 111 degrees F |
| SIB 8 Junction | OK | 41 degrees C / 105 degrees F |
| FPC 0 PMB | OK | 35 degrees C / 95 degrees F |
| FPC 0 Intake | OK | 33 degrees C / 91 degrees F |
| FPC 0 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 0 Exhaust B | OK | 43 degrees C / 109 degrees F |
| FPC 0 TL0 | OK | 48 degrees C / 118 degrees F |
| FPC 0 TQ0 | OK | 53 degrees C / 127 degrees F |
| FPC 0 TL1 | OK | 56 degrees C / 132 degrees F |
| FPC 0 TQ1 | OK | 58 degrees C / 136 degrees F |
| FPC 0 TL2 | OK | 55 degrees C / 131 degrees F |
| FPC 0 TQ2 | OK | 56 degrees C / 132 degrees F |
| FPC 0 TL3 | OK | 59 degrees C / 138 degrees F |
| FPC 0 TQ3 | OK | 59 degrees C / 138 degrees F |
| FPC 2 PMB | OK | 35 degrees C / 95 degrees F |
| FPC 2 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 2 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 2 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 2 TL0 | OK | 53 degrees C / 127 degrees F |
| FPC 2 TQ0 | OK | 53 degrees C / 127 degrees F |
| FPC 2 TL1 | OK | 57 degrees C / 134 degrees F |
| FPC 2 TQ1 | OK | 58 degrees C / 136 degrees F |
| FPC 2 TL2 | OK | 54 degrees C / 129 degrees F |
| FPC 2 TQ2 | OK | 59 degrees C / 138 degrees F |
| FPC 2 TL3 | OK | 60 degrees C / 140 degrees F |
| FPC 2 TQ3 | OK | 64 degrees C / 147 degrees F |
| PIC 2/0 Ambient | OK | 49 degrees C / 120 degrees F |
| FPC 3 PMB | OK | 34 degrees C / 93 degrees F |
| FPC 3 Intake | OK | 35 degrees C / 95 degrees F |
| FPC 3 Exhaust A | OK | 54 degrees C / 129 degrees F |
| FPC 3 Exhaust B | OK | 49 degrees C / 120 degrees F |
| FPC 3 TL0 | OK | 49 degrees C / 120 degrees F |
| FPC 3 TQ0 | OK | 55 degrees C / 131 degrees F |
| FPC 3 TL1 | OK | 56 degrees C / 132 degrees F |
| FPC 3 TQ1 | OK | 58 degrees C / 136 degrees F |
| FPC 3 TL2 | OK | 56 degrees C / 132 degrees F |
| FPC 3 TQ2 | OK | 59 degrees C / 138 degrees F |
| FPC 3 TL3 | OK | 62 degrees C / 143 degrees F |
| FPC 3 TQ3 | OK | 63 degrees C / 145 degrees F |
| PIC 3/1 | Absent | |
| FPC 5 PMB | OK | 35 degrees C / 95 degrees F |
| FPC 5 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 5 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 5 Exhaust B | OK | 53 degrees C / 127 degrees F |
| FPC 5 TL0 | OK | 54 degrees C / 129 degrees F |
| FPC 5 TQ0 | OK | 52 degrees C / 125 degrees F |
| FPC 5 TL1 | OK | 61 degrees C / 141 degrees F |

| | | | |
|------|-------------------|----|------------------------------|
| | FPC 5 TQ1 | OK | 60 degrees C / 140 degrees F |
| | FPC 5 TL2 | OK | 55 degrees C / 131 degrees F |
| | FPC 5 TQ2 | OK | 55 degrees C / 131 degrees F |
| | FPC 5 TL3 | OK | 59 degrees C / 138 degrees F |
| | FPC 5 TQ3 | OK | 58 degrees C / 136 degrees F |
| | PIC 5/0 Ambient | OK | 51 degrees C / 123 degrees F |
| | PIC 5/1 Ambient | OK | 34 degrees C / 93 degrees F |
| | PIC 5/1 cfp-5/1/0 | OK | 34 degrees C / 93 degrees F |
| | PIC 5/1 cfp-5/1/1 | OK | 36 degrees C / 96 degrees F |
| | FPC 6 PMB | OK | 36 degrees C / 96 degrees F |
| | FPC 6 Intake | OK | 33 degrees C / 91 degrees F |
| | FPC 6 Exhaust A | OK | 51 degrees C / 123 degrees F |
| | FPC 6 Exhaust B | OK | 39 degrees C / 102 degrees F |
| | FPC 6 TL0 | OK | 44 degrees C / 111 degrees F |
| | FPC 6 TQ0 | OK | 54 degrees C / 129 degrees F |
| | FPC 6 TL1 | OK | 59 degrees C / 138 degrees F |
| | FPC 6 TQ1 | OK | 58 degrees C / 136 degrees F |
| | FPC 6 TL2 | OK | 60 degrees C / 140 degrees F |
| | FPC 6 TQ2 | OK | 57 degrees C / 134 degrees F |
| | FPC 6 TL3 | OK | 65 degrees C / 149 degrees F |
| | FPC 6 TQ3 | OK | 60 degrees C / 140 degrees F |
| | FPC 7 PMB | OK | 35 degrees C / 95 degrees F |
| | FPC 7 Intake | OK | 33 degrees C / 91 degrees F |
| | FPC 7 Exhaust A | OK | 53 degrees C / 127 degrees F |
| | FPC 7 Exhaust B | OK | 40 degrees C / 104 degrees F |
| | FPC 7 TL0 | OK | 46 degrees C / 114 degrees F |
| | FPC 7 TQ0 | OK | 58 degrees C / 136 degrees F |
| | FPC 7 TL1 | OK | 53 degrees C / 127 degrees F |
| | FPC 7 TQ1 | OK | 59 degrees C / 138 degrees F |
| | FPC 7 TL2 | OK | 56 degrees C / 132 degrees F |
| | FPC 7 TQ2 | OK | 61 degrees C / 141 degrees F |
| | FPC 7 TL3 | OK | 63 degrees C / 145 degrees F |
| | FPC 7 TQ3 | OK | 63 degrees C / 145 degrees F |
| | FPM I2CS | OK | 37 degrees C / 98 degrees F |
| Fans | Fan Tray 0 Fan 1 | OK | 3042 RPM |
| | Fan Tray 0 Fan 2 | OK | 3042 RPM |
| | Fan Tray 0 Fan 3 | OK | 3000 RPM |
| | Fan Tray 0 Fan 4 | OK | 3042 RPM |
| | Fan Tray 0 Fan 5 | OK | 3000 RPM |
| | Fan Tray 0 Fan 6 | OK | 3042 RPM |
| | Fan Tray 0 Fan 7 | OK | 3085 RPM |
| | Fan Tray 0 Fan 8 | OK | 3042 RPM |
| | Fan Tray 0 Fan 9 | OK | 3042 RPM |
| | Fan Tray 0 Fan 10 | OK | 3085 RPM |
| | Fan Tray 0 Fan 11 | OK | 3085 RPM |
| | Fan Tray 0 Fan 12 | OK | 3128 RPM |
| | Fan Tray 0 Fan 13 | OK | 3128 RPM |
| | Fan Tray 0 Fan 14 | OK | 3042 RPM |
| | Fan Tray 1 Fan 1 | OK | 2299 RPM |
| | Fan Tray 1 Fan 2 | OK | 2399 RPM |
| | Fan Tray 1 Fan 3 | OK | 2299 RPM |
| | Fan Tray 1 Fan 4 | OK | 2266 RPM |
| | Fan Tray 1 Fan 5 | OK | 2266 RPM |
| | Fan Tray 1 Fan 6 | OK | 2366 RPM |
| | Fan Tray 2 Fan 1 | OK | 2199 RPM |
| | Fan Tray 2 Fan 2 | OK | 2133 RPM |
| | Fan Tray 2 Fan 3 | OK | 2366 RPM |
| | Fan Tray 2 Fan 4 | OK | 2233 RPM |
| | Fan Tray 2 Fan 5 | OK | 2399 RPM |
| | Fan Tray 2 Fan 6 | OK | 2233 RPM |

| | | | |
|------|---------------|----|------------------------------|
| Misc | SPMB 0 Intake | OK | 50 degrees C / 122 degrees F |
| | SPMB 1 Intake | OK | 40 degrees C / 104 degrees F |

show chassis environment (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

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

| Class | Item | Status | Measurement |
|-------|-------------|--------|------------------------------|
| Temp | PDU 0 | OK | |
| | PDU 0 PSM 0 | OK | 41 degrees C / 105 degrees F |
| | PDU 0 PSM 1 | Absent | |
| | PDU 0 PSM 2 | OK | 43 degrees C / 109 degrees F |
| | PDU 0 PSM 3 | Absent | |
| | PDU 0 PSM 4 | OK | 44 degrees C / 111 degrees F |
| | PDU 0 PSM 5 | Absent | |
| | PDU 0 PSM 6 | OK | 45 degrees C / 113 degrees F |
| | PDU 0 PSM 7 | Absent | |
| | PDU 1 | OK | |
| | PDU 1 PSM 0 | Absent | |
| | PDU 1 PSM 1 | OK | 45 degrees C / 113 degrees F |
| | PDU 1 PSM 2 | Absent | |
| | PDU 1 PSM 3 | OK | 43 degrees C / 109 degrees F |
| | PDU 1 PSM 4 | Absent | |
| | PDU 1 PSM 5 | OK | 46 degrees C / 114 degrees F |
| | PDU 1 PSM 6 | Absent | |
| | PDU 1 PSM 7 | OK | 46 degrees C / 114 degrees F |
| | CCG 0 | OK | 27 degrees C / 80 degrees F |
| | CCG 1 | OK | 29 degrees C / 84 degrees F |
| | ... | | |

show chassis environment (PTX1000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|---------------------------|--------|------------------------------|
| Power | FPC 0 Power Supply 0 | Absent | |
| | FPC 0 Power Supply 1 | Absent | |
| | FPC 0 Power Supply 2 | OK | |
| | FPC 0 Power Supply 3 | OK | |
| Temp | FPC 0 Intake Temp Sensor | OK | 25 degrees C / 77 degrees F |
| | FPC 0 Exhaust Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 0 Mezz Temp Sensor 0 | OK | 25 degrees C / 77 degrees F |
| | FPC 0 Mezz Temp Sensor 1 | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PE2 Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PE1 Temp Sensor | OK | 32 degrees C / 89 degrees F |
| | FPC 0 PF0 Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 PE0 Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | FPC 0 PE5 Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PE4 Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PF1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 0 PE3 Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 0 CPU Die Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 OCX0 Temp Sensor | OK | 37 degrees C / 98 degrees F |
| Fans | FPC 0 Fan Tray 0 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 1 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 2 | OK | Spinning at normal speed |

show chassis environment (PTX10008 Router)

user@host> show chassis environment

| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| Temp | Routing Engine 0 CPU | OK | 40 degrees C / 104 degrees F |
| | Routing Engine 1 CPU | OK | 40 degrees C / 104 degrees F |
| | CB 0 Intake Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Exhaust Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | CB 1 Intake Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | CB 1 Exhaust Temp Sensor | OK | 32 degrees C / 89 degrees F |
| | FPC 0 Intake-A Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | FPC 0 Intake-B Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 0 Exhaust-B Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 0 Exhaust-C Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 PE0 Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 PE1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | FPC 0 PE2 Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 0 LCPU Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 1 Intake-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Intake-B Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | FPC 1 Exhaust-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Exhaust-B Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | FPC 1 Exhaust-C Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 1 PE0 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 1 PE1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 1 PE2 Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | FPC 1 LCPU Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 2 Intake-A Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 2 Intake-B Temp Sensor | OK | 30 degrees C / 86 degrees F |
| | FPC 2 Exhaust-A Temp Sensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 Exhaust-B Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | FPC 2 Exhaust-C Temp Sensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 PE0 Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 PE1 Temp Sensor | OK | 59 degrees C / 138 degrees F |
| | FPC 2 PE2 Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 PE3 Temp Sensor | OK | 60 degrees C / 140 degrees F |
| | FPC 2 PE4 Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 PE5 Temp Sensor | OK | 63 degrees C / 145 degrees F |
| | FPC 2 LCPU Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 3 Intake-A Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | FPC 3 Intake-B Temp Sensor | OK | 30 degrees C / 86 degrees F |
| | FPC 3 Exhaust-A Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | FPC 3 Exhaust-B Temp Sensor | OK | 48 degrees C / 118 degrees F |
| | FPC 3 Exhaust-C Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 3 PE0 Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 3 PE1 Temp Sensor | OK | 53 degrees C / 127 degrees F |
| | FPC 3 PE2 Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | FPC 3 PE3 Temp Sensor | OK | 53 degrees C / 127 degrees F |
| | FPC 3 PE4 Temp Sensor | OK | 48 degrees C / 118 degrees F |
| | FPC 3 PE5 Temp Sensor | OK | 57 degrees C / 134 degrees F |
| | FPC 3 LCPU Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 5 Intake-A Temp Sensor | Failed | |
| | FPC 5 Intake-B Temp Sensor | Failed | |
| | FPC 5 Exhaust-A Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 5 Exhaust-B Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 5 Exhaust-C Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 5 PE0 Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | FPC 5 PE1 Temp Sensor | OK | 48 degrees C / 118 degrees F |
| | FPC 5 PE2 Temp Sensor | OK | 51 degrees C / 123 degrees F |

| | | | |
|-------|-----------------------------|--------|------------------------------|
| | FPC 5 LCPu Temp Sensor | Failed | |
| | FPC 6 Intake-A Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 6 Intake-B Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 6 Exhaust-A Temp Sensor | OK | 39 degrees C / 102 degrees F |
| | FPC 6 Exhaust-B Temp Sensor | OK | 39 degrees C / 102 degrees F |
| | FPC 6 Exhaust-C Temp Sensor | OK | 39 degrees C / 102 degrees F |
| | FPC 6 PE0 Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 6 PE1 Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | FPC 6 PE2 Temp Sensor | OK | 50 degrees C / 122 degrees F |
| | FPC 6 LCPu Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | SIB 0 Intake-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | SIB 0 Intake-B Temp Sensor | OK | 30 degrees C / 86 degrees F |
| | SIB 0 Exhaust-A Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | SIB 0 Exhaust-B Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | SIB 0 PF0 Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | SIB 0 PF1 Temp Sensor | OK | 39 degrees C / 102 degrees F |
| | SIB 1 Intake-A Temp Sensor | OK | 43 degrees C / 109 degrees F |
| | SIB 1 Intake-B Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | SIB 1 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | SIB 1 Exhaust-B Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | SIB 1 PF0 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | SIB 1 PF1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | SIB 2 Intake-A Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | SIB 2 Intake-B Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | SIB 2 Exhaust-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | SIB 2 Exhaust-B Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | SIB 2 PF0 Temp Sensor | OK | 55 degrees C / 131 degrees F |
| | SIB 2 PF1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | SIB 3 Intake-A Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | SIB 3 Intake-B Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | SIB 3 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | SIB 3 Exhaust-B Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | SIB 3 PF0 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | SIB 3 PF1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | SIB 4 Intake-A Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | SIB 4 Intake-B Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | SIB 4 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | SIB 4 Exhaust-B Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | SIB 4 PF0 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | SIB 4 PF1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | SIB 5 Intake-A Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | SIB 5 Intake-B Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | SIB 5 Exhaust-A Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | SIB 5 Exhaust-B Temp Sensor | OK | 39 degrees C / 102 degrees F |
| | SIB 5 PF0 Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | SIB 5 PF1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| Power | Power Supply 0 | OK | |
| | Power Supply 1 | OK | |
| | Power Supply 2 | OK | |
| | Power Supply 3 | OK | |
| | Power Supply 4 | Check | |
| | Power Supply 5 | OK | |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 4 | Failed | |
| | Fan Tray 0 Fan 5 | Failed | |
| | Fan Tray 0 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 7 | OK | Spinning at normal speed |

| | | |
|-------------------|----|--------------------------|
| Fan Tray 0 Fan 8 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 9 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 10 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 4 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 5 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 6 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 7 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 8 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 9 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 10 | OK | Spinning at normal speed |

show chassis environment (PTX10016 Router)

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

| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| Temp | Routing Engine 0 CPU | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 1 CPU | OK | 34 degrees C / 93 degrees F |
| | 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 adc

| | |
|---------------------------------|--|
| Syntax | <pre>show chassis environment adc <adc-slot-number> <all-members> <local> <member member-id></pre> |
| Release Information | <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>all-members, local, and member member-id options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> |
| Description | Display chassis environmental information about the adapter cards. |
| Options | <p>none—Display environmental information about all adapter cards.</p> <p>adc-slot-number—(Optional) Display environmental information about the specified adapter card. For MX2020 routers, replace adc-slot-number with a value of 0 through 19. For MX2010 and MX2008 routers, replace adc-slot-number with a value of 0 through 9.</p> <p>all-members—(Optional) Display chassis environmental information about the adapter cards (ADCs) in all members of the Virtual Chassis configuration.</p> <p>local—(Optional) Display chassis environmental information about the ADCs in the local member of the Virtual Chassis.</p> <p>member member-id—(Optional) Display chassis environmental information about the ADCs in the specified member of the Virtual Chassis. Replace member-id with the value 0 or 1.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • show chassis adc on page 558 |
| List of Sample Output | <p>show chassis environment adc (MX2020 Router) on page 693</p> <p>show chassis environment adc (MX2010 Router) on page 699</p> <p>show chassis environment adc (MX2008 Router) on page 702</p> |
| Output Fields | <p>Table 39 on page 693 lists the output fields for the show chassis environment adc command. Output fields are listed in the approximate order in which they appear.</p> |

Table 39: show chassis environment adc Output Fields

| Field Name | Field Description |
|--------------------|--|
| State | Status of the adapter card. <ul style="list-style-type: none"> • Online—The adapter card is online and running. • Offline—Adapter card is powered down. |
| Temperature | Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the adapter card. <ul style="list-style-type: none"> • Intake Temperature—Measures the temperature of the air intake. • Exhaust Temperature—Measures the temperature of the hot air exhaust. • ADC-XF1—Measures the temperature of the ADC chipset, ADC-XF1. • ADC-XF0—Measures the temperature of the ADC chipset, ADC-XF0. |
| Power | Power required and measured on the adapter card. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |

Sample Output

show chassis environment adc (MX2020 Router)

```

user@host> show chassis environment adc

ADC 0 status:
  State           Online
  Intake Temperature 39 degrees C / 102 degrees F
  Exhaust Temperature 50 degrees C / 122 degrees F
  ADC-XF1 Temperature 58 degrees C / 136 degrees F
  ADC-XF0 Temperature 64 degrees C / 147 degrees F
  Power
    LTC3880-XF0-1.0v-RAIL 1029 mV
    LTC3880-XF0-1.0v-CH0 1029 mV
    LTC3880-XF0-1.0v-CH1 1033 mV
    LTC3880-XF0-1.5v-RAIL 1499 mV
    LTC3880-XF0-1.5v-CH0 1499 mV
    LTC3880-XF0-1.5v-CH1 1501 mV
    LTC3880-XF1-1.0v-RAIL 1029 mV
    LTC3880-XF1-1.0v-CH0 1029 mV
    LTC3880-XF1-1.0v-CH1 1033 mV
    LTC3880-XF1-1.5v-RAIL 1499 mV
    LTC3880-XF1-1.5v-CH0 1499 mV
    LTC3880-XF1-1.5v-CH1 1502 mV
  ADC 1 status:
    State           Online
    Intake Temperature 38 degrees C / 100 degrees F
    Exhaust Temperature 48 degrees C / 118 degrees F
    ADC-XF1 Temperature 59 degrees C / 138 degrees F
    ADC-XF0 Temperature 61 degrees C / 141 degrees F
    Power
      LTC3880-XF0-1.0v-RAIL 1029 mV
      LTC3880-XF0-1.0v-CH0 1029 mV
      LTC3880-XF0-1.0v-CH1 1033 mV
      LTC3880-XF0-1.5v-RAIL 1500 mV
      LTC3880-XF0-1.5v-CH0 1500 mV
      LTC3880-XF0-1.5v-CH1 1501 mV

```

```

LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-RAIL    1500 mV
LTC3880-XF1-1.5v-CH0    1500 mV
LTC3880-XF1-1.5v-CH1    1502 mV
ADC 2 status:
State                     Online
Intake Temperature       36 degrees C / 96 degrees F
Exhaust Temperature      50 degrees C / 122 degrees F
ADC-XF1 Temperature      52 degrees C / 125 degrees F
ADC-XF0 Temperature      59 degrees C / 138 degrees F
Power
LTC3880-XF0-1.0v-RAIL    1030 mV
LTC3880-XF0-1.0v-CH0    1030 mV
LTC3880-XF0-1.0v-CH1    1033 mV
LTC3880-XF0-1.5v-CH0    1499 mV
LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-CH0    1500 mV
ADC 3 status:
State                     Online
Intake Temperature       39 degrees C / 102 degrees F
Exhaust Temperature      50 degrees C / 122 degrees F
ADC-XF1 Temperature      61 degrees C / 141 degrees F
ADC-XF0 Temperature      63 degrees C / 145 degrees F
Power
LTC3880-XF0-1.0v-RAIL    1030 mV
LTC3880-XF0-1.0v-CH0    1030 mV
LTC3880-XF0-1.0v-CH1    1033 mV
LTC3880-XF0-1.5v-RAIL    1500 mV
LTC3880-XF0-1.5v-CH0    1500 mV
LTC3880-XF0-1.5v-CH1    1501 mV
LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-RAIL    1500 mV
LTC3880-XF1-1.5v-CH0    1500 mV
LTC3880-XF1-1.5v-CH1    1502 mV
ADC 4 status:
State                     Online
Intake Temperature       38 degrees C / 100 degrees F
Exhaust Temperature      49 degrees C / 120 degrees F
ADC-XF1 Temperature      60 degrees C / 140 degrees F
ADC-XF0 Temperature      62 degrees C / 143 degrees F
Power
LTC3880-XF0-1.0v-RAIL    1029 mV
LTC3880-XF0-1.0v-CH0    1029 mV
LTC3880-XF0-1.0v-CH1    1033 mV
LTC3880-XF0-1.5v-RAIL    1500 mV
LTC3880-XF0-1.5v-CH0    1500 mV
LTC3880-XF0-1.5v-CH1    1501 mV
LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-RAIL    1500 mV
LTC3880-XF1-1.5v-CH0    1500 mV
LTC3880-XF1-1.5v-CH1    1502 mV
ADC 5 status:

```

```

State                               Online
Intake Temperature                  37 degrees C / 98 degrees F
Exhaust Temperature                 52 degrees C / 125 degrees F
ADC-XF1 Temperature                 55 degrees C / 131 degrees F
ADC-XF0 Temperature                 66 degrees C / 150 degrees F
Power
  LTC3880-XF0-1.0v-RAIL             1029 mV
  LTC3880-XF0-1.0v-CH0               1029 mV
  LTC3880-XF0-1.0v-CH1               1033 mV
  LTC3880-XF0-1.5v-CH0               1500 mV
  LTC3880-XF1-1.0v-RAIL             1030 mV
  LTC3880-XF1-1.0v-CH0               1030 mV
  LTC3880-XF1-1.0v-CH1               1033 mV
  LTC3880-XF1-1.5v-CH0               1500 mV
ADC 6 status:
State                               Online
Intake Temperature                  39 degrees C / 102 degrees F
Exhaust Temperature                 51 degrees C / 123 degrees F
ADC-XF1 Temperature                 58 degrees C / 136 degrees F
ADC-XF0 Temperature                 64 degrees C / 147 degrees F
Power
  LTC3880-XF0-1.0v-RAIL             1029 mV
  LTC3880-XF0-1.0v-CH0               1029 mV
  LTC3880-XF0-1.0v-CH1               1033 mV
  LTC3880-XF0-1.5v-RAIL             1499 mV
  LTC3880-XF0-1.5v-CH0               1499 mV
  LTC3880-XF0-1.5v-CH1               1501 mV
  LTC3880-XF1-1.0v-RAIL             1029 mV
  LTC3880-XF1-1.0v-CH0               1029 mV
  LTC3880-XF1-1.0v-CH1               1033 mV
  LTC3880-XF1-1.5v-RAIL             1499 mV
  LTC3880-XF1-1.5v-CH0               1499 mV
  LTC3880-XF1-1.5v-CH1               1502 mV
ADC 7 status:
State                               Online
Intake Temperature                  38 degrees C / 100 degrees F
Exhaust Temperature                 52 degrees C / 125 degrees F
ADC-XF1 Temperature                 61 degrees C / 141 degrees F
ADC-XF0 Temperature                 69 degrees C / 156 degrees F
Power
  LTC3880-XF0-1.0v-RAIL             1029 mV
  LTC3880-XF0-1.0v-CH0               1029 mV
  LTC3880-XF0-1.0v-CH1               1033 mV
  LTC3880-XF0-1.5v-CH0               1499 mV
  LTC3880-XF1-1.0v-RAIL             1029 mV
  LTC3880-XF1-1.0v-CH0               1029 mV
  LTC3880-XF1-1.0v-CH1               1033 mV
  LTC3880-XF1-1.5v-CH0               1500 mV
ADC 8 status:
State                               Online
Intake Temperature                  38 degrees C / 100 degrees F
Exhaust Temperature                 50 degrees C / 122 degrees F
ADC-XF1 Temperature                 63 degrees C / 145 degrees F
ADC-XF0 Temperature                 64 degrees C / 147 degrees F
Power
  LTC3880-XF0-1.0v-RAIL             1029 mV
  LTC3880-XF0-1.0v-CH0               1029 mV
  LTC3880-XF0-1.0v-CH1               1033 mV
  LTC3880-XF0-1.5v-RAIL             1499 mV
  LTC3880-XF0-1.5v-CH0               1499 mV

```

| | |
|-----------------------|------------------------------|
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1030 mV |
| LTC3880-XF1-1.0v-CH0 | 1030 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1499 mV |
| LTC3880-XF1-1.5v-CH0 | 1499 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC 9 status: | |
| State | Online |
| Intake Temperature | 40 degrees C / 104 degrees F |
| Exhaust Temperature | 50 degrees C / 122 degrees F |
| ADC-XF1 Temperature | 59 degrees C / 138 degrees F |
| ADC-XF0 Temperature | 62 degrees C / 143 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1029 mV |
| LTC3880-XF0-1.0v-CH0 | 1029 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1500 mV |
| LTC3880-XF0-1.5v-CH0 | 1500 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1029 mV |
| LTC3880-XF1-1.0v-CH0 | 1029 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1499 mV |
| LTC3880-XF1-1.5v-CH0 | 1499 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC 10 status: | |
| State | Online |
| Intake Temperature | 46 degrees C / 114 degrees F |
| Exhaust Temperature | 52 degrees C / 125 degrees F |
| ADC-XF1 Temperature | 66 degrees C / 150 degrees F |
| ADC-XF0 Temperature | 65 degrees C / 149 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1030 mV |
| LTC3880-XF0-1.0v-CH0 | 1030 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1499 mV |
| LTC3880-XF0-1.5v-CH0 | 1499 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1029 mV |
| LTC3880-XF1-1.0v-CH0 | 1029 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1500 mV |
| LTC3880-XF1-1.5v-CH0 | 1500 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC 11 status: | |
| State | Online |
| Intake Temperature | 47 degrees C / 116 degrees F |
| Exhaust Temperature | 53 degrees C / 127 degrees F |
| ADC-XF1 Temperature | 64 degrees C / 147 degrees F |
| ADC-XF0 Temperature | 65 degrees C / 149 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1030 mV |
| LTC3880-XF0-1.0v-CH0 | 1030 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1500 mV |
| LTC3880-XF0-1.5v-CH0 | 1500 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1029 mV |
| LTC3880-XF1-1.0v-CH0 | 1029 mV |

```

LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1502 mV
ADC 12 status:
State                      Online
Intake Temperature        48 degrees C / 118 degrees F
Exhaust Temperature       54 degrees C / 129 degrees F
ADC-XF1 Temperature       66 degrees C / 150 degrees F
ADC-XF0 Temperature       65 degrees C / 149 degrees F
Power
LTC3880-XF0-1.0v-RAIL     1029 mV
LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1500 mV
LTC3880-XF0-1.5v-CH0      1500 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF1-1.0v-RAIL     1029 mV
LTC3880-XF1-1.0v-CH0      1029 mV
LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1502 mV
ADC 13 status:
State                      Online
Intake Temperature        48 degrees C / 118 degrees F
Exhaust Temperature       55 degrees C / 131 degrees F
ADC-XF1 Temperature       66 degrees C / 150 degrees F
ADC-XF0 Temperature       67 degrees C / 152 degrees F
Power
LTC3880-XF0-1.0v-RAIL     1029 mV
LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1500 mV
LTC3880-XF0-1.5v-CH0      1500 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF1-1.0v-RAIL     1030 mV
LTC3880-XF1-1.0v-CH0      1030 mV
LTC3880-XF1-1.0v-CH1      1034 mV
LTC3880-XF1-1.5v-RAIL     1500 mV
LTC3880-XF1-1.5v-CH0      1500 mV
LTC3880-XF1-1.5v-CH1      1503 mV
ADC 14 status:
State                      Online
Intake Temperature        50 degrees C / 122 degrees F
Exhaust Temperature       57 degrees C / 134 degrees F
ADC-XF1 Temperature       68 degrees C / 154 degrees F
ADC-XF0 Temperature       72 degrees C / 161 degrees F
Power
LTC3880-XF0-1.0v-RAIL     1030 mV
LTC3880-XF0-1.0v-CH0      1030 mV
LTC3880-XF0-1.0v-CH1      1034 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF1-1.0v-RAIL     1030 mV
LTC3880-XF1-1.0v-CH0      1030 mV
LTC3880-XF1-1.0v-CH1      1034 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV

```

| | |
|-----------------------|------------------------------|
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC 15 status: | |
| State | Online |
| Intake Temperature | 49 degrees C / 120 degrees F |
| Exhaust Temperature | 56 degrees C / 132 degrees F |
| ADC-XF1 Temperature | 68 degrees C / 154 degrees F |
| ADC-XF0 Temperature | 68 degrees C / 154 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1030 mV |
| LTC3880-XF0-1.0v-CH0 | 1030 mV |
| LTC3880-XF0-1.0v-CH1 | 1034 mV |
| LTC3880-XF0-1.5v-RAIL | 1499 mV |
| LTC3880-XF0-1.5v-CH0 | 1499 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1030 mV |
| LTC3880-XF1-1.0v-CH0 | 1030 mV |
| LTC3880-XF1-1.0v-CH1 | 1034 mV |
| LTC3880-XF1-1.5v-RAIL | 1499 mV |
| LTC3880-XF1-1.5v-CH0 | 1499 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC 16 status: | |
| State | Online |
| Intake Temperature | 51 degrees C / 123 degrees F |
| Exhaust Temperature | 56 degrees C / 132 degrees F |
| ADC-XF1 Temperature | 67 degrees C / 152 degrees F |
| ADC-XF0 Temperature | 68 degrees C / 154 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1029 mV |
| LTC3880-XF0-1.0v-CH0 | 1029 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1499 mV |
| LTC3880-XF0-1.5v-CH0 | 1499 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1029 mV |
| LTC3880-XF1-1.0v-CH0 | 1029 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1500 mV |
| LTC3880-XF1-1.5v-CH0 | 1500 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC 17 status: | |
| State | Online |
| Intake Temperature | 51 degrees C / 123 degrees F |
| Exhaust Temperature | 56 degrees C / 132 degrees F |
| ADC-XF1 Temperature | 68 degrees C / 154 degrees F |
| ADC-XF0 Temperature | 69 degrees C / 156 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1030 mV |
| LTC3880-XF0-1.0v-CH0 | 1030 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1500 mV |
| LTC3880-XF0-1.5v-CH0 | 1500 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1030 mV |
| LTC3880-XF1-1.0v-CH0 | 1030 mV |
| LTC3880-XF1-1.0v-CH1 | 1034 mV |
| LTC3880-XF1-1.5v-RAIL | 1500 mV |
| LTC3880-XF1-1.5v-CH0 | 1500 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC 18 status: | |
| State | Online |

```

Intake Temperature      52 degrees C / 125 degrees F
Exhaust Temperature    57 degrees C / 134 degrees F
ADC-XF1 Temperature    66 degrees C / 150 degrees F
ADC-XF0 Temperature    71 degrees C / 159 degrees F
Power
  LTC3880-XF0-1.0v-RAIL 1030 mV
  LTC3880-XF0-1.0v-CH0  1030 mV
  LTC3880-XF0-1.0v-CH1  1034 mV
  LTC3880-XF0-1.5v-RAIL 1499 mV
  LTC3880-XF0-1.5v-CH0  1499 mV
  LTC3880-XF0-1.5v-CH1  1501 mV
  LTC3880-XF1-1.0v-RAIL 1030 mV
  LTC3880-XF1-1.0v-CH0  1030 mV
  LTC3880-XF1-1.0v-CH1  1034 mV
  LTC3880-XF1-1.5v-RAIL 1500 mV
  LTC3880-XF1-1.5v-CH0  1500 mV
  LTC3880-XF1-1.5v-CH1  1502 mV
ADC 19 status:
State      Online
Intake Temperature    49 degrees C / 120 degrees F
Exhaust Temperature    56 degrees C / 132 degrees F
ADC-XF1 Temperature    67 degrees C / 152 degrees F
ADC-XF0 Temperature    70 degrees C / 158 degrees F
Power
  LTC3880-XF0-1.0v-RAIL 1029 mV
  LTC3880-XF0-1.0v-CH0  1029 mV
  LTC3880-XF0-1.0v-CH1  1033 mV
  LTC3880-XF0-1.5v-RAIL 1499 mV
  LTC3880-XF0-1.5v-CH0  1499 mV
  LTC3880-XF0-1.5v-CH1  1501 mV
  LTC3880-XF1-1.0v-RAIL 1030 mV
  LTC3880-XF1-1.0v-CH0  1030 mV
  LTC3880-XF1-1.0v-CH1  1033 mV
  LTC3880-XF1-1.5v-RAIL 1500 mV
  LTC3880-XF1-1.5v-CH0  1500 mV
  LTC3880-XF1-1.5v-CH1  1502 mV

```

show chassis environment adc (MX2010 Router)

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

```

ADC 0 status:
State      Online
Intake Temperature    33 degrees C / 91 degrees F
Exhaust Temperature    42 degrees C / 107 degrees F
ADC-XF1 Temperature    46 degrees C / 114 degrees F
ADC-XF0 Temperature    53 degrees C / 127 degrees F
Power
  LTC3880-XF0-1.0v-RAIL 998 mV
  LTC3880-XF0-1.0v-CH0  998 mV
  LTC3880-XF0-1.0v-CH1 1001 mV
  LTC3880-XF0-1.5v-RAIL 1454 mV
  LTC3880-XF0-1.5v-CH0  1454 mV
  LTC3880-XF0-1.5v-CH1  1456 mV
  LTC3880-XF1-1.0v-RAIL 998 mV
  LTC3880-XF1-1.0v-CH0  998 mV
  LTC3880-XF1-1.0v-CH1 1002 mV
  LTC3880-XF1-1.5v-RAIL 1454 mV
  LTC3880-XF1-1.5v-CH0  1454 mV
  LTC3880-XF1-1.5v-CH1  1457 mV

```

ADC 1 status:

| | |
|-----------------------|------------------------------|
| State | Online |
| Intake Temperature | 32 degrees C / 89 degrees F |
| Exhaust Temperature | 42 degrees C / 107 degrees F |
| ADC-XF1 Temperature | 44 degrees C / 111 degrees F |
| ADC-XF0 Temperature | 52 degrees C / 125 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 998 mV |
| LTC3880-XF0-1.0v-CH0 | 998 mV |
| LTC3880-XF0-1.0v-CH1 | 1002 mV |
| LTC3880-XF0-1.5v-RAIL | 1454 mV |
| LTC3880-XF0-1.5v-CH0 | 1454 mV |
| LTC3880-XF0-1.5v-CH1 | 1456 mV |
| LTC3880-XF1-1.0v-RAIL | 999 mV |
| LTC3880-XF1-1.0v-CH0 | 999 mV |
| LTC3880-XF1-1.0v-CH1 | 1002 mV |
| LTC3880-XF1-1.5v-RAIL | 1454 mV |
| LTC3880-XF1-1.5v-CH0 | 1454 mV |
| LTC3880-XF1-1.5v-CH1 | 1456 mV |

ADC 2 status:

| | |
|-----------------------|------------------------------|
| State | Online |
| Intake Temperature | 35 degrees C / 95 degrees F |
| Exhaust Temperature | 42 degrees C / 107 degrees F |
| ADC-XF1 Temperature | 48 degrees C / 118 degrees F |
| ADC-XF0 Temperature | 54 degrees C / 129 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1030 mV |
| LTC3880-XF0-1.0v-CH0 | 1030 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1500 mV |
| LTC3880-XF0-1.5v-CH0 | 1500 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1029 mV |
| LTC3880-XF1-1.0v-CH0 | 1029 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1499 mV |
| LTC3880-XF1-1.5v-CH0 | 1499 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |

ADC 3 status:

| | |
|-----------------------|------------------------------|
| State | Online |
| Intake Temperature | 35 degrees C / 95 degrees F |
| Exhaust Temperature | 40 degrees C / 104 degrees F |
| ADC-XF1 Temperature | 44 degrees C / 111 degrees F |
| ADC-XF0 Temperature | 51 degrees C / 123 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 999 mV |
| LTC3880-XF0-1.0v-CH0 | 999 mV |
| LTC3880-XF0-1.0v-CH1 | 1002 mV |
| LTC3880-XF0-1.5v-RAIL | 1454 mV |
| LTC3880-XF0-1.5v-CH0 | 1454 mV |
| LTC3880-XF0-1.5v-CH1 | 1456 mV |
| LTC3880-XF1-1.0v-RAIL | 999 mV |
| LTC3880-XF1-1.0v-CH0 | 999 mV |
| LTC3880-XF1-1.0v-CH1 | 1002 mV |
| LTC3880-XF1-1.5v-RAIL | 1454 mV |
| LTC3880-XF1-1.5v-CH0 | 1454 mV |
| LTC3880-XF1-1.5v-CH1 | 1457 mV |

ADC 4 status:

| | |
|--------------------|-----------------------------|
| State | Online |
| Intake Temperature | 31 degrees C / 87 degrees F |


```

Exhaust Temperature      43 degrees C / 109 degrees F
ADC-XF1 Temperature      48 degrees C / 118 degrees F
ADC-XF0 Temperature      56 degrees C / 132 degrees F
Power
  LTC3880-XF0-1.0v-RAIL  1029 mV
  LTC3880-XF0-1.0v-CH0    1029 mV
  LTC3880-XF0-1.0v-CH1    1033 mV
  LTC3880-XF0-1.5v-RAIL  1499 mV
  LTC3880-XF0-1.5v-CH0    1499 mV
  LTC3880-XF0-1.5v-CH1    1501 mV
  LTC3880-XF1-1.0v-RAIL  1030 mV
  LTC3880-XF1-1.0v-CH0    1030 mV
  LTC3880-XF1-1.0v-CH1    1033 mV
  LTC3880-XF1-1.5v-RAIL  1499 mV
  LTC3880-XF1-1.5v-CH0    1499 mV
  LTC3880-XF1-1.5v-CH1    1502 mV
ADC 5 status:
State      Online
Intake Temperature  33 degrees C / 91 degrees F
Exhaust Temperature 43 degrees C / 109 degrees F
ADC-XF1 Temperature 47 degrees C / 116 degrees F
ADC-XF0 Temperature 54 degrees C / 129 degrees F
Power
  LTC3880-XF0-1.0v-RAIL  999 mV
  LTC3880-XF0-1.0v-CH0    999 mV
  LTC3880-XF0-1.0v-CH1    1002 mV
  LTC3880-XF0-1.5v-RAIL  1454 mV
  LTC3880-XF0-1.5v-CH0    1454 mV
  LTC3880-XF0-1.5v-CH1    1456 mV
  LTC3880-XF1-1.0v-RAIL  998 mV
  LTC3880-XF1-1.0v-CH0    998 mV
  LTC3880-XF1-1.0v-CH1    1002 mV
  LTC3880-XF1-1.5v-RAIL  1454 mV
  LTC3880-XF1-1.5v-CH0    1454 mV
  LTC3880-XF1-1.5v-CH1    1457 mV
ADC 6 status:
State      Online
Intake Temperature  32 degrees C / 89 degrees F
Exhaust Temperature 42 degrees C / 107 degrees F
ADC-XF1 Temperature 47 degrees C / 116 degrees F
ADC-XF0 Temperature 55 degrees C / 131 degrees F
Power
  LTC3880-XF0-1.0v-RAIL  1030 mV
  LTC3880-XF0-1.0v-CH0    1030 mV
  LTC3880-XF0-1.0v-CH1    1033 mV
  LTC3880-XF0-1.5v-RAIL  1499 mV
  LTC3880-XF0-1.5v-CH0    1499 mV
  LTC3880-XF0-1.5v-CH1    1501 mV
  LTC3880-XF1-1.0v-RAIL  1030 mV
  LTC3880-XF1-1.0v-CH0    1030 mV
  LTC3880-XF1-1.0v-CH1    1033 mV
  LTC3880-XF1-1.5v-RAIL  1499 mV
  LTC3880-XF1-1.5v-CH0    1499 mV
  LTC3880-XF1-1.5v-CH1    1502 mV
ADC 7 status:
State      Online
Intake Temperature  36 degrees C / 96 degrees F
Exhaust Temperature 43 degrees C / 109 degrees F
ADC-XF1 Temperature 46 degrees C / 114 degrees F
ADC-XF0 Temperature 55 degrees C / 131 degrees F

```

```

Power
LTC3880-XF0-1.0v-RAIL      1030 mV
LTC3880-XF0-1.0v-CH0       1030 mV
LTC3880-XF0-1.0v-CH1       1033 mV
LTC3880-XF0-1.5v-RAIL      1500 mV
LTC3880-XF0-1.5v-CH0       1500 mV
LTC3880-XF0-1.5v-CH1       1501 mV
LTC3880-XF1-1.0v-RAIL      1030 mV
LTC3880-XF1-1.0v-CH0       1030 mV
LTC3880-XF1-1.0v-CH1       1033 mV
LTC3880-XF1-1.5v-RAIL      1499 mV
LTC3880-XF1-1.5v-CH0       1499 mV
LTC3880-XF1-1.5v-CH1       1502 mV
ADC 8 status:
State                        Online
Intake Temperature          35 degrees C / 95 degrees F
Exhaust Temperature         43 degrees C / 109 degrees F
ADC-XF1 Temperature         44 degrees C / 111 degrees F
ADC-XF0 Temperature         51 degrees C / 123 degrees F
Power
LTC3880-XF0-1.0v-RAIL      999 mV
LTC3880-XF0-1.0v-CH0       999 mV
LTC3880-XF0-1.0v-CH1       1002 mV
LTC3880-XF0-1.5v-RAIL      1455 mV
LTC3880-XF0-1.5v-CH0       1455 mV
LTC3880-XF0-1.5v-CH1       1456 mV
LTC3880-XF1-1.0v-RAIL      999 mV
LTC3880-XF1-1.0v-CH0       999 mV
LTC3880-XF1-1.0v-CH1       1002 mV
LTC3880-XF1-1.5v-RAIL      1455 mV
LTC3880-XF1-1.5v-CH0       1455 mV
LTC3880-XF1-1.5v-CH1       1457 mV
ADC 9 status:
State                        Online
Intake Temperature          31 degrees C / 87 degrees F
Exhaust Temperature         43 degrees C / 109 degrees F
ADC-XF1 Temperature         48 degrees C / 118 degrees F
ADC-XF0 Temperature         56 degrees C / 132 degrees F
Power
LTC3880-XF0-1.0v-RAIL      1029 mV
LTC3880-XF0-1.0v-CH0       1029 mV
LTC3880-XF0-1.0v-CH1       1033 mV
LTC3880-XF0-1.5v-RAIL      1455 mV
LTC3880-XF0-1.5v-CH0       1455 mV
LTC3880-XF0-1.5v-CH1       1457 mV
LTC3880-XF1-1.0v-RAIL      1029 mV
LTC3880-XF1-1.0v-CH0       1029 mV
LTC3880-XF1-1.0v-CH1       1033 mV
LTC3880-XF1-1.5v-RAIL      1454 mV
LTC3880-XF1-1.5v-CH0       1454 mV
LTC3880-XF1-1.5v-CH1       1457 mV

```

show chassis environment adc (MX2008 Router)

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

```

ADC 7 status:
State                        Online
Intake Temperature          32 degrees C / 89 degrees F
Exhaust Temperature         39 degrees C / 102 degrees F

```

| | |
|-----------------------|------------------------------|
| ADC-XF1 Temperature | 46 degrees C / 114 degrees F |
| ADC-XF0 Temperature | 54 degrees C / 129 degrees F |
| Power | |
| LTC3880-XF0-1.0v-RAIL | 1029 mV |
| LTC3880-XF0-1.0v-CH0 | 1029 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1499 mV |
| LTC3880-XF0-1.5v-CH0 | 1499 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1029 mV |
| LTC3880-XF1-1.0v-CH0 | 1029 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1499 mV |
| LTC3880-XF1-1.5v-CH0 | 1499 mV |
| LTC3880-XF1-1.5v-CH1 | 1502 mV |
| ADC-2.5V | 2851 mV |
| ADC-3.3V | 3787 mV |

show chassis environment cb

List of Syntax [Syntax on page 704](#)
[Syntax \(TX Matrix Routers\) on page 704](#)
[Syntax \(TX Matrix Plus Routers\) on page 704](#)
[Syntax \(MX Series Routers\) on page 704](#)
[Syntax \(MX104 Universal Routing Platforms\) on page 704](#)
[Syntax \(MX2010, MX2020, MX10003, MX204, MX2008, and MX10008 Universal Routing Platforms\) on page 704](#)
[Syntax \(QFabric System\) on page 704](#)
[Syntax \(EX9251, EX9253 Switches\) on page 705](#)

| | |
|---------------|---------------------------------------|
| Syntax | show chassis environment cb <slot> |
|---------------|---------------------------------------|

| | |
|-----------------------------------|---|
| Syntax (TX Matrix Routers) | show chassis environment cb <lcc number scc> <slot> |
|-----------------------------------|---|

| | |
|--|---|
| Syntax (TX Matrix Plus Routers) | show chassis environment cb <lcc number sfc number > <slot> |
|--|---|

| | |
|-----------------------------------|---|
| Syntax (MX Series Routers) | show chassis environment cb <slot> <all-members> <local> <member member-id> |
|-----------------------------------|---|

| | |
|---|-----------------------------|
| Syntax (MX104 Universal Routing Platforms) | show chassis environment cb |
|---|-----------------------------|

| | |
|---|---------------------------------------|
| Syntax (MX2010, MX2020, MX10003, MX204, MX2008, and MX10008 Universal Routing Platforms) | show chassis environment cb <slot> |
|---|---------------------------------------|

| | |
|--------------------------------|--|
| Syntax (QFabric System) | show chassis environment cb <slot interconnect-device interconnect-device-name> < interconnect-device interconnect-device-name slot> |
|--------------------------------|--|

Syntax (EX9251, EX9253 Switches)

```
show chassis environment cb
<slot>
```

Release Information

Command introduced before Junos Release 7.4.
 Command introduced in Junos OS Release 9.4 for EX Series switches.
 Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.
 Command introduced in Junos OS Release 12.1 for T4000 Core Routers.
 option introduced for the TX Matrix Plus router in Junos Release 9.6.
 Command introduced in Junos OS Release 11.3 for the QFX Series.
 Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.
 Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.
 Command introduced in Junos OS Release 13.2 for MX104 Universal Routing Platforms.
 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 17.4 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 18.2 for MX10008 Universal Routing Platforms..

Description

(M120, M320, MX Series, and T Series routers, EX8200 switches, and PTX Series Packet Transport Routers only) Display environmental information about the Control Boards (CBs).

Options

none—Display environmental information about all CBs. For a TX Matrix router, display environmental information about all CBs on the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display environmental information about all CBs on the TX Matrix Plus router and its attached T1600 or T4000 routers.

all-members—(MX Series routers only) (Optional) Display environmental information about the CBs on all the members of the Virtual Chassis configuration.

interconnect-device—(QFabric systems only) Display environmental information about CBs on the Interconnect device.

lcc number—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

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

local—(MX Series routers only) (Optional) Display environmental information about the CBs on the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display environmental information about the CBs on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

scc—(TX Matrix router only) (Optional) Display environmental information about the CBs in the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router only) (Optional) Display environmental information about the CBs in the TX Matrix Plus router (or switch-fabric chassis).

slot—(Optional) Display environmental information about the specified CB. On routers and PTX Series Packet Transport Routers, replace *slot* with **0** or **1**. On EX Series switches replace *slot* with **0**, **1**, or **2**. On QFX Series switches, replace *slot* with **0** or **1**.

Required Privilege Level view

Related Documentation

- [request chassis cb on page 476](#)
- *Understanding Switching Control Board Redundancy*

List of Sample Output

- [show chassis environment cb \(M120 Router\) on page 708](#)
- [show chassis environment cb \(M320 Router\) on page 708](#)
- [show chassis environment cb \(MX80 Router\) on page 709](#)
- [show chassis environment cb \(MX104 Router\) on page 709](#)
- [show chassis environment cb \(MX240 Router\) on page 709](#)
- [show chassis environment cb \(MX240 Router with Enhanced MX SCB\) on page 710](#)
- [show chassis environment cb \(MX480 Router\) on page 710](#)
- [show chassis environment cb \(MX480 Router with Enhanced MX SCB\) on page 711](#)
- [show chassis environment cb \(MX960 Router\) on page 711](#)
- [show chassis environment cb \(MX960 Router with Enhanced MX SCB\) on page 712](#)
- [show chassis environment cb \(MX2020 Router\) on page 712](#)
- [show chassis environment cb \(MX2010 Router\) on page 713](#)
- [show chassis environment cb \(MX2008 Router\) on page 714](#)
- [show chassis environment cb \(MX10003 Router\) on page 715](#)
- [show chassis environment cb \(MX204 Router\) on page 716](#)
- [show chassis environment cb \(MX10008 Router\) on page 717](#)
- [show chassis environment cb \(T4000 Core Router\) on page 718](#)
- [show chassis environment cb \(TX Matrix Router\) on page 718](#)
- [show chassis environment cb \(TX Matrix Plus Router\) on page 719](#)

[show chassis environment cb \(EX8200 Switch\) on page 723](#)
[show chassis environment cb \(EX8208 Switch\) on page 724](#)
[show chassis environment cb \(EX9251 Switch\) on page 725](#)
[show chassis environment cb \(EX9253 Switch\) on page 726](#)
[show chassis environment cb \(PTX5000 Packet Transport Router\) on page 727](#)
[show chassis environment cb \(PTX10008 Router\) on page 727](#)
[show chassis environment cb \(PTX10016 Router\) on page 728](#)
[show chassis environment cb \(QFabric System\) on page 729](#)

Output Fields Table 40 on page 707 lists the output fields for the **show chassis environment cb** command. Output fields are listed in the approximate order in which they appear.

Table 40: show chassis environment cb Output Fields

| Field Name | Field Description |
|---|--|
| State | <p>Status of the CB. If two CBs are installed and online, one is functioning as the master, and the other is the standby.</p> <ul style="list-style-type: none"> • Online—CB is online and running. • Offline—CB is powered down. <p>NOTE: On the EX8208 switch, the installation can include three CBs.</p> |
| Temperature | <p>Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the CB.</p> <ul style="list-style-type: none"> • Temperature Intake—Measures the temperature of the air intake to cool the power supplies. • Temperature Exhaust—Measures the temperature of the hot air exhaust. <p>NOTE: On the MX2010, MX2020, and MX2008 routers, the intake temperature measures the temperature of the air intake to cool the Control Board (CB). The MX2010, MX2020, and MX2008 routers include intake and exhaust temperatures for multiple zones (Intake A, Intake B, Intake C, Exhaust A, Exhaust B, and TCBC).</p> |
| Power | <p>Power required and measured on the CB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p> |
| BUS Revision | <p>Revision level of the generic bus device. (Not on switches.)</p> |
| FPGA Revision | <p>Revision level of the field-programmable gate array (FPGA). (Not on switches.)</p> |
| PMBus device (on MX240, MX480, and MX960 routers with Enhanced MX SCB) | <p>Enhanced SCB on MX 240, MX480, and MX960 routers allows the system to save power by supplying only the amount of voltage that is required. Configurable PMBus devices are used to provide the voltage for each individual device. There is one PMBus device for each XF ASIC so that the output can be customized to each device. The following PMBus device information is displayed for routers with Enhanced MX SCB:</p> <ul style="list-style-type: none"> • Expected voltage • Measured voltage • Measured current • Calculated power |

Sample Output

show chassis environment cb (M120 Router)

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

```
CB 0 status:
  State           Online Master
  Temperature      33 degrees C / 91 degrees F
  Power
    1.2 V          1214 mV
    1.5 V          1495 mV
    2.5 V          2494 mV
    3.3 V          3319 mV
    5.0 V          5085 mV
    3.3 V bias     3296 mV
  Bus Revision     12
  FPGA Revision    17

CB 1 status:
  State           Online Standby
  Temperature      34 degrees C / 93 degrees F
  Power
    1.2 V          1195 mV
    1.5 V          1495 mV
    2.5 V          2504 mV
    3.3 V          3312 mV
    5.0 V          5111 mV
    3.3 V bias     3296 mV
  Bus Revision     12
  FPGA Revision    17
```

show chassis environment cb (M320 Router)

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

```
CB 0 status:
  State           Online Master
  Temperature      29 degrees C / 84 degrees F
  Power:
    1.8 V          1805 mV
    2.5 V          2501 mV
    3.3 V          3293 mV
    4.6 V          4725 mV
    5.0 V          5032 mV
    12.0 V         11975 mV
    3.3 V bias     3286 mV
    8.0 V bias     7589 mV
  BUS Revision     40
  FPGA Revision    7

CB 1 status:
  State           Online Standby
  Temperature      32 degrees C / 89 degrees F
  Power:
    1.8 V          1802 mV
    2.5 V          2482 mV
    3.3 V          3289 mV
    4.6 V          4720 mV
    5.0 V          5001 mV
    12.0 V         11946 mV
    3.3 V bias     3274 mV
```


| | |
|---------------|---------|
| 8.0 V bias | 7562 mV |
| BUS Revision | 40 |
| FPGA Revision | 7 |

show chassis environment cb (MX80 Router)

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

```
CB 0 status:
State                Online Master
Temperature          36 degrees C / 96 degrees F
Power 1
  1.0 V              1034 mV
  1.0 V MQ           1037 mV
  1.0 V LU           1005 mV
  1.2 V              1218 mV
  1.5 V              1524 mV
  1.8 V              1814 mV
  2.5 V              2558 mV
  3.3 V              3296 mV
  5.0 V              5233 mV
  5.0 V bias         5207 mV
  12.0 V             12162 mV
```

show chassis environment cb (MX104 Router)

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

```
CB 0 status:
State                Online Master
Temperature          33 degrees C / 91 degrees F
Power 1
  0.75 V             751 mV
  1.0 V              1005 mV
  1.1 V              1113 mV
  1.5 V              1494 mV
  2.5 V              2518 mV
  3.3 V              3338 mV
  5.0 V              4960 mV
  12.0 V             12006 mV
FPGA Revision        25
CB 1 status:
State                Empty
```

show chassis environment cb (MX240 Router)

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

```
CB 0 status:
State                Online Standby
Temperature          37 degrees C / 98 degrees F
Power 1
  1.2 V              1208 mV
  1.5 V              1521 mV
  1.8 V              1811 mV
  2.5 V              2513 mV
  3.3 V              3332 mV
  5.0 V              5059 mV
  12.0 V             12162 mV
```

```

1.25 V          1260 mV
3.3 V SM3       3306 mV
5.0 V RE        5085 mV
12.0 V RE       11872 mV
Power 2
11.3 V bias PEM 11272 mV
4.6 V bias MidPlane 4827 mV
11.3 V bias FPD 11272 mV
11.3 V bias POE 0 11292 mV
11.3 V bias POE 1 11253 mV
Bus Revision    42
FPGA Revision   1

```

show chassis environment cb (MX240 Router with Enhanced MX SCB)

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

```

CB 0 status:
State                Online Standby
Temperature          37 degrees C / 98 degrees F
Power 1
1.2 V                1208 mV
1.5 V                1521 mV
1.8 V                1811 mV
2.5 V                2513 mV
3.3 V                3332 mV
5.0 V                5059 mV
12.0 V               12162 mV
1.25 V               1260 mV
3.3 V SM3            3306 mV
5.0 V RE              5085 mV
12.0 V RE            11872 mV
Power 2
11.3 V bias PEM      11272 mV
4.6 V bias MidPlane  4827 mV
11.3 V bias FPD      11272 mV
11.3 V bias POE 0    11292 mV
11.3 V bias POE 1    11253 mV
Bus Revision         42
FPGA Revision        1
PMBus                Expected Measured Measured Calculated
device               voltage  voltage  current  power
XF ASIC A            1000 mV   997 mV   11031 mA 10997 mW
XF ASIC B            1000 mV   996 mV   12125 mA 12076 mW

```

show chassis environment cb (MX480 Router)

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

```

CB 0 status:
State                Online Master
Temperature          41 degrees C / 105 degrees F
Power 1
1.2 V                1202 mV
1.5 V                1511 mV
1.8 V                1798 mV
2.5 V                2507 mV
3.3 V                3312 mV
5.0 V                5027 mV

```

```

12.0 V          12200 mV
1.25 V          1260 mV
3.3 V SM3       3293 mV
5 V RE          5040 mV
12 V RE         11910 mV
Power 2
11.3 V bias PEM 11156 mV
4.6 V bias MidPlane 4801 mV
11.3 V bias FPD 11214 mV
11.3 V bias POE 0 11098 mV
11.3 V bias POE 1 11330 mV
Bus Revision    42
FPGA Revision   1

```

show chassis environment cb (MX480 Router with Enhanced MX SCB)

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

```

CB 0 status:
State          Online Master
Temperature    41 degrees C / 105 degrees F
Power 1
1.2 V          1202 mV
1.5 V          1511 mV
1.8 V          1798 mV
2.5 V          2507 mV
3.3 V          3312 mV
5.0 V          5027 mV
12.0 V         12200 mV
1.25 V         1260 mV
3.3 V SM3      3293 mV
5 V RE         5040 mV
12 V RE        11910 mV
Power 2
11.3 V bias PEM 11156 mV
4.6 V bias MidPlane 4801 mV
11.3 V bias FPD 11214 mV
11.3 V bias POE 0 11098 mV
11.3 V bias POE 1 11330 mV
Bus Revision    42
FPGA Revision   1
PMBus           Expected Measured Measured Calculated
device          voltage  voltage  current  power
XF ASIC A       1000 mV   997 mV   11031 mA 10997 mW
XF ASIC B       1000 mV   996 mV   12125 mA 12076 mW

```

show chassis environment cb (MX960 Router)

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

```

CB 0 status:
State          Online Master
Temperature    24 degrees C / 75 degrees F
Power 1
1.2 V          1965 mV
1.5 V          2465 mV
1.8 V          2990 mV
2.5 V          3296 mV
3.3 V          3296 mV

```

```

5.0 V          6593 mV
12.0 V         13187 mV
3.3 V bias     3296 mV
1.25 V         1994 mV
3.3 V SM3      3296 mV
5 V RE         6593 mV
12 V RE        13174 mV
Power 2        Sensor failure
Bus Revision   4
FPGA Revision  3

```

show chassis environment cb (MX960 Router with Enhanced MX SCB)

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

```

CB 0 status:
State          Online Master
Temperature    24 degrees C / 75 degrees F
Power 1
  1.2 V        1965 mV
  1.5 V        2465 mV
  1.8 V        2990 mV
  2.5 V        3296 mV
  3.3 V        3296 mV
  5.0 V        6593 mV
  12.0 V       13187 mV
  3.3 V bias   3296 mV
  1.25 V       1994 mV
  3.3 V SM3    3296 mV
  5 V RE       6593 mV
  12 V RE      13174 mV
Power 2        Sensor failure
Bus Revision   4
FPGA Revision  3
PMBus          Expected Measured Measured Calculated
device         voltage  voltage  current  power
XF ASIC A      1000 mV   997 mV   11031 mA 10997 mW
XF ASIC B      1000 mV   996 mV   12125 mA 12076 mW

```

show chassis environment cb (MX2020 Router)

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

```

CB 0 status:
State          Online Master
IntakeA-Zone0 Temperature 44 degrees C / 111 degrees F
IntakeB-Zone1 Temperature 34 degrees C / 93 degrees F
IntakeC-Zone0 Temperature 45 degrees C / 113 degrees F
ExhaustA-Zone0 Temperature 43 degrees C / 109 degrees F
ExhaustB-Zone1 Temperature 36 degrees C / 96 degrees F
TCBC-Zone0 Temperature 39 degrees C / 102 degrees F
Power 1
  1.0 V        1011 mV
  1.2 V        1208 mV
  1.8 V        1801 mV
  2.5 V        2552 mV
  3.3 V        3312 mV
  5.0 V        5040 mV
  5.0 V RE     4988 mV

```

```

    12.0 V          12065 mV
    12.0 V RE       12046 mV
    Bus Revision    99
    FPGA Revision   270
CB 1 status:
  State            Online Standby
  IntakeA-Zone0 Temperature 45 degrees C / 113 degrees F
  IntakeB-Zone1 Temperature 41 degrees C / 105 degrees F
  IntakeC-Zone0 Temperature 46 degrees C / 114 degrees F
  ExhaustA-Zone0 Temperature 44 degrees C / 111 degrees F
  ExhaustB-Zone1 Temperature 41 degrees C / 105 degrees F
  TCBC-Zone0 Temperature 45 degrees C / 113 degrees F
  Power 1
    1.0 V          1008 mV
    1.2 V          1208 mV
    1.8 V          1798 mV
    2.5 V          2539 mV
    3.3 V          3325 mV
    5.0 V          5033 mV
    5.0 V RE       4950 mV
    12.0 V         12046 mV
    12.0 V RE      11968 mV
    Bus Revision    99
    FPGA Revision   0

```

show chassis environment cb (MX2010 Router)

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

```

CB 0 status:
  State            Online Master
  IntakeA-Zone0 Temperature 36 degrees C / 96 degrees F
  IntakeB-Zone1 Temperature 30 degrees C / 86 degrees F
  IntakeC-Zone0 Temperature 38 degrees C / 100 degrees F
  ExhaustA-Zone0 Temperature 36 degrees C / 96 degrees F
  ExhaustB-Zone1 Temperature 32 degrees C / 89 degrees F
  TCBC-Zone0 Temperature 34 degrees C / 93 degrees F
  Power 1
    1.0 V          1015 mV
    1.2 V          1205 mV
    1.8 V          1804 mV
    2.5 V          2552 mV
    3.3 V          3325 mV
    5.0 V          5020 mV
    5.0 V RE       4988 mV
    12.0 V         12104 mV
    12.0 V RE      12026 mV
    Bus Revision    100
    FPGA Revision   270
CB 1 status:
  State            Online
  IntakeA-Zone0 Temperature 35 degrees C / 95 degrees F
  IntakeB-Zone1 Temperature 28 degrees C / 82 degrees F
  IntakeC-Zone0 Temperature 37 degrees C / 98 degrees F
  ExhaustA-Zone0 Temperature 34 degrees C / 93 degrees F
  ExhaustB-Zone1 Temperature 29 degrees C / 84 degrees F
  TCBC-Zone0 Temperature 32 degrees C / 89 degrees F
  Power 1
    1.0 V          1011 mV
    1.2 V          1208 mV

```

| | |
|---------------|----------|
| 1.8 V | 1788 mV |
| 2.5 V | 2526 mV |
| 3.3 V | 3319 mV |
| 5.0 V | 5046 mV |
| 5.0 V RE | 4975 mV |
| 12.0 V | 12046 mV |
| 12.0 V RE | 12007 mV |
| Bus Revision | 100 |
| FPGA Revision | 0 |

show chassis environment cb (MX2008 Router)

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

CB 0 status:

| | |
|----------------------|------------------------------|
| State | Online Master |
| Inlet1 Temperature | 37 degrees C / 98 degrees F |
| Inlet2 Temperature | 45 degrees C / 113 degrees F |
| Inlet3 Temperature | 44 degrees C / 111 degrees F |
| Inlet4 Temperature | 42 degrees C / 107 degrees F |
| Exhaust1 Temperature | 30 degrees C / 86 degrees F |
| Exhaust2 Temperature | 40 degrees C / 104 degrees F |
| Exhaust3 Temperature | 48 degrees C / 118 degrees F |
| Exhaust4 Temperature | 46 degrees C / 114 degrees F |
| Power 1 | |
| 1.0 V PHY | 989 mV |
| 1.15 V | 1150 mV |
| 1.2 V bias | 1189 mV |
| 1.5 V | 1488 mV |
| 1.8 V | 1772 mV |
| 2.5 V | 2462 mV |
| 3.3 V bias | 3296 mV |
| VCCIO | 1028 mV |
| Power 2 | |
| 1.1 V | 1099 mV |
| 3.3 V | 3300 mV |
| Power 3 | |
| 0.95 V XL710 | 949 mV |
| 1.05 V | 1050 mV |
| Power 4 | |
| 1.2 V | 1199 mV |
| 5.0 V | 4999 mV |
| Power 5 | |
| 1.0 V | 1000 mV |
| 1.2 V PHY | 1199 mV |
| Bus Revision | 114 |
| FPGA Revision | 1 |

CB 1 status:

| | |
|----------------------|-----------------------------|
| State | Online Standby |
| Inlet1 Temperature | 30 degrees C / 86 degrees F |
| Inlet2 Temperature | 31 degrees C / 87 degrees F |
| Inlet3 Temperature | 29 degrees C / 84 degrees F |
| Inlet4 Temperature | 32 degrees C / 89 degrees F |
| Exhaust1 Temperature | 30 degrees C / 86 degrees F |
| Exhaust2 Temperature | 33 degrees C / 91 degrees F |
| Exhaust3 Temperature | 34 degrees C / 93 degrees F |
| Exhaust4 Temperature | 35 degrees C / 95 degrees F |
| Power 1 | |
| 1.0 V PHY | 986 mV |
| 1.15 V | 1153 mV |

```

1.2 V bias          1195 mV
1.5 V              1498 mV
1.8 V              1798 mV
2.5 V              2494 mV
3.3 V bias          3296 mV
VCCIO              1034 mV
Power 2
  1.1 V            1100 mV
  3.3 V            3300 mV
Power 3
  0.95 V XL710     949 mV
  1.05 V           1050 mV
Power 4
  1.2 V            1199 mV
  5.0 V            5000 mV
Power 5
  1.0 V            1000 mV
  1.2 V PHY        1199 mV
Bus Revision        114
FPGA Revision       1

```

show chassis environment cb (MX10003 Router)

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

```

CB 0 status:
State                               Online Master
CB 0 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F
CB 0 Inlet Temp Sensor 0x49 28 degrees C / 82 degrees F
Power
  VDD1V5_PCH          1489 mV
  VDDIO                940 mV
  VDD3V3_PCH          3332 mV
  VDD2V5_AB            2508 mV
  VDD1V8_CLC           1764 mV
  VDD3V3               3292 mV
  VDD2V5_CD            2508 mV
  VDD1V2_CBC_GTX       0 mV
  VDD1V8_GLS_GTX       0 mV
  VDD1V2_CBC           0 mV
  VDD1V8_GLS           0 mV
  BIAS3V3_BP           0 mV
  VDD1V2_GH            1200 mV
  VDD3V3_CBC           3299 mV
  VDD1V2_CD            1199 mV
  BIAS3V3              3340 mV
  VDD1V2_AB            1200 mV
  VDD5V0               5000 mV
  VDD1V05              1049 mV
  VDD1V05              1050 mV
  VCORE                1780 mV
      12V                12272 mV      3952 mA      48984 mW
CB 1 status:
State                               Online Standby
CB 1 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F
CB 1 Inlet Temp Sensor 0x49 31 degrees C / 87 degrees F
Power
  VDD1V5_PCH          1489 mV
  VDDIO                940 mV

```

| | |
|----------------|----------|
| VDD3V3_PCH | 3351 mV |
| VDD2V5_AB | 2508 mV |
| VDD1V8_CLC | 1764 mV |
| VDD3V3 | 3312 mV |
| VDD2V5_CD | 2508 mV |
| VDD1V2_CBC_GTX | 1195 mV |
| VDD1V8_GLS_GTX | 1764 mV |
| VDD1V2_CBC | 1195 mV |
| VDD1V8_GLS | 1783 mV |
| BIAS3V3_BP | 4096 mV |
| VDD1V2_GH | 1200 mV |
| VDD3V3_CBC | 3300 mV |
| VDD1V2_CD | 1200 mV |
| BIAS3V3 | 3339 mV |
| VDD1V2_AB | 1200 mV |
| VDD5V0 | 5000 mV |
| VDD1V05 | 1050 mV |
| VDD1V05 | 1050 mV |
| VCORE | 1780 mV |
| 12V | 12351 mV |
| | 3823 mA |
| | 45007 mW |

show chassis environment cb (MX204 Router)

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

```
CB 0 status:
State                               Online Master
CB 0 Top Right Inlet Sensor35 degrees C / 95 degrees F
CB 0 Top Left Inlet Sensor 37 degrees C / 98 degrees F
CB 0 Top Right Exhaust Sensor43 degrees C / 109 degrees F
CB 0 Top Left Exhaust Sensor50 degrees C / 122 degrees F
CB 0 CPU Core-0 Temp               48 degrees C / 118 degrees F
CB 0 CPU Core-1 Temp               48 degrees C / 118 degrees F
CB 0 CPU Core-2 Temp               48 degrees C / 118 degrees F
CB 0 CPU Core-3 Temp               47 degrees C / 116 degrees F
CB 0 CPU Core-4 Temp               47 degrees C / 116 degrees F
CB 0 CPU Core-5 Temp               47 degrees C / 116 degrees F
CB 0 CPU Core-6 Temp               47 degrees C / 116 degrees F
CB 0 CPU Core-7 Temp               47 degrees C / 116 degrees F
Power
VDD1V5_PCH                         1509 mV
VDDIO                              950 mV
VDD3V3_PCH                         3312 mV
VDD2V5_AB                          2508 mV
VDD1V8_FRMR                        1813 mV
VDD3V3                             3312 mV
VDD2V5_CD                          2508 mV
VDD1V8_PLL                         1813 mV
VDD1V5                             1499 mV
EA0_1V5                           1499 mV
EA0_1V04                           1038 mV
EA0_PLL_1V0                        999 mV
EA0_2V5                            2508 mV
BIAS3V                             3332 mV
VDD1V2_CD                          1214 mV
VDD1V2_AB                          1215 mV
VDD1V05                            1050 mV
BIAS3V3                            3309 mV
VDD1V0                             1015 mV
```


| | | | |
|----------------|----------|----------|-----------|
| VDD1V8 | 1804 mV | | |
| VDD1V2 | 1199 mV | | |
| VDD2V5 | 2504 mV | | |
| EA0_VDD0V9 | 949 mV | | |
| EA0_HM1_VDD0V9 | 899 mV | | |
| EA0_VDD0V9R2 | 952 mV | | |
| EA0_VDD1V0 | 1000 mV | | |
| VDD3V3 | 3304 mV | | |
| EA0_XR_VDD1V2 | 1199 mV | | |
| EA0_XR_VDD0V9 | 903 mV | | |
| EA0_HM_VDDM1V2 | 1199 mV | | |
| EA0_HM_VDD1V2 | 1199 mV | | |
| VDDCPU0 | 1770 mV | | |
| 12V Hotswap A | 11968 mV | 4696 mA | 55466 mW |
| 12V Hotswap B | 12048 mV | 14936 mA | 180652 mW |

show chassis environment cb (MX10008 Router)

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

CB 0 status:

| State | Online Master | | |
|----------------------------|---------------|-----------------------------|----------|
| CB 0 Intake A Temp Sensor | | 24 degrees C / 75 degrees F | |
| CB 0 Intake B Temp Sensor | | 24 degrees C / 75 degrees F | |
| CB 0 Exhaust A Temp Sensor | | 28 degrees C / 82 degrees F | |
| CB 0 Exhaust B Temp Sensor | | 30 degrees C / 86 degrees F | |
| CB 0 Middle Temp Sensor | | 28 degrees C / 82 degrees F | |
| Power | | | |
| GESW_VDD1V0 | 1000 mV | | |
| VDD1V0 | 1000 mV | | |
| VDD1V2 | 1199 mV | | |
| VDD3V3 | 3299 mV | | |
| XL710_VCCD | 950 mV | | |
| VDD1V05 | 1050 mV | | |
| VDD2V5 | 2500 mV | | |
| FPGA_VDD1V2 | 1200 mV | | |
| VDD1V8 | 1800 mV | | |
| VDD1V15 | 1150 mV | | |
| VDD1V1 | 1099 mV | | |
| VCCIO | 950 mV | | |
| PHY_VDD1V0 | 1000 mV | | |
| VDD5V0 | 4998 mV | | |
| FPGA_VDD1V5 | 1496 mV | | |
| VDD1V5 | 1496 mV | | |
| 12V | 12281 mV | 7700 mA | 92400 mW |

CB 1 status:

| State | Online Standby | | |
|----------------------------|----------------|-----------------------------|--|
| CB 1 Intake A Temp Sensor | | 24 degrees C / 75 degrees F | |
| CB 1 Intake B Temp Sensor | | 23 degrees C / 73 degrees F | |
| CB 1 Exhaust A Temp Sensor | | 27 degrees C / 80 degrees F | |
| CB 1 Exhaust B Temp Sensor | | 30 degrees C / 86 degrees F | |
| CB 1 Middle Temp Sensor | | 28 degrees C / 82 degrees F | |
| Power | | | |
| GESW_VDD1V0 | 999 mV | | |
| VDD1V0 | 1000 mV | | |
| VDD1V2 | 1199 mV | | |
| VDD3V3 | 3299 mV | | |
| XL710_VCCD | 950 mV | | |
| VDD1V05 | 1050 mV | | |
| VDD2V5 | 2499 mV | | |

| | | | |
|-------------|----------|---------|----------|
| FPGA_VDD1V2 | 1200 mV | | |
| VDD1V8 | 1799 mV | | |
| VDD1V15 | 1150 mV | | |
| VDD1V1 | 1100 mV | | |
| VCCIO | 949 mV | | |
| PHY_VDD1V0 | 999 mV | | |
| VDD5V0 | 5000 mV | | |
| FPGA_VDD1V5 | 1502 mV | | |
| VDD1V5 | 1496 mV | | |
| 12V | 12281 mV | 8002 mA | 96024 mW |

show chassis environment cb (T4000 Core Router)

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

```
CB 0 status:
State                Online Master
Temperature           33 degrees C / 91 degrees F
Power 1
  1.8 V               1805 mV
  2.5 V               2523 mV
  3.3 V               3324 mV
  3.3 V bias          3296 mV
  4.6 V               4680 mV
  5.0 V               4893 mV
  8.0 V bias          7572 mV
  12.0 V              11916 mV
Power 2
  1.0 V               993 mV
  1.2 V               1210 mV
  3.3 V RE             3330 mV
Bus Revision          51
FPGA Revision         5
CB 1 status:
State                Online Standby
Temperature           33 degrees C / 91 degrees F
Power 1
  1.8 V               1810 mV
  2.5 V               2496 mV
  3.3 V               3308 mV
  3.3 V bias          3286 mV
  4.6 V               4692 mV
  5.0 V               4954 mV
  8.0 V bias          7282 mV
  12.0 V              11926 mV
Power 2
  1.0 V               993 mV
  1.2 V               1185 mV
  3.3 V RE             3316 mV
Bus Revision          51
FPGA Revision         5
```

show chassis environment cb (TX Matrix Router)

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

```
-----
CB 0 status:
State                Online Master
```

```

Temperature                32 degrees C / 89 degrees F
Power:
  1.8 V                    1797 mV
  2.5 V                    2477 mV
  3.3 V                    3311 mV
  4.6 V                    4727 mV
  5.0 V                    5015 mV
  12.0 V                   12185 mV
  3.3 V bias               3304 mV
  8.0 V bias               7870 mV
BUS Revision                40
FPGA Revision              1
CB 1 status:
  State                    Online Standby
...

```

```
lcc0-re0:
```

```

-----
CB 0 status:
  State                    Online Master
  Temperature              32 degrees C / 89 degrees F
  Power:
    1.8 V                  1787 mV
    2.5 V                  2473 mV
    3.3 V                  3306 mV
    4.6 V                  4793 mV
    5.0 V                  5025 mV
    12.0 V                 12156 mV
    3.3 V bias             3289 mV
    8.0 V bias             7609 mV
  BUS Revision             40
  FPGA Revision            5
CB 1 status:
  State                    Online Standby
....
  BUS Revision             40
  FPGA Revision            5

```

```
lcc2-re0:
```

```

-----
CB 0 status:
  State                    Online Master
...
CB 1 status:
  State                    Online Standby
...

```

show chassis environment cb (TX Matrix Plus Router)

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

```
sfc0-re0:
```

```

-----
CB 0 status:
  State                    Online Master
  Temperature              38 degrees C / 100 degrees F
  Power 1
    1.0 V                  1005 mV
    1.1 V                  1108 mV
    1.2 V                  1205 mV

```

| | |
|---------------|------------------------------|
| 1.25 V | 1269 mV |
| 1.5 V | 1508 mV |
| 1.8 V | 1814 mV |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 3.3 V bias | 3300 mV |
| 9.0 V | 9058 mV |
| 9.0 V RE | 9107 mV |
| Power 2 | |
| 3.9 V | 3963 mV |
| 5.0 V | 5020 mV |
| 9.0 V | 9087 mV |
| Bus Revision | 79 |
| FPGA Revision | 23 |
| CB 1 status: | |
| State | Online Standby |
| Temperature | 39 degrees C / 102 degrees F |
| Power 1 | |
| 1.0 V | 1002 mV |
| 1.1 V | 1105 mV |
| 1.2 V | 1198 mV |
| 1.25 V | 1276 mV |
| 1.5 V | 1504 mV |
| 1.8 V | 1804 mV |
| 2.5 V | 2507 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3293 mV |
| 9.0 V | 9039 mV |
| 9.0 V RE | 9049 mV |
| Power 2 | |
| 3.9 V | 3892 mV |
| 5.0 V | 5040 mV |
| 9.0 V | 9058 mV |
| Bus Revision | 79 |
| FPGA Revision | 23 |
| 1cc0-re0: | |
| ----- | |
| CB 0 status: | |
| State | Online Master |
| Temperature | 39 degrees C / 102 degrees F |
| Power 1 | |
| 1.8 V | 1799 mV |
| 2.5 V | 2499 mV |
| 3.3 V | 3327 mV |
| 3.3 V bias | 3299 mV |
| 4.6 V | 4673 mV |
| 5.0 V | 4918 mV |
| 8.0 V bias | 7308 mV |
| 12.0 V | 11887 mV |
| Power 2 | |
| 1.0 V | 996 mV |
| 1.2 V | 1199 mV |
| 3.3 V RE | 3319 mV |
| Bus Revision | 51 |
| FPGA Revision | 3 |
| CB 1 status: | |
| State | Online Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power 1 | |

```

1.8 V          1800 mV
2.5 V          2496 mV
3.3 V          3322 mV
3.3 V bias     3284 mV
4.6 V          4680 mV
5.0 V          4954 mV
8.0 V bias     7284 mV
12.0 V         11902 mV
Power 2
1.0 V          998 mV
1.2 V          1205 mV
3.3 V RE       3327 mV
Bus Revision    51
FPGA Revision   3

```

```
1cc1-re0:
```

```
-----
CB 0 status:
```

```

State          Online Master
Temperature     41 degrees C / 105 degrees F
Power 1
1.8 V          1804 mV
2.5 V          2517 mV
3.3 V          3300 mV
3.3 V bias     3284 mV
4.6 V          4681 mV
5.0 V          4927 mV
8.0 V bias     7357 mV
12.0 V         11907 mV
Power 2
1.0 V          991 mV
1.2 V          1202 mV
3.3 V RE       3301 mV
Bus Revision    51
FPGA Revision   3

```

```
CB 1 status:
```

```

State          Online Standby
Temperature     40 degrees C / 104 degrees F
Power 1
1.8 V          1805 mV
2.5 V          2528 mV
3.3 V          3324 mV
3.3 V bias     3289 mV
4.6 V          4694 mV
5.0 V          4959 mV
8.0 V bias     7311 mV
12.0 V         11926 mV
Power 2
1.0 V          998 mV
1.2 V          1200 mV
3.3 V RE       3313 mV
Bus Revision    51
FPGA Revision   3

```

```
1cc2-re0:
```

```
-----
CB 0 status:
```

```

State          Online Master
Temperature     41 degrees C / 105 degrees F
Power 1

```

```

1.8 V          1805 mV
2.5 V          2494 mV
3.3 V          3333 mV
3.3 V bias     3296 mV
4.6 V          4673 mV
5.0 V          4901 mV
8.0 V bias     7343 mV
12.0 V         11916 mV
Power 2
1.0 V          993 mV
1.2 V          1213 mV
3.3 V RE       3328 mV
Bus Revision    51
FPGA Revision   3
CB 1 status:
State           Online Standby
Temperature      41 degrees C / 105 degrees F
Power 1
1.8 V          1804 mV
2.5 V          2523 mV
3.3 V          3334 mV
3.3 V bias     3291 mV
4.6 V          4697 mV
5.0 V          4969 mV
8.0 V bias     7308 mV
12.0 V         11936 mV
Power 2
1.0 V          996 mV
1.2 V          1200 mV
3.3 V RE       3328 mV
Bus Revision    51
FPGA Revision   3
lcc3-re0:
-----
CB 0 status:
State           Online Master
Temperature      37 degrees C / 98 degrees F
Power 1
1.8 V          1809 mV
2.5 V          2510 mV
3.3 V          3296 mV
3.3 V bias     3291 mV
4.6 V          4670 mV
5.0 V          4905 mV
8.0 V bias     7211 mV
12.0 V         11882 mV
Power 2
1.0 V          996 mV
1.2 V          1188 mV
3.3 V RE       3326 mV
Bus Revision    51
FPGA Revision   5
CB 1 status:
State           Online Standby
Temperature      38 degrees C / 100 degrees F
Power 1
1.8 V          1813 mV
2.5 V          2510 mV
3.3 V          3322 mV

```

| | |
|---------------|----------|
| 3.3 V bias | 3289 mV |
| 4.6 V | 4692 mV |
| 5.0 V | 4967 mV |
| 8.0 V bias | 7194 mV |
| 12.0 V | 11916 mV |
| Power 2 | |
| 1.0 V | 996 mV |
| 1.2 V | 1205 mV |
| 3.3 V RE | 3273 mV |
| Bus Revision | 51 |
| FPGA Revision | 5 |

show chassis environment cb (EX8200 Switch)

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

```
CB 0 status:
State                Online Master
Temperature Intake    20 degrees C / 68 degrees F
Temperature Exhaust   24 degrees C / 75 degrees F
Power 1
  1.1 V                1086 mV
  1.2 V                1179 mV
  1.2 V *              1182 mV
  1.2 V *              1182 mV
  1.25 V               1211 mV
  1.5 V                1472 mV
  1.8 V                1756 mV
  2.5 V                2449 mV
  3.3 V                3254 mV
  3.3 V bias           3300 mV
  5.0 V                4911 mV
  12.0 V               11891 mV
Power 2
  3.3 V bias *         3615 mV
  3.3 V bias *         3615 mV
  3.3 V bias *         3567 mV
  3.3 V bias *         3664 mV
  4.3 V bias *         4224 mV
  4.3 V bias *         4215 mV
  4.3 V bias *         4224 mV
  4.3 V bias *         4205 mV
  4.3 V bias *         4195 mV
  4.3 V bias *         4215 mV
  5.0 V bias           4920 mV

CB 1 status:
State                Online Standby
Temperature Intake    19 degrees C / 66 degrees F
Temperature Exhaust   23 degrees C / 73 degrees F
Power 1
  1.1 V                1082 mV
  1.2 V                1169 mV
  1.2 V *              1179 mV
  1.2 V *              1179 mV
  1.25 V               1214 mV
  1.5 V                1482 mV
  1.8 V                1759 mV
  2.5 V                2481 mV
  3.3 V                3248 mV
```

```

    3.3 V bias          3306 mV
    5.0 V              4911 mV
    12.0 V             11910 mV
Power 2
    3.3 V bias *       3644 mV
    3.3 V bias *       3664 mV
    3.3 V bias *       3586 mV
    3.3 V bias *       3654 mV
    4.3 V bias *       4224 mV
    4.3 V bias *       4215 mV
    4.3 V bias *       4224 mV
    4.3 V bias *       4205 mV
    4.3 V bias *       4244 mV
    4.3 V bias *       4215 mV
    5.0 V bias         4930 mV
CB 2 status:
State                  Online
Temperature Intake     19 degrees C / 66 degrees F
Temperature Exhaust    23 degrees C / 73 degrees F
Power 1
    1.2 V              1195 mV
    1.5 V              1511 mV
    1.8 V              1804 mV
    2.5 V              2526 mV
    3.3 V              3300 mV
    3.3 V bias         3306 mV
    12.0 V             12220 mV

```

show chassis environment cb (EX8208 Switch)

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

```

CB 0 status:
State                  Online Master
Temperature Intake     20 degrees C / 68 degrees F
Temperature Exhaust    24 degrees C / 75 degrees F
Power 1
    1.1 V              1086 mV
    1.2 V              1179 mV
    1.2 V *            1182 mV
    1.2 V *            1182 mV
    1.25 V             1211 mV
    1.5 V              1466 mV
    1.8 V              1759 mV
    2.5 V              2455 mV
    3.3 V              3261 mV
    3.3 V bias         3300 mV
    5.0 V              4930 mV
    12.0 V             11891 mV
Power 2
    3.3 V bias *       3606 mV
    3.3 V bias *       3615 mV
    3.3 V bias *       3567 mV
    3.3 V bias *       3673 mV
    4.3 V bias *       4224 mV
    4.3 V bias *       4215 mV
    4.3 V bias *       4234 mV
    4.3 V bias *       4205 mV
    4.3 V bias *       4186 mV
    4.3 V bias *       4215 mV

```



```

    5.0 V bias                4940 mV
CB 1 status:
  State                      Online Standby
  Temperature Intake         19 degrees C / 66 degrees F
  Temperature Exhaust        23 degrees C / 73 degrees F
  Power 1
    1.1 V                    1086 mV
    1.2 V                    1169 mV
    1.2 V *                  1179 mV
    1.2 V *                  1179 mV
    1.25 V                   1211 mV
    1.5 V                    1479 mV
    1.8 V                    1759 mV
    2.5 V                    2475 mV
    3.3 V                    3235 mV
    3.3 V bias               3306 mV
    5.0 V                    4930 mV
    12.0 V                   11891 mV
  Power 2
    3.3 V bias *             3644 mV
    3.3 V bias *             3664 mV
    3.3 V bias *             3586 mV
    3.3 V bias *             3654 mV
    4.3 V bias *             4215 mV
    4.3 V bias *             4224 mV
    4.3 V bias *             4215 mV
    4.3 V bias *             4215 mV
    4.3 V bias *             4234 mV
    4.3 V bias *             4224 mV
    5.0 V bias               4920 mV
CB 2 status:
  State                      Online
  Temperature Intake         20 degrees C / 68 degrees F
  Temperature Exhaust        24 degrees C / 75 degrees F
  Power 1
    1.2 V                    1202 mV
    1.5 V                    1508 mV
    1.8 V                    1804 mV
    2.5 V                    2520 mV
    3.3 V                    3300 mV
    3.3 V bias               3300 mV
    12.0 V                   12200 mV

```

show chassis environment cb (EX9251 Switch)

```
user@switch> show chassis environment cb
```

```

CB 0 status:
  State                      Online Master
  CB 0 Top Right Inlet Sensor 29 degrees C / 84 degrees F
  CB 0 Top Left Inlet Sensor 28 degrees C / 82 degrees F
  CB 0 Top Right Exhaust Sensor 40 degrees C / 104 degrees F
  CB 0 Top Left Exhaust Sensor 59 degrees C / 138 degrees F
  CB 0 CPU Core-0 Temp       45 degrees C / 113 degrees F
  CB 0 CPU Core-1 Temp       44 degrees C / 111 degrees F
  CB 0 CPU Core-2 Temp       44 degrees C / 111 degrees F
  CB 0 CPU Core-3 Temp       44 degrees C / 111 degrees F
  CB 0 CPU Core-4 Temp       45 degrees C / 113 degrees F
  CB 0 CPU Core-5 Temp       44 degrees C / 111 degrees F
  CB 0 CPU Core-6 Temp       44 degrees C / 111 degrees F

```

```

CB 0 CPU Core-7 Temp      43 degrees C / 109 degrees F
Power
VDD1V5_PCH                1499 mV
VDDIO                      950 mV
VDD3V3_PCH                3312 mV
VDD2V5_AB                 2489 mV
VDD1V8_FRMR               1793 mV
VDD3V3                    3292 mV
VDD2V5_CD                 2508 mV
VDD1V8_PLL                1793 mV
VDD1V5                    1499 mV
EA0_1V5                   1499 mV
EA0_1V04                  999 mV
EA0_PLL_1V0               999 mV
EA0_2V5                   2508 mV
BIAS3V                    3292 mV
VDD1V2_CD                 1215 mV
VDD1V2_AB                 1214 mV
VDD1V05                   1050 mV
BIAS3V3                   3309 mV
VDD1V0                    1014 mV
VDD1V8                    1805 mV
VDD1V2                    1200 mV
VDD2V5                    2504 mV
EA0_VDD0V9                949 mV
EA0_HM1_VDD0V9            899 mV
EA0_VDD0V9R2              952 mV
EA0_VDD1V0                999 mV
VDD3V3                    3305 mV
EA0_XR_VDD1V2             1199 mV
EA0_XR_VDD0V9              903 mV
EA0_HM_VDDM1V2            1199 mV
EA0_HM_VDD1V2             1199 mV
VDDCPU0                   1770 mV
      12V Hotswap A        11955 mV   4861 mA   59347 mW
      12V Hotswap B        11916 mV   15046 mA  180887 mW

```

show chassis environment cb (EX9253 Switch)

```
user@switch> show chassis environment cb
```

```

CB 0 status:
State                               Online Master
CB 0 Exhaust Temp Sensor           38 degrees C / 100 degrees F
CB 0 Inlet Temp Sensor             32 degrees C / 89 degrees F
CB 0 CPU DIE Temp Sensor           43 degrees C / 109 degrees F
Power
VDD1V5_PCH                        1489 mV
VDDIO                              940 mV
VDD3V3_PCH                        3332 mV
VDD2V5_AB                         2508 mV
VDD1V8_CLC                        1783 mV
VDD3V3                            3312 mV
VDD2V5_CD                         2508 mV
VDD1V2_CBC_GTX                    1195 mV
VDD1V8_GLS_GTX                    1783 mV
VDD1V2_CBC                        1176 mV
VDD1V8_GLS                        1783 mV
BIAS3V3_BP                        3978 mV
VDD1V2_GH                         1200 mV

```

```

VDD3V3_CBC          3299 mV
VDD1V2_CD            1200 mV
BIAS3V3              3340 mV
VDD1V2_AB            1199 mV
VDD5V0               5000 mV
VDD1V05              1050 mV
VDD1V05              1050 mV
VCORE                1770 mV
12V                  12061 mV    4806 mA    57841 mW
CB 1 status:
State                Offline
CB 1 Exhaust Temp Sensor 32 degrees C / 89 degrees F
CB 1 Inlet Temp Sensor  29 degrees C / 84 degrees F
CB 1 CPU DIE Temp Sensor 43 degrees C / 109 degrees F
Power                Disabled

```

show chassis environment cb (PTX5000 Packet Transport Router)

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

```

CB 0 status:
State                Online Master
Intake Temperature   38 degrees C / 100 degrees F
Exhaust A Temperature 45 degrees C / 113 degrees F
Exhaust B Temperature 42 degrees C / 107 degrees F
Power 1
  1.2 V              1200 mV
  1.25 V             1250 mV
  2.5 V              2500 mV
  3.3 V              3300 mV
Power 2
  1.0 V              1000 mV
  3.3 V bias         3293 mV
  3.9 V              3921 mV
Bus Revision         132
FPGA Revision        27
CB 1 status:
State                Online Standby
Intake Temperature   34 degrees C / 93 degrees F
Exhaust A Temperature 39 degrees C / 102 degrees F
Exhaust B Temperature 36 degrees C / 96 degrees F
Power 1
  1.2 V              1199 mV
  1.25 V             1250 mV
  2.5 V              2499 mV
  3.3 V              3299 mV
Power 2
  1.0 V              1000 mV
  3.3 V bias         3312 mV
  3.9 V              3961 mV
Bus Revision         132
FPGA Revision        28

```

show chassis environment cb (PTX10008 Router)

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

```

CB 0 status:
State                Online Master

```

```

CB 0 Intake Temp Sensor    28 degrees C / 82 degrees F
CB 0 Exhaust Temp Sensor  32 degrees C / 89 degrees F
Power
  VDD 2.5V                2489 mV
  Bias 3.3V               3332 mV
  VDD 3.3V                3292 mV
  VCC 1.8V                1822 mV
  VDD 1.2V                1205 mV
  VCC 1V                  999 mV
  VCC CPU 1.8V            1803 mV
  VDD 2.5V                2489 mV
  VCC Aux 5V              5115 mV
  VDD DDR 1.5V            1499 mV
  VTT SA CPU 0.8V         803 mV
  VTT CPU 1.05V           1048 mV
  VCC Core CPU            901 mV
  VCC PCH 1.5V            1519 mV
  VDD 1.05V               1048 mV
  VCC 2.5V                2508 mV
  FORT VCCA 1V            960 mV
  VDD .85V                862 mV
  VTT DDRA .75V           744 mV
  VTT DDRB .75V           744 mV
  12V                     12285 mV    3779 mA    46339 mW
CB 1 status:
State                      Online Standby
CB 1 Intake Temp Sensor    27 degrees C / 80 degrees F
CB 1 Exhaust Temp Sensor  32 degrees C / 89 degrees F
Power
  VDD 2.5V                2489 mV
  Bias 3.3V               3332 mV
  VDD 3.3V                3273 mV
  VCC 1.8V                1822 mV
  VDD 1.2V                1195 mV
  VCC 1V                  999 mV
  VCC CPU 1.8V            1783 mV
  VDD 2.5V                2489 mV
  VCC Aux 5V              5056 mV
  VDD DDR 1.5V            1499 mV
  VTT SA CPU 0.8V         793 mV
  VTT CPU 1.05V           1048 mV
  VCC Core CPU            882 mV
  VCC PCH 1.5V            1509 mV
  VDD 1.05V               1048 mV
  VCC 2.5V                2489 mV
  FORT VCCA 1V            960 mV
  VDD .85V                862 mV
  VTT DDRA .75V           744 mV
  VTT DDRB .75V           744 mV
  12V                     12391 mV    3779 mA    46727 mW

```

show chassis environment cb (PTX10016 Router)

```

user@host> show chassis environment cb
CB 0 status:
State                      Online Master
CB 0 Intake Temp Sensor    20 degrees C / 68 degrees F
CB 0 Exhaust Temp Sensor  24 degrees C / 75 degrees F
Power

```

```

VDD 2.5V                2508 mV
Bias 3.3V               3351 mV
VDD 3.3V               3292 mV
VCC 1.8V               1832 mV
VDD 1.2V               1205 mV
VCC 1V                 999 mV
VCC CPU 1.8V          1793 mV
VDD 2.5V               2508 mV
VCC Aux 5V            5056 mV
VDD DDR 1.5V          1509 mV
VTT SA CPU 0.8V       803 mV
VTT CPU 1.05V         1048 mV
VCC Core CPU          960 mV
VCC PCH 1.5V          1519 mV
VDD 1.05V             1058 mV
VCC 2.5V              2528 mV
FORT VCCA 1V          960 mV
VDD .85V              852 mV
VTT DDRA .75V         744 mV
VTT DDRB .75V         744 mV
12V                   12259 mV    3649 mA    45173 mW
CB 1 status:
State                  Online Standby
CB 1 Intake Temp Sensor 20 degrees C / 68 degrees F
CB 1 Exhaust Temp Sensor 23 degrees C / 73 degrees F
Power
VDD 2.5V                2508 mV
Bias 3.3V               3312 mV
VDD 3.3V               3273 mV
VCC 1.8V               1822 mV
VDD 1.2V               1195 mV
VCC 1V                 989 mV
VCC CPU 1.8V          1783 mV
VDD 2.5V               2489 mV
VCC Aux 5V            5086 mV
VDD DDR 1.5V          1499 mV
VTT SA CPU 0.8V       803 mV
VTT CPU 1.05V         1048 mV
VCC Core CPU          1029 mV
VCC PCH 1.5V          1519 mV
VDD 1.05V             1048 mV
VCC 2.5V              2528 mV
FORT VCCA 1V          960 mV
VDD .85V              862 mV
VTT DDRA .75V         744 mV
VTT DDRB .75V         744 mV
12V                   12285 mV    3952 mA    48447 mW

```

show chassis environment cb (QFabric System)

```
user@switch> show chassis environment cb interconnect-device IC-123 0
```

```

CB 0 status:
State                  Online Master
Left Intake Temperature 33 degrees C / 91 degrees F
Right Intake Temperature 33 degrees C / 91 degrees F
Left Exhaust Temperature 36 degrees C / 96 degrees F
Right Exhaust Temperature 35 degrees C / 95 degrees F
Power                  OK
VDD 3V3               3294 mV

```

| | |
|-----------------|---------|
| VDD 2V5 | 2436 mV |
| VDD 1V8 | 1746 mV |
| VDD 1V5 | 1460 mV |
| VDD 1V25 | 1210 mV |
| VDD 1V2 | 1164 mV |
| CPU CORE 1V2 | 1120 mV |
| VDD 1V0 | 968 mV |
| VDD 5V0 | 5088 mV |
| CPU MP BIAS 4V3 | 4050 mV |
| BIAS 3V3 | 3180 mV |
| VTT 0V9 | 866 mV |

show chassis environment ccg

Syntax `show chassis environment ccg
<slot>`

Release Information Command introduced in Junos OS Release 12.1.

Description (PTX5000 Packet Transport Routers only) Display environmental information about the Centralized Clock Generators (CCGs).

Options **none**—Display environmental information about all CCGs on the router.

slot —(Optional) Display environmental information about the specified CCG. Replace *slot* with 0 or 1.

Required Privilege Level view

Related Documentation

- *Clock Sources for PTX Series Packet Transport Routers*
- [show chassis environment on page 607](#)

List of Sample Output [show chassis environment ccg \(PTX5000\) on page 732](#)

Output Fields [Table 41 on page 731](#) lists the output fields for the **show chassis environment ccg** command. Output fields are listed in the approximate order in which they appear.

Table 41: show chassis environment cb Output Fields

| Field Name | Field Description |
|---------------------|---|
| State | Status of the CCG: Online - Master clock , Online - Standby , or Offline . If two CCGs are installed and online, one is functioning as the master clock, and the other is the standby clock. |
| Temperature | Temperature of the air flowing past the CCG. |
| Power | Power required and measured on the CCG. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| BUS Revision | Revision level of the generic bus device. |

Sample Output

show chassis environment ccg (PTX5000)

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

CCG 0 status:

| | |
|--------------|-----------------------------|
| State | Online - Master clock |
| Temperature | 31 degrees C / 87 degrees F |
| Power | |
| 1.2 V bias | 1200 mV |
| 1.8 V | 1799 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| Bus Revision | 103 |

CCG 1 status:

| | |
|--------------|-----------------------------|
| State | Offline |
| Power | Disabled |
| Temperature | 31 degrees C / 87 degrees F |
| Power | |
| 1.2 V bias | 1198 mV |
| 1.8 V | 161 mV |
| 3.3 V | 451 mV |
| 3.3 V bias | 3311 mV |
| Bus Revision | 103 |

show chassis environment fan

| | |
|---------------------------------|--|
| Syntax | <pre>show chassis environment fan <all-members> <fantray-slot-number> <local> <member member-id></pre> |
| Release Information | <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>all-members, local, and member member-id options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 18.2R1 for MX10008 Routers.</p> |
| Description | (MX2020 and MX2010 routers only) Display environmental information about the fans and fan trays. |
| Options | <p>none—Display environmental information about all fans and fan trays.</p> <p>all-members—(Optional) Display environmental information about the fan and fan trays in all members of the Virtual Chassis configuration.</p> <p>fantray-slot-number—(Optional) Display environmental information about the specified fan tray. Replace <i>fantray-slot-number</i> with a value from 0 through 3.</p> <p>local—(Optional) Display environmental information about the fans and fan trays in the local member of the Virtual Chassis.</p> <p>member member-id—(Optional) Display environmental information about the fans and fan trays in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • show chassis environment on page 607 • show chassis fan on page 1000 |
| List of Sample Output | <p>show chassis environment fan (MX2020 routers) on page 734</p> <p>show chassis environment fan 3 (MX2020 routers) on page 735</p> <p>show chassis environment fan (PTX10008 routers) on page 735</p> <p>show chassis environment fan (PTX10016 routers) on page 735</p> <p>show chassis environment fan (MX10008 routers) on page 736</p> |

Output Fields Table 40 on page 707 lists the output fields for the **show chassis environment fan** command. Output fields are listed in the approximate order in which they appear.

Table 42: *show chassis environment fan* Output Fields

| Field Name | Field Description |
|------------------------------|--|
| Fan Tray Status | Status of the fan tray. |
| Temperature | Temperature in Celsius (C) and Fahrenheit (F) maintained by the fans. |
| Power | Power required and measured on the fan tray. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| Max Power Consumption | Maximum power consumed by the fan tray. |

Sample Output

show chassis environment fan (MX2020 routers)

```

user@host> show chassis environment fan

Fan Tray 0 status:
  Temperature          23 degrees C / 73 degrees F
  Power
    1.2 V              1189 mV
    3.3 V              3293 mV
    5.0 V              5230 mV
    5.0 V bias         5278 mV
    52.0 V A           49944 mV
    52.0 V B           435 mV
  Max Power Consumption 1150 Watts
Fan Tray 1 status:
  Temperature          22 degrees C / 71 degrees F
  Power
    1.2 V              1192 mV
    3.3 V              3300 mV
    5.0 V              5230 mV
    5.0 V bias         5230 mV
    52.0 V A           50205 mV
    52.0 V B           435 mV
  Max Power Consumption 1150 Watts
Fan Tray 2 status:
  Temperature          31 degrees C / 87 degrees F
  Power
    1.2 V              1192 mV
    3.3 V              3287 mV
    5.0 V              5211 mV
    5.0 V bias         5220 mV
    52.0 V A           50031 mV
    52.0 V B           435 mV
  Max Power Consumption 1150 Watts
Fan Tray 3 status:
  Temperature          31 degrees C / 87 degrees F
  Power
    1.2 V              1208 mV

```

| | |
|-----------------------|------------|
| 3.3 V | 3306 mV |
| 5.0 V | 5240 mV |
| 5.0 V bias | 5259 mV |
| 52.0 V A | 50553 mV |
| 52.0 V B | 435 mV |
| Max Power Consumption | 1150 Watts |

show chassis environment fan 3 (MX2020 routers)

```
user@host> show chassis environment fan 3
```

```
Fan Tray 3 status:
  Temperature          31 degrees C / 87 degrees F
  Power
    1.2 V              1208 mV
    3.3 V              3306 mV
    5.0 V              5240 mV
    5.0 V bias         5259 mV
    52.0 V A           50553 mV
    52.0 V B           435 mV
  Max Power Consumption 1150 Watts
```

show chassis environment fan (PTX10008 routers)

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

```
Fan Tray 0 status:
  HS 0                12338 mV    4035 mA    40623 mW
  HS 1                12325 mV    3044 mA    36483 mW
  HS 2                12272 mV    3374 mA    38388 mW
  HS 3                12364 mV    2218 mA    37918 mW
  Temperature          28 degrees C / 82 degrees F

Fan Tray 1 status:
  HS 0                12232 mV    3209 mA    50455 mW
  HS 1                12311 mV    3760 mA    50196 mW
  HS 2                12311 mV    5356 mA    47397 mW
  HS 3                12259 mV    3264 mA    15807 mW
  Temperature          28 degrees C / 82 degrees F
```

show chassis environment fan (PTX10016 routers)

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

```
Aug 02 21:13:00
Fan Tray 0 status:
  HS 0                12364 mV    4200 mA    48926 mW
  HS 1                12285 mV    3264 mA    69885 mW
  HS 2                12285 mV    4365 mA    57559 mW
  HS 3                12259 mV    2714 mA    67768 mW
  Temperature          25 degrees C / 77 degrees F

Fan Tray 1 status:
  HS 0                12325 mV    1888 mA    76354 mW
  HS 1                12325 mV    5026 mA    70779 mW
  HS 2                12285 mV    4200 mA    50032 mW
```

| | | | |
|-------------|----------|-----------------------------|----------|
| HS 3 | 12311 mV | 5246 mA | 55630 mW |
| Temperature | | 24 degrees C / 75 degrees F | |

show chassis environment fan (MX10008 routers)

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

| | | | |
|--------------------|-----------------------------|---------|----------|
| Fan Tray 0 status: | | | |
| HS 0 | 12298 mV | 4200 mA | 59676 mW |
| HS 1 | 12338 mV | 4585 mA | 48856 mW |
| HS 2 | 12325 mV | 4530 mA | 63863 mW |
| HS 3 | 12311 mV | 2879 mA | 37800 mW |
| Temperature | 26 degrees C / 78 degrees F | | |
| Fan Tray 1 status: | | | |
| HS 0 | 12298 mV | 4145 mA | 57559 mW |
| HS 1 | 12298 mV | 2934 mA | 60288 mW |
| HS 2 | 12325 mV | 5026 mA | 46715 mW |
| HS 3 | 12272 mV | 1833 mA | 47209 mW |
| Temperature | 25 degrees C / 77 degrees F | | |

show chassis environment fpc

| | |
|---|--|
| List of Syntax | Syntax on page 737 Syntax (TX Matrix and TX Matrix Plus Routers) on page 737 Syntax (MX Series Routers) on page 737 Syntax (MX2010, MX10003, MX204, MX2008, and MX10008 Universal Routing Platforms) on page 737 Syntax (MX2020 Universal Routing Platforms) on page 737 Syntax (QFX Series) on page 737 Syntax (OCX Series) on page 737 Syntax (PTX3000 Series) on page 738 Syntax (PTX10008 Series) on page 738 Syntax (Junos OS Evolved) on page 738 |
| 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) | <code>show chassis environment fpc</code> <code><fpc-slot></code> |
| Syntax (PTX10008 Series) | <code>show chassis environment fpc</code> <code><fpc-slot></code> |
| Syntax (Junos OS Evolved) | <code>show chassis environment fpc</code> <code><fpc-slot></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1X48 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> |

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

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

local—(MX Series routers only) (Optional) Display environmental information for the FPCs in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display environmental information for the FPCs in the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

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 Rotuing Engine (SRE) module), or 6 through 9 (line card only).
 - EX8208 switches—Replace **slot** with a value from 0 through 7 (line card).
 - EX8216 switches—Replace **slot** with a value from 0 through 15 (line card).
- QFX3500 switches —Replace **fpc-slot** with 0 through 15.
- PTX5000 Packet Transport Router—Replace **fpc-slot** with 0 through 7.
- PTX3000 Packet Transport Router—Replace **fpc-slot** with 0 through 15.

Required Privilege Level view

- Related Documentation**
- [request chassis fpc on page 494](#)
 - [show chassis fpc on page 1309](#)
 - [show chassis fpc-feb-connectivity on page 1366](#)
 - [Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online on page 166](#)
 - [MX960 Flexible PIC Concentrator Description](#)

- List of Sample Output**
- [show chassis environment fpc \(M120 Router\) on page 742](#)
 - [show chassis environment fpc \(M160 Router\) on page 743](#)
 - [show chassis environment fpc \(M320 Router\) on page 744](#)
 - [show chassis environment fpc \(MX2020 Router\) on page 744](#)
 - [show chassis environment fpc \(MX2010 Router\) on page 747](#)
 - [show chassis environment fpc \(MX2008 Router\) on page 750](#)
 - [show chassis environment fpc \(MX240 Router\) on page 753](#)
 - [show chassis environment fpc \(MX480 Router\) on page 755](#)
 - [show chassis environment fpc \(MX960 Router MPC10E-15C-MRATE\) on page 755](#)
 - [show chassis environment fpc \(MX960 Router\) on page 758](#)
 - [show chassis environment fpc \(MX480 Router with 100-Gigabit Ethernet CFP\) on page 759](#)
 - [show chassis environment fpc \(MX240, MX480, MX960 with Application Services Modular Line Card on page 761](#)
 - [show chassis environment fpc \(MX10003 Router\) on page 761](#)
 - [show chassis environment fpc \(MX204 Router\) on page 765](#)
 - [show chassis environment fpc \(MX10008 Router\) on page 765](#)

[show chassis environment fpc \(T320, T640, and T1600 Routers\) on page 772](#)
[show chassis environment fpc \(T4000 Router\) on page 773](#)
[show chassis environment fpc lcc \(TX Matrix Router\) on page 778](#)
[show chassis environment fpc lcc \(TX Matrix Plus Router\) on page 778](#)
[show chassis environment fpc \(QFX Series and OCX Series\) on page 779](#)
[show chassis environment fpc interconnect-device \(QFabric Systems\) on page 779](#)
[show chassis environment fpc 5 \(PTX3000 Packet Transport Router\) on page 780](#)
[show chassis environment fpc 0 \(PTX5000 Packet Transport Router\) on page 780](#)
[show chassis environment fpc 07 \(PTX5000 Packet Transport Router with FPC2-PTX-P1A\) on page 781](#)
[show chassis environment fpc \(PTX10008 router\) on page 782](#)
[show chassis environment fpc \(PTX10016 router\) on page 786](#)
[show chassis environment FPC 1 \(MX Routers with Media Services Blade \[MSB\]\) on page 789](#)
[show chassis environment FPC \(Junos OS Evolved\) on page 789](#)

Output Fields [Table 43 on page 741](#) lists the output fields for the **show chassis environment fpc** command. Output fields are listed in the approximate order in which they appear.

Table 43: show chassis environment fpc Output Fields

| Field Name | Field Description |
|----------------------------|---|
| State | Status of the FPC: <ul style="list-style-type: none"> • Unknown—FPC is not detected by the router. • Empty—No FPC is present. • Present—FPC is detected by the chassis daemon but is either not supported by the current version of the Junos OS, or the FPC is coming up but not yet online. • Ready—FPC is in intermediate or transition state. • Announce online—Intermediate state during which the FPC is coming up but not yet online, and the chassis manager acknowledges the chassisd FPC online initiative. • Online—FPC is online and running. • Offline—FPC is powered down. • Diagnostics—FPC is set to operate in diagnostics mode. |
| Temperature | (M40e and M160 routers and QFX Series only) Temperature of the air flowing past the FPC. |
| PMB Temperature | (PTX Series only) Temperature of the air flowing past the PMB (bottom of the FPC). The PTX5000 Packet Transport Router with FPC2-PTX-P1A include multiple temperatures for PMB (TEMPO and TEMP1). |
| 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. |

Table 43: show chassis environment fpc Output Fields (continued)

| Field Name | Field Description |
|-------------------------------------|---|
| Temperature Exhaust | (M120 and M320 routers, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Temperature of the air flowing out of the chassis. The PTX Series Packet Transport Routers, and the MX2010, MX2020, and MX2008 routers include exhaust temperatures for multiple zones (Exhaust A and Exhaust B). |
| Temperature Bottom | (T Series routers only) Temperature of the air flowing past the bottom of the FPC. |
| TL n Temperature | (PTX Series only) Temperature of the air flowing past the specified TL area of the packet forwarding engine (PFE) on the FPC. |
| TQ n 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
    1.5 V *             1494 mV
    1.8 V               1821 mV
    2.5 V               2533 mV
    3.3 V               3323 mV
    5.0 V               5028 mV
    3.3 V bias          3296 mV
    5.0 V bias          4984 mV
  CMB Revision          16
FPC 1 status:
  State                Online
  Temperature Intake    27 degrees C / 80 degrees F
  Temperature Exhaust   37 degrees C / 98 degrees F
  Temperature MMB1      32 degrees C / 89 degrees F
  Power:
    1.5 V               1504 mV
    1.5 V *             1499 mV
    1.8 V               1820 mV
    2.5 V               2529 mV
    3.3 V               3328 mV
    5.0 V               5013 mV
    3.3 V bias          3294 mV
    5.0 V bias          4984 mV
  CMB Revision          16
FPC 2 status:
  State                Online
  Temperature Intake    28 degrees C / 82 degrees F
  Temperature Exhaust   38 degrees C / 100 degrees F
  Temperature MMB1      32 degrees C / 89 degrees F
  Power:
    1.5 V               1498 mV
    1.5 V *             1487 mV
    1.8 V               1816 mV
    2.5 V               2531 mV
    3.3 V               3324 mV
    5.0 V               5025 mV
    3.3 V bias          3277 mV
    5.0 V bias          5013 mV
  CMB Revision          17
FPC 3 status:
...

```

show chassis environment fpc (MX2020 Router)

```

user@host> show chassis environment fpc

FPC 0 status:
  State                Online
  Temperature Intake    41 degrees C / 105 degrees F
  Temperature Exhaust A 48 degrees C / 118 degrees F

```

```

Temperature Exhaust B      60 degrees C / 140 degrees F
Temperature LU 0 TSen      56 degrees C / 132 degrees F
Temperature LU 0 Chip      59 degrees C / 138 degrees F
Temperature LU 1 TSen      56 degrees C / 132 degrees F
Temperature LU 1 Chip      61 degrees C / 141 degrees F
Temperature LU 2 TSen      56 degrees C / 132 degrees F
Temperature LU 2 Chip      52 degrees C / 125 degrees F
Temperature LU 3 TSen      56 degrees C / 132 degrees F
Temperature LU 3 Chip      52 degrees C / 125 degrees F
Temperature MQ 0 TSen      49 degrees C / 120 degrees F
Temperature MQ 0 Chip      49 degrees C / 120 degrees F
Temperature MQ 1 TSen      49 degrees C / 120 degrees F
Temperature MQ 1 Chip      52 degrees C / 125 degrees F
Temperature MQ 2 TSen      49 degrees C / 120 degrees F
Temperature MQ 2 Chip      45 degrees C / 113 degrees F
Temperature MQ 3 TSen      49 degrees C / 120 degrees F
Temperature MQ 3 Chip      46 degrees C / 114 degrees F
Power
  AS-BIAS3V3-z12105      3299 mV
  AS-VDD1V8-z12006      1807 mV
  AS-VDD2V5-z12006      2512 mV
  AS-AVDD1V0-z12004      997 mV
  AS-PCIE_1V0-z12004      996 mV
  AS-VDD3V3-z12004      3294 mV
  AS-VDD_1V5A-z12004      1501 mV
  AS-VDD_1V5B-z12004      1498 mV
  AS-LU0_1V0-z12004      998 mV
  AS-LU1_1V0-z12004      1002 mV
  AS-MQ0_1V0-z12004      999 mV
  AS-MQ1_1V0-z12004      994 mV
  AS-LU2_1V0-z12004      1000 mV
  AS-LU3_1V0-z12004      998 mV
  AS-MQ2_1V0-z12004      1002 mV
  AS-MQ3_1V0-z12004      999 mV
  AS-PMB_1V1-z12006      1096 mV
I2C Slave Revision      68
FPC 1 status:
State      Online
Temperature Intake      39 degrees C / 102 degrees F
Temperature Exhaust A    48 degrees C / 118 degrees F
Temperature Exhaust B    55 degrees C / 131 degrees F
Temperature LU 0 TSen    52 degrees C / 125 degrees F
Temperature LU 0 Chip    54 degrees C / 129 degrees F
Temperature LU 1 TSen    52 degrees C / 125 degrees F
Temperature LU 1 Chip    56 degrees C / 132 degrees F
Temperature LU 2 TSen    52 degrees C / 125 degrees F
Temperature LU 2 Chip    49 degrees C / 120 degrees F
Temperature LU 3 TSen    52 degrees C / 125 degrees F
Temperature LU 3 Chip    50 degrees C / 122 degrees F
Temperature MQ 0 TSen    48 degrees C / 118 degrees F
Temperature MQ 0 Chip    48 degrees C / 118 degrees F
Temperature MQ 1 TSen    48 degrees C / 118 degrees F
Temperature MQ 1 Chip    51 degrees C / 123 degrees F
Temperature MQ 2 TSen    48 degrees C / 118 degrees F
Temperature MQ 2 Chip    45 degrees C / 113 degrees F
Temperature MQ 3 TSen    48 degrees C / 118 degrees F
Temperature MQ 3 Chip    45 degrees C / 113 degrees F
Power
  AS-BIAS3V3-z12105      3291 mV
  AS-VDD1V8-z12006      1786 mV

```

```

AS-VDD2V5-z12006      2496 mV
AS-AVDD1V0-z12004     1000 mV
AS-PCIE_1V0-z12004     1000 mV
AS-VDD3V3-z12004      3294 mV
AS-VDD_1V5A-z12004    1500 mV
AS-VDD_1V5B-z12004    1498 mV
AS-LU0_1V0-z12004     1003 mV
AS-LU1_1V0-z12004     1000 mV
AS-MQ0_1V0-z12004     1000 mV
AS-MQ1_1V0-z12004     995 mV
AS-LU2_1V0-z12004     1002 mV
AS-LU3_1V0-z12004     997 mV
AS-MQ2_1V0-z12004     1000 mV
AS-MQ3_1V0-z12004     998 mV
AS-PMB_1V1-z12006     1096 mV
I2C Slave Revision    68
FPC 2 status:
State                  Online
Temperature Intake     39 degrees C / 102 degrees F
Temperature Exhaust A  48 degrees C / 118 degrees F
Temperature Exhaust B  58 degrees C / 136 degrees F
Temperature LU 0 TSen  55 degrees C / 131 degrees F
Temperature LU 0 Chip  57 degrees C / 134 degrees F
Temperature LU 1 TSen  55 degrees C / 131 degrees F
Temperature LU 1 Chip  63 degrees C / 145 degrees F
Temperature LU 2 TSen  55 degrees C / 131 degrees F
Temperature LU 2 Chip  51 degrees C / 123 degrees F
Temperature LU 3 TSen  55 degrees C / 131 degrees F
Temperature LU 3 Chip  52 degrees C / 125 degrees F
Temperature MQ 0 TSen  48 degrees C / 118 degrees F
Temperature MQ 0 Chip  50 degrees C / 122 degrees F
Temperature MQ 1 TSen  48 degrees C / 118 degrees F
Temperature MQ 1 Chip  52 degrees C / 125 degrees F
Temperature MQ 2 TSen  48 degrees C / 118 degrees F
Temperature MQ 2 Chip  47 degrees C / 116 degrees F
Temperature MQ 3 TSen  48 degrees C / 118 degrees F
Temperature MQ 3 Chip  47 degrees C / 116 degrees F
Power
AS-BIAS3V3-z12105     3299 mV
AS-VDD1V8-z12006     1805 mV
AS-VDD2V5-z12006     2510 mV
AS-AVDD1V0-z12004     999 mV
AS-PCIE_1V0-z12004     998 mV
AS-VDD3V3-z12004      3296 mV
AS-VDD_1V5A-z12004    1492 mV
AS-VDD_1V5B-z12004    1497 mV
AS-LU0_1V0-z12004     997 mV
AS-LU1_1V0-z12004     1000 mV
AS-MQ0_1V0-z12004     998 mV
AS-MQ1_1V0-z12004     1001 mV
AS-LU2_1V0-z12004     996 mV
AS-LU3_1V0-z12004     995 mV
AS-MQ2_1V0-z12004     998 mV
AS-MQ3_1V0-z12004     997 mV
AS-PMB_1V1-z12006     1100 mV
I2C Slave Revision    68
FPC 3 status:
State                  Online
Temperature Intake     41 degrees C / 105 degrees F
Temperature Exhaust A  48 degrees C / 118 degrees F

```

```

Temperature Exhaust B      58 degrees C / 136 degrees F
Temperature LU 0 TSen      56 degrees C / 132 degrees F
Temperature LU 0 Chip      59 degrees C / 138 degrees F
Temperature LU 1 TSen      56 degrees C / 132 degrees F
Temperature LU 1 Chip      61 degrees C / 141 degrees F
Temperature LU 2 TSen      56 degrees C / 132 degrees F
Temperature LU 2 Chip      51 degrees C / 123 degrees F
Temperature LU 3 TSen      56 degrees C / 132 degrees F
Temperature LU 3 Chip      53 degrees C / 127 degrees F
Temperature MQ 0 TSen      50 degrees C / 122 degrees F
Temperature MQ 0 Chip      51 degrees C / 123 degrees F
Temperature MQ 1 TSen      50 degrees C / 122 degrees F
Temperature MQ 1 Chip      55 degrees C / 131 degrees F
Temperature MQ 2 TSen      50 degrees C / 122 degrees F
Temperature MQ 2 Chip      47 degrees C / 116 degrees F
Temperature MQ 3 TSen      50 degrees C / 122 degrees F
Temperature MQ 3 Chip      50 degrees C / 122 degrees F
Power
  AS-BIAS3V3-z12105        3305 mV
  AS-VDD1V8-z12006         1810 mV
  AS-VDD2V5-z12006         2508 mV
  AS-AVDD1V0-z12004         999 mV
  AS-PCIE_1V0-z12004        1001 mV
  AS-VDD3V3-z12004         3294 mV
  AS-VDD_1V5A-z12004        1500 mV
  AS-VDD_1V5B-z12004        1498 mV
  AS-LU0_1V0-z12004         998 mV
  AS-LU1_1V0-z12004         998 mV
  AS-MQ0_1V0-z12004         999 mV
  AS-MQ1_1V0-z12004         998 mV
  AS-LU2_1V0-z12004        1000 mV
  AS-LU3_1V0-z12004        1001 mV
  AS-MQ2_1V0-z12004         996 mV
  AS-MQ3_1V0-z12004         998 mV
  AS-PMB_1V1-z12006        1098 mV
I2C Slave Revision        68
FPC 4 status:
...
```

show chassis environment fpc (MX2010 Router)

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

```

FPC 0 status:
State      Online
Temperature Intake      36 degrees C / 96 degrees F
Temperature Exhaust A   42 degrees C / 107 degrees F
Temperature Exhaust B   51 degrees C / 123 degrees F
Temperature LU 0 TSen    49 degrees C / 120 degrees F
Temperature LU 0 Chip    50 degrees C / 122 degrees F
Temperature LU 1 TSen    49 degrees C / 120 degrees F
Temperature LU 1 Chip    54 degrees C / 129 degrees F
Temperature LU 2 TSen    49 degrees C / 120 degrees F
Temperature LU 2 Chip    45 degrees C / 113 degrees F
Temperature LU 3 TSen    49 degrees C / 120 degrees F
Temperature LU 3 Chip    46 degrees C / 114 degrees F
Temperature MQ 0 TSen    40 degrees C / 104 degrees F
Temperature MQ 0 Chip    41 degrees C / 105 degrees F
Temperature MQ 1 TSen    40 degrees C / 104 degrees F
Temperature MQ 1 Chip    44 degrees C / 111 degrees F
```

| | |
|-----------------------------|------------------------------|
| Temperature MQ 2 TSen | 40 degrees C / 104 degrees F |
| Temperature MQ 2 Chip | 38 degrees C / 100 degrees F |
| Temperature MQ 3 TSen | 40 degrees C / 104 degrees F |
| Temperature MQ 3 Chip | 41 degrees C / 105 degrees F |
| Power | |
| AS-BIAS3V3-z12105 | 3300 mV |
| AS-VDD1V8-z12006 | 1805 mV |
| AS-VDD2V5-z12006 | 2505 mV |
| AS-AVDD1V0-z12004 | 998 mV |
| AS-PCIE_1V0-z12004 | 999 mV |
| AS-VDD3V3-z12004 | 3303 mV |
| AS-VDD_1V5A-z12004 | 1497 mV |
| AS-VDD_1V5B-z12004 | 1497 mV |
| AS-LU0_1V0-z12004 | 998 mV |
| AS-LU1_1V0-z12004 | 1003 mV |
| AS-MQ0_1V0-z12004 | 998 mV |
| AS-MQ1_1V0-z12004 | 998 mV |
| AS-LU2_1V0-z12004 | 997 mV |
| AS-LU3_1V0-z12004 | 1001 mV |
| AS-MQ2_1V0-z12004 | 996 mV |
| AS-MQ3_1V0-z12004 | 994 mV |
| AS-PMB_1V1-z12006 | 1097 mV |
| I2C Slave Revision | 68 |
| FPC 1 status: | |
| State | Online |
| Temperature Intake | 34 degrees C / 93 degrees F |
| Temperature Exhaust A | 46 degrees C / 114 degrees F |
| Temperature Exhaust B | 54 degrees C / 129 degrees F |
| Temperature LU 0 TSen | 45 degrees C / 113 degrees F |
| Temperature LU 0 Chip | 55 degrees C / 131 degrees F |
| Temperature LU 1 TSen | 45 degrees C / 113 degrees F |
| Temperature LU 1 Chip | 44 degrees C / 111 degrees F |
| Temperature LU 2 TSen | 45 degrees C / 113 degrees F |
| Temperature LU 2 Chip | 50 degrees C / 122 degrees F |
| Temperature LU 3 TSen | 45 degrees C / 113 degrees F |
| Temperature LU 3 Chip | 58 degrees C / 136 degrees F |
| Temperature XM 0 TSen | 45 degrees C / 113 degrees F |
| Temperature XM 0 Chip | 51 degrees C / 123 degrees F |
| Temperature XF 0 TSen | 45 degrees C / 113 degrees F |
| Temperature XF 0 Chip | 63 degrees C / 145 degrees F |
| Temperature PLX Switch TSen | 45 degrees C / 113 degrees F |
| Temperature PLX Switch Chip | 47 degrees C / 116 degrees F |
| Power | |
| MPC-BIAS3V3-z12105 | 3300 mV |
| MPC-VDD3V3-z16100 | 3294 mV |
| MPC-VDD2V5-z16100 | 2505 mV |
| MPC-VDD1V8-z12004 | 1796 mV |
| MPC-AVDD1V0-z12004 | 991 mV |
| MPC-VDD1V2-z16100 | 1196 mV |
| MPC-VDD1V5A-z12004 | 1491 mV |
| MPC-VDD1V5B-z12004 | 1492 mV |
| MPC-XF_0V9-z12004 | 996 mV |
| MPC-PCIE_1V0-z16100 | 1003 mV |
| MPC-LU0_1V0-z12004 | 996 mV |
| MPC-LU1_1V0-z12004 | 996 mV |
| MPC-LU2_1V0-z12004 | 998 mV |
| MPC-LU3_1V0-z12004 | 994 mV |
| MPC-12VA-BMR453 | 12031 mV |
| MPC-12VB-BMR453 | 12003 mV |
| MPC-PMB_1V1-z12006 | 1104 mV |


```

MPC-PMB_1V2-z12106      1194 mV
MPC-XM_OV9-vt273m       911 mV
I2C Slave Revision      110
FPC 8 status:
State                    Online
Temperature Intake       32 degrees C / 89 degrees F
Temperature Exhaust A    44 degrees C / 111 degrees F
Temperature Exhaust B    37 degrees C / 98 degrees F
Temperature LU 0 TCAM TSen 41 degrees C / 105 degrees F
Temperature LU 0 TCAM Chip 49 degrees C / 120 degrees F
Temperature LU 0 TSen     41 degrees C / 105 degrees F
Temperature LU 0 Chip     52 degrees C / 125 degrees F
Temperature MQ 0 TSen     41 degrees C / 105 degrees F
Temperature MQ 0 Chip     47 degrees C / 116 degrees F
Temperature LU 1 TCAM TSen 39 degrees C / 102 degrees F
Temperature LU 1 TCAM Chip 42 degrees C / 107 degrees F
Temperature LU 1 TSen     39 degrees C / 102 degrees F
Temperature LU 1 Chip     46 degrees C / 114 degrees F
Temperature MQ 1 TSen     39 degrees C / 102 degrees F
Temperature MQ 1 Chip     45 degrees C / 113 degrees F
Power
MPC-BIAS3V3-z12105      3296 mV
MPC-VDD3V3-z12006      3298 mV
MPC-VDD2V5-z12006      2505 mV
MPC-TCAM_1V0-z12004     997 mV
MPC-AVDD1V0-z12006      1007 mV
MPC-VDD1V8-z12006      1803 mV
MPC-PCIE_1V0-z12006     1004 mV
MPC-LU0_1V0-z12004      1000 mV
MPC-MQ0_1V0-z12004      999 mV
MPC-VDD_1V5-z12004      1498 mV
MPC-PMB_1V1-z12006      1102 mV
MPC-9VA-BMR453          9009 mV
MPC-9VB-BMR453          8960 mV
MPC-PMB_1V2-z12105      1202 mV
MPC-LU1_1V0-z12004      1005 mV
MPC-MQ1_1V0-z12004      1000 mV
I2C Slave Revision      70
FPC 9 status:
State                    Online
Temperature Intake       34 degrees C / 93 degrees F
Temperature Exhaust A    41 degrees C / 105 degrees F
Temperature Exhaust B    54 degrees C / 129 degrees F
Temperature LU 0 TSen     51 degrees C / 123 degrees F
Temperature LU 0 Chip     52 degrees C / 125 degrees F
Temperature LU 1 TSen     51 degrees C / 123 degrees F
Temperature LU 1 Chip     55 degrees C / 131 degrees F
Temperature LU 2 TSen     51 degrees C / 123 degrees F
Temperature LU 2 Chip     47 degrees C / 116 degrees F
Temperature LU 3 TSen     51 degrees C / 123 degrees F
Temperature LU 3 Chip     47 degrees C / 116 degrees F
Temperature MQ 0 TSen     40 degrees C / 104 degrees F
Temperature MQ 0 Chip     42 degrees C / 107 degrees F
Temperature MQ 1 TSen     40 degrees C / 104 degrees F
Temperature MQ 1 Chip     44 degrees C / 111 degrees F
Temperature MQ 2 TSen     40 degrees C / 104 degrees F
Temperature MQ 2 Chip     38 degrees C / 100 degrees F
Temperature MQ 3 TSen     40 degrees C / 104 degrees F
Temperature MQ 3 Chip     40 degrees C / 104 degrees F
Power

```

```

AS-BIAS3V3-z12105      3302 mV
AS-VDD1V8-z12006      1808 mV
AS-VDD2V5-z12006      2513 mV
AS-AVDD1V0-z12004      997 mV
AS-PCIE_1V0-z12004      999 mV
AS-VDD3V3-z12004      3294 mV
AS-VDD_1V5A-z12004     1503 mV
AS-VDD_1V5B-z12004     1502 mV
AS-LU0_1V0-z12004      996 mV
AS-LU1_1V0-z12004      999 mV
AS-MQ0_1V0-z12004      997 mV
AS-MQ1_1V0-z12004      999 mV
AS-LU2_1V0-z12004      997 mV
AS-LU3_1V0-z12004      998 mV
AS-MQ2_1V0-z12004     1000 mV
AS-MQ3_1V0-z12004     1000 mV
AS-PMB_1V1-z12006     1102 mV
I2C Slave Revision      68

```

show chassis environment fpc (MX2008 Router)

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

```

FPC 0 status:
State                               Online
Temperature Intake                  29 degrees C / 84 degrees F
Temperature Exhaust A               43 degrees C / 109 degrees F
Temperature Exhaust B               42 degrees C / 107 degrees F
Temperature XL 0 TSen                38 degrees C / 100 degrees F
Temperature XL 0 Chip                53 degrees C / 127 degrees F
Temperature XL 0 XR2 0 TSen          38 degrees C / 100 degrees F
Temperature XL 0 XR2 0 Chip          60 degrees C / 140 degrees F
Temperature XL 0 XR2 1 TSen          38 degrees C / 100 degrees F
Temperature XL 0 XR2 1 Chip          60 degrees C / 140 degrees F
Temperature XL 1 TSen                30 degrees C / 86 degrees F
Temperature XL 1 Chip                43 degrees C / 109 degrees F
Temperature XL 1 XR2 0 TSen          30 degrees C / 86 degrees F
Temperature XL 1 XR2 0 Chip          50 degrees C / 122 degrees F
Temperature XL 1 XR2 1 TSen          30 degrees C / 86 degrees F
Temperature XL 1 XR2 1 Chip          50 degrees C / 122 degrees F
Temperature XM 0 TSen                42 degrees C / 107 degrees F
Temperature XM 0 Chip                49 degrees C / 120 degrees F
Temperature XM 1 TSen                42 degrees C / 107 degrees F
Temperature XM 1 Chip                42 degrees C / 107 degrees F
Temperature XM 2 TSen                42 degrees C / 107 degrees F
Temperature XM 2 Chip                42 degrees C / 107 degrees F
Temperature XM 3 TSen                42 degrees C / 107 degrees F
Temperature XM 3 Chip                40 degrees C / 104 degrees F
Temperature PCIE Switch TSen         42 degrees C / 107 degrees F
Temperature PCIE Switch Chip         22 degrees C / 71 degrees F
Power
MPC-VDD_3V3-vt273m                 3304 mV
MPC-VDD_2V5-vt273m                 2503 mV
MPC-VDD_1V5-vt273m                 1499 mV
MPC-PCIE_0V9-vt273m                 900 mV
MPC-VDD_1V8-vt273m                 1799 mV
MPC-VDD_1V2-vt273m                 1203 mV
MPC-XM01_AVDD_1V0-vt273             1001 mV
MPC-XM23_AVDD_1V0-vt273             1001 mV
MPC-XM0_0V9-vt273m                 900 mV

```

```

MPC-XM1_OV9-vt273m      901 mV
MPC-XM2_OV9-vt273m      903 mV
MPC-XM3_OV9-vt273m      899 mV
MPC-XL0_XR0_OV9-vt273m  899 mV
MPC-XL0_XR1_OV9-vt273m  903 mV
MPC-XL0_OV9-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_OV9-vt273m  899 mV
MPC-XL1_XR1_OV9-vt273m  899 mV
MPC-XL1_OV9-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_OV9-vt1527mb          950 mV
MPC-EA1_OV9-vt1527mb          950 mV
MPC-EA2_OV9-vt1527mb          925 mV
MPC-EA3_OV9-vt1527mb          924 mV
MAX20751-1V0                   1020 mV
MAX20731-OV9                    891 mV
MAX20751-EA0-AVDD1V0           1000 mV
MAX20731-EA0-1V2               1189 mV
MAX20731-EA0-HMC-1V2          1182 mV
MAX20731-EA0-OV906             899 mV
MAX20731-EA0-HMC-OV9           891 mV
MAX20751-EA1-AVDD1V0           1000 mV
MAX20731-EA1-1V2               1189 mV
MAX20731-EA1-HMC-1V2          1182 mV
MAX20731-EA1-OV906             899 mV
MAX20731-EA1-HMC-OV9           889 mV
MAX20751-EA2-AVDD1V0           1000 mV
MAX20731-EA2-1V2               1186 mV
MAX20731-EA2-HMC-1V2          1193 mV
MAX20731-EA2-OV906             899 mV
MAX20731-EA2-HMC-OV9           889 mV
MAX20751-EA3-AVDD1V0           1000 mV
MAX20731-EA3-1V2               1186 mV
MAX20731-EA3-HMC-1V2          1193 mV
MAX20731-EA3-OV906             897 mV
MAX20731-EA3-HMC-OV9           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 MPC10E-15C-MRATE)

```
user@router> show chassis environment fpc 8
```

```
FPC 8 status:
State                Online
Temperature Intake    37 degrees C / 98 degrees F
Temperature Exhaust A 50 degrees C / 122 degrees F
Temperature Exhaust B 56 degrees C / 132 degrees F
Temperature ZT0 Chip  83 degrees C / 181 degrees F
Temperature ZT1 Chip  80 degrees C / 176 degrees F
Temperature ZT2 Chip  81 degrees C / 177 degrees F
Temperature PCIE_SW Chip 64 degrees C / 147 degrees F
Temperature ZT0 TestMacro 73 degrees C / 163 degrees F
Temperature ZT0 hbmio_grp3 74 degrees C / 165 degrees F
```

| | |
|----------------------------|------------------------------|
| Temperature ZT0 hbmio_grp0 | 76 degrees C / 168 degrees F |
| Temperature ZT0 gumem1 | 78 degrees C / 172 degrees F |
| Temperature ZT0 llm | 80 degrees C / 176 degrees F |
| Temperature ZT0 wanio_sd | 78 degrees C / 172 degrees F |
| Temperature ZT0 fabio_sd | 84 degrees C / 183 degrees F |
| Temperature ZT0 flexmem | 84 degrees C / 183 degrees F |
| Temperature ZT1 TestMacro | 70 degrees C / 158 degrees F |
| Temperature ZT1 hbmio_grp3 | 71 degrees C / 159 degrees F |
| Temperature ZT1 hbmio_grp0 | 74 degrees C / 165 degrees F |
| Temperature ZT1 gumem1 | 75 degrees C / 167 degrees F |
| Temperature ZT1 llm | 78 degrees C / 172 degrees F |
| Temperature ZT1 wanio_sd | 76 degrees C / 168 degrees F |
| Temperature ZT1 fabio_sd | 78 degrees C / 172 degrees F |
| Temperature ZT1 flexmem | 82 degrees C / 179 degrees F |
| Temperature ZT2 TestMacro | 71 degrees C / 159 degrees F |
| Temperature ZT2 hbmio_grp3 | 72 degrees C / 161 degrees F |
| Temperature ZT2 hbmio_grp0 | 75 degrees C / 167 degrees F |
| Temperature ZT2 gumem1 | 76 degrees C / 168 degrees F |
| Temperature ZT2 llm | 78 degrees C / 172 degrees F |
| Temperature ZT2 wanio_sd | 78 degrees C / 172 degrees F |
| Temperature ZT2 fabio_sd | 80 degrees C / 176 degrees F |
| Temperature ZT2 flexmem | 76 degrees C / 168 degrees F |
| Temperature ZT0 HBMO | 74 degrees C / 165 degrees F |
| Temperature ZT0 HBM1 | 74 degrees C / 165 degrees F |
| Temperature ZT1 HBMO | 74 degrees C / 165 degrees F |
| Temperature ZT1 HBM1 | 75 degrees C / 167 degrees F |
| Temperature ZT2 HBMO | 73 degrees C / 163 degrees F |
| Temperature ZT2 HBM1 | 73 degrees C / 163 degrees F |
| Temperature FAB RT1.0 | 73 degrees C / 163 degrees F |
| Temperature FAB RT2.0 | 75 degrees C / 167 degrees F |

| | |
|--------------------------------------|------------------------------|
| Temperature FAB RT3.0 | 73 degrees C / 163 degrees F |
| Temperature FAB RT4.0 | 70 degrees C / 158 degrees F |
| Temperature FAB RT5.0 | 67 degrees C / 152 degrees F |
| Temperature FAB RT6.0 | 67 degrees C / 152 degrees F |
| Temperature FAB RT7.0 | 65 degrees C / 149 degrees F |
| Temperature FAB RT8.0 | 66 degrees C / 150 degrees F |
| Temperature WAN RT9.0 | 64 degrees C / 147 degrees F |
| Temperature WAN RT9.1 | 62 degrees C / 143 degrees F |
| Temperature WAN RT10.0 | 65 degrees C / 149 degrees F |
| Temperature WAN RT10.1 | 63 degrees C / 145 degrees F |
| Temperature WAN RT11.0 | 51 degrees C / 123 degrees F |
| Temperature WAN RT11.1 | 49 degrees C / 120 degrees F |
| Temperature PIM4820 T1 | 72 degrees C / 161 degrees F |
| Temperature BMR456-12V-BRICK-A T1 | 83 degrees C / 181 degrees F |
| Temperature BMR456-12V-BRICK-B T1 | 91 degrees C / 195 degrees F |
| Temperature MAX20730-ZT0-AVDDH T1 | 72 degrees C / 161 degrees F |
| Temperature MAX20730-ZT0-HBM-VDDQ T1 | 64 degrees C / 147 degrees F |
| Temperature MAX20730-ZT0-HBM-VDDC T1 | 65 degrees C / 149 degrees F |
| Temperature MAX20730-ZT1-AVDDH T1 | 65 degrees C / 149 degrees F |
| Temperature MAX20730-ZT1-HBM-VDDQ T1 | 60 degrees C / 140 degrees F |
| Temperature MAX20730-ZT1-HBM-VDDC T1 | 57 degrees C / 134 degrees F |
| Temperature MAX20730-ZT2-AVDDH T1 | 65 degrees C / 149 degrees F |
| Temperature MAX20730-ZT2-HBM-VDDQ T1 | 58 degrees C / 136 degrees F |
| Temperature MAX20730-ZT2-HBM-VDDC T1 | 55 degrees C / 131 degrees F |
| Temperature CPU0_PMB | 61 degrees C / 141 degrees F |
| Temperature CPU7_PMB | 61 degrees C / 141 degrees F |
| Temperature DDR4 A | 38 degrees C / 100 degrees F |
| Temperature DDR4 B | 37 degrees C / 98 degrees F |
| Power | |
| PIM4820 | 56967 mV |
| BMR456-12V-BRICK-A | 12016 mV |
| BMR456-12V-BRICK-B | 12039 mV |

| | |
|-----------------------|---------|
| MAX20743-RT01-DVDD | 724 mV |
| MAX20743-RT234-DVDD | 724 mV |
| MAX20743-RT567-DVDD | 724 mV |
| MAX20754-ZT0-VDD | 750 mV |
| MAX20754-ZT0-VDDM | 799 mV |
| MAX20743-ZT0-AVDD | 904 mV |
| MAX20730-ZT0-AVDDH | 1103 mV |
| MAX20730-ZT0-HBM-VDDQ | 1198 mV |
| MAX20730-ZT0-HBM-VDDC | 1202 mV |
| MAX20730-VDD-1V25 | 1246 mV |
| MAX20754-ZT1-VDD | 724 mV |
| MAX20754-ZT1-VDDM | 800 mV |
| MAX20743-ZT1-AVDD | 904 mV |
| MAX20730-ZT1-AVDDH | 1103 mV |
| MAX20730-ZT1-HBM-VDDQ | 1202 mV |
| MAX20730-ZT1-HBM-VDDC | 1198 mV |
| MAX20730-PCIE-0V9 | 901 mV |
| MAX20754-ZT2-VDD | 724 mV |
| MAX20754-ZT2-VDDM | 799 mV |
| MAX20743-ZT2-AVDD | 904 mV |
| MAX20730-ZT2-AVDDH | 1103 mV |
| MAX20730-ZT2-HBM-VDDQ | 1198 mV |
| MAX20730-ZT2-HBM-VDDC | 1198 mV |
| MAX20730-VDD3V3 | 3308 mV |
| MAX20754-WAN-VDD3V3 | 3301 mV |
| MAX20754-WAN-DVDD0V8 | 799 mV |
| MAX20743-WAN-VDD1V0A | 1003 mV |
| MAX20743-WAN-AVDD0V8 | 800 mV |
| MAX20743-WAN-VDD1V0C | 1003 mV |
| TPS53631-1V2-VDDQ-PMB | 1225 mV |
| TPS53641-VCCIN-PMB | 1770 mV |
| TPS53641-VCCSBUS-PMB | 1040 mV |
| MAX20730-BIAS3P30-PMB | 3308 mV |
| MAX20730-BIAS5P0-PMB | 5063 mV |
| MAX20730-VPP-V2P5-PMB | 2503 mV |
| MAX20730-VDD1V2 | 1195 mV |
| MAX20730-VDD1V5 | 1496 mV |
| MAX20730-VDD1V8 | 1799 mV |
| MAX20730-VDD2V5 | 2511 mV |
| MAX20754-RT-AVDD-0V8 | 800 mV |
| MAX20743-XGE-VDD-AVS | 1012 mV |
| PMB VCC1P05_PCH_SW | 1048 mV |
| PMB VCC1P3 | 1294 mV |
| PMB VCC1P5 | 1485 mV |
| PMB VCC1P7 | 1705 mV |
| PMB DDR4_VPP | 2519 mV |
| PMB VCC3P3 | 3336 mV |
| PMB VCC3P3_PCH | 3332 mV |
| I2C Slave Revision | 124 |

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_PFP1 | 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_L | 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 |
| XM0 | 67 degrees C / 152 degrees F |
| PFE0 LU1 | 63 degrees C / 145 degrees F |
| PFE0 LU2 | 66 degrees C / 150 degrees F |
| PFE1 LU1 | 41 degrees C / 105 degrees F |
| Power 1 | |
| 1.0 V | 1002 mV |
| 1.2 V bias | 1201 mV |
| 1.8 V | 1785 mV |

| | |
|-----------------------|------------------------------|
| 2.5 V | 2485 mV |
| 3.3 V | 3288 mV |
| 3.3 V bias | 3285 mV |
| 12.0 V A | 10412 mV |
| 12.0 V B | 10515 mV |
| Power 2 | |
| 0.9 V | 882 mV |
| 0.9 V PFE0 | 920 mV |
| 0.9 V PFE1 | 905 mV |
| 1.0 V PFE0 | 1015 mV |
| 1.0 V PFE1 | 1001 mV |
| 1.1 V | 1094 mV |
| 1.5 V_0 | 1495 mV |
| 1.5 V_1 | 1478 mV |
| Power 3 | |
| 0.92 V PFE1 | 998 mV |
| 1.0 V PFE0 | 997 mV |
| 1.0 V PFE0 * | 992 mV |
| 1.0 V PFE1 * | 991 mV |
| 1.8 V PFE 0 | 1780 mV |
| 1.8 V PFE 1 | 1797 mV |
| 2.5 V | 2492 mV |
| 12.0 V | 11604 mV |
| Power 4 | |
| 1.0 V PFE0 LU0 | 1003 mV |
| 1.0 V PFE1 LU0 | 1004 mV |
| 1.0 V PFE1 LU2 | 1003 mV |
| 1.0 V PFE0 LU0 * | 1000 mV |
| 1.0 V PFE1 LU0 * | 1001 mV |
| 1.0 V PFE1 LU2 * | 1003 mV |
| 12.0 V | 11653 mV |
| 12.0 V C | 11672 mV |
| Power (Base/PMB/MMB) | |
| LMB0 VDD2V5 | 2512 mV |
| LMB0 VDD1V8 | 1790 mV |
| LMB0 VDD1V5 | 1500 mV |
| LMB0 PFE0 LU0 AVDD1V0 | 1004 mV |
| LMB0 PFE0 LU0 VDD1V0 | 1002 mV |
| LMB0 VDD12V0 | 10608 mV |
| LMB1 VDD2V5 | 2472 mV |
| LMB1 VDD1V8 | 1788 mV |
| LMB1 VDD1V5 | 1480 mV |
| LMB1 PFE0 LU2 AVDD1V0 | 1000 mV |
| LMB1 PFE0 LU2 VDD1V0 | 1004 mV |
| LMB1 VDD12V0 | 10672 mV |
| LMB2 VDD2V5 | 2488 mV |
| LMB2 VDD1V8 | 1798 mV |
| LMB2 VDD1V5 | 1494 mV |
| LMB2 PFE1 LU1 AVDD1V0 | 1000 mV |
| LMB2 PFE1 LU1 VDD1V0 | 1004 mV |
| LMB2 VDD12V0 | 10528 mV |
| PMB 1.05v | 1050 mV |
| PMB 1.5v | 1500 mV |
| PMB 2.5v | 2499 mV |
| PMB 3.3v | 3299 mV |
| Bus Revision | 113 |
| FPC 5 status: | |
| State | Online |
| Temperature Top | 39 degrees C / 102 degrees F |
| Temperature Bottom | 38 degrees C / 100 degrees F |

| | |
|----------------------|------------------------------|
| Power | |
| 1.8 V | 1804 mV |
| 1.8 V bias | 1802 mV |
| 3.3 V | 3294 mV |
| 3.3 V bias | 3277 mV |
| 5.0 V bias | 5008 mV |
| 5.0 V TOP | 5067 mV |
| 8.0 V bias | 6642 mV |
| Power (Base/PMB/MMB) | |
| 1.2 V | 1202 mV |
| 1.5 V | 1504 mV |
| 5.0 V BOT | 5079 mV |
| 12.0 V TOP Base | 11848 mV |
| 12.0 V BOT Base | 11780 mV |
| 1.1 V PMB | 1111 mV |
| 1.2 V PMB | 1189 mV |
| 1.5 V PMB | 1494 mV |
| 1.8 V PMB | 1819 mV |
| 2.5 V PMB | 2503 mV |
| 3.3 V PMB | 3294 mV |
| 5.0 V PMB | 5035 mV |
| 12.0 V PMB | 11788 mV |
| 0.75 MMB TOP | 766 mV |
| 1.5 V MMB TOP | 1484 mV |
| 1.8 V MMB TOP | 1772 mV |
| 2.5 V MMB TOP | 2485 mV |
| 1.2 V MMB TOP | 1137 mV |
| 5.0 V MMB TOP | 4946 mV |
| 12.0 V MMB TOP | 11772 mV |
| 3.3 V MMB TOP | 3289 mV |
| 0.75 MMB BOT | 759 mV |
| 1.5 V MMB BOT | 1482 mV |
| 1.8 V MMB BOT | 1792 mV |
| 2.5 V MMB BOT | 2490 mV |
| 1.2 V MMB BOT | 1145 mV |
| 5.0 V MMB BOT | 4922 mV |
| 12.0 V MMB BOT | 11625 mV |
| 3.3 V MMB BOT | 3282 mV |
| APS 00 | 2495 mV |
| APS 01 | 3308 mV |
| APS 02 | 3301 mV |
| 5.0 V PIC 0 | 4967 mV |
| APS 10 | 2512 mV |
| APS 11 | 3316 mV |
| APS 12 | 3304 mV |
| 5.0 V PIC 1 | 5081 mV |
| Bus Revision | 49 |
| FPC 6 status: | |
| State | Online |
| Fan Intake | 34 degrees C / 93 degrees F |
| Fan Exhaust | 49 degrees C / 120 degrees F |
| PMB | 40 degrees C / 104 degrees F |
| LMB0 | 60 degrees C / 140 degrees F |
| LMB1 | 58 degrees C / 136 degrees F |
| LMB2 | 40 degrees C / 104 degrees F |
| PFE1 LU2 | 69 degrees C / 156 degrees F |
| PFE1 LU0 | 45 degrees C / 113 degrees F |
| PFE0 LU0 | 71 degrees C / 159 degrees F |
| XF1 | 58 degrees C / 136 degrees F |
| XF0 | 65 degrees C / 149 degrees F |

| | |
|-----------------------|------------------------------|
| XM1 | 40 degrees C / 104 degrees F |
| XM0 | 66 degrees C / 150 degrees F |
| PFE0 LU1 | 69 degrees C / 156 degrees F |
| PFE0 LU2 | 68 degrees C / 154 degrees F |
| PFE1 LU1 | 42 degrees C / 107 degrees F |
| Power 1 | |
| 1.0 V | 998 mV |
| 1.2 V bias | 1191 mV |
| 1.8 V | 1781 mV |
| 2.5 V | 2487 mV |
| 3.3 V | 3302 mV |
| 3.3 V bias | 3300 mV |
| 12.0 V A | 10388 mV |
| 12.0 V B | 10388 mV |
| Power 2 | |
| 0.9 V | 902 mV |
| 0.9 V PFE0 | 921 mV |
| 0.9 V PFE1 | 907 mV |
| 1.0 V PFE0 | 996 mV |
| 1.0 V PFE1 | 974 mV |
| 1.1 V | 1095 mV |
| 1.5 V_0 | 1495 mV |
| 1.5 V_1 | 1478 mV |
| Power 3 | |
| 1.0 V PFE0 | 997 mV |
| 1.0 V PFE1 | 998 mV |
| 1.0 V PFE0 * | 993 mV |
| 1.0 V PFE1 * | 991 mV |
| 1.8 V PFE 0 | 1796 mV |
| 1.8 V PFE 1 | 1789 mV |
| 2.5 V | 2465 mV |
| 12.0 V | 11609 mV |
| Power 4 | |
| 1.0 V PFE0 LU0 | 1003 mV |
| 1.0 V PFE1 LU0 | 1006 mV |
| 1.0 V PFE1 LU2 | 1002 mV |
| 1.0 V PFE0 LU0 * | 1000 mV |
| 1.0 V PFE1 LU0 * | 998 mV |
| 1.0 V PFE1 LU2 * | 998 mV |
| 12.0 V | 11638 mV |
| 12.0 V C | 11702 mV |
| Power (Base/PMB/MMB) | |
| LMB0 VDD2V5 | 2484 mV |
| LMB0 VDD1V8 | 1780 mV |
| LMB0 VDD1V5 | 1496 mV |
| LMB0 PFE0 LU0 AVDD1V0 | 998 mV |
| LMB0 PFE0 LU0 VDD1V0 | 1004 mV |
| LMB0 VDD12V0 | 10528 mV |
| LMB1 VDD2V5 | 2472 mV |
| LMB1 VDD1V8 | 1776 mV |
| LMB1 VDD1V5 | 1474 mV |
| LMB1 PFE0 LU2 AVDD1V0 | 994 mV |
| LMB1 PFE0 LU2 VDD1V0 | 1004 mV |
| LMB1 VDD12V0 | 10544 mV |
| LMB2 VDD2V5 | 2476 mV |
| LMB2 VDD1V8 | 1790 mV |
| LMB2 VDD1V5 | 1492 mV |
| LMB2 PFE1 LU1 AVDD1V0 | 996 mV |
| LMB2 PFE1 LU1 VDD1V0 | 1010 mV |
| LMB2 VDD12V0 | 10528 mV |

| | |
|--------------|---------|
| PMB 1.05v | 1050 mV |
| PMB 1.5v | 1499 mV |
| PMB 2.5v | 2500 mV |
| PMB 3.3v | 3300 mV |
| Bus Revision | 80 |

show chassis environment fpc lcc (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 TEMP0 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 Sensor38 degrees C / 100 degrees F
FPC 1 Exhaust-B Temp Sensor38 degrees C / 100 degrees F
FPC 1 Exhaust-C Temp Sensor40 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 Sensor50 degrees C / 122 degrees F
FPC 2 Exhaust-B Temp Sensor52 degrees C / 125 degrees F
FPC 2 Exhaust-C Temp Sensor51 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 Sensor41 degrees C / 105 degrees F
FPC 5 Exhaust-B Temp Sensor41 degrees C / 105 degrees F
FPC 5 Exhaust-C Temp Sensor42 degrees C / 107 degrees F
FPC 5 PE0 Temp Sensor      47 degrees C / 116 degrees F
FPC 5 PE1 Temp Sensor      49 degrees C / 120 degrees F
FPC 5 PE2 Temp Sensor      53 degrees C / 127 degrees F
FPC 5 LCPU Temp Sensor     Failed

```

Power

| | | | |
|--------------------|----------|----------|-----------|
| PE0 Core 0.9V | 923 mV | 30976 mA | 28578 mW |
| PE0 HMC0 Core 0.9V | 899 mV | 10093 mA | 9078 mW |
| PE1 Core 0.9V | 897 mV | 29398 mA | 26414 mW |
| PE1 HMC0 Core 0.9V | 899 mV | 9734 mA | 8750 mW |
| PE2 Core 0.9V | 922 mV | 30226 mA | 27886 mW |
| PE2 HMC0 Core 0.9V | 899 mV | 9984 mA | 8968 mW |
| PE0 Serdes 1.0V | 1019 mV | 29296 mA | 29890 mW |
| PE1 Serdes 1.0V | 1020 mV | 28687 mA | 29296 mW |
| PE2 Serdes 1.0V | 1020 mV | 28187 mA | 28765 mW |
| LCPU Platform 1.1V | 1100 mV | 3664 mA | 4031 mW |
| LCPU Core 1.0V | 999 mV | 9125 mA | 9125 mW |
| PHY VDD B 1.0V | 999 mV | 15593 mA | 15593 mW |
| PHY VDD A 1.0V | 1000 mV | 15453 mA | 15453 mW |
| BCM Core 1.0V | 999 mV | 7773 mA | 7765 mW |
| BCM PEX 1.0V | 1000 mV | 3460 mA | 3464 mW |
| HMC Core 1.2V | 1199 mV | 1328 mA | 1628 mW |
| HMC Serdes 1.2V | 1199 mV | 32203 mA | 38625 mW |
| VDD 1.5V | 1499 mV | 2675 mA | 4007 mW |
| VDD 2.5V | 2450 mV | 3675 mA | 9000 mW |
| VDD 3.3V | 3300 mV | 1814 mA | 5980 mW |
| 12V | 12272 mV | 29045 mA | 361369 mW |

FPC 6 status:

```

State                               Online
FPC 6 Intake-A Temp Sensor 41 degrees C / 105 degrees F
FPC 6 Intake-B Temp Sensor 37 degrees C / 98 degrees F
FPC 6 Exhaust-A Temp Sensor40 degrees C / 104 degrees F
FPC 6 Exhaust-B Temp Sensor40 degrees C / 104 degrees F
FPC 6 Exhaust-C Temp Sensor40 degrees C / 104 degrees F
FPC 6 PE0 Temp Sensor      45 degrees C / 113 degrees F
FPC 6 PE1 Temp Sensor      47 degrees C / 116 degrees F
FPC 6 PE2 Temp Sensor      51 degrees C / 123 degrees F
FPC 6 LCPU Temp Sensor     41 degrees C / 105 degrees F

```

Power

| | | | |
|--------------------|--------|----------|----------|
| PE0 Core 0.9V | 897 mV | 30214 mA | 27179 mW |
| PE0 HMC0 Core 0.9V | 899 mV | 10000 mA | 8984 mW |
| PE1 Core 0.9V | 873 mV | 29332 mA | 25601 mW |
| PE1 HMC0 Core 0.9V | 899 mV | 9828 mA | 8828 mW |

| | | | |
|--------------------|----------|----------|-----------|
| PE2 Core 0.9V | 898 mV | 30781 mA | 27675 mW |
| PE2 HMC0 Core 0.9V | 899 mV | 10328 mA | 9296 mW |
| PE0 Serdes 1.0V | 1019 mV | 28921 mA | 29531 mW |
| PE1 Serdes 1.0V | 1020 mV | 29437 mA | 30046 mW |
| PE2 Serdes 1.0V | 1019 mV | 29671 mA | 30281 mW |
| LCPU Platform 1.1V | 1100 mV | 3671 mA | 4039 mW |
| LCPU Core 1.0V | 1000 mV | 8218 mA | 8187 mW |
| PHY VDD B 1.0V | 1000 mV | 15984 mA | 15984 mW |
| PHY VDD A 1.0V | 999 mV | 16093 mA | 16093 mW |
| BCM Core 1.0V | 1000 mV | 8046 mA | 8062 mW |
| BCM PEX 1.0V | 1000 mV | 3500 mA | 3500 mW |
| HMC Core 1.2V | 1199 mV | 1327 mA | 1579 mW |
| HMC Serdes 1.2V | 1199 mV | 33031 mA | 39593 mW |
| VDD 1.5V | 1499 mV | 2722 mA | 4078 mW |
| VDD 2.5V | 2449 mV | 3539 mA | 8671 mW |
| VDD 3.3V | 3299 mV | 8082 mA | 26656 mW |
| 12V | 12311 mV | 31124 mA | 385270 mW |

show chassis environment fpc (PTX10016 router)

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

FPC 1 status:

| State | Online |
|-----------------------------|------------------------------|
| FPC 1 Intake-A Temp Sensor | 36 degrees C / 96 degrees F |
| FPC 1 Intake-B Temp Sensor | 32 degrees C / 89 degrees F |
| FPC 1 Exhaust-A Temp Sensor | 37 degrees C / 98 degrees F |
| FPC 1 Exhaust-B Temp Sensor | 36 degrees C / 96 degrees F |
| FPC 1 Exhaust-C Temp Sensor | 36 degrees C / 96 degrees F |
| FPC 1 PE0 Temp Sensor | 45 degrees C / 113 degrees F |
| FPC 1 PE1 Temp Sensor | 46 degrees C / 114 degrees F |
| FPC 1 PE2 Temp Sensor | 53 degrees C / 127 degrees F |
| FPC 1 LCPU Temp Sensor | 35 degrees C / 95 degrees F |

Power

| | | | |
|--------------------|----------|----------|-----------|
| PE0 Core 0.9V | 897 mV | 28992 mA | 26027 mW |
| PE0 HMC0 Core 0.9V | 899 mV | 10156 mA | 9156 mW |
| PE1 Core 0.9V | 871 mV | 28800 mA | 25164 mW |
| PE1 HMC0 Core 0.9V | 899 mV | 10125 mA | 9109 mW |
| PE2 Core 0.9V | 898 mV | 29914 mA | 26906 mW |
| PE2 HMC0 Core 0.9V | 899 mV | 10343 mA | 9296 mW |
| PE0 Serdes 1.0V | 1019 mV | 27515 mA | 28093 mW |
| PE1 Serdes 1.0V | 1020 mV | 27968 mA | 28546 mW |
| PE2 Serdes 1.0V | 1019 mV | 27796 mA | 28359 mW |
| LCPU Platform 1.1V | 1100 mV | 3347 mA | 3289 mW |
| LCPU Core 1.0V | 1000 mV | 7960 mA | 7960 mW |
| PHY VDD B 1.0V | 1000 mV | 16437 mA | 16437 mW |
| PHY VDD A 1.0V | 999 mV | 15656 mA | 15656 mW |
| BCM Core 1.0V | 1000 mV | 7289 mA | 7335 mW |
| BCM PEX 1.0V | 999 mV | 3453 mA | 3453 mW |
| HMC Core 1.2V | 1199 mV | 1218 mA | 1453 mW |
| HMC Serdes 1.2V | 1199 mV | 32093 mA | 38562 mW |
| VDD 1.5V | 1500 mV | 2859 mA | 4289 mW |
| VDD 2.5V | 2449 mV | 3875 mA | 9500 mW |
| VDD 3.3V | 3299 mV | 2806 mA | 9257 mW |
| 12V | 12351 mV | 28569 mA | 354877 mW |

FPC 3 status:

| State | Online |
|-----------------------------|-----------------------------|
| FPC 3 Intake-A Temp Sensor | 35 degrees C / 95 degrees F |
| FPC 3 Intake-B Temp Sensor | 31 degrees C / 87 degrees F |
| FPC 3 Exhaust-A Temp Sensor | 36 degrees C / 96 degrees F |

```

FPC 3 Exhaust-B Temp 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 Sensor34 degrees C / 93 degrees F
FPC 6 Exhaust-B Temp Sensor35 degrees C / 95 degrees F
FPC 6 Exhaust-C Temp Sensor35 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 (Junos OS Evolved)

```
user@switch> show chassis environment fpc
```

```
FPC 0 status:
State                               Online
Intake Temperature                  32 degrees C / 89 degrees F
Exhaust-A Temperature              43 degrees C / 109 degrees F
Exhaust-B Temperature              32 degrees C / 89 degrees F
PE0 Temperature                     34 degrees C / 93 degrees F
```

| | |
|-----------------|------------------------------|
| PE1 Temperature | 38 degrees C / 100 degrees F |
| PE2 Temperature | 38 degrees C / 100 degrees F |
| PE3 Temperature | 36 degrees C / 96 degrees F |
| PE4 Temperature | 35 degrees C / 95 degrees F |
| PE5 Temperature | 35 degrees C / 95 degrees F |
| Power 1 | |
| RT_1 1.0v | 1018 mV |
| RT_2 1.0v | 1018 mV |
| Power 2 | |
| FPC 1 1.0v | 999 mV |
| FPC 2 1.0v | 998 mV |
| Power 3 | |
| FPC 2.5v | 2499 mV |
| FPC 3.3v | 3299 mV |
| Power 4 | |
| FPC 0.9v | 899 mV |
| FPC 1.5v | 1499 mV |
| Power 5 | |
| PE0 1 1.0v | 1039 mV |
| PE0 2 1.0v | 1039 mV |
| Power 6 | |
| PE0 1 0.9v | 900 mV |
| PE0 2 0.9v | 900 mV |
| Power 7 | |
| PE0 3 0.9v | 902 mV |
| PE0 4 0.9v | 902 mV |
| Power 8 | |
| PE0 H 0.9v | 899 mV |
| PE0 H 1.2v | 1199 mV |
| Power 9 | |
| PE1 1 1.0v | 1040 mV |
| PE1 2 1.0v | 1039 mV |
| Power 10 | |
| PE1 1 0.9v | 901 mV |
| PE1 2 0.9v | 901 mV |
| Power 11 | |
| PE1 3 0.9v | 900 mV |
| PE1 4 0.9v | 900 mV |
| Power 12 | |
| PE1 H 0.9v | 899 mV |
| PE1 H 1.2v | 1199 mV |
| Power 13 | |
| PE2 1 1.0v | 1039 mV |
| PE2 2 1.0v | 1039 mV |
| Power 14 | |
| PE2 1 0.9v | 900 mV |
| PE2 2 0.9v | 900 mV |
| Power 15 | |
| PE2 3 0.9v | 900 mV |
| PE2 4 0.9v | 900 mV |
| Power 16 | |
| PE2 H 0.9v | 899 mV |
| PE2 H 1.2v | 1199 mV |
| Power 17 | |
| PE3 1 1.0v | 1039 mV |
| PE3 2 1.0v | 1039 mV |
| Power 18 | |
| PE3 1 0.9v | 899 mV |
| PE3 2 0.9v | 900 mV |
| Power 19 | |

```

    PE3 3 0.9v          899 mV
    PE3 4 0.9v          900 mV
Power 20
    PE3 H 0.9v          899 mV
    PE3 H 1.2v          1199 mV
Power 21
    PE4 1 1.0v          1039 mV
    PE4 2 1.0v          1039 mV
Power 22
    PE4 1 0.9v          900 mV
    PE4 2 0.9v          900 mV
Power 23
    PE4 3 0.9v          901 mV
    PE4 4 0.9v          901 mV
Power 24
    PE4 H 0.9v          899 mV
    PE4 H 1.2v          1199 mV
Power 25
    PE5 1 1.0v          1040 mV
    PE5 2 1.0v          1039 mV
Power 26
    PE5 1 0.9v          901 mV
    PE5 2 0.9v          901 mV
Power 27
    PE5 3 0.9v          901 mV
    PE5 4 0.9v          901 mV
Power 28
    PE5 H 0.9v          899 mV
    PE5 H 1.2v          1199 mV
Power 29
    PIC0 12.0v          12342 mV
Power 30
    PIC1 12.0v          12342 mV
Power 31
    A    12.0v          12375 mV
    B    12.0v          1008 mV
Bus Revision            115
FPC 1 status:
State                   Online
Intake Temperature      33 degrees C / 91 degrees F
Exhaust-A Temperature   44 degrees C / 111 degrees F
Exhaust-B Temperature   33 degrees C / 91 degrees F
PE0 Temperature         34 degrees C / 93 degrees F
PE1 Temperature         38 degrees C / 100 degrees F
PE2 Temperature         37 degrees C / 98 degrees F
PE3 Temperature         36 degrees C / 96 degrees F
PE4 Temperature         34 degrees C / 93 degrees F
PE5 Temperature         36 degrees C / 96 degrees F
Power 1
    RT_1 1.0v          1018 mV
    RT_2 1.0v          1018 mV
Power 2
    FPC 1 1.0v          999 mV
    FPC 2 1.0v          999 mV
Power 3
    FPC 2.5v          2499 mV
    FPC 3.3v          3300 mV
Power 4
    FPC 0.9v          899 mV
    FPC 1.5v          1500 mV

```

| | |
|------------|---------|
| Power 5 | |
| PE0 1 1.0v | 1039 mV |
| PE0 2 1.0v | 1039 mV |
| Power 6 | |
| PE0 1 0.9v | 925 mV |
| PE0 2 0.9v | 925 mV |
| Power 7 | |
| PE0 3 0.9v | 925 mV |
| PE0 4 0.9v | 926 mV |
| Power 8 | |
| PE0 H 0.9v | 899 mV |
| PE0 H 1.2v | 1199 mV |
| Power 9 | |
| PE1 1 1.0v | 1040 mV |
| PE1 2 1.0v | 1039 mV |
| Power 10 | |
| PE1 1 0.9v | 900 mV |
| PE1 2 0.9v | 901 mV |
| Power 11 | |
| PE1 3 0.9v | 899 mV |
| PE1 4 0.9v | 900 mV |
| Power 12 | |
| PE1 H 0.9v | 899 mV |
| PE1 H 1.2v | 1199 mV |
| Power 13 | |
| PE2 1 1.0v | 1040 mV |
| PE2 2 1.0v | 1039 mV |
| Power 14 | |
| PE2 1 0.9v | 926 mV |
| PE2 2 0.9v | 926 mV |
| Power 15 | |
| PE2 3 0.9v | 927 mV |
| PE2 4 0.9v | 927 mV |
| Power 16 | |
| PE2 H 0.9v | 899 mV |
| PE2 H 1.2v | 1199 mV |
| Power 17 | |
| PE3 1 1.0v | 1039 mV |
| PE3 2 1.0v | 1039 mV |
| Power 18 | |
| PE3 1 0.9v | 926 mV |
| PE3 2 0.9v | 927 mV |
| Power 19 | |
| PE3 3 0.9v | 925 mV |
| PE3 4 0.9v | 926 mV |
| Power 20 | |
| PE3 H 0.9v | 899 mV |
| PE3 H 1.2v | 1199 mV |
| Power 21 | |
| PE4 1 1.0v | 1039 mV |
| PE4 2 1.0v | 1040 mV |
| Power 22 | |
| PE4 1 0.9v | 925 mV |
| PE4 2 0.9v | 925 mV |
| Power 23 | |
| PE4 3 0.9v | 925 mV |
| PE4 4 0.9v | 926 mV |
| Power 24 | |
| PE4 H 0.9v | 900 mV |
| PE4 H 1.2v | 1199 mV |

```

Power 25
  PE5 1 1.0v          1039 mV
  PE5 2 1.0v          1039 mV
Power 26
  PE5 1 0.9v          898 mV
  PE5 2 0.9v          899 mV
Power 27
  PE5 3 0.9v          900 mV
  PE5 4 0.9v          900 mV
Power 28
  PE5 H 0.9v          899 mV
  PE5 H 1.2v          1199 mV
Power 29
  PICO 12.0v          0 mV
Power 30
  PIC1 12.0v          12402 mV
Power 31
  A    12.0v          12344 mV
  B    12.0v          1008 mV
Bus Revision          115
FPC 2 status:
State                 Online
Intake Temperature    31 degrees C / 87 degrees F
Exhaust-A Temperature 38 degrees C / 100 degrees F
Exhaust-B Temperature 28 degrees C / 82 degrees F
PE0 Temperature       28 degrees C / 82 degrees F
PE1 Temperature       33 degrees C / 91 degrees F
PE2 Temperature       34 degrees C / 93 degrees F
PE3 Temperature       31 degrees C / 87 degrees F
Power 1
  RT_1 1.0v          1018 mV
  RT_2 1.0v          1018 mV
Power 2
  FPC 1 1.0v          999 mV
  FPC 2 1.0v          999 mV
Power 3
  FPC 2.5v          2499 mV
  FPC 3.3v          3299 mV
Power 4
  FPC 0.9v          899 mV
  FPC 1.5v          1500 mV
Power 5
  PE0 1 1.0v          1039 mV
  PE0 2 1.0v          1040 mV
Power 6
  PE0 1 0.9v          900 mV
  PE0 2 0.9v          901 mV
Power 7
  PE0 3 0.9v          900 mV
  PE0 4 0.9v          900 mV
Power 8
  PE0 H 0.9v          899 mV
  PE0 H 1.2v          1199 mV
Power 9
  PE1 1 1.0v          1039 mV
  PE1 2 1.0v          1039 mV
Power 10
  PE1 1 0.9v          875 mV
  PE1 2 0.9v          876 mV
Power 11

```

| | |
|-----------------------|------------------------------|
| PE1 3 0.9v | 875 mV |
| PE1 4 0.9v | 875 mV |
| Power 12 | |
| PE1 H 0.9v | 899 mV |
| PE1 H 1.2v | 1199 mV |
| Power 13 | |
| PE2 1 1.0v | 1039 mV |
| PE2 2 1.0v | 1039 mV |
| Power 14 | |
| PE2 1 0.9v | 900 mV |
| PE2 2 0.9v | 900 mV |
| Power 15 | |
| PE2 3 0.9v | 900 mV |
| PE2 4 0.9v | 900 mV |
| Power 16 | |
| PE2 H 0.9v | 899 mV |
| PE2 H 1.2v | 1199 mV |
| Power 17 | |
| PE3 1 1.0v | 1039 mV |
| PE3 2 1.0v | 1039 mV |
| Power 18 | |
| PE3 1 0.9v | 875 mV |
| PE3 2 0.9v | 875 mV |
| Power 19 | |
| PE3 3 0.9v | 875 mV |
| PE3 4 0.9v | 875 mV |
| Power 20 | |
| PE3 H 0.9v | 899 mV |
| PE3 H 1.2v | 1200 mV |
| Power 21 | |
| PIC0 12.0v | 12281 mV |
| Power 22 | |
| PIC1 12.0v | 0 mV |
| Power 23 | |
| A 12.0v | 12406 mV |
| B 12.0v | 1006 mV |
| Bus Revision | 115 |
| FPC 3 status: | |
| State | Online |
| Intake Temperature | 33 degrees C / 91 degrees F |
| Exhaust-A Temperature | 44 degrees C / 111 degrees F |
| Exhaust-B Temperature | 30 degrees C / 86 degrees F |
| PE0 Temperature | 33 degrees C / 91 degrees F |
| PE1 Temperature | 37 degrees C / 98 degrees F |
| PE2 Temperature | 38 degrees C / 100 degrees F |
| PE3 Temperature | 34 degrees C / 93 degrees F |
| PE4 Temperature | 33 degrees C / 91 degrees F |
| PE5 Temperature | 36 degrees C / 96 degrees F |
| Power 1 | |
| RT_1 1.0v | 1018 mV |
| RT_2 1.0v | 1018 mV |
| Power 2 | |
| FPC 1 1.0v | 999 mV |
| FPC 2 1.0v | 999 mV |
| Power 3 | |
| FPC 2.5v | 2500 mV |
| FPC 3.3v | 3299 mV |
| Power 4 | |
| FPC 0.9v | 899 mV |
| FPC 1.5v | 1500 mV |

| | | |
|------------|--|---------|
| Power 5 | | |
| PE0 1 1.0v | | 1039 mV |
| PE0 2 1.0v | | 1039 mV |
| Power 6 | | |
| PE0 1 0.9v | | 900 mV |
| PE0 2 0.9v | | 900 mV |
| Power 7 | | |
| PE0 3 0.9v | | 898 mV |
| PE0 4 0.9v | | 899 mV |
| Power 8 | | |
| PE0 H 0.9v | | 899 mV |
| PE0 H 1.2v | | 1199 mV |
| Power 9 | | |
| PE1 1 1.0v | | 1040 mV |
| PE1 2 1.0v | | 1039 mV |
| Power 10 | | |
| PE1 1 0.9v | | 926 mV |
| PE1 2 0.9v | | 926 mV |
| Power 11 | | |
| PE1 3 0.9v | | 925 mV |
| PE1 4 0.9v | | 925 mV |
| Power 12 | | |
| PE1 H 0.9v | | 900 mV |
| PE1 H 1.2v | | 1199 mV |
| Power 13 | | |
| PE2 1 1.0v | | 1039 mV |
| PE2 2 1.0v | | 1039 mV |
| Power 14 | | |
| PE2 1 0.9v | | 873 mV |
| PE2 2 0.9v | | 873 mV |
| Power 15 | | |
| PE2 3 0.9v | | 875 mV |
| PE2 4 0.9v | | 875 mV |
| Power 16 | | |
| PE2 H 0.9v | | 899 mV |
| PE2 H 1.2v | | 1199 mV |
| Power 17 | | |
| PE3 1 1.0v | | 1039 mV |
| PE3 2 1.0v | | 1039 mV |
| Power 18 | | |
| PE3 1 0.9v | | 899 mV |
| PE3 2 0.9v | | 900 mV |
| Power 19 | | |
| PE3 3 0.9v | | 899 mV |
| PE3 4 0.9v | | 899 mV |
| Power 20 | | |
| PE3 H 0.9v | | 899 mV |
| PE3 H 1.2v | | 1199 mV |
| Power 21 | | |
| PE4 1 1.0v | | 1040 mV |
| PE4 2 1.0v | | 1040 mV |
| Power 22 | | |
| PE4 1 0.9v | | 949 mV |
| PE4 2 0.9v | | 950 mV |
| Power 23 | | |
| PE4 3 0.9v | | 950 mV |
| PE4 4 0.9v | | 951 mV |
| Power 24 | | |
| PE4 H 0.9v | | 899 mV |
| PE4 H 1.2v | | 1199 mV |

| | |
|---------------|----------|
| Power 25 | |
| PE5 1 1.0v | 1039 mV |
| PE5 2 1.0v | 1039 mV |
| Power 26 | |
| PE5 1 0.9v | 900 mV |
| PE5 2 0.9v | 900 mV |
| Power 27 | |
| PE5 3 0.9v | 900 mV |
| PE5 4 0.9v | 900 mV |
| Power 28 | |
| PE5 H 0.9v | 899 mV |
| PE5 H 1.2v | 1199 mV |
| Power 29 | |
| PIC0 12.0v | 0 mV |
| Power 30 | |
| PIC1 12.0v | 0 mV |
| Power 31 | |
| A 12.0v | 12406 mV |
| B 12.0v | 1008 mV |
| Bus Revision | 115 |
| FPC 6 status: | |
| State | Onlining |
| Bus Revision | 115 |

show chassis environment fpm

| | |
|--|--|
| List of Syntax | Syntax on page 797 Syntax (TX Matrix Routers) on page 797 Syntax (TX Matrix Plus Routers) on page 797 |
| Syntax | show chassis environment fpm |
| Syntax (TX Matrix Routers) | show chassis environment fpm <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Routers) | show chassis environment fpm <lcc <i>number</i> sfc <i>number</i> > |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 12.1x48 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 MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> |
| Description | <p>(M40e, M120, M160, M320, MX Series, and T Series routers and the PTX Series Packet Transport Routers only) Display environmental information about the front panel module in the router.</p> |
| Options | <p>none—(TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display environmental information about the front panel modules (craft interfaces) on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about the front panel modules (craft interfaces) on the TX Matrix Plus router and its attached routers.</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.

scc—(TX Matrix router only) (Optional) Display environmental information about the front panel module (craft interface) on the TX Matrix router (or switch-card chassis).

sfc number—(TX Matrix Plus router only) (Optional) Display environmental information about the front panel module (craft interface) on the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level view

Related Documentation [request chassis fpm resync on page 501](#)

List of Sample Output [show chassis environment fpm \(M40e and M160 Routers\) on page 799](#)
[show chassis environment fpm \(M320 Router\) on page 799](#)
[show chassis environment fpm \(MX2010 Router\) on page 800](#)
[show chassis environment fpm \(MX2020 Router\) on page 800](#)
[show chassis environment fpm \(MX2008 Router\) on page 800](#)
[show chassis environment fpm \(MX240 Router\) on page 800](#)
[show chassis environment fpm \(MX480 Router\) on page 800](#)
[show chassis environment fpm \(T Series Routers\) on page 800](#)
[show chassis environment fpm lcc \(TX Matrix Router\) on page 801](#)
[show chassis environment fpm scc \(TX Matrix Router\) on page 801](#)
[show chassis environment fpm sfc \(TX Matrix Plus Router\) on page 801](#)
[show chassis environment fpm \(T4000 Core Router\) on page 802](#)
[show chassis environment fpm \(PTX5000 Packet Transport Router\) on page 803](#)

Output Fields [Table 44 on page 798](#) lists the output fields for the **show chassis environment fpm** command. Output fields are listed in the approximate order in which they appear.

Table 44: show chassis environment fpm Output Fields

| Field Name | Field Description |
|------------------------|---|
| State | FPM status: <ul style="list-style-type: none"> • Online—FPM is online and running. • Offline—FPM is powered down. |
| FPM CMB Voltage | (M40e and M160 routers only) Information about the voltage supplied to the FPM chassis management bus (CMB) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |

Table 44: show chassis environment fpm Output Fields (continued)

| Field Name | Field Description |
|--------------------------------|---|
| FPM GBUS Voltage | (M320 and T Series routers only) Information about the voltage supplied to the FPM generic bus (GBUS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| FPM I2CS Voltage | (PTX Series only) Information about the voltage supplied to the FPM generic bus (I2CS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| FPM Display Voltage | Information about the voltage supplied to the FPM display. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| FPM CMB Temperature | (M40e and M160 routers only) Temperature of the air flowing past the FPM CMB device |
| FPM GBUS Temperature | (M320 and T Series routers only) Temperature of the air flowing past the FPM GBUS device. |
| FPM I2CS Temperature | (PTX Series only) Temperature of the air flowing past the FPM I2CS device. |
| FPM Display Temperature | Temperature of the air flowing past the FPM display. |
| CMB Revision | (M40e and M160 routers only) Revision level of the CMB device. |
| GBUS Revision | (M320 and T Series routers only) Revision level of the GBUS device. |
| I2CS Revision | (MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Revision level of the I2CS device. |

Sample Output

show chassis environment fpm (M40e and M160 Routers)

```

user@host> show chassis environment fpm

FPM status:
State                               Online
FPM CMB Voltage:
  5.0 V bias                        5030 mV
  8.0 V bias                        8083 mV
FPM Display Voltage:
  5.0 V bias                        4998 mV
FPM CMB temperature                 34 degrees C / 93 degrees F
FPM Display temperature             35 degrees C / 95 degrees F
CMB Revision                        12

```

show chassis environment fpm (M320 Router)

```

user@host> show chassis environment fpm

FPM status:
State                               Online

```

```
FPM GBUS Voltage:
  5.0 V          5006 mV
  1.8 V bias     1799 mV
  3.3 V bias     3294 mV
  5.0 V bias     4998 mV
  8.0 V bias     7682 mV
FPM GBUS temperature 30 degrees C / 86 degrees F
GBUS Revision       51
```

show chassis environment fpm (MX2010 Router)

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

```
FPM status:
  State          Online
  I2CS Revision  4
```

show chassis environment fpm (MX2020 Router)

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

```
FPM status:
  State          Online
  I2CS Revision  3
```

show chassis environment fpm (MX2008 Router)

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

```
FPM status:
  State          Online
  I2CS Revision  5
```

show chassis environment fpm (MX240 Router)

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

```
FPM status:
  State          Online
  I2CS Revision  41
```

show chassis environment fpm (MX480 Router)

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

```
FPM status:
  State          Online
  I2CS Revision  41
```

show chassis environment fpm (T Series Routers)

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

```
FPM status:
  State          Online
FPM GBUS Voltage:
  1.8 V bias     1787 mV
  3.3 V bias     3286 mV
```

```

    5.0 V bias          4991 mV
    8.0 V bias          7162 mV
FPM Display Voltage:
    5.0 V              4996 mV
FPM GBUS temperature   29 degrees C / 84 degrees F
FPM Display temperature 26 degrees C / 78 degrees F
GBUS Revision          37

```

show chassis environment fpm lcc (TX Matrix Router)

```

user@host> show chassis environment fpm lcc 0

lcc0-re0:
-----
FPM status:
State                               Online
FPM GBUS Voltage:
    1.8 V bias          1797 mV
    3.3 V bias          3294 mV
    5.0 V bias          5015 mV
    8.0 V bias          7470 mV
FPM Display Voltage:
    5.0 V              5018 mV
FPM GBUS temperature   25 degrees C / 77 degrees F
FPM Display temperature 29 degrees C / 84 degrees F
GBUS Revision          37

```

show chassis environment fpm scc (TX Matrix Router)

```

user@host> show chassis environment fpm scc

scc-re0:
-----
FPM status:
State                               Online
FPM GBUS Voltage:
    1.8 V bias          1789 mV
    3.3 V bias          3296 mV
    5.0 V bias          5003 mV
    8.0 V bias          7592 mV
FPM Display Voltage:
    5.0 V              5010 mV
FPM GBUS temperature   22 degrees C / 71 degrees F
FPM Display temperature 27 degrees C / 80 degrees F
GBUS Revision          37

```

show chassis environment fpm sfc (TX Matrix Plus Router)

```

user@host> show chassis environment fpm sfc

sfc0-re0:
-----
FPM status:
State                               Online
FPM I2CS Voltage:
    3.3 V              3300 mV
    5.0 V              5001 mV
    9.0 V FPD          8672 mV

```

```
FPM I2CS temperature      33 degrees C / 91 degrees F
I2CS Revision             69
```

```
1cc0-re0:
```

```
FPM status:
```

```
State                     Online
FPM GBUS Voltage:
  1.8 V bias              1802 mV
  3.3 V bias              3301 mV
  5.0 V bias              4984 mV
  8.0 V bias              7377 mV
FPM Display Voltage:
  5.0 V                   5015 mV
FPM GBUS temperature      30 degrees C / 86 degrees F
FPM Display temperature   32 degrees C / 89 degrees F
GBUS Revision             37
```

```
1cc1-re0:
```

```
FPM status:
```

```
State                     Online
FPM GBUS Voltage:
  1.8 V bias              1789 mV
  3.3 V bias              3311 mV
  5.0 V bias              5013 mV
  8.0 V bias              7467 mV
FPM Display Voltage:
  5.0 V                   5015 mV
FPM GBUS temperature      29 degrees C / 84 degrees F
FPM Display temperature   31 degrees C / 87 degrees F
GBUS Revision             37
```

show chassis environment fpm (T4000 Core Router)

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

```
CB 0 status:
```

```
State                     Online Master
Temperature               34 degrees C / 93 degrees F
Power 1
  1.8 V                   1804 mV
  2.5 V                   2499 mV
  3.3 V                   3317 mV
  3.3 V bias              3291 mV
  4.6 V                   4663 mV
  5.0 V                   4905 mV
  8.0 V bias              7658 mV
  12.0 V                  11877 mV
Power 2
  1.0 V                   996 mV
  1.2 V                  1207 mV
  3.3 V RE                3354 mV
Bus Revision              51
FPGA Revision             5
```

```
CB 1 status:
```

```
State                     Online Standby
Temperature               36 degrees C / 96 degrees F
Power 1
  1.8 V                   1791 mV
```

```

2.5 V          2494 mV
3.3 V          3321 mV
3.3 V bias     3301 mV
4.6 V          4666 mV
5.0 V          4945 mV
8.0 V bias     7645 mV
12.0 V         11897 mV
Power 2
1.0 V          991 mV
1.2 V          1201 mV
3.3 V RE       3289 mV
Bus Revision   51
FPGA Revision  5

user@host> show chassis environment fpm
FPM status:
State          Online
FPM GBUS Voltage:
  1.8 V bias    1802 mV
  3.3 V bias    3294 mV
  5.0 V bias    5003 mV
  8.0 V bias    7306 mV
FPM Display Voltage:
  5.0 V         5010 mV
FPM GBUS temperature 26 degrees C / 78 degrees F
FPM Display temperature 29 degrees C / 84 degrees F
GBUS Revision        37

```

show chassis environment fpm (PTX5000 Packet Transport Router)

```

user@host> show chassis environment fpm

FPM status:
State          Online
FPM I2CS Voltage:
  3.3 V         3300 mV
  5.0 V         4975 mV
FPM I2CS temperature 37 degrees C / 98 degrees F
I2CS Revision    109

```

show chassis environment monitored

| | |
|--|---|
| List of Syntax | Syntax on page 804 Syntax (MX2020, MX2010, and MX2008 Routers) on page 804 |
| Syntax | show chassis environment monitored |
| Syntax (MX2020, MX2010, and MX2008 Routers) | show chassis environment monitored <all-members> <local> <member <i>member-id</i> > |
| Release Information | <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers. Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms. Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p> |
| Description | <p>(PTX Series Packet Transport Routers, MX2010, MX2020, MX2008, and MX10008 routers) Display status information for monitored temperatures.</p> <p>On the PTX Series Packet Transport Routers, and on MX2010, MX2020, MX2008, and MX10008 routers, you can configure which temperatures are monitored for computing temperature alarms. Use this command to display only the temperatures that are monitored. Temperatures that are not included in the temperature alarm computations are not displayed.</p> |
| Options | <p>none—Display status information for monitored temperatures.</p> <p>all-members—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in all members of the Virtual Chassis configuration.</p> <p>local—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the local member of the Virtual Chassis.</p> <p>member <i>member-id</i>—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> |
| Required Privilege Level | view |

- Related Documentation**
- [show chassis environment on page 607](#)
 - *Chassis-Level Feature Guide*

- List of Sample Output**
- [show chassis environment monitored \(PTX3000 Packet Transport Router\) on page 805](#)
 - [show chassis environment monitored \(PTX5000 Packet Transport Router\) on page 806](#)
 - [show chassis environment monitored \(MX2010 Router\) on page 806](#)
 - [show chassis environment monitored \(MX2020 Router\) on page 809](#)
 - [show chassis environment monitored \(MX2008 Router\) on page 818](#)
 - [show chassis environment monitored \(MX10008 Router\) on page 821](#)

- Output Fields** Table 45 on page 805 lists the output fields for the **show chassis environment monitored** command. Output fields are listed in the approximate order in which they appear.

Table 45: show chassis environment monitored Output Fields

| Field Name | Field Description |
|--------------------|---|
| Item | Chassis component: <ul style="list-style-type: none"> • (PTX Series Packet Transport Routers, and MX2010, MX2020, and Mx2008 routers)—Information about the chassis, Routing Engines, Control Boards (CBs), Switch Interface Boards (SIBs), PICs, and Flexible PIC Concentrators (FPCs). |
| Status | Status of the specified item: OK , Alarm , or Present . |
| Measurement | Temperature of the air flowing past the specified chassis component. Temperature is displayed in degrees Celsius (C) and degrees Fahrenheit (F). |

Sample Output

show chassis environment monitored (PTX3000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|---------|------------------------------|
| | Routing Engine 0 CPU | OK | 54 degrees C / 129 degrees F |
| | Routing Engine 1 CPU | Present | |
| | CB 0 Exhaust A | OK | 25 degrees C / 77 degrees F |
| | CB 1 Exhaust A | OK | 22 degrees C / 71 degrees F |
| | SIB 0 Exhaust | OK | 34 degrees C / 93 degrees F |
| | SIB 0 TF | OK | 42 degrees C / 107 degrees F |
| | SIB 1 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 1 TF | OK | 41 degrees C / 105 degrees F |
| | SIB 2 Exhaust | OK | 32 degrees C / 89 degrees F |
| | SIB 2 TF | OK | 40 degrees C / 104 degrees F |
| | SIB 3 Exhaust | OK | 32 degrees C / 89 degrees F |
| | SIB 3 TF | OK | 40 degrees C / 104 degrees F |
| | SIB 4 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 4 TF | OK | 40 degrees C / 104 degrees F |
| | SIB 5 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 5 TF | OK | 39 degrees C / 102 degrees F |
| | SIB 6 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 6 TF | OK | 39 degrees C / 102 degrees F |
| | SIB 7 Exhaust | OK | 35 degrees C / 95 degrees F |

| | | |
|------------------------|----|------------------------------|
| SIB 7 TF | OK | 40 degrees C / 104 degrees F |
| SIB 8 Exhaust | OK | 32 degrees C / 89 degrees F |
| SIB 8 TF | OK | 40 degrees C / 104 degrees F |
| FPC 2 PMB CPU | OK | 67 degrees C / 152 degrees F |
| FPC 2 Exhaust | OK | 40 degrees C / 104 degrees F |
| FPC 2 Intake | OK | 33 degrees C / 91 degrees F |
| FPC 2 TL0 | OK | 69 degrees C / 156 degrees F |
| FPC 2 TQ0 | OK | 60 degrees C / 140 degrees F |
| FPC 2 TL1 | OK | 56 degrees C / 132 degrees F |
| FPC 2 TQ1 | OK | 45 degrees C / 113 degrees F |
| PIC Ambient | OK | 40 degrees C / 104 degrees F |
| FPC 6 PMB CPU | OK | 80 degrees C / 176 degrees F |
| FPC 6 Exhaust | OK | 53 degrees C / 127 degrees F |
| FPC 6 Intake | OK | 36 degrees C / 96 degrees F |
| FPC 6 TL0 | OK | 69 degrees C / 156 degrees F |
| FPC 6 TQ0 | OK | 65 degrees C / 149 degrees F |
| FPC 6 TL1 | OK | 52 degrees C / 125 degrees F |
| FPC 6 TQ1 | OK | 47 degrees C / 116 degrees F |
| PIC Ambient | OK | 46 degrees C / 114 degrees F |
| FPC 12 PMB CPU | OK | 42 degrees C / 107 degrees F |
| FPC 12 Intake | OK | 33 degrees C / 91 degrees F |
| FPC 12 Exhaust | OK | 41 degrees C / 105 degrees F |
| FPC 12 TL0 | OK | 48 degrees C / 118 degrees F |
| FPC 12 TQ0 | OK | 45 degrees C / 113 degrees F |
| FPC 12 TL1 | OK | 58 degrees C / 136 degrees F |
| FPC 12 TQ1 | OK | 50 degrees C / 122 degrees F |
| PIC Ambient | OK | 56 degrees C / 132 degrees F |
| PIC 100G_OTN_LH-12/0/0 | OK | 74 degrees C / 165 degrees F |
| PIC 100G_OTN_LH-12/0/1 | OK | 93 degrees C / 199 degrees F |

show chassis environment monitored (PTX5000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| | Routing Engine 0 CPU | OK | 71 degrees C / 159 degrees F |
| | Routing Engine 1 CPU | OK | 62 degrees C / 143 degrees F |
| | CB 0 Exhaust A | OK | 45 degrees C / 113 degrees F |
| | CB 0 Exhaust B | OK | 41 degrees C / 105 degrees F |
| | CB 1 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | CB 1 Exhaust B | OK | 36 degrees C / 96 degrees F |

show chassis environment monitored (MX2010 Router)

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

| Class | Item | Status | Measurement |
|-------|---------------------|--------|------------------------------|
| Temp | CB 0 IntakeA-Zone0 | OK | 37 degrees C / 98 degrees F |
| | CB 0 IntakeB-Zone1 | OK | 31 degrees C / 87 degrees F |
| | CB 0 IntakeC-Zone0 | OK | 39 degrees C / 102 degrees F |
| | CB 0 ExhaustA-Zone0 | OK | 36 degrees C / 96 degrees F |
| | CB 0 ExhaustB-Zone1 | OK | 32 degrees C / 89 degrees F |
| | CB 0 TCBC-Zone0 | OK | 34 degrees C / 93 degrees F |
| | CB 1 IntakeA-Zone0 | OK | 36 degrees C / 96 degrees F |
| | CB 1 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| | CB 1 IntakeC-Zone0 | OK | 38 degrees C / 100 degrees F |
| | CB 1 ExhaustA-Zone0 | OK | 36 degrees C / 96 degrees F |

| | | |
|----------------------|---------|------------------------------|
| CB 1 ExhaustB-Zone1 | OK | 30 degrees C / 86 degrees F |
| CB 1 TCBC-Zone0 | OK | 33 degrees C / 91 degrees F |
| SPMB 0 Intake | OK | 30 degrees C / 86 degrees F |
| SPMB 1 Intake | OK | 28 degrees C / 82 degrees F |
| Routing Engine 0 CPU | OK | 32 degrees C / 89 degrees F |
| Routing Engine 1 CPU | Present | |
| SFB 0 Intake-Zone0 | OK | 46 degrees C / 114 degrees F |
| SFB 0 Exhaust-Zone1 | OK | 38 degrees C / 100 degrees F |
| SFB 0 IntakeA-Zone0 | OK | 35 degrees C / 95 degrees F |
| SFB 0 IntakeB-Zone1 | OK | 31 degrees C / 87 degrees F |
| SFB 0 Exhaust-Zone0 | OK | 39 degrees C / 102 degrees F |
| SFB 0 SFB-XF2-Zone1 | OK | 44 degrees C / 111 degrees F |
| SFB 0 SFB-XF1-Zone0 | OK | 47 degrees C / 116 degrees F |
| SFB 0 SFB-XF0-Zone0 | OK | 56 degrees C / 132 degrees F |
| SFB 1 Intake-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 1 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 1 IntakeA-Zone0 | OK | 29 degrees C / 84 degrees F |
| SFB 1 IntakeB-Zone1 | OK | 29 degrees C / 84 degrees F |
| SFB 1 Exhaust-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 1 SFB-XF2-Zone1 | OK | 42 degrees C / 107 degrees F |
| SFB 1 SFB-XF1-Zone0 | OK | 40 degrees C / 104 degrees F |
| SFB 1 SFB-XF0-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 2 Intake-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 2 Exhaust-Zone1 | OK | 33 degrees C / 91 degrees F |
| SFB 2 IntakeA-Zone0 | OK | 28 degrees C / 82 degrees F |
| SFB 2 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 2 Exhaust-Zone0 | OK | 31 degrees C / 87 degrees F |
| SFB 2 SFB-XF2-Zone1 | OK | 41 degrees C / 105 degrees F |
| SFB 2 SFB-XF1-Zone0 | OK | 39 degrees C / 102 degrees F |
| SFB 2 SFB-XF0-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 3 Intake-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 3 Exhaust-Zone1 | OK | 33 degrees C / 91 degrees F |
| SFB 3 IntakeA-Zone0 | OK | 29 degrees C / 84 degrees F |
| SFB 3 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 3 Exhaust-Zone0 | OK | 31 degrees C / 87 degrees F |
| SFB 3 SFB-XF2-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 3 SFB-XF1-Zone0 | OK | 40 degrees C / 104 degrees F |
| SFB 3 SFB-XF0-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 4 Intake-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 4 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 4 IntakeA-Zone0 | OK | 29 degrees C / 84 degrees F |
| SFB 4 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 4 Exhaust-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 4 SFB-XF2-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 4 SFB-XF1-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 4 SFB-XF0-Zone0 | OK | 43 degrees C / 109 degrees F |
| SFB 5 Intake-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 5 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 5 IntakeA-Zone0 | OK | 30 degrees C / 86 degrees F |
| SFB 5 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 5 Exhaust-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 5 SFB-XF2-Zone1 | OK | 41 degrees C / 105 degrees F |
| SFB 5 SFB-XF1-Zone0 | OK | 41 degrees C / 105 degrees F |
| SFB 5 SFB-XF0-Zone0 | OK | 44 degrees C / 111 degrees F |
| SFB 6 Intake-Zone0 | OK | 35 degrees C / 95 degrees F |
| SFB 6 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 6 IntakeA-Zone0 | OK | 30 degrees C / 86 degrees F |
| SFB 6 IntakeB-Zone1 | OK | 29 degrees C / 84 degrees F |
| SFB 6 Exhaust-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 6 SFB-XF2-Zone1 | OK | 44 degrees C / 111 degrees F |

| | | |
|-----------------------|----|------------------------------|
| SFB 6 SFB-XF1-Zone0 | OK | 43 degrees C / 109 degrees F |
| SFB 6 SFB-XF0-Zone0 | OK | 46 degrees C / 114 degrees F |
| SFB 7 Intake-Zone0 | OK | 39 degrees C / 102 degrees F |
| SFB 7 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 7 IntakeA-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 7 IntakeB-Zone1 | OK | 29 degrees C / 84 degrees F |
| SFB 7 Exhaust-Zone0 | OK | 37 degrees C / 98 degrees F |
| SFB 7 SFB-XF2-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 7 SFB-XF1-Zone0 | OK | 47 degrees C / 116 degrees F |
| SFB 7 SFB-XF0-Zone0 | OK | 52 degrees C / 125 degrees F |
| FPC 0 Intake | OK | 36 degrees C / 96 degrees F |
| FPC 0 Exhaust A | OK | 42 degrees C / 107 degrees F |
| FPC 0 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 0 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 0 LU 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 0 LU 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 0 LU 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 0 MQ 0 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 0 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 0 MQ 1 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 1 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 0 MQ 2 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 2 Chip | OK | 38 degrees C / 100 degrees F |
| FPC 0 MQ 3 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 3 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 1 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 1 Exhaust A | OK | 46 degrees C / 114 degrees F |
| FPC 1 Exhaust B | OK | 54 degrees C / 129 degrees F |
| FPC 1 LU 0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 1 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 1 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 1 LU 2 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 LU 3 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 3 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 1 XM 0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 XM 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 1 XF 0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 XF 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 1 PLX Switch TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 PLX Switch Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 Intake | OK | 32 degrees C / 89 degrees F |
| FPC 8 Exhaust A | OK | 44 degrees C / 111 degrees F |
| FPC 8 Exhaust B | OK | 37 degrees C / 98 degrees F |
| FPC 8 LU 0 TCAM TSen | OK | 41 degrees C / 105 degrees F |
| FPC 8 LU 0 TCAM Chip | OK | 49 degrees C / 120 degrees F |
| FPC 8 LU 0 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 8 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 8 MQ 0 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 8 MQ 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 LU 1 TCAM TSen | OK | 39 degrees C / 102 degrees F |
| FPC 8 LU 1 TCAM Chip | OK | 42 degrees C / 107 degrees F |
| FPC 8 LU 1 TSen | OK | 39 degrees C / 102 degrees F |
| FPC 8 LU 1 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 8 MQ 1 TSen | OK | 39 degrees C / 102 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 8 MQ 1 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 9 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 9 Exhaust A | OK | 41 degrees C / 105 degrees F |
| FPC 9 Exhaust B | OK | 54 degrees C / 129 degrees F |
| FPC 9 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 9 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 9 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 9 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 9 MQ 0 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 0 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 9 MQ 1 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 1 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 9 MQ 2 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 2 Chip | OK | 38 degrees C / 100 degrees F |
| FPC 9 MQ 3 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 3 Chip | OK | 40 degrees C / 104 degrees F |
| ADC 0 Intake | OK | 35 degrees C / 95 degrees F |
| ADC 0 Exhaust | OK | 44 degrees C / 111 degrees F |
| ADC 0 ADC-XF1 | OK | 48 degrees C / 118 degrees F |
| ADC 0 ADC-XF0 | OK | 59 degrees C / 138 degrees F |
| ADC 1 Intake | OK | 34 degrees C / 93 degrees F |
| ADC 1 Exhaust | OK | 45 degrees C / 113 degrees F |
| ADC 1 ADC-XF1 | OK | 53 degrees C / 127 degrees F |
| ADC 1 ADC-XF0 | OK | 56 degrees C / 132 degrees F |
| ADC 8 Intake | OK | 35 degrees C / 95 degrees F |
| ADC 8 Exhaust | OK | 41 degrees C / 105 degrees F |
| ADC 8 ADC-XF1 | OK | 52 degrees C / 125 degrees F |
| ADC 8 ADC-XF0 | OK | 55 degrees C / 131 degrees F |
| ADC 9 Intake | OK | 33 degrees C / 91 degrees F |
| ADC 9 Exhaust | OK | 42 degrees C / 107 degrees F |
| ADC 9 ADC-XF1 | OK | 55 degrees C / 131 degrees F |
| ADC 9 ADC-XF0 | OK | 56 degrees C / 132 degrees F |

show chassis environment monitored (MX2020 Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | CB 0 IntakeA-Zone0 | OK | 44 degrees C / 111 degrees F |
| | CB 0 IntakeB-Zone1 | OK | 34 degrees C / 93 degrees F |
| | CB 0 IntakeC-Zone0 | OK | 46 degrees C / 114 degrees F |
| | CB 0 ExhaustA-Zone0 | OK | 44 degrees C / 111 degrees F |
| | CB 0 ExhaustB-Zone1 | OK | 36 degrees C / 96 degrees F |
| | CB 0 TCBC-Zone0 | OK | 39 degrees C / 102 degrees F |
| | CB 1 IntakeA-Zone0 | OK | 46 degrees C / 114 degrees F |
| | CB 1 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| | CB 1 IntakeC-Zone0 | OK | 47 degrees C / 116 degrees F |
| | CB 1 ExhaustA-Zone0 | OK | 45 degrees C / 113 degrees F |
| | CB 1 ExhaustB-Zone1 | OK | 42 degrees C / 107 degrees F |
| | CB 1 TCBC-Zone0 | OK | 46 degrees C / 114 degrees F |
| | SPMB 0 Intake | OK | 33 degrees C / 91 degrees F |
| | SPMB 1 Intake | OK | 43 degrees C / 109 degrees F |
| | Routing Engine 0 CPU | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 1 CPU | OK | 42 degrees C / 107 degrees F |
| | SFB 0 Intake-Zone0 | OK | 52 degrees C / 125 degrees F |
| | SFB 0 Exhaust-Zone1 | OK | 45 degrees C / 113 degrees F |

| | | |
|---------------------|----|------------------------------|
| SFB 0 IntakeA-Zone0 | OK | 47 degrees C / 116 degrees F |
| SFB 0 IntakeB-Zone1 | OK | 38 degrees C / 100 degrees F |
| SFB 0 Exhaust-Zone0 | OK | 49 degrees C / 120 degrees F |
| SFB 0 SFB-XF2-Zone1 | OK | 59 degrees C / 138 degrees F |
| SFB 0 SFB-XF1-Zone0 | OK | 65 degrees C / 149 degrees F |
| SFB 0 SFB-XF0-Zone0 | OK | 65 degrees C / 149 degrees F |
| SFB 1 Intake-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 1 Exhaust-Zone1 | OK | 45 degrees C / 113 degrees F |
| SFB 1 IntakeA-Zone0 | OK | 48 degrees C / 118 degrees F |
| SFB 1 IntakeB-Zone1 | OK | 39 degrees C / 102 degrees F |
| SFB 1 Exhaust-Zone0 | OK | 48 degrees C / 118 degrees F |
| SFB 1 SFB-XF2-Zone1 | OK | 60 degrees C / 140 degrees F |
| SFB 1 SFB-XF1-Zone0 | OK | 64 degrees C / 147 degrees F |
| SFB 1 SFB-XF0-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 2 Intake-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 2 Exhaust-Zone1 | OK | 46 degrees C / 114 degrees F |
| SFB 2 IntakeA-Zone0 | OK | 48 degrees C / 118 degrees F |
| SFB 2 IntakeB-Zone1 | OK | 39 degrees C / 102 degrees F |
| SFB 2 Exhaust-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 2 SFB-XF2-Zone1 | OK | 63 degrees C / 145 degrees F |
| SFB 2 SFB-XF1-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 2 SFB-XF0-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 3 Intake-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 3 Exhaust-Zone1 | OK | 46 degrees C / 114 degrees F |
| SFB 3 IntakeA-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 3 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |
| SFB 3 Exhaust-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 3 SFB-XF2-Zone1 | OK | 64 degrees C / 147 degrees F |
| SFB 3 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 3 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 4 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 4 Exhaust-Zone1 | OK | 48 degrees C / 118 degrees F |
| SFB 4 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 4 IntakeB-Zone1 | OK | 42 degrees C / 107 degrees F |
| SFB 4 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 4 SFB-XF2-Zone1 | OK | 63 degrees C / 145 degrees F |
| SFB 4 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 4 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 5 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 5 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 5 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 5 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 5 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 5 SFB-XF2-Zone1 | OK | 65 degrees C / 149 degrees F |
| SFB 5 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 5 SFB-XF0-Zone0 | OK | 71 degrees C / 159 degrees F |
| SFB 6 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 6 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 6 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 6 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 6 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 6 SFB-XF2-Zone1 | OK | 64 degrees C / 147 degrees F |
| SFB 6 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 6 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 7 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 7 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 7 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 7 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 7 Exhaust-Zone0 | OK | 52 degrees C / 125 degrees F |
| SFB 7 SFB-XF2-Zone1 | OK | 66 degrees C / 150 degrees F |

| | | |
|---------------------|----|------------------------------|
| SFB 7 SFB-XF1-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 7 SFB-XF0-Zone0 | OK | 70 degrees C / 158 degrees F |
| FPC 0 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 0 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 0 Exhaust B | OK | 60 degrees C / 140 degrees F |
| FPC 0 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 0 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 2 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 0 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 0 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 0 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 0 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 1 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 1 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 1 Exhaust B | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 0 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 1 LU 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 1 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 1 LU 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 1 LU 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 1 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 1 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 3 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 2 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 2 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 2 Exhaust B | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 2 LU 1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 1 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 2 LU 2 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 2 LU 3 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 2 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 2 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 2 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 3 Intake | OK | 41 degrees C / 105 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 3 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 3 Exhaust B | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 3 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 3 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 3 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 3 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 3 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 3 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 3 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 4 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 4 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 4 Exhaust B | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 4 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 4 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 4 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 4 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 4 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 4 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 5 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 5 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 5 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 5 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 5 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 5 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 5 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 5 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 5 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 5 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 5 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 6 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 6 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 6 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 0 TSen | OK | 58 degrees C / 136 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 6 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 6 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 6 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 6 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 6 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 6 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 0 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 6 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 6 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 7 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 7 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 7 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 7 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 7 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 7 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 7 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 8 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 8 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 8 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 8 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 8 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 1 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 8 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 8 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 8 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 8 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 8 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 8 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 9 Intake | OK | 43 degrees C / 109 degrees F |
| FPC 9 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 9 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 9 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 9 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 1 Chip | OK | 63 degrees C / 145 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 9 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 2 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 9 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 MQ 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 9 MQ 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 MQ 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 9 MQ 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 10 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 10 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 10 Exhaust B | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 0 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 0 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 1 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 10 LU 2 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 10 LU 3 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 10 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 10 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 10 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 11 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 11 Exhaust A | OK | 47 degrees C / 116 degrees F |
| FPC 11 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 11 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 11 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 11 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 11 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 11 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 11 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 11 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 12 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 12 Exhaust A | OK | 47 degrees C / 116 degrees F |
| FPC 12 Exhaust B | OK | 50 degrees C / 122 degrees F |
| FPC 12 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 12 LU 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 12 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 12 LU 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 12 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 12 LU 3 TSen | OK | 49 degrees C / 120 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 12 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 12 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 12 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 12 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 13 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 13 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 13 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 13 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 13 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 13 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 13 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 14 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 14 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 14 Exhaust B | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 14 LU 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 14 LU 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 14 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 14 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 15 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 15 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 15 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 15 LU 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 15 LU 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 15 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 1 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 15 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 2 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 15 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 16 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 16 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 16 Exhaust B | OK | 53 degrees C / 127 degrees F |
| FPC 16 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 16 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 1 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 16 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 16 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 16 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 16 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 16 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 17 Intake | OK | 45 degrees C / 113 degrees F |
| FPC 17 Exhaust A | OK | 52 degrees C / 125 degrees F |
| FPC 17 Exhaust B | OK | 55 degrees C / 131 degrees F |
| FPC 17 LU 0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 17 LU 1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 17 LU 2 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 3 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 3 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 17 MQ 0 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 1 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 1 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 17 MQ 2 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 17 MQ 3 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 18 Intake | OK | 46 degrees C / 114 degrees F |
| FPC 18 Exhaust A | OK | 53 degrees C / 127 degrees F |
| FPC 18 Exhaust B | OK | 57 degrees C / 134 degrees F |
| FPC 18 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 0 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 18 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 1 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 18 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 18 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 18 MQ 0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 18 MQ 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 18 MQ 1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 18 MQ 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 18 MQ 2 TSen | OK | 54 degrees C / 129 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 18 MQ 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 18 MQ 3 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 18 MQ 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 19 Intake | OK | 49 degrees C / 120 degrees F |
| FPC 19 Exhaust A | OK | 56 degrees C / 132 degrees F |
| FPC 19 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 0 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 19 LU 1 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 1 Chip | OK | 69 degrees C / 156 degrees F |
| FPC 19 LU 2 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 2 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 19 LU 3 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 3 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 19 MQ 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 19 MQ 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 19 MQ 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 2 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 19 MQ 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 3 Chip | OK | 60 degrees C / 140 degrees F |
| ADC 0 Intake | OK | 40 degrees C / 104 degrees F |
| ADC 0 Exhaust | OK | 50 degrees C / 122 degrees F |
| ADC 0 ADC-XF1 | OK | 58 degrees C / 136 degrees F |
| ADC 0 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 1 Intake | OK | 38 degrees C / 100 degrees F |
| ADC 1 Exhaust | OK | 48 degrees C / 118 degrees F |
| ADC 1 ADC-XF1 | OK | 59 degrees C / 138 degrees F |
| ADC 1 ADC-XF0 | OK | 61 degrees C / 141 degrees F |
| ADC 2 Intake | OK | 36 degrees C / 96 degrees F |
| ADC 2 Exhaust | OK | 50 degrees C / 122 degrees F |
| ADC 2 ADC-XF1 | OK | 53 degrees C / 127 degrees F |
| ADC 2 ADC-XF0 | OK | 59 degrees C / 138 degrees F |
| ADC 3 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 3 Exhaust | OK | 49 degrees C / 120 degrees F |
| ADC 3 ADC-XF1 | OK | 61 degrees C / 141 degrees F |
| ADC 3 ADC-XF0 | OK | 62 degrees C / 143 degrees F |
| ADC 4 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 4 Exhaust | OK | 49 degrees C / 120 degrees F |
| ADC 4 ADC-XF1 | OK | 60 degrees C / 140 degrees F |
| ADC 4 ADC-XF0 | OK | 61 degrees C / 141 degrees F |
| ADC 5 Intake | OK | 38 degrees C / 100 degrees F |
| ADC 5 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 5 ADC-XF1 | OK | 55 degrees C / 131 degrees F |
| ADC 5 ADC-XF0 | OK | 65 degrees C / 149 degrees F |
| ADC 6 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 6 Exhaust | OK | 51 degrees C / 123 degrees F |
| ADC 6 ADC-XF1 | OK | 58 degrees C / 136 degrees F |
| ADC 6 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 7 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 7 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 7 ADC-XF1 | OK | 61 degrees C / 141 degrees F |
| ADC 7 ADC-XF0 | OK | 68 degrees C / 154 degrees F |
| ADC 8 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 8 Exhaust | OK | 50 degrees C / 122 degrees F |
| ADC 8 ADC-XF1 | OK | 64 degrees C / 147 degrees F |
| ADC 8 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 9 Intake | OK | 41 degrees C / 105 degrees F |
| ADC 9 Exhaust | OK | 50 degrees C / 122 degrees F |

| | | |
|----------------|----|------------------------------|
| ADC 9 ADC-XF1 | OK | 60 degrees C / 140 degrees F |
| ADC 9 ADC-XF0 | OK | 62 degrees C / 143 degrees F |
| ADC 10 Intake | OK | 46 degrees C / 114 degrees F |
| ADC 10 Exhaust | OK | 53 degrees C / 127 degrees F |
| ADC 10 ADC-XF1 | OK | 66 degrees C / 150 degrees F |
| ADC 10 ADC-XF0 | OK | 65 degrees C / 149 degrees F |
| ADC 11 Intake | OK | 46 degrees C / 114 degrees F |
| ADC 11 Exhaust | OK | 53 degrees C / 127 degrees F |
| ADC 11 ADC-XF1 | OK | 63 degrees C / 145 degrees F |
| ADC 11 ADC-XF0 | OK | 64 degrees C / 147 degrees F |
| ADC 12 Intake | OK | 47 degrees C / 116 degrees F |
| ADC 12 Exhaust | OK | 53 degrees C / 127 degrees F |
| ADC 12 ADC-XF1 | OK | 65 degrees C / 149 degrees F |
| ADC 12 ADC-XF0 | OK | 65 degrees C / 149 degrees F |
| ADC 13 Intake | OK | 48 degrees C / 118 degrees F |
| ADC 13 Exhaust | OK | 55 degrees C / 131 degrees F |
| ADC 13 ADC-XF1 | OK | 65 degrees C / 149 degrees F |
| ADC 13 ADC-XF0 | OK | 67 degrees C / 152 degrees F |
| ADC 14 Intake | OK | 49 degrees C / 120 degrees F |
| ADC 14 Exhaust | OK | 57 degrees C / 134 degrees F |
| ADC 14 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| ADC 14 ADC-XF0 | OK | 72 degrees C / 161 degrees F |
| ADC 15 Intake | OK | 50 degrees C / 122 degrees F |
| ADC 15 Exhaust | OK | 56 degrees C / 132 degrees F |
| ADC 15 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| ADC 15 ADC-XF0 | OK | 68 degrees C / 154 degrees F |
| ADC 16 Intake | OK | 51 degrees C / 123 degrees F |
| ADC 16 Exhaust | OK | 57 degrees C / 134 degrees F |
| ADC 16 ADC-XF1 | OK | 67 degrees C / 152 degrees F |
| ADC 16 ADC-XF0 | OK | 68 degrees C / 154 degrees F |
| ADC 17 Intake | OK | 51 degrees C / 123 degrees F |
| ADC 17 Exhaust | OK | 57 degrees C / 134 degrees F |
| ADC 17 ADC-XF1 | OK | 69 degrees C / 156 degrees F |
| ADC 17 ADC-XF0 | OK | 69 degrees C / 156 degrees F |
| ADC 18 Intake | OK | 52 degrees C / 125 degrees F |
| ADC 18 Exhaust | OK | 58 degrees C / 136 degrees F |
| ADC 18 ADC-XF1 | OK | 67 degrees C / 152 degrees F |
| ADC 18 ADC-XF0 | OK | 72 degrees C / 161 degrees F |
| ADC 19 Intake | OK | 50 degrees C / 122 degrees F |
| ADC 19 Exhaust | OK | 58 degrees C / 136 degrees F |
| ADC 19 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| ADC 19 ADC-XF0 | OK | 71 degrees C / 159 degrees F |

show chassis environment monitored (MX2008 Router)

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

| Class | Item | Status | Measurement |
|-------|---------------|--------|------------------------------|
| Temp | CB 0 Inlet1 | OK | 37 degrees C / 98 degrees F |
| | CB 0 Inlet2 | OK | 46 degrees C / 114 degrees F |
| | CB 0 Inlet3 | OK | 44 degrees C / 111 degrees F |
| | CB 0 Inlet4 | OK | 42 degrees C / 107 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 | 35 degrees C / 95 degrees F |
| Routing Engine 0 CPU | OK | 76 degrees C / 168 degrees F |
| Routing Engine 1 CPU | OK | 47 degrees C / 116 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 | 27 degrees C / 80 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 | 34 degrees C / 93 degrees F |
| SFB 6 Exhaust1 | OK | 32 degrees C / 89 degrees F |
| SFB 6 Inlet1 | OK | 31 degrees C / 87 degrees F |
| SFB 6 Exhaust2 | OK | 34 degrees C / 93 degrees F |
| SFB 6 SFB2-PF-local | OK | 34 degrees C / 93 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 | 43 degrees C / 109 degrees F |
| FPC 0 Exhaust B | OK | 42 degrees C / 107 degrees F |
| FPC 0 XL 0 TSen | OK | 39 degrees C / 102 degrees F |
| FPC 0 XL 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 XL 0 XR2 0 TSen | OK | 39 degrees C / 102 degrees F |

| | | |
|--------------------------|----|------------------------------|
| FPC 0 XL 0 XR2 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 0 XL 0 XR2 1 TSen | OK | 39 degrees C / 102 degrees F |
| FPC 0 XL 0 XR2 1 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 0 XL 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 Chip | OK | 43 degrees C / 109 degrees F |
| FPC 0 XL 1 XR2 0 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 0 XL 1 XR2 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 0 XM 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 0 Chip | OK | 50 degrees C / 122 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 | 55 degrees C / 131 degrees F |
| FPC 1 EA0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA0_XR0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA0_XR0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA0_XR1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA0_XR1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA1_XR0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA1_XR0 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA1_XR1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA1_XR1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 1 PEX TSen | OK | 55 degrees C / 131 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 | 46 degrees C / 114 degrees F |
| FPC 1 EA2_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2_XR1 Chip | OK | 43 degrees C / 109 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 | 51 degrees C / 123 degrees F |
| FPC 1 EA3_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3_XR1 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 1 EA0_HMC0 Logic die | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA0_HMC0 DRAM botm | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA0_HMC1 Logic die | OK | 62 degrees C / 143 degrees F |
| FPC 1 EA0_HMC1 DRAM botm | OK | 59 degrees C / 138 degrees F |
| FPC 1 EA0_HMC2 Logic die | OK | 59 degrees C / 138 degrees F |
| FPC 1 EA0_HMC2 DRAM botm | OK | 56 degrees C / 132 degrees F |
| FPC 1 EA1_HMC0 Logic die | OK | 66 degrees C / 150 degrees F |
| FPC 1 EA1_HMC0 DRAM botm | OK | 63 degrees C / 145 degrees F |
| FPC 1 EA1_HMC1 Logic die | OK | 65 degrees C / 149 degrees F |
| FPC 1 EA1_HMC1 DRAM botm | OK | 62 degrees C / 143 degrees F |
| FPC 1 EA1_HMC2 Logic die | OK | 63 degrees C / 145 degrees F |
| FPC 1 EA1_HMC2 DRAM botm | OK | 60 degrees C / 140 degrees F |

| | | |
|--------------------------|----|------------------------------|
| FPC 1 EA2_HMC0 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA2_HMC0 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA2_HMC1 Logic die | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA2_HMC1 DRAM botm | OK | 52 degrees C / 125 degrees F |
| FPC 1 EA2_HMC2 Logic die | OK | 52 degrees C / 125 degrees F |
| FPC 1 EA2_HMC2 DRAM botm | OK | 49 degrees C / 120 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 | 52 degrees C / 125 degrees F |
| FPC 1 EA3_HMC2 DRAM botm | OK | 49 degrees C / 120 degrees F |
| FPC 7 Intake | OK | 31 degrees C / 87 degrees F |
| FPC 7 Exhaust A | OK | 46 degrees C / 114 degrees F |
| FPC 7 Exhaust B | OK | 38 degrees C / 100 degrees F |
| FPC 7 QX 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 QX 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 7 LU 0 TCAM TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 0 TCAM Chip | OK | 52 degrees C / 125 degrees F |
| FPC 7 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 MQ 0 Chip | OK | 55 degrees C / 131 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 |

show chassis environment monitored (MX10008 Router)

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

| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| | Routing Engine 0 CPU | | |
| | Routing Engine 1 CPU | | |
| 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 | 30 degrees C / 86 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 | 67 degrees C / 152 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 | 61 degrees C / 141 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| FPC 0 EA1_XR0 Temp Sensor | OK | 65 degrees C / 149 degrees F |
| FPC 0 EA1_XR1 Temp Sensor | OK | 63 degrees C / 145 degrees F |
| FPC 0 EA2 Temp Sensor | OK | 69 degrees C / 156 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 | 64 degrees C / 147 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 | 71 degrees C / 159 degrees F |
| FPC 0 EA4_XR0 Temp Sensor | OK | 72 degrees C / 161 degrees F |
| FPC 0 EA4_XR1 Temp Sensor | OK | 71 degrees C / 159 degrees F |
| FPC 0 EA5 Temp Sensor | OK | 58 degrees C / 136 degrees F |
| FPC 0 EA5_XR0 Temp Sensor | OK | 62 degrees C / 143 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 | 76 degrees C / 168 degrees F |
| FPC 0 EA0_HMC1 DRAM botm | OK | 73 degrees C / 163 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 | 73 degrees C / 163 degrees F |
| FPC 0 EA1_HMC0 DRAM botm | OK | 70 degrees C / 158 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 | 81 degrees C / 177 degrees F |
| FPC 0 EA2_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| FPC 0 EA2_HMC2 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 0 EA2_HMC2 DRAM botm | OK | 77 degrees C / 170 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 | 69 degrees C / 156 degrees F |
| FPC 0 EA5_HMC0 DRAM botm | OK | 66 degrees C / 150 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 | 68 degrees C / 154 degrees F |
| FPC 0 EA5_HMC2 DRAM botm | OK | 65 degrees C / 149 degrees F |
| FPC 2 Intake-A Temp Sensor | OK | 33 degrees C / 91 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 | 79 degrees C / 174 degrees F |
| FPC 2 EA1 Temp Sensor | OK | 64 degrees C / 147 degrees F |
| FPC 2 EA1_XR0 Temp Sensor | OK | 68 degrees C / 154 degrees F |
| FPC 2 EA1_XR1 Temp Sensor | OK | 66 degrees C / 150 degrees F |
| FPC 2 EA2 Temp Sensor | OK | 75 degrees C / 167 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| FPC 2 EA2_XR0 Temp Sensor | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA2_XR1 Temp Sensor | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3 Temp Sensor | OK | 67 degrees C / 152 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 | 65 degrees C / 149 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 | 77 degrees C / 170 degrees F |
| FPC 2 EA1_HMC1 DRAM botm | OK | 74 degrees C / 165 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 | 87 degrees C / 188 degrees F |
| FPC 2 EA2_HMC0 DRAM botm | OK | 84 degrees C / 183 degrees F |
| FPC 2 EA2_HMC1 Logic die | OK | 88 degrees C / 190 degrees F |
| FPC 2 EA2_HMC1 DRAM botm | OK | 85 degrees C / 185 degrees F |
| FPC 2 EA2_HMC2 Logic die | OK | 88 degrees C / 190 degrees F |
| FPC 2 EA2_HMC2 DRAM botm | OK | 85 degrees C / 185 degrees F |
| FPC 2 EA3_HMC0 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC0 DRAM botm | OK | 78 degrees C / 172 degrees F |
| FPC 2 EA3_HMC1 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| FPC 2 EA3_HMC2 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC2 DRAM botm | OK | 78 degrees C / 172 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 | 90 degrees C / 194 degrees F |
| FPC 2 EA4_HMC1 DRAM botm | OK | 87 degrees C / 188 degrees F |
| FPC 2 EA4_HMC2 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA4_HMC2 DRAM botm | OK | 78 degrees C / 172 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 | 73 degrees C / 163 degrees F |
| FPC 2 EA5_HMC2 DRAM botm | OK | 70 degrees C / 158 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 | 45 degrees C / 113 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 | 60 degrees C / 140 degrees F |
| FPC 3 EA1_XR1 Temp Sensor | OK | 59 degrees C / 138 degrees F |
| FPC 3 EA2 Temp Sensor | OK | 62 degrees C / 143 degrees F |
| FPC 3 EA2_XR0 Temp Sensor | OK | 67 degrees C / 152 degrees F |
| FPC 3 EA2_XR1 Temp Sensor | OK | 67 degrees C / 152 degrees F |
| FPC 3 EA3 Temp Sensor | OK | 55 degrees C / 131 degrees F |

| | | | |
|-------|---------------------------|--------|------------------------------|
| | FPC 3 EA3_XR0 Temp Sensor | OK | 57 degrees C / 134 degrees F |
| | FPC 3 EA3_XR1 Temp Sensor | OK | 57 degrees C / 134 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 | 59 degrees C / 138 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 | 70 degrees C / 158 degrees F |
| | FPC 3 EA0_HMC2 DRAM botm | OK | 67 degrees C / 152 degrees F |
| | FPC 3 EA1_HMC0 Logic die | OK | 68 degrees C / 154 degrees F |
| | FPC 3 EA1_HMC0 DRAM botm | OK | 65 degrees C / 149 degrees F |
| | FPC 3 EA1_HMC1 Logic die | OK | 65 degrees C / 149 degrees F |
| | FPC 3 EA1_HMC1 DRAM botm | OK | 62 degrees C / 143 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 | 70 degrees C / 158 degrees F |
| | FPC 3 EA3_HMC0 DRAM botm | OK | 67 degrees C / 152 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 | 82 degrees C / 179 degrees F |
| | FPC 3 EA4_HMC0 DRAM botm | OK | 79 degrees C / 174 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 | 69 degrees C / 156 degrees F |
| | FPC 3 EA5_HMC0 DRAM botm | OK | 66 degrees C / 150 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 | 33 degrees C / 91 degrees F |
| SFB 0 Intake-B | OK | 22 degrees C / 71 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 | 40 degrees C / 104 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 | 21 degrees C / 69 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 | 21 degrees C / 69 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 | 37 degrees C / 98 degrees F |
| SFB 3 Intake-B | OK | 21 degrees C / 69 degrees F |
| SFB 3 Exhaust-A | OK | 26 degrees C / 78 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 | 30 degrees C / 86 degrees F |
| SFB 4 Intake-A | OK | 31 degrees C / 87 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 | 32 degrees C / 89 degrees F |
| SFB 4 PF0 | OK | 41 degrees C / 105 degrees F |
| SFB 4 PF1 | OK | 30 degrees C / 86 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 | 26 degrees C / 78 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 mcs

| | |
|---------------------------------|---|
| Syntax | <code>show chassis environment mcs</code> <code><slot></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers only) Display environmental information about the Miscellaneous Control Subsystems (MCSs). |
| Options | <p>none—Display environmental information about both MCSs.</p> <p>slot —(Optional) Display environmental information about an individual MCS. Replace slot with 0 or 1</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> request chassis mcs on page 506 |
| List of Sample Output | <p>show chassis environment mcs (M40e Router) on page 828</p> <p>show chassis environment mcs (M160 Router) on page 828</p> |
| Output Fields | Table 46 on page 826 lists the output fields for the show chassis environment mcs command. Output fields are listed in the approximate order in which they appear. |

Table 46: show chassis environment mcs Output Fields

| Field Name | Field Description |
|---------------------|--|
| State | <p>Status of the MCS:</p> <ul style="list-style-type: none"> Present—MCS is detected by the chassis daemon but is either not supported by the current version of Junos or MCS is coming up but not yet online. Online—MCS is online and running. Offline—MCS is powered down. Empty—No MCS is present. Master—MCS is online, operating as master. Standby—MCS is online, operating as standby. |
| Temperature | Temperature of the air flowing past the MCS. |
| Power | Information about the voltage supplied to the MCS. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| BUS Revision | Revision level of the generic bus device. |

Table 46: show chassis environment mcs Output Fields (continued)

| Field Name | Field Description |
|----------------------|--|
| FPGA Revision | Revision level of the field-programmable gate array (FPGA) revision. |

Sample Output

show chassis environment mcs (M40e Router)

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

```
MCS 0 status:
State                Online Master
Temperature          45 degrees C / 113 degrees F
Power:
  3.3 V              3283 mV
  5.0 V              5013 mV
  12.0 V             11721 mV
  5.0 V bias         5025 mV
  8.0 V bias         8229 mV
BUS Revision         12
FPGA Revision        13
MCS 1 status:
State                Online Standby
Temperature          42 degrees C / 107 degrees F
Power:
  3.3 V              3296 mV
  5.0 V              4971 mV
  12.0 V             11814 mV
  5.0 V bias         4976 mV
  8.0 V bias         8241 mV
BUS Revision         12
FPGA Revision        13
```

show chassis environment mcs (M160 Router)

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

```
MCS 0 status:
State                Online Master
Temperature          50 degrees C / 122 degrees F
Power:
  3.3 V              3306 mV
  5.0 V              4993 mV
  12.0 V             11799 mV
  5.0 V bias         4993 mV
  8.0 V bias         8288 mV
BUS Revision         12
FPGA Revision        13
```


show chassis environment monitored

| | |
|--|---|
| List of Syntax | Syntax on page 829 Syntax (MX2020, MX2010, and MX2008 Routers) on page 829 |
| Syntax | show chassis environment monitored |
| Syntax (MX2020, MX2010, and MX2008 Routers) | show chassis environment monitored <all-members> <local> <member <i>member-id</i> > |
| Release Information | <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers. Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms. Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p> |
| Description | <p>(PTX Series Packet Transport Routers, MX2010, MX2020, MX2008, and MX10008 routers) Display status information for monitored temperatures.</p> <p>On the PTX Series Packet Transport Routers, and on MX2010, MX2020, MX2008, and MX10008 routers, you can configure which temperatures are monitored for computing temperature alarms. Use this command to display only the temperatures that are monitored. Temperatures that are not included in the temperature alarm computations are not displayed.</p> |
| Options | <p>none—Display status information for monitored temperatures.</p> <p>all-members—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in all members of the Virtual Chassis configuration.</p> <p>local—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the local member of the Virtual Chassis.</p> <p>member <i>member-id</i>—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> |
| Required Privilege Level | view |

- Related Documentation**
- [show chassis environment on page 607](#)
 - *Chassis-Level Feature Guide*

- List of Sample Output**
- [show chassis environment monitored \(PTX3000 Packet Transport Router\) on page 830](#)
 - [show chassis environment monitored \(PTX5000 Packet Transport Router\) on page 831](#)
 - [show chassis environment monitored \(MX2010 Router\) on page 831](#)
 - [show chassis environment monitored \(MX2020 Router\) on page 834](#)
 - [show chassis environment monitored \(MX2008 Router\) on page 843](#)
 - [show chassis environment monitored \(MX10008 Router\) on page 846](#)

- Output Fields** [Table 45 on page 805](#) lists the output fields for the **show chassis environment monitored** command. Output fields are listed in the approximate order in which they appear.

Table 47: show chassis environment monitored Output Fields

| Field Name | Field Description |
|--------------------|---|
| Item | Chassis component: <ul style="list-style-type: none"> • (PTX Series Packet Transport Routers, and MX2010, MX2020, and Mx2008 routers)—Information about the chassis, Routing Engines, Control Boards (CBs), Switch Interface Boards (SIBs), PICs, and Flexible PIC Concentrators (FPCs). |
| Status | Status of the specified item: OK , Alarm , or Present . |
| Measurement | Temperature of the air flowing past the specified chassis component. Temperature is displayed in degrees Celsius (C) and degrees Fahrenheit (F). |

Sample Output

show chassis environment monitored (PTX3000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|---------|------------------------------|
| | Routing Engine 0 CPU | OK | 54 degrees C / 129 degrees F |
| | Routing Engine 1 CPU | Present | |
| | CB 0 Exhaust A | OK | 25 degrees C / 77 degrees F |
| | CB 1 Exhaust A | OK | 22 degrees C / 71 degrees F |
| | SIB 0 Exhaust | OK | 34 degrees C / 93 degrees F |
| | SIB 0 TF | OK | 42 degrees C / 107 degrees F |
| | SIB 1 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 1 TF | OK | 41 degrees C / 105 degrees F |
| | SIB 2 Exhaust | OK | 32 degrees C / 89 degrees F |
| | SIB 2 TF | OK | 40 degrees C / 104 degrees F |
| | SIB 3 Exhaust | OK | 32 degrees C / 89 degrees F |
| | SIB 3 TF | OK | 40 degrees C / 104 degrees F |
| | SIB 4 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 4 TF | OK | 40 degrees C / 104 degrees F |
| | SIB 5 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 5 TF | OK | 39 degrees C / 102 degrees F |
| | SIB 6 Exhaust | OK | 31 degrees C / 87 degrees F |
| | SIB 6 TF | OK | 39 degrees C / 102 degrees F |
| | SIB 7 Exhaust | OK | 35 degrees C / 95 degrees F |

| | | |
|------------------------|----|------------------------------|
| SIB 7 TF | OK | 40 degrees C / 104 degrees F |
| SIB 8 Exhaust | OK | 32 degrees C / 89 degrees F |
| SIB 8 TF | OK | 40 degrees C / 104 degrees F |
| FPC 2 PMB CPU | OK | 67 degrees C / 152 degrees F |
| FPC 2 Exhaust | OK | 40 degrees C / 104 degrees F |
| FPC 2 Intake | OK | 33 degrees C / 91 degrees F |
| FPC 2 TL0 | OK | 69 degrees C / 156 degrees F |
| FPC 2 TQ0 | OK | 60 degrees C / 140 degrees F |
| FPC 2 TL1 | OK | 56 degrees C / 132 degrees F |
| FPC 2 TQ1 | OK | 45 degrees C / 113 degrees F |
| PIC Ambient | OK | 40 degrees C / 104 degrees F |
| FPC 6 PMB CPU | OK | 80 degrees C / 176 degrees F |
| FPC 6 Exhaust | OK | 53 degrees C / 127 degrees F |
| FPC 6 Intake | OK | 36 degrees C / 96 degrees F |
| FPC 6 TL0 | OK | 69 degrees C / 156 degrees F |
| FPC 6 TQ0 | OK | 65 degrees C / 149 degrees F |
| FPC 6 TL1 | OK | 52 degrees C / 125 degrees F |
| FPC 6 TQ1 | OK | 47 degrees C / 116 degrees F |
| PIC Ambient | OK | 46 degrees C / 114 degrees F |
| FPC 12 PMB CPU | OK | 42 degrees C / 107 degrees F |
| FPC 12 Intake | OK | 33 degrees C / 91 degrees F |
| FPC 12 Exhaust | OK | 41 degrees C / 105 degrees F |
| FPC 12 TL0 | OK | 48 degrees C / 118 degrees F |
| FPC 12 TQ0 | OK | 45 degrees C / 113 degrees F |
| FPC 12 TL1 | OK | 58 degrees C / 136 degrees F |
| FPC 12 TQ1 | OK | 50 degrees C / 122 degrees F |
| PIC Ambient | OK | 56 degrees C / 132 degrees F |
| PIC 100G_OTN_LH-12/0/0 | OK | 74 degrees C / 165 degrees F |
| PIC 100G_OTN_LH-12/0/1 | OK | 93 degrees C / 199 degrees F |

show chassis environment monitored (PTX5000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| | Routing Engine 0 CPU | OK | 71 degrees C / 159 degrees F |
| | Routing Engine 1 CPU | OK | 62 degrees C / 143 degrees F |
| | CB 0 Exhaust A | OK | 45 degrees C / 113 degrees F |
| | CB 0 Exhaust B | OK | 41 degrees C / 105 degrees F |
| | CB 1 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | CB 1 Exhaust B | OK | 36 degrees C / 96 degrees F |

show chassis environment monitored (MX2010 Router)

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

| Class | Item | Status | Measurement |
|-------|---------------------|--------|------------------------------|
| Temp | CB 0 IntakeA-Zone0 | OK | 37 degrees C / 98 degrees F |
| | CB 0 IntakeB-Zone1 | OK | 31 degrees C / 87 degrees F |
| | CB 0 IntakeC-Zone0 | OK | 39 degrees C / 102 degrees F |
| | CB 0 ExhaustA-Zone0 | OK | 36 degrees C / 96 degrees F |
| | CB 0 ExhaustB-Zone1 | OK | 32 degrees C / 89 degrees F |
| | CB 0 TCBC-Zone0 | OK | 34 degrees C / 93 degrees F |
| | CB 1 IntakeA-Zone0 | OK | 36 degrees C / 96 degrees F |
| | CB 1 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| | CB 1 IntakeC-Zone0 | OK | 38 degrees C / 100 degrees F |
| | CB 1 ExhaustA-Zone0 | OK | 36 degrees C / 96 degrees F |

| | | |
|----------------------|---------|------------------------------|
| CB 1 ExhaustB-Zone1 | OK | 30 degrees C / 86 degrees F |
| CB 1 TCBC-Zone0 | OK | 33 degrees C / 91 degrees F |
| SPMB 0 Intake | OK | 30 degrees C / 86 degrees F |
| SPMB 1 Intake | OK | 28 degrees C / 82 degrees F |
| Routing Engine 0 CPU | OK | 32 degrees C / 89 degrees F |
| Routing Engine 1 CPU | Present | |
| SFB 0 Intake-Zone0 | OK | 46 degrees C / 114 degrees F |
| SFB 0 Exhaust-Zone1 | OK | 38 degrees C / 100 degrees F |
| SFB 0 IntakeA-Zone0 | OK | 35 degrees C / 95 degrees F |
| SFB 0 IntakeB-Zone1 | OK | 31 degrees C / 87 degrees F |
| SFB 0 Exhaust-Zone0 | OK | 39 degrees C / 102 degrees F |
| SFB 0 SFB-XF2-Zone1 | OK | 44 degrees C / 111 degrees F |
| SFB 0 SFB-XF1-Zone0 | OK | 47 degrees C / 116 degrees F |
| SFB 0 SFB-XF0-Zone0 | OK | 56 degrees C / 132 degrees F |
| SFB 1 Intake-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 1 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 1 IntakeA-Zone0 | OK | 29 degrees C / 84 degrees F |
| SFB 1 IntakeB-Zone1 | OK | 29 degrees C / 84 degrees F |
| SFB 1 Exhaust-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 1 SFB-XF2-Zone1 | OK | 42 degrees C / 107 degrees F |
| SFB 1 SFB-XF1-Zone0 | OK | 40 degrees C / 104 degrees F |
| SFB 1 SFB-XF0-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 2 Intake-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 2 Exhaust-Zone1 | OK | 33 degrees C / 91 degrees F |
| SFB 2 IntakeA-Zone0 | OK | 28 degrees C / 82 degrees F |
| SFB 2 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 2 Exhaust-Zone0 | OK | 31 degrees C / 87 degrees F |
| SFB 2 SFB-XF2-Zone1 | OK | 41 degrees C / 105 degrees F |
| SFB 2 SFB-XF1-Zone0 | OK | 39 degrees C / 102 degrees F |
| SFB 2 SFB-XF0-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 3 Intake-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 3 Exhaust-Zone1 | OK | 33 degrees C / 91 degrees F |
| SFB 3 IntakeA-Zone0 | OK | 29 degrees C / 84 degrees F |
| SFB 3 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 3 Exhaust-Zone0 | OK | 31 degrees C / 87 degrees F |
| SFB 3 SFB-XF2-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 3 SFB-XF1-Zone0 | OK | 40 degrees C / 104 degrees F |
| SFB 3 SFB-XF0-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 4 Intake-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 4 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 4 IntakeA-Zone0 | OK | 29 degrees C / 84 degrees F |
| SFB 4 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 4 Exhaust-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 4 SFB-XF2-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 4 SFB-XF1-Zone0 | OK | 42 degrees C / 107 degrees F |
| SFB 4 SFB-XF0-Zone0 | OK | 43 degrees C / 109 degrees F |
| SFB 5 Intake-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 5 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 5 IntakeA-Zone0 | OK | 30 degrees C / 86 degrees F |
| SFB 5 IntakeB-Zone1 | OK | 28 degrees C / 82 degrees F |
| SFB 5 Exhaust-Zone0 | OK | 32 degrees C / 89 degrees F |
| SFB 5 SFB-XF2-Zone1 | OK | 41 degrees C / 105 degrees F |
| SFB 5 SFB-XF1-Zone0 | OK | 41 degrees C / 105 degrees F |
| SFB 5 SFB-XF0-Zone0 | OK | 44 degrees C / 111 degrees F |
| SFB 6 Intake-Zone0 | OK | 35 degrees C / 95 degrees F |
| SFB 6 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 6 IntakeA-Zone0 | OK | 30 degrees C / 86 degrees F |
| SFB 6 IntakeB-Zone1 | OK | 29 degrees C / 84 degrees F |
| SFB 6 Exhaust-Zone0 | OK | 33 degrees C / 91 degrees F |
| SFB 6 SFB-XF2-Zone1 | OK | 44 degrees C / 111 degrees F |

| | | |
|-----------------------|----|------------------------------|
| SFB 6 SFB-XF1-Zone0 | OK | 43 degrees C / 109 degrees F |
| SFB 6 SFB-XF0-Zone0 | OK | 46 degrees C / 114 degrees F |
| SFB 7 Intake-Zone0 | OK | 39 degrees C / 102 degrees F |
| SFB 7 Exhaust-Zone1 | OK | 34 degrees C / 93 degrees F |
| SFB 7 IntakeA-Zone0 | OK | 34 degrees C / 93 degrees F |
| SFB 7 IntakeB-Zone1 | OK | 29 degrees C / 84 degrees F |
| SFB 7 Exhaust-Zone0 | OK | 37 degrees C / 98 degrees F |
| SFB 7 SFB-XF2-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 7 SFB-XF1-Zone0 | OK | 47 degrees C / 116 degrees F |
| SFB 7 SFB-XF0-Zone0 | OK | 52 degrees C / 125 degrees F |
| FPC 0 Intake | OK | 36 degrees C / 96 degrees F |
| FPC 0 Exhaust A | OK | 42 degrees C / 107 degrees F |
| FPC 0 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 0 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 0 LU 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 0 LU 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 0 LU 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 LU 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 0 MQ 0 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 0 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 0 MQ 1 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 1 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 0 MQ 2 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 2 Chip | OK | 38 degrees C / 100 degrees F |
| FPC 0 MQ 3 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 0 MQ 3 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 1 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 1 Exhaust A | OK | 46 degrees C / 114 degrees F |
| FPC 1 Exhaust B | OK | 54 degrees C / 129 degrees F |
| FPC 1 LU 0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 1 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 1 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 1 LU 2 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 LU 3 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 LU 3 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 1 XM 0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 XM 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 1 XF 0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 XF 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 1 PLX Switch TSen | OK | 45 degrees C / 113 degrees F |
| FPC 1 PLX Switch Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 Intake | OK | 32 degrees C / 89 degrees F |
| FPC 8 Exhaust A | OK | 44 degrees C / 111 degrees F |
| FPC 8 Exhaust B | OK | 37 degrees C / 98 degrees F |
| FPC 8 LU 0 TCAM TSen | OK | 41 degrees C / 105 degrees F |
| FPC 8 LU 0 TCAM Chip | OK | 49 degrees C / 120 degrees F |
| FPC 8 LU 0 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 8 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 8 MQ 0 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 8 MQ 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 LU 1 TCAM TSen | OK | 39 degrees C / 102 degrees F |
| FPC 8 LU 1 TCAM Chip | OK | 42 degrees C / 107 degrees F |
| FPC 8 LU 1 TSen | OK | 39 degrees C / 102 degrees F |
| FPC 8 LU 1 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 8 MQ 1 TSen | OK | 39 degrees C / 102 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 8 MQ 1 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 9 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 9 Exhaust A | OK | 41 degrees C / 105 degrees F |
| FPC 9 Exhaust B | OK | 54 degrees C / 129 degrees F |
| FPC 9 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 9 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 9 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 9 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 LU 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 9 MQ 0 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 0 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 9 MQ 1 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 1 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 9 MQ 2 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 2 Chip | OK | 38 degrees C / 100 degrees F |
| FPC 9 MQ 3 TSen | OK | 40 degrees C / 104 degrees F |
| FPC 9 MQ 3 Chip | OK | 40 degrees C / 104 degrees F |
| ADC 0 Intake | OK | 35 degrees C / 95 degrees F |
| ADC 0 Exhaust | OK | 44 degrees C / 111 degrees F |
| ADC 0 ADC-XF1 | OK | 48 degrees C / 118 degrees F |
| ADC 0 ADC-XF0 | OK | 59 degrees C / 138 degrees F |
| ADC 1 Intake | OK | 34 degrees C / 93 degrees F |
| ADC 1 Exhaust | OK | 45 degrees C / 113 degrees F |
| ADC 1 ADC-XF1 | OK | 53 degrees C / 127 degrees F |
| ADC 1 ADC-XF0 | OK | 56 degrees C / 132 degrees F |
| ADC 8 Intake | OK | 35 degrees C / 95 degrees F |
| ADC 8 Exhaust | OK | 41 degrees C / 105 degrees F |
| ADC 8 ADC-XF1 | OK | 52 degrees C / 125 degrees F |
| ADC 8 ADC-XF0 | OK | 55 degrees C / 131 degrees F |
| ADC 9 Intake | OK | 33 degrees C / 91 degrees F |
| ADC 9 Exhaust | OK | 42 degrees C / 107 degrees F |
| ADC 9 ADC-XF1 | OK | 55 degrees C / 131 degrees F |
| ADC 9 ADC-XF0 | OK | 56 degrees C / 132 degrees F |

show chassis environment monitored (MX2020 Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | CB 0 IntakeA-Zone0 | OK | 44 degrees C / 111 degrees F |
| | CB 0 IntakeB-Zone1 | OK | 34 degrees C / 93 degrees F |
| | CB 0 IntakeC-Zone0 | OK | 46 degrees C / 114 degrees F |
| | CB 0 ExhaustA-Zone0 | OK | 44 degrees C / 111 degrees F |
| | CB 0 ExhaustB-Zone1 | OK | 36 degrees C / 96 degrees F |
| | CB 0 TCBC-Zone0 | OK | 39 degrees C / 102 degrees F |
| | CB 1 IntakeA-Zone0 | OK | 46 degrees C / 114 degrees F |
| | CB 1 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| | CB 1 IntakeC-Zone0 | OK | 47 degrees C / 116 degrees F |
| | CB 1 ExhaustA-Zone0 | OK | 45 degrees C / 113 degrees F |
| | CB 1 ExhaustB-Zone1 | OK | 42 degrees C / 107 degrees F |
| | CB 1 TCBC-Zone0 | OK | 46 degrees C / 114 degrees F |
| | SPMB 0 Intake | OK | 33 degrees C / 91 degrees F |
| | SPMB 1 Intake | OK | 43 degrees C / 109 degrees F |
| | Routing Engine 0 CPU | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 1 CPU | OK | 42 degrees C / 107 degrees F |
| | SFB 0 Intake-Zone0 | OK | 52 degrees C / 125 degrees F |
| | SFB 0 Exhaust-Zone1 | OK | 45 degrees C / 113 degrees F |

| | | |
|---------------------|----|------------------------------|
| SFB 0 IntakeA-Zone0 | OK | 47 degrees C / 116 degrees F |
| SFB 0 IntakeB-Zone1 | OK | 38 degrees C / 100 degrees F |
| SFB 0 Exhaust-Zone0 | OK | 49 degrees C / 120 degrees F |
| SFB 0 SFB-XF2-Zone1 | OK | 59 degrees C / 138 degrees F |
| SFB 0 SFB-XF1-Zone0 | OK | 65 degrees C / 149 degrees F |
| SFB 0 SFB-XF0-Zone0 | OK | 65 degrees C / 149 degrees F |
| SFB 1 Intake-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 1 Exhaust-Zone1 | OK | 45 degrees C / 113 degrees F |
| SFB 1 IntakeA-Zone0 | OK | 48 degrees C / 118 degrees F |
| SFB 1 IntakeB-Zone1 | OK | 39 degrees C / 102 degrees F |
| SFB 1 Exhaust-Zone0 | OK | 48 degrees C / 118 degrees F |
| SFB 1 SFB-XF2-Zone1 | OK | 60 degrees C / 140 degrees F |
| SFB 1 SFB-XF1-Zone0 | OK | 64 degrees C / 147 degrees F |
| SFB 1 SFB-XF0-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 2 Intake-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 2 Exhaust-Zone1 | OK | 46 degrees C / 114 degrees F |
| SFB 2 IntakeA-Zone0 | OK | 48 degrees C / 118 degrees F |
| SFB 2 IntakeB-Zone1 | OK | 39 degrees C / 102 degrees F |
| SFB 2 Exhaust-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 2 SFB-XF2-Zone1 | OK | 63 degrees C / 145 degrees F |
| SFB 2 SFB-XF1-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 2 SFB-XF0-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 3 Intake-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 3 Exhaust-Zone1 | OK | 46 degrees C / 114 degrees F |
| SFB 3 IntakeA-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 3 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |
| SFB 3 Exhaust-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 3 SFB-XF2-Zone1 | OK | 64 degrees C / 147 degrees F |
| SFB 3 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 3 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 4 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 4 Exhaust-Zone1 | OK | 48 degrees C / 118 degrees F |
| SFB 4 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 4 IntakeB-Zone1 | OK | 42 degrees C / 107 degrees F |
| SFB 4 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 4 SFB-XF2-Zone1 | OK | 63 degrees C / 145 degrees F |
| SFB 4 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 4 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 5 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 5 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 5 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 5 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 5 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 5 SFB-XF2-Zone1 | OK | 65 degrees C / 149 degrees F |
| SFB 5 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 5 SFB-XF0-Zone0 | OK | 71 degrees C / 159 degrees F |
| SFB 6 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 6 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 6 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 6 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 6 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 6 SFB-XF2-Zone1 | OK | 64 degrees C / 147 degrees F |
| SFB 6 SFB-XF1-Zone0 | OK | 66 degrees C / 150 degrees F |
| SFB 6 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 7 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 7 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 7 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 7 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 7 Exhaust-Zone0 | OK | 52 degrees C / 125 degrees F |
| SFB 7 SFB-XF2-Zone1 | OK | 66 degrees C / 150 degrees F |

| | | |
|---------------------|----|------------------------------|
| SFB 7 SFB-XF1-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 7 SFB-XF0-Zone0 | OK | 70 degrees C / 158 degrees F |
| FPC 0 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 0 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 0 Exhaust B | OK | 60 degrees C / 140 degrees F |
| FPC 0 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 0 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 2 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 0 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 0 LU 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 0 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 0 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 0 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 1 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 1 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 1 Exhaust B | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 0 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 1 LU 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 1 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 1 LU 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 1 LU 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 1 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 1 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 1 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 3 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 2 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 2 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 2 Exhaust B | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 2 LU 1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 1 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 2 LU 2 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 2 LU 3 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 2 LU 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 2 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 2 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 2 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 2 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 3 Intake | OK | 41 degrees C / 105 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 3 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 3 Exhaust B | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 3 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 3 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 3 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 3 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 3 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 3 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 3 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 3 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 4 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 4 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 4 Exhaust B | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 4 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 4 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 4 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 4 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 4 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 4 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 4 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 4 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 5 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 5 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 5 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 5 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 5 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 5 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 5 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 5 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 5 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 5 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 5 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 5 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 5 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 6 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 6 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 6 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 0 TSen | OK | 58 degrees C / 136 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 6 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 6 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 6 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 6 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 6 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 6 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 0 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 6 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 6 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 6 MQ 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 7 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 7 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 7 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 7 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 7 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 7 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 7 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 7 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 8 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 8 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 8 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 8 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 8 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 1 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 8 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 8 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 8 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 8 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 8 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 8 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 8 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 8 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 9 Intake | OK | 43 degrees C / 109 degrees F |
| FPC 9 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 9 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 9 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 9 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 1 Chip | OK | 63 degrees C / 145 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 9 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 2 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 9 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 9 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 MQ 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 9 MQ 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 MQ 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 9 MQ 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 9 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 10 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 10 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 10 Exhaust B | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 0 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 0 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 1 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 10 LU 2 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 10 LU 3 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 10 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 10 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 10 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 10 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 11 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 11 Exhaust A | OK | 47 degrees C / 116 degrees F |
| FPC 11 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 11 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 11 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 11 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 11 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 11 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 11 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 11 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 11 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 12 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 12 Exhaust A | OK | 47 degrees C / 116 degrees F |
| FPC 12 Exhaust B | OK | 50 degrees C / 122 degrees F |
| FPC 12 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 12 LU 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 12 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 12 LU 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 12 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 12 LU 3 TSen | OK | 49 degrees C / 120 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 12 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 12 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 12 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 12 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 12 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 13 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 13 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 13 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 13 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 13 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 13 LU 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 13 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 13 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 14 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 14 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 14 Exhaust B | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 14 LU 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 14 LU 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 14 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 14 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 14 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 14 MQ 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 15 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 15 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 15 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 15 LU 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 15 LU 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 15 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 15 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 1 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 15 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 2 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 15 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 15 MQ 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 16 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 16 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 16 Exhaust B | OK | 53 degrees C / 127 degrees F |
| FPC 16 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 16 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 1 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 16 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 16 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 16 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 16 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 16 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 MQ 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 17 Intake | OK | 45 degrees C / 113 degrees F |
| FPC 17 Exhaust A | OK | 52 degrees C / 125 degrees F |
| FPC 17 Exhaust B | OK | 55 degrees C / 131 degrees F |
| FPC 17 LU 0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 17 LU 1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 1 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 17 LU 2 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 3 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 3 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 17 MQ 0 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 1 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 1 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 17 MQ 2 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 17 MQ 3 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 18 Intake | OK | 46 degrees C / 114 degrees F |
| FPC 18 Exhaust A | OK | 53 degrees C / 127 degrees F |
| FPC 18 Exhaust B | OK | 57 degrees C / 134 degrees F |
| FPC 18 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 0 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 18 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 1 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 18 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 18 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 18 MQ 0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 18 MQ 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 18 MQ 1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 18 MQ 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 18 MQ 2 TSen | OK | 54 degrees C / 129 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 18 MQ 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 18 MQ 3 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 18 MQ 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 19 Intake | OK | 49 degrees C / 120 degrees F |
| FPC 19 Exhaust A | OK | 56 degrees C / 132 degrees F |
| FPC 19 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 0 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 19 LU 1 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 1 Chip | OK | 69 degrees C / 156 degrees F |
| FPC 19 LU 2 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 2 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 19 LU 3 TSen | OK | 62 degrees C / 143 degrees F |
| FPC 19 LU 3 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 19 MQ 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 19 MQ 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 19 MQ 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 2 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 19 MQ 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 19 MQ 3 Chip | OK | 60 degrees C / 140 degrees F |
| ADC 0 Intake | OK | 40 degrees C / 104 degrees F |
| ADC 0 Exhaust | OK | 50 degrees C / 122 degrees F |
| ADC 0 ADC-XF1 | OK | 58 degrees C / 136 degrees F |
| ADC 0 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 1 Intake | OK | 38 degrees C / 100 degrees F |
| ADC 1 Exhaust | OK | 48 degrees C / 118 degrees F |
| ADC 1 ADC-XF1 | OK | 59 degrees C / 138 degrees F |
| ADC 1 ADC-XF0 | OK | 61 degrees C / 141 degrees F |
| ADC 2 Intake | OK | 36 degrees C / 96 degrees F |
| ADC 2 Exhaust | OK | 50 degrees C / 122 degrees F |
| ADC 2 ADC-XF1 | OK | 53 degrees C / 127 degrees F |
| ADC 2 ADC-XF0 | OK | 59 degrees C / 138 degrees F |
| ADC 3 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 3 Exhaust | OK | 49 degrees C / 120 degrees F |
| ADC 3 ADC-XF1 | OK | 61 degrees C / 141 degrees F |
| ADC 3 ADC-XF0 | OK | 62 degrees C / 143 degrees F |
| ADC 4 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 4 Exhaust | OK | 49 degrees C / 120 degrees F |
| ADC 4 ADC-XF1 | OK | 60 degrees C / 140 degrees F |
| ADC 4 ADC-XF0 | OK | 61 degrees C / 141 degrees F |
| ADC 5 Intake | OK | 38 degrees C / 100 degrees F |
| ADC 5 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 5 ADC-XF1 | OK | 55 degrees C / 131 degrees F |
| ADC 5 ADC-XF0 | OK | 65 degrees C / 149 degrees F |
| ADC 6 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 6 Exhaust | OK | 51 degrees C / 123 degrees F |
| ADC 6 ADC-XF1 | OK | 58 degrees C / 136 degrees F |
| ADC 6 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 7 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 7 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 7 ADC-XF1 | OK | 61 degrees C / 141 degrees F |
| ADC 7 ADC-XF0 | OK | 68 degrees C / 154 degrees F |
| ADC 8 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 8 Exhaust | OK | 50 degrees C / 122 degrees F |
| ADC 8 ADC-XF1 | OK | 64 degrees C / 147 degrees F |
| ADC 8 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 9 Intake | OK | 41 degrees C / 105 degrees F |
| ADC 9 Exhaust | OK | 50 degrees C / 122 degrees F |

| | | |
|----------------|----|------------------------------|
| ADC 9 ADC-XF1 | OK | 60 degrees C / 140 degrees F |
| ADC 9 ADC-XF0 | OK | 62 degrees C / 143 degrees F |
| ADC 10 Intake | OK | 46 degrees C / 114 degrees F |
| ADC 10 Exhaust | OK | 53 degrees C / 127 degrees F |
| ADC 10 ADC-XF1 | OK | 66 degrees C / 150 degrees F |
| ADC 10 ADC-XF0 | OK | 65 degrees C / 149 degrees F |
| ADC 11 Intake | OK | 46 degrees C / 114 degrees F |
| ADC 11 Exhaust | OK | 53 degrees C / 127 degrees F |
| ADC 11 ADC-XF1 | OK | 63 degrees C / 145 degrees F |
| ADC 11 ADC-XF0 | OK | 64 degrees C / 147 degrees F |
| ADC 12 Intake | OK | 47 degrees C / 116 degrees F |
| ADC 12 Exhaust | OK | 53 degrees C / 127 degrees F |
| ADC 12 ADC-XF1 | OK | 65 degrees C / 149 degrees F |
| ADC 12 ADC-XF0 | OK | 65 degrees C / 149 degrees F |
| ADC 13 Intake | OK | 48 degrees C / 118 degrees F |
| ADC 13 Exhaust | OK | 55 degrees C / 131 degrees F |
| ADC 13 ADC-XF1 | OK | 65 degrees C / 149 degrees F |
| ADC 13 ADC-XF0 | OK | 67 degrees C / 152 degrees F |
| ADC 14 Intake | OK | 49 degrees C / 120 degrees F |
| ADC 14 Exhaust | OK | 57 degrees C / 134 degrees F |
| ADC 14 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| ADC 14 ADC-XF0 | OK | 72 degrees C / 161 degrees F |
| ADC 15 Intake | OK | 50 degrees C / 122 degrees F |
| ADC 15 Exhaust | OK | 56 degrees C / 132 degrees F |
| ADC 15 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| ADC 15 ADC-XF0 | OK | 68 degrees C / 154 degrees F |
| ADC 16 Intake | OK | 51 degrees C / 123 degrees F |
| ADC 16 Exhaust | OK | 57 degrees C / 134 degrees F |
| ADC 16 ADC-XF1 | OK | 67 degrees C / 152 degrees F |
| ADC 16 ADC-XF0 | OK | 68 degrees C / 154 degrees F |
| ADC 17 Intake | OK | 51 degrees C / 123 degrees F |
| ADC 17 Exhaust | OK | 57 degrees C / 134 degrees F |
| ADC 17 ADC-XF1 | OK | 69 degrees C / 156 degrees F |
| ADC 17 ADC-XF0 | OK | 69 degrees C / 156 degrees F |
| ADC 18 Intake | OK | 52 degrees C / 125 degrees F |
| ADC 18 Exhaust | OK | 58 degrees C / 136 degrees F |
| ADC 18 ADC-XF1 | OK | 67 degrees C / 152 degrees F |
| ADC 18 ADC-XF0 | OK | 72 degrees C / 161 degrees F |
| ADC 19 Intake | OK | 50 degrees C / 122 degrees F |
| ADC 19 Exhaust | OK | 58 degrees C / 136 degrees F |
| ADC 19 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| ADC 19 ADC-XF0 | OK | 71 degrees C / 159 degrees F |

show chassis environment monitored (MX2008 Router)

user@host> show chassis environment monitored

| Class | Item | Status | Measurement |
|-------|---------------|--------|------------------------------|
| Temp | CB 0 Inlet1 | OK | 37 degrees C / 98 degrees F |
| | CB 0 Inlet2 | OK | 46 degrees C / 114 degrees F |
| | CB 0 Inlet3 | OK | 44 degrees C / 111 degrees F |
| | CB 0 Inlet4 | OK | 42 degrees C / 107 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 | 35 degrees C / 95 degrees F |
| Routing Engine 0 CPU | OK | 76 degrees C / 168 degrees F |
| Routing Engine 1 CPU | OK | 47 degrees C / 116 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 | 27 degrees C / 80 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 | 34 degrees C / 93 degrees F |
| SFB 6 Exhaust1 | OK | 32 degrees C / 89 degrees F |
| SFB 6 Inlet1 | OK | 31 degrees C / 87 degrees F |
| SFB 6 Exhaust2 | OK | 34 degrees C / 93 degrees F |
| SFB 6 SFB2-PF-local | OK | 34 degrees C / 93 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 | 43 degrees C / 109 degrees F |
| FPC 0 Exhaust B | OK | 42 degrees C / 107 degrees F |
| FPC 0 XL 0 TSen | OK | 39 degrees C / 102 degrees F |
| FPC 0 XL 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 XL 0 XR2 0 TSen | OK | 39 degrees C / 102 degrees F |

| | | |
|--------------------------|----|------------------------------|
| FPC 0 XL 0 XR2 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 0 XL 0 XR2 1 TSen | OK | 39 degrees C / 102 degrees F |
| FPC 0 XL 0 XR2 1 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 0 XL 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 Chip | OK | 43 degrees C / 109 degrees F |
| FPC 0 XL 1 XR2 0 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 0 XL 1 XR2 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 0 XM 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 0 Chip | OK | 50 degrees C / 122 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 | 55 degrees C / 131 degrees F |
| FPC 1 EA0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA0_XR0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA0_XR0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA0_XR1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA0_XR1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA1_XR0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA1_XR0 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA1_XR1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA1_XR1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 1 PEX TSen | OK | 55 degrees C / 131 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 | 46 degrees C / 114 degrees F |
| FPC 1 EA2_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2_XR1 Chip | OK | 43 degrees C / 109 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 | 51 degrees C / 123 degrees F |
| FPC 1 EA3_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3_XR1 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 1 EA0_HMC0 Logic die | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA0_HMC0 DRAM botm | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA0_HMC1 Logic die | OK | 62 degrees C / 143 degrees F |
| FPC 1 EA0_HMC1 DRAM botm | OK | 59 degrees C / 138 degrees F |
| FPC 1 EA0_HMC2 Logic die | OK | 59 degrees C / 138 degrees F |
| FPC 1 EA0_HMC2 DRAM botm | OK | 56 degrees C / 132 degrees F |
| FPC 1 EA1_HMC0 Logic die | OK | 66 degrees C / 150 degrees F |
| FPC 1 EA1_HMC0 DRAM botm | OK | 63 degrees C / 145 degrees F |
| FPC 1 EA1_HMC1 Logic die | OK | 65 degrees C / 149 degrees F |
| FPC 1 EA1_HMC1 DRAM botm | OK | 62 degrees C / 143 degrees F |
| FPC 1 EA1_HMC2 Logic die | OK | 63 degrees C / 145 degrees F |
| FPC 1 EA1_HMC2 DRAM botm | OK | 60 degrees C / 140 degrees F |

| | | |
|--------------------------|----|------------------------------|
| FPC 1 EA2_HMC0 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA2_HMC0 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA2_HMC1 Logic die | OK | 55 degrees C / 131 degrees F |
| FPC 1 EA2_HMC1 DRAM botm | OK | 52 degrees C / 125 degrees F |
| FPC 1 EA2_HMC2 Logic die | OK | 52 degrees C / 125 degrees F |
| FPC 1 EA2_HMC2 DRAM botm | OK | 49 degrees C / 120 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 | 52 degrees C / 125 degrees F |
| FPC 1 EA3_HMC2 DRAM botm | OK | 49 degrees C / 120 degrees F |
| FPC 7 Intake | OK | 31 degrees C / 87 degrees F |
| FPC 7 Exhaust A | OK | 46 degrees C / 114 degrees F |
| FPC 7 Exhaust B | OK | 38 degrees C / 100 degrees F |
| FPC 7 QX 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 QX 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 7 LU 0 TCAM TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 0 TCAM Chip | OK | 52 degrees C / 125 degrees F |
| FPC 7 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 7 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 MQ 0 Chip | OK | 55 degrees C / 131 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 |

show chassis environment monitored (MX10008 Router)

user@host> show chassis environment monitored

| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| Temp | Routing Engine 0 CPU | | |
| | Routing Engine 1 CPU | | |
| | 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 | 30 degrees C / 86 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 | 67 degrees C / 152 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 | 61 degrees C / 141 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| FPC 0 EA1_XR0 Temp Sensor | OK | 65 degrees C / 149 degrees F |
| FPC 0 EA1_XR1 Temp Sensor | OK | 63 degrees C / 145 degrees F |
| FPC 0 EA2 Temp Sensor | OK | 69 degrees C / 156 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 | 64 degrees C / 147 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 | 71 degrees C / 159 degrees F |
| FPC 0 EA4_XR0 Temp Sensor | OK | 72 degrees C / 161 degrees F |
| FPC 0 EA4_XR1 Temp Sensor | OK | 71 degrees C / 159 degrees F |
| FPC 0 EA5 Temp Sensor | OK | 58 degrees C / 136 degrees F |
| FPC 0 EA5_XR0 Temp Sensor | OK | 62 degrees C / 143 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 | 76 degrees C / 168 degrees F |
| FPC 0 EA0_HMC1 DRAM botm | OK | 73 degrees C / 163 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 | 73 degrees C / 163 degrees F |
| FPC 0 EA1_HMC0 DRAM botm | OK | 70 degrees C / 158 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 | 81 degrees C / 177 degrees F |
| FPC 0 EA2_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| FPC 0 EA2_HMC2 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 0 EA2_HMC2 DRAM botm | OK | 77 degrees C / 170 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 | 69 degrees C / 156 degrees F |
| FPC 0 EA5_HMC0 DRAM botm | OK | 66 degrees C / 150 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 | 68 degrees C / 154 degrees F |
| FPC 0 EA5_HMC2 DRAM botm | OK | 65 degrees C / 149 degrees F |
| FPC 2 Intake-A Temp Sensor | OK | 33 degrees C / 91 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 | 79 degrees C / 174 degrees F |
| FPC 2 EA1 Temp Sensor | OK | 64 degrees C / 147 degrees F |
| FPC 2 EA1_XR0 Temp Sensor | OK | 68 degrees C / 154 degrees F |
| FPC 2 EA1_XR1 Temp Sensor | OK | 66 degrees C / 150 degrees F |
| FPC 2 EA2 Temp Sensor | OK | 75 degrees C / 167 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| FPC 2 EA2_XR0 Temp Sensor | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA2_XR1 Temp Sensor | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3 Temp Sensor | OK | 67 degrees C / 152 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 | 65 degrees C / 149 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 | 77 degrees C / 170 degrees F |
| FPC 2 EA1_HMC1 DRAM botm | OK | 74 degrees C / 165 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 | 87 degrees C / 188 degrees F |
| FPC 2 EA2_HMC0 DRAM botm | OK | 84 degrees C / 183 degrees F |
| FPC 2 EA2_HMC1 Logic die | OK | 88 degrees C / 190 degrees F |
| FPC 2 EA2_HMC1 DRAM botm | OK | 85 degrees C / 185 degrees F |
| FPC 2 EA2_HMC2 Logic die | OK | 88 degrees C / 190 degrees F |
| FPC 2 EA2_HMC2 DRAM botm | OK | 85 degrees C / 185 degrees F |
| FPC 2 EA3_HMC0 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC0 DRAM botm | OK | 78 degrees C / 172 degrees F |
| FPC 2 EA3_HMC1 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| FPC 2 EA3_HMC2 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC2 DRAM botm | OK | 78 degrees C / 172 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 | 90 degrees C / 194 degrees F |
| FPC 2 EA4_HMC1 DRAM botm | OK | 87 degrees C / 188 degrees F |
| FPC 2 EA4_HMC2 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA4_HMC2 DRAM botm | OK | 78 degrees C / 172 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 | 73 degrees C / 163 degrees F |
| FPC 2 EA5_HMC2 DRAM botm | OK | 70 degrees C / 158 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 | 45 degrees C / 113 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 | 60 degrees C / 140 degrees F |
| FPC 3 EA1_XR1 Temp Sensor | OK | 59 degrees C / 138 degrees F |
| FPC 3 EA2 Temp Sensor | OK | 62 degrees C / 143 degrees F |
| FPC 3 EA2_XR0 Temp Sensor | OK | 67 degrees C / 152 degrees F |
| FPC 3 EA2_XR1 Temp Sensor | OK | 67 degrees C / 152 degrees F |
| FPC 3 EA3 Temp Sensor | OK | 55 degrees C / 131 degrees F |

| | | | |
|-------|---------------------------|--------|------------------------------|
| | FPC 3 EA3_XR0 Temp Sensor | OK | 57 degrees C / 134 degrees F |
| | FPC 3 EA3_XR1 Temp Sensor | OK | 57 degrees C / 134 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 | 59 degrees C / 138 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 | 70 degrees C / 158 degrees F |
| | FPC 3 EA0_HMC2 DRAM botm | OK | 67 degrees C / 152 degrees F |
| | FPC 3 EA1_HMC0 Logic die | OK | 68 degrees C / 154 degrees F |
| | FPC 3 EA1_HMC0 DRAM botm | OK | 65 degrees C / 149 degrees F |
| | FPC 3 EA1_HMC1 Logic die | OK | 65 degrees C / 149 degrees F |
| | FPC 3 EA1_HMC1 DRAM botm | OK | 62 degrees C / 143 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 | 70 degrees C / 158 degrees F |
| | FPC 3 EA3_HMC0 DRAM botm | OK | 67 degrees C / 152 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 | 82 degrees C / 179 degrees F |
| | FPC 3 EA4_HMC0 DRAM botm | OK | 79 degrees C / 174 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 | 69 degrees C / 156 degrees F |
| | FPC 3 EA5_HMC0 DRAM botm | OK | 66 degrees C / 150 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 | 33 degrees C / 91 degrees F |
| SFB 0 Intake-B | OK | 22 degrees C / 71 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 | 40 degrees C / 104 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 | 21 degrees C / 69 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 | 21 degrees C / 69 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 | 37 degrees C / 98 degrees F |
| SFB 3 Intake-B | OK | 21 degrees C / 69 degrees F |
| SFB 3 Exhaust-A | OK | 26 degrees C / 78 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 | 30 degrees C / 86 degrees F |
| SFB 4 Intake-A | OK | 31 degrees C / 87 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 | 32 degrees C / 89 degrees F |
| SFB 4 PF0 | OK | 41 degrees C / 105 degrees F |
| SFB 4 PF1 | OK | 30 degrees C / 86 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 | 26 degrees C / 78 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 pcg

| | |
|---------------------------------|---|
| Syntax | <code>show chassis environment pcg</code> <code><slot></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers only) Display environmental information about the Packet Forwarding Engine clock generators (PCGs). |
| Options | <p>none—Display environmental information about both PCGs.</p> <p>slot—(Optional) Display environmental information about an individual PCG. Replace slot with 0 or 1.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> request chassis pcg on page 511 |
| List of Sample Output | <p>show chassis environment pcg (M40e Router) on page 853</p> <p>show chassis environment pcg (M160 Router) on page 853</p> |
| Output Fields | Table 48 on page 851 lists the output fields for the show chassis environment pcg command. Output fields are listed in the approximate order in which they appear. |

Table 48: show chassis environment pcg Output Fields

| Field Name | Field Description |
|-----------------|--|
| PCG slot status | Slot number: 0 or 1. |
| State | <p>Status of PCG:</p> <ul style="list-style-type: none"> Present—PCG is detected by the chassis process but is either not supported by the current version of Junos OS or PCG is coming up but is not yet online. Online—PCG is powered down. If Online, it can be the Master clock or the Standby clock. Offline—PCG is powered down. Empty—No PCG is present. |
| Temperature | Temperature of the air flowing past the PCG. |
| Frequency | Frequency setting and measurement for the PCG. |

Table 48: show chassis environment pcg Output Fields (continued)

| Field Name | Field Description |
|---------------------|--|
| Power | Information about the voltage supplied to the PCG. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| BUS Revision | Revision level of the generic bus device. |

Sample Output

show chassis environment pcg (M40e Router)

```

user@host> show chassis environment pcg

PCG 0 status:
  State                Online - Master clock
  Temperature           44 degrees C / 111 degrees F
  Frequency:
    Setting             125.00 MHz
    Measurement         124.95 MHz
  Power:
    3.3 V               3266 mV
    5.0 V bias          4964 mV
    8.0 V bias          8112 mV
  BUS Revision         12

PCG 1 status:
  State                Online - Standby
  Temperature           47 degrees C / 116 degrees F
  Frequency:
    Setting             125.00 MHz
    Measurement         124.96 MHz
  Power:
    3.3 V               3271 mV
    5.0 V bias          4979 mV
    8.0 V bias          8117 mV
  BUS Revision         12

```

show chassis environment pcg (M160 Router)

```

user@host> show chassis environment pcg

PCG 0 status:
  State                Online - Master clock
  Temperature           41 degrees C / 105 degrees F
  Frequency:
    Setting             125.00 MHz
    Measurement         125.03 MHz
  Power:
    3.3 V               3286 mV
    5.0 V bias          5010 mV
    8.0 V bias          8183 mV
  BUS Revision         12

PCG 1 status:
  State                Online - Standby
  Temperature           43 degrees C / 109 degrees F
  Frequency:
    Setting             125.00 MHz
    Measurement         125.01 MHz
  Power:
    3.3 V               3288 mV
    5.0 V bias          4993 mV
    8.0 V bias          8197 mV
  BUS Revision         12

```

show chassis environment pdu

| | |
|---------------------------------|---|
| Syntax | <pre>show chassis environment pdu <none> <slot></pre> |
| Release Information | Command introduced in Junos OS Release 12.1X48 for PTX5000 Packet Transport Routers. |
| Description | <p>Display the environmental status information of a power distribution unit (PDU).</p> <p>Starting from Junos OS Release 14.1, the show chassis environment pdu slot operational mode command output displays environmental status information for the new DC power supply module (PSM) and PDU that are added to provide power to the high-density FPC—FPC2-PTX-P1A.</p> <p>Starting from Junos OS Release 14.2, the power management software in Junos OS tracks the PSM power capacity to identify the power available for the PTX5000 router. Each PSM is assigned a power capability value that is equal to its maximum power rating. Therefore, the total input power—power that the chassis draws from a PDU—is the sum of all the online PSMs' maximum rating. Note that to limit the PDU's output power, the power management software adjusts the maximum rating of the PSMs according to the feed—that is, 60 A, 100 A, or 150 A—selected.</p> |
| Options | <p>none—Display environmental information about all PDUs.</p> <p>slot —(Optional) Display environmental information about an individual PDU. For the PTX5000, replace slot with 0 or 1.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> <i>PTX5000 Packet Transport Router Hardware Guide</i> |
| List of Sample Output | <p>show chassis environment pdu (PTX5000) on page 855</p> <p>show chassis environment pdu (PTX5000 Packet Transport Router with DC PSM and PDU) on page 856</p> <p>show chassis environment pdu (PTX5000 Packet Transport Router with AC PSM and PDU) on page 857</p> <p>show chassis environment pdu (PTX5000 Packet Transport Router after a health check failure on a PSM) on page 857</p> |
| Output Fields | <p>Table 49 on page 855 lists the output fields for the show chassis environment pdu command. Output fields are listed in the approximate order in which they appear.</p> |

Table 49: show chassis environment pdu Output Fields

| Field Name | Field Description |
|-------------------------|--|
| PDU slot status | Number of the PDU slot. |
| PDU - State | Status of the PDU. Status can be Online , Present , or Absent . |
| PDU - BoostConv | Status of the booster converter. |
| Feed Switch | Status of the connected input line cord in the AC PDU. Status can be , 60A , 100A , or 150A . |
| PDU - Hours Used | Number of hours the PDU has been operational. |
| PDU - Firmware Version | Version level of the firmware running on the PDU. |
| PSM number status | PSM number. PSMs are numbered 0 through 3 . |
| PSM - State | Status of the PSM. Status can be Online , Present , or Absent . |
| PSM - Temperature | Temperature of the air flowing past the PSM. |
| PSM - Fans | Status of the cooling fans associated with the PSM. |
| PSM - AC Input | Status of the AC input for the specified component |
| PSM - AC Output | Status of the AC output for the specified component. |
| PSM - DC input | Status of the DC input for the specified component. |
| PSM - DC output | Status of the DC output for the specified component. |
| PSM-Health check status | Reason for the health check failure of the PSM. |
| PSM - Hours Used | Number of hours the PSM has been operational. |
| PSM - Firmware Version | Version level of the firmware running on the PSM. |

Sample Output

show chassis environment pdu (PTX5000)

```
user@host> show chassis environment pdu 0
```

```
PDU 0 status:
  State                Online
  Hours Used           4281
  Firmware Version (MCU1) 00.02
  Firmware Version (MCU2) 00.02
  Firmware Version (MCU3) 00.02
  Firmware Version (MCU4) 00.02
```

```

PDU 0 PSM 0 status:
  State           Online
  Temperature     OK    32 degrees C / 89 degrees F
  Fans            OK
  DC Input        OK
  DC Output       OK
  Hours Used      2864
  Firmware Version 00.04
PDU 0 PSM 1 status:
  State           Online
  Temperature     OK    30 degrees C / 86 degrees F
  Fans            OK
  DC Input        OK
  DC Output       OK
  Hours Used      3540
  Firmware Version 00.04
PDU 0 PSM 2 status:
  State           Online
  Temperature     OK    29 degrees C / 84 degrees F
  Fans            OK
  DC Input        OK
  DC Output       OK
  Hours Used      3711
  Firmware Version 00.04
PDU 0 PSM 3 status:
  State           Online
  Temperature     OK    29 degrees C / 84 degrees F
  Fans            OK
  DC Input        OK
  DC Output       OK
  Hours Used      4243
  Firmware Version 00.04

```

show chassis environment pdu (PTX5000 Packet Transport Router with DC PSM and PDU)

```

user@host> show chassis environment pdu 1

PDU 1 status:
  State           Online
  BoostConv       OK
  Hours Used      1054
  Firmware Version (MCU1) 03.05
PDU 1 PSM 0 status:
  State           Empty
PDU 1 PSM 1 status:
  State           Online
  Temperature     OK    45 degrees C / 113 degrees F
  Fans            OK
  DC Input        OK
  DC Output       OK
  Hours Used      1027
  Firmware Version 03.07
PDU 1 PSM 2 status:
  State           Empty
PDU 1 PSM 3 status:
  State           Online
  Temperature     OK    43 degrees C / 109 degrees F
  Fans            OK
  DC Input        OK
  DC Output       OK

```

```

Hours Used          1029
Firmware Version    03.07
PDU 1 PSM 4 status:
State               Empty
PDU 1 PSM 5 status:
State               Online
Temperature         OK    46 degrees C / 114 degrees F
Fans                OK
DC Input            OK
DC Output           OK
Hours Used          1028
Firmware Version    03.07
PDU 1 PSM 6 status:
State               Empty
PDU 1 PSM 7 status:
State               Online
Temperature         OK    46 degrees C / 114 degrees F
Fans                OK
DC Input            OK
DC Output           OK
Hours Used          1030
Firmware Version    03.07

```

show chassis environment pdu (PTX5000 Packet Transport Router with AC PSM and PDU)

```
user@host> show chassis environment pdu 0
```

```

PDU 0 status:
State               Online
BoostConv           OK
Feed Switch         150 Amps
Hours Used          177
Firmware Version (MCU1) 03.04
Firmware Version (MCU2) 03.02
Firmware Version (MCU3) 03.02
Firmware Version (MCU4) 03.02
Firmware Version (MCU5) 03.02
Firmware Version (MCU6) 03.02
Firmware Version (MCU7) 03.02
Firmware Version (MCU8) 03.02
PDU 0 PSM 0 status:
State               Online
Temperature         OK    28 degrees C / 82 degrees F
Fans                OK
AC Input            OK
DC Output           OK
Hours Used          652
Firmware Version    01.01

```

show chassis environment pdu (PTX5000 Packet Transport Router after a health check failure on a PSM)

```
user@host> show chassis environment pdu 0
```

```

PDU 0 status:
State               Online
BoostConv           OK
Feed Switch         20 Amps
Hours Used          16706
Firmware Version (MCU1) 91.02

```

```

Firmware Version (MCU2) 03.02
Firmware Version (MCU3) 03.02
Firmware Version (MCU4) 03.02
Firmware Version (MCU5) 03.02
Firmware Version (MCU6) 03.02
Firmware Version (MCU7) 03.02
Firmware Version (MCU8) 03.02
PDU 0 PSM 0 status:
  State Online
  Temperature OK 29 degrees C / 84 degrees F
  Fans OK
  AC Input OK
  DC Output OK
  Hours Used 9847
  Firmware Version 01.01
PDU 0 PSM 1 status:
  State Online
  Temperature OK 29 degrees C / 84 degrees F
  Fans OK
  AC Input OK
  DC Output OK
  Hours Used 5586
  Firmware Version 01.01
PDU 0 PSM 2 status:
  State Online
  Temperature OK 28 degrees C / 82 degrees F
  Fans OK
  AC Input OK
  DC Output OK
  Hours Used 10425
  Firmware Version 01.01
PDU 0 PSM 3 status:
  State Online
  Temperature OK 28 degrees C / 82 degrees F
  Fans OK
  AC Input OK
  DC Output OK
  Hours Used 9912
  Firmware Version 01.01
PDU 0 PSM 4 status:
  State Empty
PDU 0 PSM 5 status:
  State Empty
PDU 0 PSM 6 status:
  State Present
  Temperature OK 32 degrees C / 89 degrees F
  Fans OK
  AC Input OK
  DC Output OK
  Health check status Failed, PSM set to NOT OK
  Hours Used 5770
  Firmware Version 01.01
PDU 0 PSM 7 status:
  State Online
  Temperature OK 33 degrees C / 91 degrees F
  Fans OK
  AC Input OK
  DC Output OK
  Hours Used 20167
  Firmware Version 01.01

```


show chassis environment pem

List of Syntax

- Syntax on page 860
- Syntax (ACX4000 Router) on page 860
- Syntax (TX Matrix Routers) on page 860
- Syntax (TX Matrix Plus Routers) on page 860
- Syntax (MX Series Router) on page 860
- Syntax (PTX Series Router) on page 860
- Syntax (MX104 Universal Routing Platforms) on page 860
- Syntax (MX10003, MX204, and MX10008 Universal Routing Platforms) on page 861
- Syntax (QFX Series) on page 861
- Syntax (OCX Series) on page 861
- Syntax (EX9251, EX9253 Switches) on page 861

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 <i>name slot</i>) (node-device <i>name</i>)> |
| Syntax (OCX Series) | show chassis environment pem <slot> |
| Syntax (EX9251, EX9253 Switches) | show chassis environment pem <slot> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p> <p>Command introduced in Junos OS Release 12.3R2 for EX Series.</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 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 18.2R1 for MX10008 Routers</p> |
| Description | <p>Display Power Entry Module (PEM) environmental status information.</p> <div>  <p>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.</p> </div> |
| Options | <p>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.</p> <p>all-members—(MX Series routers only) (Optional) Display environmental information about the PEMs in all the member routers of the Virtual Chassis configuration.</p> |

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 1369](#)

List of Sample Output

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[show chassis environment pem \(M120 Router\) on page 864](#)

[show chassis environment pem \(M160 Router\) on page 865](#)
[show chassis environment pem \(M320 Router\) on page 865](#)
[show chassis environment pem \(MX150\) on page 865](#)
[show chassis environment pem \(MX104 Router\) on page 865](#)
[show chassis environment pem \(MX240 Router\) on page 866](#)
[show chassis environment pem \(MX480 Router\) on page 866](#)
[show chassis environment pem \(MX960 Router\) on page 866](#)
[show chassis environment pem \(MX10003 Router\) on page 866](#)
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[show chassis environment pem lcc \(TX Matrix Routing Matrix\) on page 870](#)
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[show chassis environment pem node-device \(QFabric System\) on page 872](#)
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[show chassis environment pem \(QFX 10016\) on page 873](#)
[show chassis environment pem interconnect-device \(QFabric System\) on page 873](#)
[show chassis environment pem \(EX9251 Switches\) on page 873](#)
[show chassis environment pem \(EX9253 Switches\) on page 873](#)
[show chassis environment pem \(PTX1000 Packet Transport Routers\) on page 874](#)

Output Fields [Table 50 on page 863](#) lists the output fields for the **show chassis environment pem** command. Output fields are listed in the approximate order in which they appear.

Table 50: 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. |

Table 50: show chassis environment pem Output Fields (continued)

| Field Name | Field Description |
|------------|---|
| 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. |
| 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 (QFX 10016)

```
user@router> show chassis environment pem 1
```

```

PEM 1 status:
  State                Present
  Input                Voltage(V) Current(A) Power(W)
  INP 1                229.9      0.4      96.6
  INP 2                233.7      0.4      98.2
  Health check Information:
    Status:            Scheduled
    Last Result:       Pass
    Last Execution:    2019-04-23 15:09:54
    Next Scheduled Run: 2019-04-23 15:32:59

```

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 pem (PTX1000 Packet Transport Routers)

```
user@router> show chassis environment pem
```

```

PEM 0 status:
State                               Online
Airflow                             Front to Back
Temp Sensor 0                       OK    22 degrees C / 71 degrees F
Temp Sensor 1                       OK    23 degrees C / 73 degrees F
Fan 0                               9184 RPM
Fan 1                               7936 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12          24      288      18
PEM 2 status:
State                               Online
Airflow                             Front to Back
Temp Sensor 0                       OK    22 degrees C / 71 degrees F
Temp Sensor 1                       OK    26 degrees C / 78 degrees F
Fan 0                               9056 RPM
Fan 1                               7808 RPM
DC Output                           Voltage(V) Current(A) Power(W) Load(%)
                                   12          24      288      18

```

On PTX1000 Packet Transport Routers, you cannot view the **show chassis environment pem** output at the PEM slot level, by using the command **show chassis environment pem slot**.

show chassis environment psu

| | |
|---------------------------------|---|
| Syntax | show chassis environment psu <i><slot-number></i> |
| Release Information | Command introduced in Junos OS Release 10.3 for EX Series switches. |
| Description | (On EX8200 switches only) Display the state of the power supply. |
| Options | none —Display the state of the power supply for all power supplies. slot-number —(Optional) Display the state of the power supply for a specific power supply slot number (0–5). |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • <i>Verifying Power Configuration and Use</i> • <i>show chassis power-budget-statistics</i> |
| List of Sample Output | show chassis environment psu on page 875 show chassis environment psu (for PSU 1) on page 876 |
| Output Fields | Table 51 on page 875 lists the output fields for the show chassis environment psu command. Output fields are listed in the approximate order in which they appear. |

Table 51: show chassis environment psu Output Fields

| Field Name | Field Description |
|--------------------|--|
| State | State of the power supply: Online, Offline, or Empty. |
| Temperature | Temperature for the online power supply: OK or Out of Range. |
| DC Output | DC output for the online power supply: OK or Out of Range. |

Sample Output

show chassis environment psu

```
user@switch> show chassis environment psu
```

```
PSU 0 status:
  State                Offline
PSU 1 status:
  State                Online
```

| | |
|---------------|---------|
| Temperature | OK |
| DC Output: | OK |
| PSU 2 status: | |
| State | Online |
| Temperature | OK |
| DC Output: | OK |
| PSU 3 status: | |
| State | Offline |
| PSU 4 status: | |
| State | Offline |
| PSU 5 status: | |
| State | Offline |

show chassis environment psu (for PSU 1)

```
user@switch> show chassis environment psu 1
```

| | |
|---------------|--------|
| PSU 1 status: | |
| State | Online |
| Temperature | OK |
| DC Output: | OK |

show chassis environment psm

| | |
|---------------------------------|---|
| Syntax | <pre>show chassis environment psm <all-members> <local> <member <i>member-id</i>> <psm-slot-number></pre> |
| Release Information | <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> |
| Description | Display chassis environmental information about the power supply module (PSM). |
| Options | <p>none—Display environmental information about all power supply modules (PSMs).</p> <p>all-members—(Optional) Display chassis environmental information about the PSM in all members of the Virtual Chassis configuration.</p> <p>local—(Optional) Display chassis environmental information about the PSM in the local member of the Virtual Chassis.</p> <p>member <i>member-id</i>—(Optional) Display chassis environmental information about the PSM in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> <p><i>psm-slot-number</i>—(Optional) Display environmental information about the specified power supply module. For MX2020 routers, replace <i>psm-slot-number</i> with a value from 0 through 17. For MX2010 and MX2008 routers, replace <i>psm-slot-number</i> with a value from 0 through 8.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • show chassis environment on page 607 |
| List of Sample Output | <p>show chassis environment psm (MX2020 Router) on page 878</p> <p>show chassis environment psm (MX2020 Router with 240-V high-voltage DC PSMs) on page 880</p> <p>show chassis environment psm (MX2010 Router) on page 883</p> <p>show chassis environment psm (MX2008 Router) on page 884</p> |
| Output Fields | <p>Table 52 on page 878 lists the output fields for the show chassis environment psm command. Output fields are listed in the approximate order in which they appear.</p> |

Table 52: show chassis environment psm Output Fields

| Field Name | Field Description |
|-------------|---|
| State | Status of the PSM. <ul style="list-style-type: none"> • Online—The PSM is online and running. • Offline—PSM is powered down. |
| Temperature | The status of the temperature of the air flowing past the PSM. <ul style="list-style-type: none"> • Out of range—Displayed if the PSM detects over-temperature. • OK—Displayed if the temperature is within the acceptable limit. |
| DC Input | State of the DC input power feed for the specified zone at the specified amps and voltage, and load for the PSM. |
| DC Output | DC power output in watts (W) for the specified zone at the specified amps and voltage (A @ V), and load and percentage utilization of the maximum capacity for the PSM. |
| Hours Used | Number of hours the PSM has been operational. |

Sample Output

show chassis environment psm (MX2020 Router)

```

user@host> show chassis environment psm

PSM 2 status:
  State      Online
  Temperature OK
  DC Input   Feed      Voltage(V) Current(A) Power(W)
              INP0      50.00      18.90    945.00
              INP1      0.00      0.00     0.00
  DC Output  Voltage(V) Current(A) Power(W) Load(%)
              51.75      16.50    853.88   40.66
  Hours Used 6140
PSM 3 status:
  State      Online
  Temperature OK
  DC Input   Feed      Voltage(V) Current(A) Power(W)
              INP0      50.40      18.90    952.56
              INP1      0.00      0.00     0.00
  DC Output  Voltage(V) Current(A) Power(W) Load(%)
              51.75      16.50    853.88   40.66
  Hours Used 6140
PSM 4 status:
  State      Online
  Temperature OK
  DC Input   Feed      Voltage(V) Current(A) Power(W)
              INP0      50.40      18.90    952.56
              INP1      0.00      0.00     0.00
  DC Output  Voltage(V) Current(A) Power(W) Load(%)
              52.00      16.75    871.00   41.48
  Hours Used 6140
PSM 5 status:
  State      Online

```

| | | | | | |
|----------------|------------|------------|------------|----------|--|
| Temperature | OK | | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) | |
| | INP0 | 50.40 | 18.90 | 952.56 | |
| | INP1 | 0.00 | 0.00 | 0.00 | |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) | |
| | 52.00 | 16.50 | 858.00 | 40.86 | |
| Hours Used | 6140 | | | | |
| PSM 6 status: | | | | | |
| State | Online | | | | |
| Temperature | OK | | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) | |
| | INP0 | 50.40 | 18.90 | 952.56 | |
| | INP1 | 0.00 | 0.00 | 0.00 | |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) | |
| | 52.00 | 16.75 | 871.00 | 41.48 | |
| Hours Used | 6140 | | | | |
| PSM 7 status: | | | | | |
| State | Online | | | | |
| Temperature | OK | | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) | |
| | INP0 | 50.40 | 19.20 | 967.68 | |
| | INP1 | 0.00 | 0.00 | 0.00 | |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) | |
| | 52.00 | 16.75 | 871.00 | 41.48 | |
| Hours Used | 6140 | | | | |
| PSM 8 status: | | | | | |
| State | Online | | | | |
| Temperature | OK | | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) | |
| | INP0 | 50.00 | 20.40 | 1020.00 | |
| | INP1 | 0.00 | 0.00 | 0.00 | |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) | |
| | 51.75 | 17.00 | 879.75 | 41.89 | |
| Hours Used | 3380 | | | | |
| PSM 11 status: | | | | | |
| State | Online | | | | |
| Temperature | OK | | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) | |
| | INP0 | 0.00 | 0.00 | 0.00 | |
| | INP1 | 50.40 | 18.30 | 922.32 | |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) | |
| | 52.00 | 16.25 | 845.00 | 40.24 | |
| Hours Used | 5615 | | | | |
| PSM 12 status: | | | | | |
| State | Online | | | | |
| Temperature | OK | | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) | |
| | INP0 | 0.00 | 0.00 | 0.00 | |
| | INP1 | 50.40 | 18.30 | 922.32 | |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) | |
| | 52.00 | 16.00 | 832.00 | 39.62 | |
| Hours Used | 6143 | | | | |
| PSM 13 status: | | | | | |
| State | Online | | | | |
| Temperature | OK | | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) | |
| | INP0 | 0.00 | 0.00 | 0.00 | |
| | INP1 | 50.40 | 18.00 | 907.20 | |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) | |
| | 52.00 | 16.00 | 832.00 | 39.62 | |

```

Hours Used          6143
PSM 14 status:
State              Online
Temperature        OK
DC Input           Feed      Voltage(V)  Current(A)  Power(W)
                   INP0      0.00      0.00      0.00
                   INP1      50.00     18.30     915.00
DC Output           Voltage(V) Current(A)  Power(W)  Load(%)
                   52.00     16.00     832.00    39.62
Hours Used          6143
PSM 15 status:
State              Online
Temperature        OK
DC Input           Feed      Voltage(V)  Current(A)  Power(W)
                   INP0      0.00      0.00      0.00
                   INP1      48.80     18.90     922.32
DC Output           Voltage(V) Current(A)  Power(W)  Load(%)
                   52.00     16.25     845.00    40.24
Hours Used          6143
PSM 16 status:
State              Online
Temperature        OK
DC Input           Feed      Voltage(V)  Current(A)  Power(W)
                   INP0      0.00      0.00      0.00
                   INP1      48.80     18.90     922.32
DC Output           Voltage(V) Current(A)  Power(W)  Load(%)
                   52.00     16.25     845.00    40.24
Hours Used          6143
PSM 17 status:
State              Online
Temperature        OK
DC Input           Feed      Voltage(V)  Current(A)  Power(W)
                   INP0      0.00      0.00      0.00
                   INP1      48.80     18.90     922.32
DC Output           Voltage(V) Current(A)  Power(W)  Load(%)
                   52.00     16.25     845.00    40.24
Hours Used          5207

```

show chassis environment psm (MX2020 Router with 240-V high-voltage DC PSMs)

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

```

PSM 0 status:
State              Online
Temperature        OK
DC Input           Feed      Voltage(V)  Current(A)  Power(W)
                   INP0      0.00      0.00      0.00
                   INP1      240.00    1.00      240.00
DC Output           Voltage(V) Current(A)  Power(W)  Load(%)
                   52.75     3.75     197.81    7.91
Hours Used          2026
PSM 1 status:
State              Online
Temperature        OK
DC Input           Feed      Voltage(V)  Current(A)  Power(W)
                   INP0      0.00      0.00      0.00
                   INP1      240.00    0.90     216.00
DC Output           Voltage(V) Current(A)  Power(W)  Load(%)
                   52.75     3.25     171.44    6.86

```

```

Hours Used                2530
PSM 2 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage(V)  Current(A)  Power(W)
                        INP0       0.00       0.00       0.00
                        INP1       240.00     0.90       216.00
DC Output                 Voltage(V)  Current(A)  Power(W)  Load(%)
                        52.75      3.50      184.62    7.38
Hours Used                2530
PSM 3 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage(V)  Current(A)  Power(W)
                        INP0       0.00       0.00       0.00
                        INP1       240.00     0.90       216.00
DC Output                 Voltage(V)  Current(A)  Power(W)  Load(%)
                        52.75      3.50      184.62    7.38
Hours Used                2530
PSM 4 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage(V)  Current(A)  Power(W)
                        INP0       0.00       0.00       0.00
                        INP1       240.00     0.90       216.00
DC Output                 Voltage(V)  Current(A)  Power(W)  Load(%)
                        52.50      3.50      183.75    7.35
Hours Used                2530
PSM 5 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage(V)  Current(A)  Power(W)
                        INP0       0.00       0.00       0.00
                        INP1       240.00     1.00       240.00
DC Output                 Voltage(V)  Current(A)  Power(W)  Load(%)
                        52.50      3.75      196.88    7.88
Hours Used                2530
PSM 6 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage(V)  Current(A)  Power(W)
                        INP0       0.00       0.00       0.00
                        INP1       240.00     1.00       240.00
DC Output                 Voltage(V)  Current(A)  Power(W)  Load(%)
                        52.50      3.75      196.88    7.88
Hours Used                2002
PSM 7 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage(V)  Current(A)  Power(W)
                        INP0       0.00       0.00       0.00
                        INP1       240.00     1.00       240.00
DC Output                 Voltage(V)  Current(A)  Power(W)  Load(%)
                        52.50      3.75      196.88    7.88
Hours Used                2146
PSM 8 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage(V)  Current(A)  Power(W)
                        INP0       0.00       0.00       0.00

```

| | | | | |
|----------------|------------|------------|------------|----------|
| DC Output | INP1 | 240.00 | 1.00 | 240.00 |
| | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 52.50 | 3.75 | 196.88 | 7.88 |
| Hours Used | 2026 | | | |
| PSM 9 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 240.00 | 0.80 | 192.00 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 52.50 | 2.75 | 144.38 | 5.78 |
| Hours Used | 2530 | | | |
| PSM 10 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 240.00 | 0.80 | 192.00 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 52.75 | 2.75 | 145.06 | 5.80 |
| Hours Used | 682 | | | |
| PSM 11 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 240.00 | 0.70 | 168.00 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 52.75 | 2.75 | 145.06 | 5.80 |
| Hours Used | 2098 | | | |
| PSM 12 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 240.00 | 0.80 | 192.00 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 52.25 | 3.00 | 156.75 | 6.27 |
| Hours Used | 2458 | | | |
| PSM 13 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 240.00 | 0.80 | 192.00 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 52.25 | 2.75 | 143.69 | 5.75 |
| Hours Used | 2601 | | | |
| PSM 14 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 240.00 | 0.80 | 192.00 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 52.75 | 2.75 | 145.06 | 5.80 |
| Hours Used | 682 | | | |
| PSM 15 status: | | | | |
| State | Online | | | |

```

Temperature      OK
DC Input         Feed      Voltage(V) Current(A) Power(W)
                  INP0      240.00      0.80      192.00
                  INP1      0.00        0.00      0.00
DC Output         Voltage(V) Current(A) Power(W) Load(%)
                  52.25      2.75      143.69    5.75
Hours Used       2122
PSM 16 status:
State            Online
Temperature      OK
DC Input         Feed      Voltage(V) Current(A) Power(W)
                  INP0      240.00      0.70      168.00
                  INP1      0.00        0.00      0.00
DC Output         Voltage(V) Current(A) Power(W) Load(%)
                  52.25      2.50      130.62    5.22
Hours Used       2050
PSM 17 status:
State            Online
Temperature      OK
DC Input         Feed      Voltage(V) Current(A) Power(W)
                  INP0      240.00      0.80      192.00
                  INP1      0.00        0.00      0.00
DC Output         Voltage(V) Current(A) Power(W) Load(%)
                  52.50      3.00      157.50    6.30
Hours Used       2122

```

show chassis environment psm (MX2010 Router)

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

```

PSM 0 status:
State            Online
Temperature      OK
DC Input         Feed      Voltage(V) Current(A) Power(W)
                  INP0      51.20      14.70      752.64
                  INP1      0.00        0.00      0.00
DC Output         Voltage(V) Current(A) Power(W) Load(%)
                  51.25      13.00      666.25    26.65
Hours Used       2056
PSM 1 status:
State            Online
Temperature      OK
DC Input         Feed      Voltage(V) Current(A) Power(W)
                  INP0      51.20      14.35      734.72
                  INP1      0.00        0.00      0.00
DC Output         Voltage(V) Current(A) Power(W) Load(%)
                  51.25      12.75      653.44    26.14
Hours Used       2008
PSM 2 status:
State            Online
Temperature      OK
DC Input         Feed      Voltage(V) Current(A) Power(W)
                  INP0      51.20      14.35      734.72
                  INP1      0.00        0.00      0.00
DC Output         Voltage(V) Current(A) Power(W) Load(%)
                  51.50      13.00      669.50    26.78
Hours Used       2032
PSM 3 status:
State            Online

```

| | | | | |
|---------------|------------|------------|------------|----------|
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 50.40 | 14.35 | 723.24 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.00 | 12.75 | 650.25 | 26.01 |
| Hours Used | 2008 | | | |
| PSM 4 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 51.20 | 14.00 | 716.80 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.25 | 13.00 | 666.25 | 26.65 |
| Hours Used | 2055 | | | |
| PSM 5 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 51.20 | 14.70 | 752.64 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.25 | 13.00 | 666.25 | 26.65 |
| Hours Used | 2056 | | | |
| PSM 6 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 50.80 | 14.70 | 746.76 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.25 | 13.00 | 666.25 | 26.65 |
| Hours Used | 2056 | | | |
| PSM 7 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 50.40 | 14.70 | 740.88 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.25 | 13.00 | 666.25 | 26.65 |
| Hours Used | 2056 | | | |
| PSM 8 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 50.40 | 14.70 | 740.88 |
| | INP1 | 0.00 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.25 | 13.00 | 666.25 | 26.65 |
| Hours Used | 2056 | | | |

show chassis environment psm (MX2008 Router)

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

```
PSM 1 status:
```

```
State           Online
Temperature      OK
```


| | | | | |
|---------------|------------|------------|------------|----------|
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 53.20 | 4.55 | 242.06 |
| | INP1 | 53.20 | 3.85 | 204.82 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.50 | 7.75 | 399.12 | 15.96 |
| Hours Used | 2811 | | | |
| PSM 2 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 53.20 | 4.55 | 242.06 |
| | INP1 | 53.20 | 3.85 | 204.82 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.25 | 8.00 | 410.00 | 16.40 |
| Hours Used | 2882 | | | |
| PSM 3 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 52.40 | 1.75 | 91.70 |
| | INP1 | 52.80 | 8.40 | 443.52 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.50 | 7.75 | 399.12 | 15.96 |
| Hours Used | 2668 | | | |
| PSM 4 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 52.80 | 0.35 | 18.48 |
| | INP1 | 53.20 | 8.40 | 446.88 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.50 | 7.75 | 399.12 | 15.96 |
| Hours Used | 2740 | | | |
| PSM 5 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 52.40 | 0.00 | 0.00 |
| | INP1 | 53.20 | 8.40 | 446.88 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.50 | 7.75 | 399.12 | 15.96 |
| Hours Used | 2932 | | | |
| PSM 6 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 54.00 | 8.40 | 453.60 |
| | INP1 | 53.20 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.50 | 7.75 | 399.12 | 15.96 |
| Hours Used | 2932 | | | |
| PSM 7 status: | | | | |
| State | Online | | | |
| Temperature | OK | | | |
| DC Input | Feed | Voltage(V) | Current(A) | Power(W) |
| | INP0 | 54.00 | 8.40 | 453.60 |
| | INP1 | 53.20 | 0.00 | 0.00 |
| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
| | 51.25 | 7.75 | 397.19 | 15.89 |
| Hours Used | 2931 | | | |

show chassis environment routing-engine

List of Syntax [Syntax on page 887](#)
 [Syntax \(TX Matrix Routers\) on page 887](#)
 [Syntax \(TX Matrix Plus Routers\) on page 887](#)
 [Syntax \(MX104, MX2010, MX2020, MX10003, MX204, and MX2008 Universal Routing Platforms\) on page 887](#)
 [Syntax \(MX Series Routers\) on page 887](#)
 [Syntax \(PTX Series Routers\) on page 887](#)
 [Syntax \(QFX Series\) on page 888](#)
 [Syntax \(OCX Series\) on page 888](#)
 [Syntax \(ACX5048 and ACX5096 Routers\) on page 888](#)
 [Syntax \(ACX500 Routers\) on page 888](#)
 [Syntax \(EX9251, EX9253 Switches\) on page 888](#)

Syntax show chassis environment routing-engine
 <slot>

Syntax (TX Matrix Routers) show chassis environment routing-engine
 <lcc number | scc>
 <slot>

Syntax (TX Matrix Plus Routers) show chassis environment routing-engine
 <lcc number | sfc number>
 <slot>

Syntax (MX104, MX2010, MX2020, MX10003, MX204, and MX2008 Universal Routing Platforms) show chassis environment routing-engine
 <slot>
 <satellite [fpc-slot slot-id | device-alias alias-name]

Syntax (MX Series Routers) show chassis environment routing-engine
 <slot>
 <all-members>
 <local>
 <member member-id>

Syntax (PTX Series Routers) show chassis environment routing-engine
 <slot>
 <all-members>
 <local>
 <member member-id>

| | |
|---|--|
| Syntax (QFX Series) | show chassis environment routing-engine interconnect-device <i>name</i> |
| Syntax (OCX Series) | show chassis environment routing-engine interconnect-device <i>name</i> |
| Syntax (ACX5048 and ACX5096 Routers) | show chassis environment routing-engine |
| Syntax (ACX500 Routers) | show chassis environment routing-engine |
| Syntax (EX9251, EX9253 Switches) | show chassis environment routing-engine |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option introduced 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> |

interconnect-device *name*—(QFabric systems only) (Optional) Display environmental information about the Routing Engines 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 environmental information about the Routing Engines in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the specified member in the Virtual Chassis configuration. Replace *member-id* with the value of 0 or 1.

satellite [*fpc-slot slot-id* | *device-alias alias-name*]—(Junos Fusion only)(Optional) Display environmental information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix router (switch-card chassis).

sfc—(TX Matrix Plus router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix Plus router (or switch-fabric chassis).

slot—(Optional) Display environmental information about an individual Routing Engine. On M10i, M20, M40e, M120, M160, M320, MX Series, MX104 routers, MX2010 routers, MX2020 routers, MX2008 routers, and T Series routers, replace *slot* with 0 or 1. On M5, M7i, M10, and M40 routers, replace *slot* with 0. On EX3200 and EX4200 standalone switches, replace *slot* with 0. On EX4200 switches in a Virtual Chassis configuration and on EX8208 and EX8216 switches, replace *slot* with 0 or 1. On the QFX3500 switch, there is only one Routing Engine, so you do not need to specify the slot number. On PTX Series Packet Transport Routers, replace *slot* with 0 or 1.

Required Privilege Level view

Related Documentation

- [request chassis routing-engine master on page 522](#)
- [show chassis routing-engine on page 1475](#)

- List of Sample Output**
- [show chassis environment routing-engine \(Nonredundant\) on page 891](#)
 - [show chassis environment routing-engine \(Redundant\) on page 891](#)
 - [show chassis environment routing-engine \(MX150\) on page 891](#)
 - [show chassis environment routing-engine \(MX104 Router\) on page 891](#)
 - [show chassis environment routing-engine \(MX2010 Router\) on page 891](#)
 - [show chassis environment routing-engine \(MX2020 Router\) on page 891](#)
 - [show chassis environment routing-engine \(MX2008 Router\) on page 892](#)
 - [show chassis environment routing-engine \(TX Matrix Plus Router\) on page 892](#)
 - [show chassis environment routing-engine \(T4000 Core Router\) on page 892](#)
 - [show chassis environment routing-engine \(QFX Series and OCX Series\) on page 892](#)
 - [show chassis environment routing-engine interconnect-device \(QFabric System\) on page 893](#)
 - [show chassis environment routing-engine \(PTX5000 Packet Transport Router\) on page 893](#)
 - [show chassis environment routing-engine \(PTX10008 Router\) on page 893](#)
 - [show chassis environment routing-engine \(PTX10016 Router\) on page 893](#)
 - [show chassis environment routing-engine \(ACX5048 and ACX5096 Routers\) on page 893](#)
 - [show chassis environment routing-engine \(ACX500 Routers\) on page 894](#)
 - [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 894](#)
 - [show chassis environment routing-engine \(MX204 Routers\) on page 894](#)
 - [show chassis environment routing-engine \(MX10008 Routers\) on page 894](#)
 - [show chassis environment routing-engine \(EX9251 Switches\) on page 894](#)
 - [show chassis environment routing-engine \(EX9253 Switches\) on page 894](#)

Output Fields [Table 53 on page 890](#) 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 53: 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 environment scg

List of Syntax [Syntax on page 896](#)
[Syntax \(TX Matrix and TX Matrix Plus Router\) on page 896](#)

Syntax `show chassis environment scg
<slot>`

Syntax (TX Matrix and TX Matrix Plus Router) `show chassis environment scg
<lcc number>
<slot>`

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 12.1 for the T4000 Core Routers.

Description Display SONET Clock Generator (SCG) environmental information.

Options **none**—(TX Matrix and TX Matrix Plus routers only) Display environmental information about all SCGs. On a TX Matrix router, display environmental information about all SCGs on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about all SCGs on the TX Matrix Plus router and its attached routers.

lcc number—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

slot—(Optional) Display environmental information about the SCG. Replace **slot** with 0 or 1.

Required Privilege Level view

- Related Documentation**
- [request chassis scg on page 528](#)
 - *Configuring the Clock Source*
 - *T320 SONET Clock Generator (SCG) Description*

List of Sample Output

[show chassis environment scg \(T Series Routers\) on page 897](#)
[show chassis environment scg \(T4000 Core Routers\) on page 898](#)
[show chassis environment scg lcc \(TX Matrix Router\) on page 898](#)
[show chassis environment scg lcc \(TX Matrix Plus Router\) on page 899](#)
[show chassis environment scg \(TX Matrix Plus Router\) on page 899](#)

Output Fields Table 54 on page 897 lists the output fields for the **show chassis environment scg** command. Output fields are listed in the approximate order in which they appear.

Table 54: show chassis environment scg Output Fields

| Field Name | Field Description |
|-----------------|--|
| SCG slot status | Number of the SCG slot: 0 or 1. |
| State | Status of the SCG: <ul style="list-style-type: none"> • Online—SCG is online and running. • Offline—SCG is powered down. If two SCGs are installed and online, one is functioning as the master, and the other is the standby. |
| Temperature | Temperature of the air flowing past the SCG. |
| Power | Power on the SCG. The left column displays required power, in volts. The right column displays measured power, in millivolts. |
| BUS Revision | Revision level of the generic bus device. |

Sample Output

show chassis environment scg (T Series Routers)

```

user@host> show chassis environment scg

SCG 0 status:
  State                Online - Master clock
  Temperature          29 degrees C / 84 degrees F
  Power:
    GROUND              0 mV
    3.3 V               3297 mV
    5.0 V               5050 mV
    5.6 V               5682 mV
    1.8 V bias          1787 mV
    3.3 V bias          3277 mV
    5.0 V bias          4984 mV
    8.0 V bias          8400 mV
  
```

```

BUS Revision          40
SCG 1 status:
  State               Online - Standby
  Temperature         28 degrees C / 82 degrees F
  Power:
    GROUND            0 mV
    3.3 V             3317 mV
    5.0 V             5057 mV
    5.6 V             5689 mV
    1.8 V bias        1794 mV
    3.3 V bias        3296 mV
    5.0 V bias        4991 mV
    8.0 V bias        8410 mV
  BUS Revision        40

```

show chassis environment scg (T4000 Core Routers)

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

```

SCG 0 status:
  State               Online - Master clock
  Temperature         33 degrees C / 91 degrees F
  Power:
    GROUND            0 mV
    1.8 V bias        1794 mV
    3.3 V             3310 mV
    3.3 V bias        3299 mV
    5.0 V             5040 mV
    5.0 V bias        5003 mV
    5.6 V             5780 mV
    8.0 V bias        7416 mV
  Bus Revision        40
SCG 1 status:
  State               Online - Standby
  Temperature         33 degrees C / 91 degrees F
  Power:
    GROUND            0 mV
    1.8 V bias        1794 mV
    3.3 V             3319 mV
    3.3 V bias        3286 mV
    5.0 V             5047 mV
    5.0 V bias        5013 mV
    5.6 V             5758 mV
    8.0 V bias        7347 mV
  Bus Revision        40

```

show chassis environment scg lcc (TX Matrix Router)

```
user@host> show chassis environment scg lcc 0 0
```

```
lcc0-re0:
```

```

-----
SCG 0 status:
  State               Online - Master clock
  Temperature         30 degrees C / 86 degrees F
  Power:
    GROUND            0 mV
    3.3 V             3321 mV
    5.0 V             5062 mV

```

| | |
|--------------|---------|
| 5.6 V | 5682 mV |
| 1.8 V bias | 1789 mV |
| 3.3 V bias | 3289 mV |
| 5.0 V bias | 4993 mV |
| 8.0 V bias | 7807 mV |
| BUS Revision | 40 |

show chassis environment scg lcc (TX Matrix Plus Router)

```
user@host> show chassis environment scg lcc 0
```

```
lcc0-re0:
```

```
-----
```

```
SCG 0 status:
```

| | |
|--------------|------------------------------|
| State | Online - Master clock |
| Temperature | 42 degrees C / 107 degrees F |
| Power | |
| GROUND | 0 mV |
| 1.8 V bias | 1800 mV |
| 3.3 V | 3290 mV |
| 3.3 V bias | 3304 mV |
| 5.0 V | 5042 mV |
| 5.0 V bias | 4979 mV |
| 5.6 V | 5765 mV |
| 8.0 V bias | 7682 mV |
| Bus Revision | 40 |

show chassis environment scg (TX Matrix Plus Router)

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

```
lcc0-re0:
```

```
-----
```

```
SCG 0 status:
```

| | |
|--------------|------------------------------|
| State | Online - Master clock |
| Temperature | 40 degrees C / 104 degrees F |
| Power | |
| GROUND | 0 mV |
| 1.8 V bias | 1800 mV |
| 3.3 V | 3291 mV |
| 3.3 V bias | 3304 mV |
| 5.0 V | 5042 mV |
| 5.0 V bias | 4979 mV |
| 5.6 V | 5765 mV |
| 8.0 V bias | 7643 mV |
| Bus Revision | 40 |

```
lcc1-re0:
```

```
-----
```

```
SCG 0 status:
```

| | |
|-------------|-----------------------------|
| State | Online - Master clock |
| Temperature | 37 degrees C / 98 degrees F |
| Power | |
| GROUND | 0 mV |
| 1.8 V bias | 1788 mV |
| 3.3 V | 3305 mV |
| 3.3 V bias | 3284 mV |
| 5.0 V | 5042 mV |
| 5.0 V bias | 5010 mV |

| | |
|--------------|---------|
| 5.6 V | 5748 mV |
| 8.0 V bias | 7692 mV |
| Bus Revision | 40 |

lcc2-re0:

SCG 0 status:

| | |
|--------------|------------------------------|
| State | Online - Master clock |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| GROUND | 0 mV |
| 1.8 V bias | 1785 mV |
| 3.3 V | 3306 mV |
| 3.3 V bias | 3301 mV |
| 5.0 V | 5045 mV |
| 5.0 V bias | 4993 mV |
| 5.6 V | 5765 mV |
| 8.0 V bias | 7838 mV |
| Bus Revision | 40 |

lcc3-re0:

SCG 0 status:

| | |
|--------------|------------------------------|
| State | Online - Master clock |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| GROUND | 0 mV |
| 1.8 V bias | 1800 mV |
| 3.3 V | 3290 mV |
| 3.3 V bias | 3294 mV |
| 5.0 V | 5050 mV |
| 5.0 V bias | 4984 mV |
| 5.6 V | 5780 mV |
| 8.0 V bias | 7716 mV |
| Bus Revision | 40 |

show chassis environment sfb

| | |
|---------------------------------|---|
| Syntax | <pre>show chassis environment sfb <all-members> <local> <member <i>member-id</i>> <<i>sfb-slot-number</i>></pre> |
| Release Information | <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p> |
| Description | Display chassis environmental information about the Switch Fabric Board (SFB). |
| Options | <p>none—Display environmental information about all Switch Fabric Boards.</p> <p>all-members—(Optional) Display chassis environmental information about the SFB in all members of the Virtual Chassis configuration.</p> <p>local—(Optional) Display chassis environmental information about the SFB in the local member of the Virtual Chassis.</p> <p>member <i>member-id</i>—(Optional) Display chassis environmental information about the SFB in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> <p><i>sfb-slot-number</i>—(Optional) Display environmental information about the specified Switch Fabric Board. For MX2020, MX2010, and MX2008 routers, replace <i>sfb-slot-number</i> with a value from 0 through 7.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis sfb on page 530 • show chassis sfb on page 1507 |
| List of Sample Output | <p>show chassis environment sfb (MX2020 Router) on page 902</p> <p>show chassis environment sfb (MX2010 Router) on page 906</p> <p>show chassis environment sfb (MX2008 Router) on page 910</p> <p>show chassis environment sfb (MX10008 Router) on page 911</p> |
| Output Fields | <p>Table 55 on page 902 lists the output fields for the show chassis environment sfb command. Output fields are listed in the approximate order in which they appear.</p> |

Table 55: show chassis environment sfb Output Fields

| Field Name | Field Description |
|--------------------|---|
| State | Status of the SFB. <ul style="list-style-type: none"> • Online—The SFB is online and running. • Offline— SFB is powered down. |
| Temperature | Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the SFB. <ul style="list-style-type: none"> • Intake—Measures the temperature of the air intake. • Exhaust—Measures the temperature of the hot air exhaust. • SFB-XF2—Measures the temperature of the hot air exhaust for the XF2 fabric plane. • SFB-XF1—Measures the temperature of the hot air exhaust for the XF1 fabric plane. • SFB-XF0—Measures the temperature of the hot air exhaust for the XF0 fabric plane. |
| Power | Power required and measured on the SFB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |

Sample Output

show chassis environment sfb (MX2020 Router)

```

user@host> show chassis environment sfb

SFB 0 status:
  State                Online
  Intake-Zone0 Temperature 51 degrees C / 123 degrees F
  Exhaust-Zone1 Temperature 44 degrees C / 111 degrees F
  IntakeA-Zone0 Temperature 46 degrees C / 114 degrees F
  IntakeB-Zone1 Temperature 37 degrees C / 98 degrees F
  Exhaust-Zone0 Temperature 48 degrees C / 118 degrees F
  SFB-XF2-Zone1 Temperature 58 degrees C / 136 degrees F
  SFB-XF1-Zone0 Temperature 65 degrees C / 149 degrees F
  SFB-XF0-Zone0 Temperature 64 degrees C / 147 degrees F
  Power
    LTC3880-XF2-1.5v-RAIL 1500 mV
    LTC3880-XF2-1.5v-CH0 1500 mV
    LTC3880-XF2-1.5v-CH1 1500 mV
    LTC3880-XF2-1.0v-RAIL 1029 mV
    LTC3880-XF2-1.0v-CH0 1029 mV
    LTC3880-XF2-1.0v-CH1 1032 mV
    LTC3880-XF1-1.5v-RAIL 1499 mV
    LTC3880-XF1-1.5v-CH0 1499 mV
    LTC3880-XF1-1.5v-CH1 1501 mV
    LTC3880-XF1-1.0v-RAIL 1029 mV
    LTC3880-XF1-1.0v-CH0 1029 mV
    LTC3880-XF1-1.0v-CH1 1033 mV
    LTC3880-XF0-1.5v-RAIL 1500 mV
    LTC3880-XF0-1.5v-CH0 1500 mV
    LTC3880-XF0-1.5v-CH1 1501 mV
    LTC3880-XF0-1.0v-RAIL 1029 mV
    LTC3880-XF0-1.0v-CH0 1029 mV
    LTC3880-XF0-1.0v-CH1 1033 mV
    LTC3880-3.3v-RAIL 3300 mV
    LTC3880-3.3v-CH0 3300 mV

```

```

LTC3880-3.3v-CH1          3299 mV
SFB 1 status:
State                      Online
Intake-Zone0 Temperature  52 degrees C / 125 degrees F
Exhaust-Zone1 Temperature 44 degrees C / 111 degrees F
IntakeA-Zone0 Temperature 47 degrees C / 116 degrees F
IntakeB-Zone1 Temperature 37 degrees C / 98 degrees F
Exhaust-Zone0 Temperature 47 degrees C / 116 degrees F
SFB-XF2-Zone1 Temperature 59 degrees C / 138 degrees F
SFB-XF1-Zone0 Temperature 63 degrees C / 145 degrees F
SFB-XF0-Zone0 Temperature 65 degrees C / 149 degrees F
Power
LTC3880-XF2-1.5v-RAIL     1500 mV
LTC3880-XF2-1.5v-CH0      1500 mV
LTC3880-XF2-1.5v-CH1      1501 mV
LTC3880-XF2-1.0v-RAIL     1030 mV
LTC3880-XF2-1.0v-CH0      1030 mV
LTC3880-XF2-1.0v-CH1      1033 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1500 mV
LTC3880-XF1-1.0v-RAIL     1029 mV
LTC3880-XF1-1.0v-CH0      1029 mV
LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1500 mV
LTC3880-XF0-1.5v-CH0      1500 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF0-1.0v-RAIL     1030 mV
LTC3880-XF0-1.0v-CH0      1030 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-3.3v-RAIL        3300 mV
LTC3880-3.3v-CH0         3300 mV
LTC3880-3.3v-CH1         3299 mV
SFB 2 status:
State                      Online
Intake-Zone0 Temperature  52 degrees C / 125 degrees F
Exhaust-Zone1 Temperature 44 degrees C / 111 degrees F
IntakeA-Zone0 Temperature 47 degrees C / 116 degrees F
IntakeB-Zone1 Temperature 37 degrees C / 98 degrees F
Exhaust-Zone0 Temperature 49 degrees C / 120 degrees F
SFB-XF2-Zone1 Temperature 62 degrees C / 143 degrees F
SFB-XF1-Zone0 Temperature 66 degrees C / 150 degrees F
SFB-XF0-Zone0 Temperature 66 degrees C / 150 degrees F
Power
LTC3880-XF2-1.5v-RAIL     1499 mV
LTC3880-XF2-1.5v-CH0      1499 mV
LTC3880-XF2-1.5v-CH1      1500 mV
LTC3880-XF2-1.0v-RAIL     1030 mV
LTC3880-XF2-1.0v-CH0      1030 mV
LTC3880-XF2-1.0v-CH1      1033 mV
LTC3880-XF1-1.5v-RAIL     1500 mV
LTC3880-XF1-1.5v-CH0      1500 mV
LTC3880-XF1-1.5v-CH1      1501 mV
LTC3880-XF1-1.0v-RAIL     1030 mV
LTC3880-XF1-1.0v-CH0      1030 mV
LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF0-1.0v-RAIL     1030 mV

```

| | |
|---------------------------|------------------------------|
| LTC3880-XF0-1.0v-CH0 | 1030 mV |
| LTC3880-XF0-1.0v-CH1 | 1033 mV |
| LTC3880-3.3v-RAIL | 3300 mV |
| LTC3880-3.3v-CH0 | 3300 mV |
| LTC3880-3.3v-CH1 | 3299 mV |
| SFB 3 status: | |
| State | Online |
| Intake-Zone0 Temperature | 53 degrees C / 127 degrees F |
| Exhaust-Zone1 Temperature | 44 degrees C / 111 degrees F |
| IntakeA-Zone0 Temperature | 48 degrees C / 118 degrees F |
| IntakeB-Zone1 Temperature | 38 degrees C / 100 degrees F |
| Exhaust-Zone0 Temperature | 49 degrees C / 120 degrees F |
| SFB-XF2-Zone1 Temperature | 62 degrees C / 143 degrees F |
| SFB-XF1-Zone0 Temperature | 65 degrees C / 149 degrees F |
| SFB-XF0-Zone0 Temperature | 68 degrees C / 154 degrees F |
| Power | |
| LTC3880-XF2-1.5v-RAIL | 1500 mV |
| LTC3880-XF2-1.5v-CH0 | 1500 mV |
| LTC3880-XF2-1.5v-CH1 | 1500 mV |
| LTC3880-XF2-1.0v-RAIL | 1029 mV |
| LTC3880-XF2-1.0v-CH0 | 1029 mV |
| LTC3880-XF2-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1500 mV |
| LTC3880-XF1-1.5v-CH0 | 1500 mV |
| LTC3880-XF1-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1030 mV |
| LTC3880-XF1-1.0v-CH0 | 1030 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |
| LTC3880-XF0-1.5v-RAIL | 1499 mV |
| LTC3880-XF0-1.5v-CH0 | 1499 mV |
| LTC3880-XF0-1.5v-CH1 | 1501 mV |
| LTC3880-XF0-1.0v-RAIL | 1030 mV |
| LTC3880-XF0-1.0v-CH0 | 1030 mV |
| LTC3880-XF0-1.0v-CH1 | 1034 mV |
| LTC3880-3.3v-RAIL | 3300 mV |
| LTC3880-3.3v-CH0 | 3300 mV |
| LTC3880-3.3v-CH1 | 3300 mV |
| SFB 4 status: | |
| State | Online |
| Intake-Zone0 Temperature | 54 degrees C / 129 degrees F |
| Exhaust-Zone1 Temperature | 46 degrees C / 114 degrees F |
| IntakeA-Zone0 Temperature | 49 degrees C / 120 degrees F |
| IntakeB-Zone1 Temperature | 39 degrees C / 102 degrees F |
| Exhaust-Zone0 Temperature | 50 degrees C / 122 degrees F |
| SFB-XF2-Zone1 Temperature | 61 degrees C / 141 degrees F |
| SFB-XF1-Zone0 Temperature | 64 degrees C / 147 degrees F |
| SFB-XF0-Zone0 Temperature | 67 degrees C / 152 degrees F |
| Power | |
| LTC3880-XF2-1.5v-RAIL | 1500 mV |
| LTC3880-XF2-1.5v-CH0 | 1500 mV |
| LTC3880-XF2-1.5v-CH1 | 1500 mV |
| LTC3880-XF2-1.0v-RAIL | 1030 mV |
| LTC3880-XF2-1.0v-CH0 | 1030 mV |
| LTC3880-XF2-1.0v-CH1 | 1033 mV |
| LTC3880-XF1-1.5v-RAIL | 1499 mV |
| LTC3880-XF1-1.5v-CH0 | 1499 mV |
| LTC3880-XF1-1.5v-CH1 | 1501 mV |
| LTC3880-XF1-1.0v-RAIL | 1030 mV |
| LTC3880-XF1-1.0v-CH0 | 1030 mV |
| LTC3880-XF1-1.0v-CH1 | 1033 mV |

```

LTC3880-XF0-1.5v-RAIL      1500 mV
LTC3880-XF0-1.5v-CH0       1500 mV
LTC3880-XF0-1.5v-CH1       1501 mV
LTC3880-XF0-1.0v-RAIL      1030 mV
LTC3880-XF0-1.0v-CH0       1030 mV
LTC3880-XF0-1.0v-CH1       1033 mV
LTC3880-3.3v-RAIL          3299 mV
LTC3880-3.3v-CH0           3299 mV
LTC3880-3.3v-CH1           3299 mV
SFB 5 status:
State                       Online
Intake-Zone0 Temperature    54 degrees C / 129 degrees F
Exhaust-Zone1 Temperature   46 degrees C / 114 degrees F
IntakeA-Zone0 Temperature   49 degrees C / 120 degrees F
IntakeB-Zone1 Temperature   40 degrees C / 104 degrees F
Exhaust-Zone0 Temperature   50 degrees C / 122 degrees F
SFB-XF2-Zone1 Temperature   63 degrees C / 145 degrees F
SFB-XF1-Zone0 Temperature   65 degrees C / 149 degrees F
SFB-XF0-Zone0 Temperature   70 degrees C / 158 degrees F
Power
LTC3880-XF2-1.5v-RAIL      1500 mV
LTC3880-XF2-1.5v-CH0       1500 mV
LTC3880-XF2-1.5v-CH1       1500 mV
LTC3880-XF2-1.0v-RAIL      1029 mV
LTC3880-XF2-1.0v-CH0       1029 mV
LTC3880-XF2-1.0v-CH1       1033 mV
LTC3880-XF1-1.5v-RAIL      1499 mV
LTC3880-XF1-1.5v-CH0       1499 mV
LTC3880-XF1-1.5v-CH1       1500 mV
LTC3880-XF1-1.0v-RAIL      1030 mV
LTC3880-XF1-1.0v-CH0       1030 mV
LTC3880-XF1-1.0v-CH1       1033 mV
LTC3880-XF0-1.5v-RAIL      1499 mV
LTC3880-XF0-1.5v-CH0       1499 mV
LTC3880-XF0-1.5v-CH1       1501 mV
LTC3880-XF0-1.0v-RAIL      1029 mV
LTC3880-XF0-1.0v-CH0       1029 mV
LTC3880-XF0-1.0v-CH1       1033 mV
LTC3880-3.3v-RAIL          3299 mV
LTC3880-3.3v-CH0           3299 mV
LTC3880-3.3v-CH1           3300 mV
SFB 6 status:
State                       Online
Intake-Zone0 Temperature    54 degrees C / 129 degrees F
Exhaust-Zone1 Temperature   46 degrees C / 114 degrees F
IntakeA-Zone0 Temperature   48 degrees C / 118 degrees F
IntakeB-Zone1 Temperature   40 degrees C / 104 degrees F
Exhaust-Zone0 Temperature   49 degrees C / 120 degrees F
SFB-XF2-Zone1 Temperature   62 degrees C / 143 degrees F
SFB-XF1-Zone0 Temperature   64 degrees C / 147 degrees F
SFB-XF0-Zone0 Temperature   68 degrees C / 154 degrees F
Power
LTC3880-XF2-1.5v-RAIL      1499 mV
LTC3880-XF2-1.5v-CH0       1499 mV
LTC3880-XF2-1.5v-CH1       1501 mV
LTC3880-XF2-1.0v-RAIL      1030 mV
LTC3880-XF2-1.0v-CH0       1030 mV
LTC3880-XF2-1.0v-CH1       1033 mV
LTC3880-XF1-1.5v-RAIL      1499 mV
LTC3880-XF1-1.5v-CH0       1499 mV

```

```

LTC3880-XF1-1.5v-CH1      1500 mV
LTC3880-XF1-1.0v-RAIL     1029 mV
LTC3880-XF1-1.0v-CH0      1029 mV
LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF0-1.0v-RAIL     1029 mV
LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-3.3v-RAIL         3300 mV
LTC3880-3.3v-CH0          3300 mV
LTC3880-3.3v-CH1          3300 mV
SFB 7 status:
State                      Online
Intake-Zone0 Temperature  53 degrees C / 127 degrees F
Exhaust-Zone1 Temperature 46 degrees C / 114 degrees F
IntakeA-Zone0 Temperature 49 degrees C / 120 degrees F
IntakeB-Zone1 Temperature 40 degrees C / 104 degrees F
Exhaust-Zone0 Temperature 50 degrees C / 122 degrees F
SFB-XF2-Zone1 Temperature 64 degrees C / 147 degrees F
SFB-XF1-Zone0 Temperature 66 degrees C / 150 degrees F
SFB-XF0-Zone0 Temperature 69 degrees C / 156 degrees F
Power
LTC3880-XF2-1.5v-RAIL     1500 mV
LTC3880-XF2-1.5v-CH0      1500 mV
LTC3880-XF2-1.5v-CH1      1501 mV
LTC3880-XF2-1.0v-RAIL     1029 mV
LTC3880-XF2-1.0v-CH0      1029 mV
LTC3880-XF2-1.0v-CH1      1033 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1501 mV
LTC3880-XF1-1.0v-RAIL     1030 mV
LTC3880-XF1-1.0v-CH0      1030 mV
LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF0-1.0v-RAIL     1030 mV
LTC3880-XF0-1.0v-CH0      1030 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-3.3v-RAIL         3300 mV
LTC3880-3.3v-CH0          3300 mV
LTC3880-3.3v-CH1          3300 mV

```

show chassis environment sfb (MX2010 Router)

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

```

SFB 0 status:
State                      Online
Intake-Zone0 Temperature  31 degrees C / 87 degrees F
Exhaust-Zone1 Temperature 22 degrees C / 71 degrees F
IntakeA-Zone0 Temperature 21 degrees C / 69 degrees F
IntakeB-Zone1 Temperature 16 degrees C / 60 degrees F
Exhaust-Zone0 Temperature 23 degrees C / 73 degrees F
SFB-XF2-Zone1 Temperature 30 degrees C / 86 degrees F
SFB-XF1-Zone0 Temperature 28 degrees C / 82 degrees F
SFB-XF0-Zone0 Temperature 38 degrees C / 100 degrees F

```

```

Power
LTC3880-XF2-1.5v-RAIL      1500 mV
LTC3880-XF2-1.5v-CH0       1500 mV
LTC3880-XF2-1.5v-CH1       1500 mV
LTC3880-XF2-1.0v-RAIL      949 mV
LTC3880-XF2-1.0v-CH0       949 mV
LTC3880-XF2-1.0v-CH1       951 mV
LTC3880-XF1-1.5v-RAIL      1499 mV
LTC3880-XF1-1.5v-CH0       1499 mV
LTC3880-XF1-1.5v-CH1       1500 mV
LTC3880-XF1-1.0v-RAIL      949 mV
LTC3880-XF1-1.0v-CH0       949 mV
LTC3880-XF1-1.0v-CH1       951 mV
LTC3880-XF0-1.5v-RAIL      1499 mV
LTC3880-XF0-1.5v-CH0       1499 mV
LTC3880-XF0-1.5v-CH1       1500 mV
LTC3880-XF0-1.0v-RAIL      1029 mV
LTC3880-XF0-1.0v-CH0       1029 mV
LTC3880-XF0-1.0v-CH1       1032 mV
LTC3880-3.3v-RAIL          3300 mV
LTC3880-3.3v-CH0           3300 mV
LTC3880-3.3v-CH1           3299 mV

SFB 1 status:
State      Online
Intake-Zone0 Temperature 32 degrees C / 89 degrees F
Exhaust-Zone1 Temperature 20 degrees C / 68 degrees F
IntakeA-Zone0 Temperature 25 degrees C / 77 degrees F
IntakeB-Zone1 Temperature 15 degrees C / 59 degrees F
Exhaust-Zone0 Temperature 24 degrees C / 75 degrees F
SFB-XF2-Zone1 Temperature 31 degrees C / 87 degrees F
SFB-XF1-Zone0 Temperature 31 degrees C / 87 degrees F
SFB-XF0-Zone0 Temperature 37 degrees C / 98 degrees F

Power
LTC3880-XF2-1.5v-RAIL      1499 mV
LTC3880-XF2-1.5v-CH0       1499 mV
LTC3880-XF2-1.5v-CH1       1500 mV
LTC3880-XF2-1.0v-RAIL      1029 mV
LTC3880-XF2-1.0v-CH0       1029 mV
LTC3880-XF2-1.0v-CH1       1031 mV
LTC3880-XF1-1.5v-RAIL      1499 mV
LTC3880-XF1-1.5v-CH0       1499 mV
LTC3880-XF1-1.5v-CH1       1500 mV
LTC3880-XF1-1.0v-RAIL      1029 mV
LTC3880-XF1-1.0v-CH0       1029 mV
LTC3880-XF1-1.0v-CH1       1031 mV
LTC3880-XF0-1.5v-RAIL      1500 mV
LTC3880-XF0-1.5v-CH0       1500 mV
LTC3880-XF0-1.5v-CH1       1500 mV
LTC3880-XF0-1.0v-RAIL      1029 mV
LTC3880-XF0-1.0v-CH0       1029 mV
LTC3880-XF0-1.0v-CH1       1032 mV
LTC3880-3.3v-RAIL          3299 mV
LTC3880-3.3v-CH0           3299 mV
LTC3880-3.3v-CH1           3299 mV

SFB 2 status:
State      Online
Intake-Zone0 Temperature 26 degrees C / 78 degrees F
Exhaust-Zone1 Temperature 19 degrees C / 66 degrees F
IntakeA-Zone0 Temperature 23 degrees C / 73 degrees F
IntakeB-Zone1 Temperature 15 degrees C / 59 degrees F

```

```

Exhaust-Zone0 Temperature 21 degrees C / 69 degrees F
SFB-XF2-Zone1 Temperature 29 degrees C / 84 degrees F
SFB-XF1-Zone0 Temperature 26 degrees C / 78 degrees F
SFB-XF0-Zone0 Temperature 31 degrees C / 87 degrees F
Power
  LTC3880-XF2-1.5v-RAIL 1500 mV
  LTC3880-XF2-1.5v-CH0 1500 mV
  LTC3880-XF2-1.5v-CH1 1500 mV
  LTC3880-XF2-1.0v-RAIL 1029 mV
  LTC3880-XF2-1.0v-CH0 1029 mV
  LTC3880-XF2-1.0v-CH1 1031 mV
  LTC3880-XF1-1.5v-RAIL 1499 mV
  LTC3880-XF1-1.5v-CH0 1499 mV
  LTC3880-XF1-1.5v-CH1 1500 mV
  LTC3880-XF1-1.0v-RAIL 1030 mV
  LTC3880-XF1-1.0v-CH0 1030 mV
  LTC3880-XF1-1.0v-CH1 1031 mV
  LTC3880-XF0-1.5v-RAIL 1499 mV
  LTC3880-XF0-1.5v-CH0 1499 mV
  LTC3880-XF0-1.5v-CH1 1500 mV
  LTC3880-XF0-1.0v-RAIL 1029 mV
  LTC3880-XF0-1.0v-CH0 1029 mV
  LTC3880-XF0-1.0v-CH1 1032 mV
  LTC3880-3.3v-RAIL 3300 mV
  LTC3880-3.3v-CH0 3300 mV
  LTC3880-3.3v-CH1 3300 mV
SFB 3 status:
  State Offline
  Reason No power
SFB 4 status:
  State Online
  Intake-Zone0 Temperature 33 degrees C / 91 degrees F
  Exhaust-Zone1 Temperature 21 degrees C / 69 degrees F
  IntakeA-Zone0 Temperature 24 degrees C / 75 degrees F
  IntakeB-Zone1 Temperature 17 degrees C / 62 degrees F
  Exhaust-Zone0 Temperature 24 degrees C / 75 degrees F
  SFB-XF2-Zone1 Temperature 32 degrees C / 89 degrees F
  SFB-XF1-Zone0 Temperature 32 degrees C / 89 degrees F
  SFB-XF0-Zone0 Temperature 37 degrees C / 98 degrees F
Power
  LTC3880-XF2-1.5v-RAIL 1499 mV
  LTC3880-XF2-1.5v-CH0 1499 mV
  LTC3880-XF2-1.5v-CH1 1500 mV
  LTC3880-XF2-1.0v-RAIL 949 mV
  LTC3880-XF2-1.0v-CH0 949 mV
  LTC3880-XF2-1.0v-CH1 952 mV
  LTC3880-XF1-1.5v-RAIL 1500 mV
  LTC3880-XF1-1.5v-CH0 1500 mV
  LTC3880-XF1-1.5v-CH1 1500 mV
  LTC3880-XF1-1.0v-RAIL 1029 mV
  LTC3880-XF1-1.0v-CH0 1029 mV
  LTC3880-XF1-1.0v-CH1 1031 mV
  LTC3880-XF0-1.5v-RAIL 1499 mV
  LTC3880-XF0-1.5v-CH0 1499 mV
  LTC3880-XF0-1.5v-CH1 1500 mV
  LTC3880-XF0-1.0v-RAIL 949 mV
  LTC3880-XF0-1.0v-CH0 949 mV
  LTC3880-XF0-1.0v-CH1 952 mV
  LTC3880-3.3v-RAIL 3299 mV
  LTC3880-3.3v-CH0 3299 mV

```



```

LTC3880-3.3v-CH1          3299 mV
SFB 5 status:
State                      Online
Intake-Zone0 Temperature  27 degrees C / 80 degrees F
Exhaust-Zone1 Temperature 20 degrees C / 68 degrees F
IntakeA-Zone0 Temperature 23 degrees C / 73 degrees F
IntakeB-Zone1 Temperature 15 degrees C / 59 degrees F
Exhaust-Zone0 Temperature 22 degrees C / 71 degrees F
SFB-XF2-Zone1 Temperature 27 degrees C / 80 degrees F
SFB-XF1-Zone0 Temperature 34 degrees C / 93 degrees F
SFB-XF0-Zone0 Temperature 32 degrees C / 89 degrees F
Power
LTC3880-XF2-1.5v-RAIL     1500 mV
LTC3880-XF2-1.5v-CH0      1500 mV
LTC3880-XF2-1.5v-CH1      1500 mV
LTC3880-XF2-1.0v-RAIL     949 mV
LTC3880-XF2-1.0v-CH0      949 mV
LTC3880-XF2-1.0v-CH1      951 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1500 mV
LTC3880-XF1-1.0v-RAIL     949 mV
LTC3880-XF1-1.0v-CH0      949 mV
LTC3880-XF1-1.0v-CH1      951 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1500 mV
LTC3880-XF0-1.0v-RAIL     1029 mV
LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1032 mV
LTC3880-3.3v-RAIL        3299 mV
LTC3880-3.3v-CH0         3299 mV
LTC3880-3.3v-CH1         3299 mV
SFB 6 status:
State                      Online
Intake-Zone0 Temperature  32 degrees C / 89 degrees F
Exhaust-Zone1 Temperature 19 degrees C / 66 degrees F
IntakeA-Zone0 Temperature 24 degrees C / 75 degrees F
IntakeB-Zone1 Temperature 15 degrees C / 59 degrees F
Exhaust-Zone0 Temperature 25 degrees C / 77 degrees F
SFB-XF2-Zone1 Temperature 29 degrees C / 84 degrees F
SFB-XF1-Zone0 Temperature 37 degrees C / 98 degrees F
SFB-XF0-Zone0 Temperature 39 degrees C / 102 degrees F
Power
LTC3880-XF2-1.5v-RAIL     1500 mV
LTC3880-XF2-1.5v-CH0      1500 mV
LTC3880-XF2-1.5v-CH1      1500 mV
LTC3880-XF2-1.0v-RAIL     1029 mV
LTC3880-XF2-1.0v-CH0      1029 mV
LTC3880-XF2-1.0v-CH1      1031 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1500 mV
LTC3880-XF1-1.0v-RAIL     949 mV
LTC3880-XF1-1.0v-CH0      949 mV
LTC3880-XF1-1.0v-CH1      951 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1500 mV
LTC3880-XF0-1.0v-RAIL     1029 mV

```

```

LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1032 mV
LTC3880-3.3v-RAIL         3300 mV
LTC3880-3.3v-CH0          3300 mV
LTC3880-3.3v-CH1          3299 mV
SFB 7 status:
State                      Online
Intake-Zone0 Temperature   31 degrees C / 87 degrees F
Exhaust-Zone1 Temperature  18 degrees C / 64 degrees F
IntakeA-Zone0 Temperature  20 degrees C / 68 degrees F
IntakeB-Zone1 Temperature  13 degrees C / 55 degrees F
Exhaust-Zone0 Temperature  22 degrees C / 71 degrees F
SFB-XF2-Zone1 Temperature  27 degrees C / 80 degrees F
SFB-XF1-Zone0 Temperature  26 degrees C / 78 degrees F
SFB-XF0-Zone0 Temperature  39 degrees C / 102 degrees F
Power
LTC3880-XF2-1.5v-RAIL     1499 mV
LTC3880-XF2-1.5v-CH0      1499 mV
LTC3880-XF2-1.5v-CH1      1500 mV
LTC3880-XF2-1.0v-RAIL     1029 mV
LTC3880-XF2-1.0v-CH0      1029 mV
LTC3880-XF2-1.0v-CH1      1031 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1500 mV
LTC3880-XF1-1.0v-RAIL     1029 mV
LTC3880-XF1-1.0v-CH0      1029 mV
LTC3880-XF1-1.0v-CH1      1031 mV
LTC3880-XF0-1.5v-RAIL     1500 mV
LTC3880-XF0-1.5v-CH0      1500 mV
LTC3880-XF0-1.5v-CH1      1500 mV
LTC3880-XF0-1.0v-RAIL     1029 mV
LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1031 mV
LTC3880-3.3v-RAIL         3300 mV
LTC3880-3.3v-CH0          3300 mV
LTC3880-3.3v-CH1          3299 mV

```

show chassis environment sfb (MX2008 Router)

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

```

SFB 0 status:
State                      Online
Inlet1 Temperature         26 degrees C / 78 degrees F
Inlet2 Temperature         27 degrees C / 80 degrees F
Exhaust1 Temperature       26 degrees C / 78 degrees F
Exhaust2 Temperature       28 degrees C / 82 degrees F
SFB2-PF-local Temperature  27 degrees C / 80 degrees F
SFB2-PF-die Temperature    33 degrees C / 91 degrees F
Power
SFB2-PF0-1.0V-PLL          1008 mV
SFB2-1.0V                  988 mV
SFB2-10.8V                 10727 mV
SFB2-1.5V                  1491 mV
SFB2-PF0-1.8V              1782 mV
SFB2-2.5V                  2475 mV
SFB2-Bias-5V               5535 mV

```

```

SFB2-3.3V-Main          3294 mV
SFB2-1.8V               1798 mV
MAX20751-PF0-0.9v      974 mV
MAX20751-PF0-1.0v      1020 mV
SFB 1 status:
State                   Online
Inlet1 Temperature     26 degrees C / 78 degrees F
Inlet2 Temperature     29 degrees C / 84 degrees F
Exhaust1 Temperature   26 degrees C / 78 degrees F
Exhaust2 Temperature   29 degrees C / 84 degrees F
SFB2-PF-local Temperature 29 degrees C / 84 degrees F
SFB2-PF-die Temperature 41 degrees C / 105 degrees F
Power
SFB2-PF0-1.0V-PLL      1014 mV
SFB2-1.0V              994 mV
SFB2-10.8V             10746 mV
SFB2-1.5V              1495 mV
SFB2-PF0-1.8V          1814 mV
SFB2-2.5V              2478 mV
SFB2-Bias-5V           5594 mV
SFB2-3.3V-Main         3306 mV
SFB2-1.8V              1774 mV
MAX20751-PF0-0.9v      974 mV
MAX20751-PF0-1.0v      1020 mV
SFB 2 status:
State                   Online
Inlet1 Temperature     29 degrees C / 84 degrees F
Inlet2 Temperature     36 degrees C / 96 degrees F
Exhaust1 Temperature   27 degrees C / 80 degrees F
Exhaust2 Temperature   34 degrees C / 93 degrees F
SFB2-PF-local Temperature 38 degrees C / 100 degrees F
SFB2-PF-die Temperature 40 degrees C / 104 degrees F
Power
SFB2-PF0-1.0V-PLL      1010 mV
SFB2-1.0V              994 mV
SFB2-10.8V             10805 mV
SFB2-1.5V              1495 mV
SFB2-PF0-1.8V          1804 mV
SFB2-2.5V              2475 mV
SFB2-Bias-5V           5562 mV

SFB2-3.3V-Main         3302 mV
SFB2-1.8V              1788 mV
MAX20751-PF0-0.9v      974 mV
MAX20751-PF0-1.0v      1020

```

show chassis environment sfb (MX10008 Router)

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

```

SFB 0 status:
State                   Online
Intake-A Temperature    33 degrees C / 91 degrees F
Intake-B Temperature    22 degrees C / 71 degrees F
Exhaust-A Temperature   27 degrees C / 80 degrees F
Exhaust-B Temperature   32 degrees C / 89 degrees F
PF0 Temperature         38 degrees C / 100 degrees F
PF1 Temperature         29 degrees C / 84 degrees F
Power
PF0 Core 0.9V           925 mV

```

| | |
|-----------------------|------------------------------|
| PF0 AVDD 1V | 999 mV |
| PF1 Core 0.9V | 922 mV |
| PF1 AVDD 1V | 1000 mV |
| 12V | 12311 mV |
| SFB 1 status: | |
| State | Online |
| Intake-A Temperature | 43 degrees C / 109 degrees F |
| Intake-B Temperature | 21 degrees C / 69 degrees F |
| Exhaust-A Temperature | 25 degrees C / 77 degrees F |
| Exhaust-B Temperature | 43 degrees C / 109 degrees F |
| PF0 Temperature | 49 degrees C / 120 degrees F |
| PF1 Temperature | 29 degrees C / 84 degrees F |
| Power | |
| PF0 Core 0.9V | 951 mV |
| PF0 AVDD 1V | 1000 mV |
| PF1 Core 0.9V | 924 mV |
| PF1 AVDD 1V | 1000 mV |
| 12V | 12311 mV |
| SFB 2 status: | |
| State | Online |
| Intake-A Temperature | 39 degrees C / 102 degrees F |
| Intake-B Temperature | 21 degrees C / 69 degrees F |
| Exhaust-A Temperature | 25 degrees C / 77 degrees F |
| Exhaust-B Temperature | 38 degrees C / 100 degrees F |
| PF0 Temperature | 44 degrees C / 111 degrees F |
| PF1 Temperature | 30 degrees C / 86 degrees F |
| Power | |
| PF0 Core 0.9V | 923 mV |
| PF0 AVDD 1V | 1000 mV |
| PF1 Core 0.9V | 925 mV |
| PF1 AVDD 1V | 999 mV |
| 12V | 12364 mV |
| SFB 3 status: | |
| State | Online |
| Intake-A Temperature | 37 degrees C / 98 degrees F |
| Intake-B Temperature | 21 degrees C / 69 degrees F |
| Exhaust-A Temperature | 26 degrees C / 78 degrees F |
| Exhaust-B Temperature | 34 degrees C / 93 degrees F |
| PF0 Temperature | 41 degrees C / 105 degrees F |
| PF1 Temperature | 29 degrees C / 84 degrees F |
| Power | |
| PF0 Core 0.9V | 925 mV |
| PF0 AVDD 1V | 1000 mV |
| PF1 Core 0.9V | 923 mV |
| PF1 AVDD 1V | 1000 mV |
| 12V | 12285 mV |
| SFB 4 status: | |
| State | Online |
| Intake-A Temperature | 30 degrees C / 86 degrees F |
| Intake-B Temperature | 20 degrees C / 68 degrees F |
| Exhaust-A Temperature | 25 degrees C / 77 degrees F |
| Exhaust-B Temperature | 31 degrees C / 87 degrees F |
| PF0 Temperature | 40 degrees C / 104 degrees F |
| PF1 Temperature | 29 degrees C / 84 degrees F |
| Power | |
| PF0 Core 0.9V | 951 mV |
| PF0 AVDD 1V | 1000 mV |
| PF1 Core 0.9V | 948 mV |
| PF1 AVDD 1V | 999 mV |
| 12V | 12193 mV |

SFB 5 status:

| | | |
|-----------------------|----------|-----------------------------|
| State | Online | |
| Intake-A Temperature | | 30 degrees C / 86 degrees F |
| Intake-B Temperature | | 21 degrees C / 69 degrees F |
| Exhaust-A Temperature | | 26 degrees C / 78 degrees F |
| Exhaust-B Temperature | | 30 degrees C / 86 degrees F |
| PF0 Temperature | | 34 degrees C / 93 degrees F |
| PF1 Temperature | | 33 degrees C / 91 degrees F |
| Power | | |
| PF0 Core 0.9V | 951 mV | |
| PF0 AVDD 1V | 1000 mV | |
| PF1 Core 0.9V | 948 mV | |
| PF1 AVDD 1V | 999 mV | |
| 12V | 12166 mV | |

show chassis environment sfm

| | |
|---------------------------------|--|
| Syntax | <code>show chassis environment sfm</code> <code><slot></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers only) Display Switching and Forwarding Module (SFM) environmental information. |
| Options | <p>none—Display environmental information about all SFMs.</p> <p>slot—(Optional) Display environmental information about an individual SFM. Replace slot with a value from 0 through 3.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis sfm on page 534 • request chassis sfm master switch on page 532 • <i>Configuring SFM Redundancy on M40e and M160 Routers</i> • <i>Switching the Global Master and Backup Roles in a Virtual Chassis Configuration</i> |
| List of Sample Output | show chassis environment sfm (M40e Router) on page 916 show chassis environment sfm (M160 Router) on page 916 |
| Output Fields | Table 56 on page 914 lists the output fields for the show chassis environment sfm command. Output fields are listed in the approximate order in which they appear. |

Table 56: show chassis environment sfm Output Fields

| Field Name | Field Description |
|------------------------|---|
| SFM slot status | SFM slot number: 0 or 1 on an M40e router, or 0 , 1 , 2 , or 3 on an M160 router. |
| State | <p>Status of the SFM:</p> <ul style="list-style-type: none"> • Online—SFM is online and running. • Offline—SFM is powered down. <p>If two SFMs are installed and online, one is functioning as the master, and the other is marked as the Standby.</p> |
| SPP Temperature | Temperature of the air flowing past the Switch Plane Processor card. |
| SPR Temperature | Temperature of the air flowing past the Switch Plane Router card. |

Table 56: show chassis environment sfm Output Fields (continued)

| Field Name | Field Description |
|---------------------|--|
| SPP Power | Information about the voltage supplied to the Switch Plane Processor card. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| SPR Power | Information about the voltage supplied to the Switch Plane Router. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| CMB Revision | Revision level of the Chassis Management Bus (CMB) device. |

Sample Output

show chassis environment sfm (M40e Router)

```

user@host> show chassis environment sfm

SFM 0 status:
  State                Online
  SPP temperature       40 degrees C / 104 degrees F
  SPR temperature       44 degrees C / 111 degrees F
  SPP Power:
    1.5 V               1501 mV
    2.5 V               2472 mV
    3.3 V               3293 mV
    5.0 V               5028 mV
    5.0 V bias          4964 mV
  SPR Power:
    1.5 V               1501 mV
    2.5 V               2483 mV
    3.3 V               3308 mV
    5.0 V               5035 mV
    5.0 V bias          4981 mV
    8.0 V bias          8239 mV
  CMB Revision          12

SFM 1 status:
  State                Online - Standby
  SPP temperature       43 degrees C / 109 degrees F
  SPR temperature       45 degrees C / 113 degrees F
  SPP Power:
    1.5 V               1503 mV
    2.5 V               2483 mV
    3.3 V               3284 mV
    5.0 V               5045 mV
    5.0 V bias          4993 mV
  SPR Power:
    1.5 V               1498 mV
    2.5 V               2472 mV
    3.3 V               3284 mV
    5.0 V               5035 mV
    5.0 V bias          4991 mV
    8.0 V bias          8231 mV
  CMB Revision          12

```

show chassis environment sfm (M160 Router)

```

user@host> show chassis environment sfm

SFM 0 status:
  State                Online
  SPP temperature       43 degrees C / 109 degrees F
  SPR temperature       44 degrees C / 111 degrees F
  SPP Power:
    1.5 V               1504 mV
    2.5 V               2474 mV
    3.3 V               3290 mV
    5.0 V               5015 mV
    5.0 V bias          4962 mV
  SPR Power:
    1.5 V               1498 mV
    2.5 V               2482 mV

```



```

3.3 V          3299 mV
5.0 V          5020 mV
5.0 V bias     4971 mV
8.0 V bias     8229 mV
CMB Revision   12
SFM 1 status:
State          Online
SPP temperature 47 degrees C / 116 degrees F
SPR temperature 50 degrees C / 122 degrees F
SPP Power:
1.5 V          1499 mV
2.5 V          2466 mV
3.3 V          3274 mV
5.0 V          5025 mV
5.0 V bias     4984 mV
SPR Power:
1.5 V          1496 mV
2.5 V          2470 mV
3.3 V          3279 mV
5.0 V          5020 mV
5.0 V bias     4993 mV
8.0 V bias     8222 mV
CMB Revision   12
SFM 2 status:
State          Online
SPP temperature 50 degrees C / 122 degrees F
SPR temperature 52 degrees C / 125 degrees F
SPP Power:
1.5 V          1504 mV
2.5 V          2471 mV
3.3 V          3294 mV
5.0 V          5045 mV
5.0 V bias     4981 mV
SPR Power:
1.5 V          1496 mV
2.5 V          2470 mV
3.3 V          3293 mV
5.0 V          5028 mV
5.0 V bias     4971 mV
8.0 V bias     8214 mV
CMB Revision   12
SFM 3 status:
State          Online
SPP temperature 49 degrees C / 120 degrees F
SPR temperature 48 degrees C / 118 degrees F
SPP Power:
1.5 V          1505 mV
2.5 V          2484 mV
3.3 V          3296 mV
5.0 V          5040 mV
5.0 V bias     4984 mV
SPR Power:
1.5 V          1503 mV
2.5 V          2488 mV
3.3 V          3302 mV
5.0 V          5037 mV
5.0 V bias     4993 mV
8.0 V bias     8249 mV
CMB Revision   12

```


show chassis environment sib

| | |
|---------------------------------------|--|
| List of Syntax | Syntax on page 919 Syntax (TX Matrix router) on page 919 Syntax (TX Matrix Plus Router) on page 919 |
| Syntax | <pre>show chassis environment sib <slot></pre> |
| Syntax (TX Matrix router) | <pre>show chassis environment sib <lcc number scc slot></pre> |
| Syntax (TX Matrix Plus Router) | <pre>show chassis environment sib <sib-slot lcc number sfc number f13 sib-slot f2s sib-slot/sib-f2s-slot-number></pre> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>sfc option introduced in Junos OS Release 9.6. for the TX Matrix Plus router.</p> <p>Command introduced in Junos OS 12.1X48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS 12.1 for T4000 Core Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> |
| Description | <p>Display Switch Interface Board (SIB) environmental information.</p> |
| Options | <p>none—Display environmental information about all SIBs. On a TX Matrix router, display environmental information about all SIBs on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about all SIBs on the TX Matrix Plus router and its attached routers .</p> <p>f13 sib-slot—(TX Matrix Plus routers only) (Optional) Display SIB F13 environmental information only. Replace sib-slot with one of the following values: 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12. (Slots 2, 5, 10, 13, 14, and 15 are unused).</p> <p>f2s sib-slot/sib-f2s-slot-number—(TX Matrix Plus routers only) (Optional) Display SIB F2s environmental information only. Replace sib-slot with a value from 0 through 4, followed by a sib-f2s-slot-number value of 0, 2, 4 or 6.</p> <p>lcc number—(TX Matrix router, 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.

scc—(TX Matrix routers only) (Optional) Display environmental information about the SIB in the TX Matrix router (switch-card chassis).

sfc—(TX Matrix Plus routers only) (Optional) On a TX Matrix Plus router, display environmental information about the SIB in the TX Matrix Plus router (switch-fabric chassis).

sib-slot—(Optional) Display environmental information about the specified SIB. For the M320 router, replace **sib-slot** with a value from 0 through 3. For the T640, T1600, T4000, and TX Matrix routers, replace **sib-slot** with a value from 0 through 4. For the TX Matrix Plus router, see `f13 sib-slot` and `f2s sib-slot/sib-f2s-slot-number`. For the T320 router, replace **sib-slot** with a value from 0 through 2. For the PTX5000 Packet Transport Router, replace **sib-slot** with a value from 0 through 8.

Required Privilege Level view

Related Documentation

- [request chassis sib on page 535](#)
- [show chassis sibs on page 1515](#)
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Output Fields Table 57 on page 921 lists the output fields for the **show chassis environment sib** command. Output fields are listed in the approximate order in which they appear.

Table 57: show chassis environment sib Output Fields

| Field Name | Field Description |
|------------------------|---|
| SIB slot status | <p>SIB slot number:</p> <ul style="list-style-type: none"> • 0 through 3 on an M320 router. • 0 or 2 on a T320 router. • 0 through 4 on a T640, T1600, T4000, or TX Matrix router. • 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12 for F13 SIBs on a TX Matrix Plus router. (Slots 2, 5, 10, 13, 14, and 15 are unused). • 0 through 4, followed by 0, 2, 4, or 6 for F2S SIBs on a TX Matrix Plus router. For example, SIB F2S 0/4. • 0 through 8 on a PTX5000 Packet Transport Router. |
| State | <p>Status of the SIB:</p> <ul style="list-style-type: none"> • Online—SIB is online and running. • Offline—SIB is powered down. • Spare (T640, T1600, T4000, and TX Matrix routers only)—SIB is redundant and will move to active state if one of the working SIBs fails. <p>Only four of the SIBs are active at any time. The fifth one is marked Spare. It is activated if there is a fault on one of the active SIBs.</p> <p>Online standby (TX Matrix Plus router only).</p> |
| Temperature | <p>Temperature of the air flowing past the SIB.</p> <p>On PTX Series Packet Transport Routers, separate temperatures are displayed for Intake, Exhaust, and Junction.</p> |
| Power | <p>Information about the voltage supplied to the SIB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p> |

Sample Output

show chassis environment sib (M320 Router)

```

user@host> show chassis environment sib

SIB 0 status:
State                Online
Temperature          34 degrees C / 93 degrees F
Power:
  GROUND              0 mV
  1.8 V               1805 mV
  2.5 V               2498 mV
  3.3 V               3306 mV
  1.8 V bias          1789 mV
  3.3 V bias          3299 mV
  5.0 V bias          5003 mV
  8.0 V bias          7374 mV

```

```

SIB 1 status:
State                Online
Temperature          35 degrees C / 95 degrees F
Power:
  GROUND              0 mV
  1.8 V               1814 mV
  2.5 V               2477 mV
  3.3 V               3319 mV
  1.8 V bias          1792 mV
  3.3 V bias          3291 mV
  5.0 V bias          4981 mV
  8.0 V bias          7335 mV
SIB 2 status:
State                Online
Temperature          33 degrees C / 91 degrees F
Power:
  GROUND              0 mV
  1.8 V               1811 mV
  2.5 V               2489 mV
  3.3 V               3330 mV
  1.8 V bias          1797 mV
  3.3 V bias          3304 mV
  5.0 V bias          5025 mV
  8.0 V bias          7330 mV
SIB 3 status:
State                Online
Temperature          37 degrees C / 98 degrees F
Power:
  GROUND              0 mV
  1.8 V               1798 mV
  2.5 V               2481 mV
  3.3 V               3328 mV
  1.8 V bias          1792 mV
  3.3 V bias          3313 mV
  5.0 V bias          5013 mV
  8.0 V bias          7467 mV

```

show chassis environment sib 1 (T640 Router)

```
user@host> show chassis environment sib 1
```

```

SIB 1 status:
State                Online
Temperature          39 degrees C / 102 degrees F
Power:
  GROUND              0 mV
  1.8 V               1809 mV
  2.5 V               2478 mV
  3.3 V               3308 mV
  1.8 V bias          1794 mV
  3.3 V bias          3274 mV
  5.0 V bias          4996 mV
  8.0 V bias          7247 mV

```

show chassis environment sib 1 (T4000 Router)

```
user@host> show chassis environment sib 1
```

```

SIB 1 status:
State                Online
Temperature          42 degrees C / 107 degrees F
Power
  8.0 V bias         8100 mV
  3.3 V bias         3284 mV
  0.9 V bias         904 mV
  1.1 V bias         1090 mV
  1.5 V bias         1488 mV
  2.5 V bias         2504 mV
  9.0 V              8940 mV
  3.3 V              3288 mV
  XF0 1.0 V          998 mV
  XF0 1.0 V LDO      994 mV
  PCIe SW 1.0 V      990 mV
  XF0 1.8 V          1788 mV
  XF1 1.0 V          1002 mV
  XF2 1.0 V          1002 mV
  XF3 1.0 V          998 mV
  1.2 V              1194 mV
  XF1 1.0 V LDO      1000 mV
  XF2 1.0 V LDO      998 mV
  XF3 1.0 V LDO      998 mV
  XF1 1.8 V          1798 mV
  XF2 1.8 V          1800 mV
  XF3 1.8 V          1794 mV
  1.5 V              1488 mV
  SW 3.3 V           3320 mV

```

show chassis environment sib scc (TX Matrix Router)

```

user@host> show chassis environment sib scc

scc-re0:
-----
SIB 3 status:
State                Offline
Reason              Offlined by button press
Temperature          0 degrees C / 32 degrees F
Power:
  GROUND              0 mV
  1.8 V               0 mV
  2.5 V               0 mV
  3.3 V               0 mV
  1.8 V bias          0 mV
  3.3 V bias          0 mV
  5.0 V bias          0 mV
  8.0 V bias          0 mV
SIB 4 status:
State                Online
Temperature          42 degrees C / 107 degrees F
Temperature (B)      41 degrees C / 105 degrees F
Power:
  GROUND              0 mV
  1.8 V               1787 mV
  2.5 V               2488 mV
  3.3 V               3294 mV
  1.8 V bias          1787 mV
  3.3 V bias          3306 mV
  5.0 V bias          5010 mV

```

| | |
|------------|---------|
| 8.0 V bias | 7418 mV |
| Power (B): | |
| GROUND | 0 mV |
| 1.8 V | 1785 mV |
| 2.5 V | 2485 mV |
| 3.3 V | 3289 mV |
| 1.8 V bias | 1799 mV |
| 3.3 V bias | 3284 mV |
| 5.0 V bias | 4979 mV |
| 8.0 V bias | 7882 mV |

show chassis environment sib (TX Matrix Plus Router)

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

```
sfc0-re0:
```

```
-----
```

```
SIB F13 0 status:
```

| | |
|-----------------|------------------------------|
| State | Online - Standby |
| Temperature | 54 degrees C / 129 degrees F |
| Temperature (B) | 50 degrees C / 122 degrees F |
| Power | |
| 1.2 V_0 | 1205 mV |
| 1.2 V_1 | 1202 mV |
| 1.2 V_2 | 1205 mV |
| 1.2 V_3 | 1208 mV |
| 1.5 V_0 | 1501 mV |
| 1.5 V_1 | 1508 mV |
| 1.8 V | 1798 mV |
| 2.5 V | 2510 mV |
| 3.3 V | 3312 mV |
| 9.0 V | 8991 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2510 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 9024 mV |

```
SIB F13 1 status:
```

| | |
|-----------------|------------------------------|
| State | Online - Standby |
| Temperature | 45 degrees C / 113 degrees F |
| Temperature (B) | 42 degrees C / 107 degrees F |
| Power | |
| 1.2 V_0 | 1202 mV |
| 1.2 V_1 | 1198 mV |
| 1.2 V_2 | 1202 mV |
| 1.2 V_3 | 1202 mV |
| 1.5 V_0 | 1498 mV |
| 1.5 V_1 | 1501 mV |
| 1.8 V | 1811 mV |
| 2.5 V | 2504 mV |
| 3.3 V | 3292 mV |
| 9.0 V | 8991 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8970 mV |

```
SIB F13 3 status:
```

| | |
|-------------|------------------------------|
| State | Online |
| Temperature | 48 degrees C / 118 degrees F |


```

Temperature (B)          44 degrees C / 111 degrees F
Power
  1.2 V_0                1205 mV
  1.2 V_1                1202 mV
  1.2 V_2                1202 mV
  1.2 V_3                1202 mV
  1.5 V_0                1508 mV
  1.5 V_1                1504 mV
  1.8 V                  1798 mV
  2.5 V                  2520 mV
  3.3 V                  3300 mV
  9.0 V                  9009 mV
  9.0 V bias             0 mV
Power (B)
  2.5 V                  2504 mV
  3.3 V                  3312 mV
  9.0 V                  9006 mV
SIB F13 4 status:
State                    Online
Temperature              44 degrees C / 111 degrees F
Temperature (B)         40 degrees C / 104 degrees F
Power
  1.2 V_0                1205 mV
  1.2 V_1                1205 mV
  1.2 V_2                1202 mV
  1.2 V_3                1205 mV
  1.5 V_0                1508 mV
  1.5 V_1                1508 mV
  1.8 V                  1811 mV
  2.5 V                  2510 mV
  3.3 V                  3312 mV
  9.0 V                  8970 mV
  9.0 V bias             0 mV
Power (B)
  2.5 V                  2513 mV
  3.3 V                  3318 mV
  9.0 V                  9048 mV
SIB F13 6 status:
State                    Online
Temperature              50 degrees C / 122 degrees F
Temperature (B)         46 degrees C / 114 degrees F
Power
  1.2 V_0                1195 mV
  1.2 V_1                1205 mV
  1.2 V_2                1202 mV
  1.2 V_3                1202 mV
  1.5 V_0                1495 mV
  1.5 V_1                1495 mV
  1.8 V                  1801 mV
  2.5 V                  2494 mV
  3.3 V                  3300 mV
  9.0 V                  8991 mV
  9.0 V bias             0 mV
Power (B)
  2.5 V                  2500 mV
  3.3 V                  3300 mV
  9.0 V                  9006 mV
SIB F13 7 status:
State                    Online
Temperature              52 degrees C / 125 degrees F

```

| | |
|--------------------|------------------------------|
| Temperature (B) | 49 degrees C / 120 degrees F |
| Power | |
| 1.2 V_0 | 1202 mV |
| 1.2 V_1 | 1202 mV |
| 1.2 V_2 | 1198 mV |
| 1.2 V_3 | 1185 mV |
| 1.5 V_0 | 1501 mV |
| 1.5 V_1 | 1492 mV |
| 1.8 V | 1795 mV |
| 2.5 V | 2491 mV |
| 3.3 V | 3286 mV |
| 9.0 V | 8892 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8952 mV |
| SIB F13 8 status: | |
| State | Online |
| Temperature | 55 degrees C / 131 degrees F |
| Temperature (B) | 50 degrees C / 122 degrees F |
| Power | |
| 1.2 V_0 | 1208 mV |
| 1.2 V_1 | 1205 mV |
| 1.2 V_2 | 1205 mV |
| 1.2 V_3 | 1211 mV |
| 1.5 V_0 | 1514 mV |
| 1.5 V_1 | 1508 mV |
| 1.8 V | 1807 mV |
| 2.5 V | 2516 mV |
| 3.3 V | 3324 mV |
| 9.0 V | 9027 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2520 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 9066 mV |
| SIB F13 9 status: | |
| State | Online |
| Temperature | 46 degrees C / 114 degrees F |
| Temperature (B) | 41 degrees C / 105 degrees F |
| Power | |
| 1.2 V_0 | 1208 mV |
| 1.2 V_1 | 1202 mV |
| 1.2 V_2 | 1208 mV |
| 1.2 V_3 | 1202 mV |
| 1.5 V_0 | 1504 mV |
| 1.5 V_1 | 1504 mV |
| 1.8 V | 1817 mV |
| 2.5 V | 2516 mV |
| 3.3 V | 3312 mV |
| 9.0 V | 9009 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2510 mV |
| 3.3 V | 3312 mV |
| 9.0 V | 9024 mV |
| SIB F13 11 status: | |
| State | Online |
| Temperature | 47 degrees C / 116 degrees F |

```

Temperature (B)          42 degrees C / 107 degrees F
Power
  1.2 V_0                1202 mV
  1.2 V_1                1205 mV
  1.2 V_2                1202 mV
  1.2 V_3                1202 mV
  1.5 V_0                1501 mV
  1.5 V_1                1501 mV
  1.8 V                  1801 mV
  2.5 V                  2510 mV
  3.3 V                  3312 mV
  9.0 V                  8979 mV
  9.0 V bias             0 mV
Power (B)
  2.5 V                  2252 mV
  3.3 V                  5014 mV
  9.0 V                  9954 mV
SIB F13 12 status:
State                    Online
Temperature              45 degrees C / 113 degrees F
Temperature (B)          40 degrees C / 104 degrees F
Power
  1.2 V_0                1211 mV
  1.2 V_1                1208 mV
  1.2 V_2                1205 mV
  1.2 V_3                1205 mV
  1.5 V_0                1511 mV
  1.5 V_1                1501 mV
  1.8 V                  1817 mV
  2.5 V                  2504 mV
  3.3 V                  3318 mV
  9.0 V                  9027 mV
  9.0 V bias             0 mV
Power (B)
  2.5 V                  2520 mV
  3.3 V                  3338 mV
  9.0 V                  9006 mV
SIB F2S 0/0 status:
State                    Online - Standby
Temperature              40 degrees C / 104 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1198 mV
  1.2 V_ASF_B            1198 mV
  1.2 V_ASF_D            1202 mV
  1.5 V                  1498 mV
  1.8 V                  1814 mV
  3.3 V                  3300 mV
  3.3 V bias             3300 mV
  3.3 V ASF              3286 mV
  9.0 V                  8250 mV
SIB F2S 0/2 status:
State                    Online - Standby
Temperature              40 degrees C / 104 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1198 mV
  1.2 V_ASF_B            1195 mV
  1.2 V_ASF_D            1202 mV
  1.5 V                  1498 mV

```

| | |
|---------------------|------------------------------|
| 1.8 V | 1807 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3286 mV |
| 9.0 V | 8250 mV |
| SIB F2S 0/4 status: | |
| State | Online - Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1202 mV |
| 1.2 V_ASF_B | 1198 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1504 mV |
| 1.8 V | 1817 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3306 mV |
| 9.0 V | 8250 mV |
| SIB F2S 0/6 status: | |
| State | Online - Standby |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1202 mV |
| 1.2 V_ASF_B | 1198 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1495 mV |
| 1.8 V | 1814 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3280 mV |
| 9.0 V | 8250 mV |
| SIB F2S 1/0 status: | |
| State | Online |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1195 mV |
| 1.2 V_ASF_B | 1192 mV |
| 1.2 V_ASF_D | 1195 mV |
| 1.5 V | 1488 mV |
| 1.8 V | 1798 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3280 mV |
| 9.0 V | 8250 mV |
| SIB F2S 1/2 status: | |
| State | Online |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1205 mV |
| 1.2 V_ASF_B | 1202 mV |
| 1.2 V_ASF_D | 1205 mV |
| 1.5 V | 1501 mV |
| 1.8 V | 1820 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3306 mV |

```

    9.0 V                               8250 mV
SIB F2S 1/4 status:
  State                               Online
  Temperature                         39 degrees C / 102 degrees F
  Power
    1.2 V_1                           0 mV
    1.2 V_ASF                         1198 mV
    1.2 V_ASF_B                       1195 mV
    1.2 V_ASF_D                       1195 mV
    1.5 V                             1498 mV
    1.8 V                             1811 mV
    3.3 V                             3300 mV
    3.3 V bias                        3300 mV
    3.3 V ASF                         3300 mV
    9.0 V                             8250 mV
SIB F2S 1/6 status:
  State                               Online
  Temperature                         39 degrees C / 102 degrees F
  Power
    1.2 V_1                           0 mV
    1.2 V_ASF                         1195 mV
    1.2 V_ASF_B                       1195 mV
    1.2 V_ASF_D                       1198 mV
    1.5 V                             1498 mV
    1.8 V                             1807 mV
    3.3 V                             3306 mV
    3.3 V bias                        3300 mV
    3.3 V ASF                         3292 mV
    9.0 V                             8250 mV
SIB F2S 2/0 status:
  State                               Online
  Temperature                         39 degrees C / 102 degrees F
  Power
    1.2 V_1                           0 mV
    1.2 V_ASF                         1195 mV
    1.2 V_ASF_B                       1195 mV
    1.2 V_ASF_D                       1198 mV
    1.5 V                             1498 mV
    1.8 V                             1804 mV
    3.3 V                             3300 mV
    3.3 V bias                        3300 mV
    3.3 V ASF                         3286 mV
    9.0 V                             8250 mV
SIB F2S 2/2 status:
  State                               Online
  Temperature                         38 degrees C / 100 degrees F
  Power
    1.2 V_1                           0 mV
    1.2 V_ASF                         1195 mV
    1.2 V_ASF_B                       1195 mV
    1.2 V_ASF_D                       1198 mV
    1.5 V                             1495 mV
    1.8 V                             1807 mV
    3.3 V                             3300 mV
    3.3 V bias                        3300 mV
    3.3 V ASF                         3300 mV
    9.0 V                             8250 mV
SIB F2S 2/4 status:
  State                               Online
  Temperature                         38 degrees C / 100 degrees F

```

```

Power
  1.2 V_1                0 mV
  1.2 V_ASF              1198 mV
  1.2 V_ASF_B            1195 mV
  1.2 V_ASF_D            1198 mV
  1.5 V                  1501 mV
  1.8 V                  1804 mV
  3.3 V                  3286 mV
  3.3 V bias              3292 mV
  3.3 V ASF               3300 mV
  9.0 V                  8230 mV
SIB F2S 2/6 status:
State                     Online
Temperature               38 degrees C / 100 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1202 mV
  1.2 V_ASF_B            1198 mV
  1.2 V_ASF_D            1202 mV
  1.5 V                  1501 mV
  1.8 V                  1817 mV
  3.3 V                  3300 mV
  3.3 V bias              3300 mV
  3.3 V ASF               3318 mV
  9.0 V                  8250 mV
SIB F2S 3/0 status:
State                     Online
Temperature               38 degrees C / 100 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1195 mV
  1.2 V_ASF_B            1195 mV
  1.2 V_ASF_D            1198 mV
  1.5 V                  1501 mV
  1.8 V                  1814 mV
  3.3 V                  3300 mV
  3.3 V bias              3300 mV
  3.3 V ASF               3274 mV
  9.0 V                  8250 mV
SIB F2S 3/2 status:
State                     Online
Temperature               37 degrees C / 98 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1202 mV
  1.2 V_ASF_B            1195 mV
  1.2 V_ASF_D            1195 mV
  1.5 V                  1495 mV
  1.8 V                  1804 mV
  3.3 V                  3300 mV
  3.3 V bias              3300 mV
  3.3 V ASF               3286 mV
  9.0 V                  8250 mV
SIB F2S 3/4 status:
State                     Online
Temperature               37 degrees C / 98 degrees F
Power
  1.2 V_1                0 mV
  1.2 V_ASF              1205 mV
  1.2 V_ASF_B            1198 mV

```

```

1.2 V_ASF_D          1202 mV
1.5 V                1501 mV
1.8 V                1811 mV
3.3 V                3300 mV
3.3 V bias           3300 mV
3.3 V ASF            3318 mV
9.0 V                8250 mV
SIB F2S 3/6 status:
State                Online
Temperature          37 degrees C / 98 degrees F
Power
1.2 V_1              0 mV
1.2 V_ASF            1205 mV
1.2 V_ASF_B          1202 mV
1.2 V_ASF_D          1202 mV
1.5 V                1511 mV
1.8 V                1820 mV
3.3 V                3306 mV
3.3 V bias           3306 mV
3.3 V ASF            3318 mV
9.0 V                8265 mV
SIB F2S 4/0 status:
State                Online
Temperature          36 degrees C / 96 degrees F
Power
1.2 V_1              0 mV
1.2 V_ASF            1198 mV
1.2 V_ASF_B          1198 mV
1.2 V_ASF_D          1198 mV
1.5 V                1501 mV
1.8 V                1814 mV
3.3 V                3292 mV
3.3 V bias           3292 mV
3.3 V ASF            3312 mV
9.0 V                8230 mV
SIB F2S 4/2 status:
State                Online
Temperature          37 degrees C / 98 degrees F
Power
1.2 V_1              0 mV
1.2 V_ASF            1198 mV
1.2 V_ASF_B          1192 mV
1.2 V_ASF_D          1195 mV
1.5 V                1495 mV
1.8 V                1807 mV
3.3 V                3300 mV
3.3 V bias           3300 mV
3.3 V ASF            3300 mV
9.0 V                8250 mV
SIB F2S 4/4 status:
State                Online
Temperature          36 degrees C / 96 degrees F
Power
1.2 V_1              0 mV
1.2 V_ASF            1202 mV
1.2 V_ASF_B          1195 mV
1.2 V_ASF_D          1202 mV
1.5 V                1501 mV
1.8 V                1814 mV
3.3 V                3300 mV

```

```

3.3 V bias          3300 mV
3.3 V ASF           3312 mV
9.0 V               8250 mV
SIB F2S 4/6 status:
State               Online
Temperature         36 degrees C / 96 degrees F
Power
  1.2 V_1           0 mV
  1.2 V_ASF         1198 mV
  1.2 V_ASF_B       1195 mV
  1.2 V_ASF_D       1198 mV
  1.5 V             1498 mV
  1.8 V             1820 mV
  3.3 V             3292 mV
  3.3 V bias        3292 mV
  3.3 V ASF         3286 mV
  9.0 V             8230 mV

1cc0-re0:
-----
SIB 0 status:
State               Online - Standby
Temperature         49 degrees C / 120 degrees F
Temperature (B)     42 degrees C / 107 degrees F
Power
  1.2 V             1204 mV
  1.5 V             1484 mV
  2.5 V             2500 mV
  3.3 V             3312 mV
  3.3 V bias        3312 mV
  5.0 V bias        4956 mV
  8.0 V bias        7740 mV
  9.0 V             8880 mV
Power (B)
  1.2 V             1206 mV
  2.5 V             2500 mV
  3.3 V             3316 mV
  9.0 V             8988 mV
SIB 1 status:
State               Online
Temperature         49 degrees C / 120 degrees F
Temperature (B)     42 degrees C / 107 degrees F
Power
  1.2 V             1202 mV
  1.5 V             1482 mV
  2.5 V             2500 mV
  3.3 V             3296 mV
  3.3 V bias        3288 mV
  5.0 V bias        4986 mV
  8.0 V bias        7800 mV
  9.0 V             8868 mV
Power (B)
  1.2 V             1206 mV
  2.5 V             2512 mV
  3.3 V             3312 mV
  9.0 V             8952 mV
SIB 2 status:
State               Online
Temperature         49 degrees C / 120 degrees F
Temperature (B)     42 degrees C / 107 degrees F

```



```

Power
  1.2 V      1202 mV
  1.5 V      1480 mV
  2.5 V      2476 mV
  3.3 V      3292 mV
  3.3 V bias 3308 mV
  5.0 V bias 5010 mV
  8.0 V bias 7800 mV
  9.0 V      8880 mV
Power (B)
  1.2 V      1204 mV
  2.5 V      2516 mV
  3.3 V      3308 mV
  9.0 V      8988 mV
SIB 3 status:
State      Online
Temperature 48 degrees C / 118 degrees F
Temperature (B) 42 degrees C / 107 degrees F
Power
  1.2 V      1204 mV
  1.5 V      1480 mV
  2.5 V      2500 mV
  3.3 V      3292 mV
  3.3 V bias 3292 mV
  5.0 V bias 4986 mV
  8.0 V bias 7812 mV
  9.0 V      8892 mV
Power (B)
  1.2 V      1198 mV
  2.5 V      2512 mV
  3.3 V      3308 mV
  9.0 V      8892 mV
SIB 4 status:
State      Online
Temperature 48 degrees C / 118 degrees F
Temperature (B) 42 degrees C / 107 degrees F
Power
  1.2 V      1206 mV
  1.5 V      1482 mV
  2.5 V      2484 mV
  3.3 V      3324 mV
  3.3 V bias 3340 mV
  5.0 V bias 4980 mV
  8.0 V bias 7764 mV
  9.0 V      8784 mV
Power (B)
  1.2 V      1202 mV
  2.5 V      2504 mV
  3.3 V      3308 mV
  9.0 V      8820 mV
lcc1-re0:
-----
SIB 0 status:
State      Online - Standby
Temperature 49 degrees C / 120 degrees F
Temperature (B) 43 degrees C / 109 degrees F
Power
  1.2 V      1206 mV
  1.5 V      1506 mV
  2.5 V      2496 mV

```

```

3.3 V          3308 mV
3.3 V bias     3296 mV
5.0 V bias     4974 mV
8.0 V bias     7884 mV
9.0 V          8820 mV
Power (B)
1.2 V          1200 mV
2.5 V          2508 mV
3.3 V          3292 mV
9.0 V          8892 mV
...

```

show chassis environment sib sfc (TX Matrix Plus Router)

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

```
sfc0-re0:
```

```
-----
SIB F13 0 status:
```

```

State          Online - Standby
Temperature     54 degrees C / 129 degrees F
Temperature (B) 50 degrees C / 122 degrees F
Power
  1.2 V_0       1205 mV
  1.2 V_1       1205 mV
  1.2 V_2       1208 mV
  1.2 V_3       1208 mV
  1.5 V_0       1501 mV
  1.5 V_1       1508 mV
  1.8 V         1804 mV
  2.5 V         2504 mV
  3.3 V         3312 mV
  9.0 V         8991 mV
  9.0 V bias    0 mV
Power (B)
  2.5 V         2516 mV
  3.3 V         3318 mV
  9.0 V         9048 mV

```

```
SIB F13 1 status:
```

```

State          Online - Standby
Temperature     45 degrees C / 113 degrees F
Temperature (B) 42 degrees C / 107 degrees F
Power
  1.2 V_0       1202 mV
  1.2 V_1       1205 mV
  1.2 V_2       1198 mV
  1.2 V_3       1205 mV
  1.5 V_0       1498 mV
  1.5 V_1       1495 mV
  1.8 V         1801 mV
  2.5 V         2507 mV
  3.3 V         3306 mV
  9.0 V         8970 mV
  9.0 V bias    0 mV
Power (B)
  2.5 V         2507 mV
  3.3 V         3306 mV
  9.0 V         8970 mV

```

```
SIB F13 3 status:
```

```

State          Online

```

```

Temperature          48 degrees C / 118 degrees F
Temperature (B)      43 degrees C / 109 degrees F
Power
  1.2 V_0            1208 mV
  1.2 V_1            1195 mV
  1.2 V_2            1202 mV
  1.2 V_3            1198 mV
  1.5 V_0            1504 mV
  1.5 V_1            1504 mV
  1.8 V              1801 mV
  2.5 V              2510 mV
  3.3 V              3312 mV
  9.0 V              8970 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2500 mV
  3.3 V              3332 mV
  9.0 V              8970 mV
SIB F13 4 status:
State                Online
Temperature           44 degrees C / 111 degrees F
Temperature (B)      40 degrees C / 104 degrees F
Power
  1.2 V_0            1205 mV
  1.2 V_1            1202 mV
  1.2 V_2            1205 mV
  1.2 V_3            1202 mV
  1.5 V_0            1508 mV
  1.5 V_1            1511 mV
  1.8 V              1811 mV
  2.5 V              2510 mV
  3.3 V              3312 mV
  9.0 V              8952 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2510 mV
  3.3 V              3306 mV
  9.0 V              9024 mV
SIB F13 6 status:
State                Online
Temperature           49 degrees C / 120 degrees F
Temperature (B)      46 degrees C / 114 degrees F
Power
  1.2 V_0            1195 mV
  1.2 V_1            1198 mV
  1.2 V_2            1202 mV
  1.2 V_3            1202 mV
  1.5 V_0            1501 mV
  1.5 V_1            1495 mV
  1.8 V              1801 mV
  2.5 V              2507 mV
  3.3 V              3306 mV
  9.0 V              8979 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2497 mV
  3.3 V              3318 mV
  9.0 V              9006 mV
SIB F13 7 status:
State                Online

```

| | |
|--------------------|------------------------------|
| Temperature | 52 degrees C / 125 degrees F |
| Temperature (B) | 48 degrees C / 118 degrees F |
| Power | |
| 1.2 V_0 | 1198 mV |
| 1.2 V_1 | 1198 mV |
| 1.2 V_2 | 1202 mV |
| 1.2 V_3 | 1189 mV |
| 1.5 V_0 | 1498 mV |
| 1.5 V_1 | 1498 mV |
| 1.8 V | 1804 mV |
| 2.5 V | 2491 mV |
| 3.3 V | 3292 mV |
| 9.0 V | 8904 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2500 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8952 mV |
| SIB F13 8 status: | |
| State | Online |
| Temperature | 54 degrees C / 129 degrees F |
| Temperature (B) | 49 degrees C / 120 degrees F |
| Power | |
| 1.2 V_0 | 1211 mV |
| 1.2 V_1 | 1208 mV |
| 1.2 V_2 | 1208 mV |
| 1.2 V_3 | 1211 mV |
| 1.5 V_0 | 1508 mV |
| 1.5 V_1 | 1511 mV |
| 1.8 V | 1801 mV |
| 2.5 V | 2513 mV |
| 3.3 V | 3324 mV |
| 9.0 V | 9048 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2516 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 9102 mV |
| SIB F13 9 status: | |
| State | Online |
| Temperature | 46 degrees C / 114 degrees F |
| Temperature (B) | 41 degrees C / 105 degrees F |
| Power | |
| 1.2 V_0 | 1205 mV |
| 1.2 V_1 | 1202 mV |
| 1.2 V_2 | 1205 mV |
| 1.2 V_3 | 1198 mV |
| 1.5 V_0 | 1504 mV |
| 1.5 V_1 | 1504 mV |
| 1.8 V | 1817 mV |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8991 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2510 mV |
| 3.3 V | 3332 mV |
| 9.0 V | 9006 mV |
| SIB F13 11 status: | |
| State | Online |

```

Temperature          47 degrees C / 116 degrees F
Temperature (B)      42 degrees C / 107 degrees F
Power
  1.2 V_0            1202 mV
  1.2 V_1            1205 mV
  1.2 V_2            1202 mV
  1.2 V_3            1198 mV
  1.5 V_0            1501 mV
  1.5 V_1            1504 mV
  1.8 V              1807 mV
  2.5 V              2510 mV
  3.3 V              3306 mV
  9.0 V              8991 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2249 mV
  3.3 V              4994 mV
  9.0 V              9936 mV
SIB F13 12 status:
State                Online
Temperature           44 degrees C / 111 degrees F
Temperature (B)       40 degrees C / 104 degrees F
Power
  1.2 V_0            1208 mV
  1.2 V_1            1202 mV
  1.2 V_2            1208 mV
  1.2 V_3            1205 mV
  1.5 V_0            1511 mV
  1.5 V_1            1508 mV
  1.8 V              1814 mV
  2.5 V              2507 mV
  3.3 V              3318 mV
  9.0 V              9039 mV
  9.0 V bias         0 mV
Power (B)
  2.5 V              2516 mV
  3.3 V              3344 mV
  9.0 V              9006 mV
SIB F2S 0/0 status:
State                Online - Standby
Temperature           40 degrees C / 104 degrees F
Power
  1.2 V_1            0 mV
  1.2 V_ASF          1198 mV
  1.2 V_ASF_B        1198 mV
  1.2 V_ASF_D        1202 mV
  1.5 V              1498 mV
  1.8 V              1814 mV
  3.3 V              3300 mV
  3.3 V bias         3300 mV
  3.3 V ASF          3286 mV
  9.0 V              8250 mV
SIB F2S 0/2 status:
State                Online - Standby
Temperature           40 degrees C / 104 degrees F
Power
  1.2 V_1            0 mV
  1.2 V_ASF          1198 mV
  1.2 V_ASF_B        1195 mV
  1.2 V_ASF_D        1202 mV

```

| | |
|---------------------|------------------------------|
| 1.5 V | 1498 mV |
| 1.8 V | 1807 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3292 mV |
| 9.0 V | 8250 mV |
| SIB F2S 0/4 status: | |
| State | Online - Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1198 mV |
| 1.2 V_ASF_B | 1195 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1501 mV |
| 1.8 V | 1817 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3306 mV |
| 9.0 V | 8250 mV |
| SIB F2S 0/6 status: | |
| State | Online - Standby |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1202 mV |
| 1.2 V_ASF_B | 1198 mV |
| 1.2 V_ASF_D | 1198 mV |
| 1.5 V | 1495 mV |
| 1.8 V | 1814 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3280 mV |
| 9.0 V | 8250 mV |
| SIB F2S 1/0 status: | |
| State | Online |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1195 mV |
| 1.2 V_ASF_B | 1192 mV |
| 1.2 V_ASF_D | 1195 mV |
| 1.5 V | 1492 mV |
| 1.8 V | 1798 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3280 mV |
| 9.0 V | 8250 mV |
| SIB F2S 1/2 status: | |
| State | Online |
| Temperature | 39 degrees C / 102 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1205 mV |
| 1.2 V_ASF_B | 1202 mV |
| 1.2 V_ASF_D | 1205 mV |
| 1.5 V | 1504 mV |
| 1.8 V | 1820 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |

```

    3.3 V ASF          3306 mV
    9.0 V              8250 mV
SIB F2S 1/4 status:
  State               Online
  Temperature         39 degrees C / 102 degrees F
  Power
    1.2 V_1           0 mV
    1.2 V_ASF         1202 mV
    1.2 V_ASF_B       1195 mV
    1.2 V_ASF_D       1198 mV
    1.5 V              1498 mV
    1.8 V              1811 mV
    3.3 V              3300 mV
    3.3 V bias         3300 mV
    3.3 V ASF          3300 mV
    9.0 V              8250 mV
SIB F2S 1/6 status:
  State               Online
  Temperature         39 degrees C / 102 degrees F
  Power
    1.2 V_1           0 mV
    1.2 V_ASF         1195 mV
    1.2 V_ASF_B       1192 mV
    1.2 V_ASF_D       1198 mV
    1.5 V              1498 mV
    1.8 V              1807 mV
    3.3 V              3306 mV
    3.3 V bias         3300 mV
    3.3 V ASF          3292 mV
    9.0 V              8250 mV
SIB F2S 2/0 status:
  State               Online
  Temperature         38 degrees C / 100 degrees F
  Power
    1.2 V_1           0 mV
    1.2 V_ASF         1195 mV
    1.2 V_ASF_B       1195 mV
    1.2 V_ASF_D       1198 mV
    1.5 V              1498 mV
    1.8 V              1804 mV
    3.3 V              3300 mV
    3.3 V bias         3300 mV
    3.3 V ASF          3292 mV
    9.0 V              8250 mV
...

```

show chassis environment sib f13 (TX Matrix Plus Router)

```
user@host> show chassis environment sib f13 0
```

```

SIB F13 0 status:
  State               Online - Standby
  Temperature         54 degrees C / 129 degrees F
  Temperature (B)     50 degrees C / 122 degrees F
  Power
    1.2 V_0           1202 mV
    1.2 V_1           1202 mV
    1.2 V_2           1208 mV
    1.2 V_3           1208 mV
    1.5 V_0           1501 mV

```

| | |
|------------|---------|
| 1.5 V_1 | 1504 mV |
| 1.8 V | 1801 mV |
| 2.5 V | 2504 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 8991 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2510 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 9024 mV |

show chassis environment sib f2s (TX Matrix Plus Router)

```
user@host> show chassis environment sib f2s 0/2
```

SIB F2S 0/2 status:

| | |
|-------------|------------------------------|
| State | Online - Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1198 mV |
| 1.2 V_ASF_B | 1195 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1501 mV |
| 1.8 V | 1807 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3286 mV |
| 9.0 V | 8250 mV |

show chassis environment sib (TX Matrix Plus router with 3D SIBs)

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

sfc0-re0:

SIB F13 0 status:

| | |
|-------------------------|------------------------------|
| State | Online |
| Board Temperature | 44 degrees C / 111 degrees F |
| XF Junction Temperature | 62 degrees C / 143 degrees F |
| Power | |
| XF F1 LCC0 1.0 V | 999 mV |
| PCIe Switch 1.0 V | 1000 mV |
| XF F3 LCC0 1.0 V | 1000 mV |
| XF F1/F3 LCC0 1.2 V | 1199 mV |
| XF F1 LCC1 1.0 V | 1000 mV |
| XF F1/F3 LCC1 1.2 V | 1199 mV |
| XF F3 LCC1 1.0 V | 1000 mV |
| XF F1/F3 1.5 V | 1499 mV |
| XF RC LCC0 Base 1.0 | 1000 mV |
| XF RC Base 1.2 V | 1200 mV |
| XF RC LCC1 Base 1.0 | 1000 mV |
| XF RC Base 1.5 V | 1499 mV |
| 3.3 V Base | 3300 mV |
| VSC8248 Base 1.8V | 1796 mV |
| FPGA Core 0.9 V | 899 mV |
| 2.5 V Base | 2500 mV |
| 1tc3880-3.3v-bias | 3343 mV |
| CXP Base 4.0 V | 3999 mV |


```

XF RC LCC0 Mezz 1.0      1000 mV
XF RC Mezz 1.2 V        1199 mV
XF RC LCC1 Mezz 1.0      999 mV
XF RC Mezz 1.5 V        1499 mV
3.3 V Mezz              3299 mV
VSC8248 Mezz 1.8V       1800 mV
CXP Mezz 4.0 V          3999 mV
[...Output Truncated...]
SIB F2S 0/0 status:
State                   Online
Board Temperature      32 degrees C / 89 degrees F
XF Junction Temperature 41 degrees C / 105 degrees F
Power
  XF F2S 1.8 V LD0      1775 mV
  XF F2S 1.0 V AN       992 mV
  XF F2S 1.0 V          1002 mV
  XF F2S 1.5 V          1488 mV
  1.5 V Base            2500 mV
  3.3 V bias            3306 mV
  3.3 V Base            3280 mV
  12.0 V Base           11928 mV
[...Output Truncated...]
SIB F2S 2/6 status:
State                   Online
Board Temperature      28 degrees C / 82 degrees F
XF Junction Temperature 40 degrees C / 104 degrees F
Power
  XF F2S 1.8 V LD0      1782 mV
  XF F2S 1.0 V AN       999 mV
  XF F2S 1.0 V          1005 mV
  XF F2S 1.5 V          1498 mV
  1.5 V Base            2510 mV
  3.3 V bias            3292 mV
  3.3 V Base            3292 mV
  12.0 V Base           12024 mV

1cc0-re0:
-----
SIB 0 status:
State                   Online
Temperature             41 degrees C / 105 degrees F
Temperature (B)         Absent
Max Jn Temperature      48 degrees C / 118 degrees F
Power
  8.0 V bias            8156 mV
  3.3 V bias            3284 mV
  FPGA 0.9 V bias       908 mV
  FPGA 1.1 V bias       1086 mV
  FPGA 1.5 V bias       1487 mV
  FPGA 2.5 V bias       2525 mV
  3.3 V                 3282 mV
  1.5 V                 1487 mV
  XF HSS 1.5 V          1501 mV
  XF1 1.0 V             1001 mV
  XF2 1.0 V             1003 mV
  XF3 1.0 V             998 mV
  XF1 1.8 V LD0         1782 mV
  XF2 1.8 V LD0         1792 mV
  XF3 1.8 V LD0         1782 mV
  CLK BUF 2.5 V LDO     2493 mV

```

```

XF1 1.0 V LDO          991 mV
XF2 1.0 V LDO          991 mV
XF3 1.0 V LDO          991 mV
PCIE SW 3.3 V          3274 mV
PCIE 1.0 V             996 mV
RETIMER 1.2 V          1174 mV
RETIMER IO 1.8 V       1770 mV
                        0 mV
Power (B)
  1.2 V                0 mV
  2.5 V                0 mV
  3.3 V                0 mV
  9.0 V                0 mV

```

[...Output Truncated...]

lcc2-re0:

SIB 0 status:

```

State                  Online
Temperature            42 degrees C / 107 degrees F
Temperature (B)        Absent
Max Jn Temperature     51 degrees C / 123 degrees F
Power
  8.0 V bias           8146 mV
  3.3 V bias           3277 mV
  FPGA 0.9 V bias      903 mV
  FPGA 1.1 V bias     1089 mV
  FPGA 1.5 V bias     1479 mV
  FPGA 2.5 V bias     2515 mV
  3.3 V                3277 mV
  1.5 V                1482 mV
  XF HSS 1.5 V         1501 mV
  XF1 1.0 V            1001 mV
  XF2 1.0 V            1003 mV
  XF3 1.0 V            998 mV
  XF1 1.8 V LDO        1787 mV
  XF2 1.8 V LDO        1792 mV
  XF3 1.8 V LDO        1792 mV
  CLK BUF 2.5 V LDO    2481 mV
  XF1 1.0 V LDO        986 mV
  XF2 1.0 V LDO        993 mV
  XF3 1.0 V LDO        991 mV
  PCIE SW 3.3 V        3279 mV
  PCIE 1.0 V           991 mV
  RETIMER 1.2 V        1179 mV
  RETIMER IO 1.8 V     1772 mV
                        0 mV
Power (B)
  1.2 V                0 mV
  2.5 V                0 mV
  3.3 V                0 mV
  9.0 V                0 mV

```

[...Output Truncated...]

show chassis environment sib (PTX5000 Packet Transport Router with SIB-I-8S)

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

SIB 0 status:

```

State                  Online
Exhaust Temperature    31 degrees C / 87 degrees F

```

```

Junction Temperature      40 degrees C / 104 degrees F
Power
  1.0 V                  1000 mV
  1.5 V                  1499 mV
  1.2 V                  1200 mV
  3.3 V                  3300 mV
  0.9 V                  900 mV
  2.5 V                  2499 mV
  3.3 V bias             3313 mV
  12.0 V                 12296 mV
  12.0 V i               2908 mA
SIB 1 status:
State                     Online
Exhaust Temperature      31 degrees C / 87 degrees F
Junction Temperature     40 degrees C / 104 degrees F
Power
  1.0 V                  1000 mV
  1.5 V                  1499 mV
  1.2 V                  1200 mV
  3.3 V                  3299 mV
  0.9 V                  900 mV
  2.5 V                  2500 mV
  3.3 V bias             3313 mV
  12.0 V                 12312 mV
  12.0 V i               2979 mA
SIB 2 status:
State                     Online
Exhaust Temperature      31 degrees C / 87 degrees F
Junction Temperature     38 degrees C / 100 degrees F
Power
  1.0 V                  999 mV
  1.5 V                  1499 mV
  1.2 V                  1200 mV
  3.3 V                  3300 mV
  0.9 V                  900 mV
  2.5 V                  2500 mV
  3.3 V bias             3324 mV
  12.0 V                 12312 mV
  12.0 V i               2990 mA
SIB 3 status:
State                     Online
Exhaust Temperature      31 degrees C / 87 degrees F
Junction Temperature     39 degrees C / 102 degrees F
Power
  1.0 V                  999 mV
  1.5 V                  1500 mV
  1.2 V                  1200 mV
  3.3 V                  3300 mV
  0.9 V                  900 mV
  2.5 V                  2499 mV
  3.3 V bias             3307 mV
  12.0 V                 12296 mV
  12.0 V i               3144 mA
SIB 4 status:
State                     Online
Exhaust Temperature      31 degrees C / 87 degrees F
Junction Temperature     38 degrees C / 100 degrees F
Power
  1.0 V                  1000 mV
  1.5 V                  1500 mV

```

| | |
|----------------------|------------------------------|
| 1.2 V | 1200 mV |
| 3.3 V | 3300 mV |
| 0.9 V | 899 mV |
| 2.5 V | 2499 mV |
| 3.3 V bias | 3341 mV |
| 12.0 V | 12328 mV |
| 12.0 V i | 2836 mA |
| SIB 5 status: | |
| State | Online |
| Exhaust Temperature | 31 degrees C / 87 degrees F |
| Junction Temperature | 38 degrees C / 100 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1499 mV |
| 1.2 V | 1199 mV |
| 3.3 V | 3299 mV |
| 0.9 V | 900 mV |
| 2.5 V | 2499 mV |
| 3.3 V bias | 3327 mV |
| 12.0 V | 12296 mV |
| 12.0 V i | 2919 mA |
| SIB 6 status: | |
| State | Online |
| Exhaust Temperature | 31 degrees C / 87 degrees F |
| Junction Temperature | 38 degrees C / 100 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1200 mV |
| 3.3 V | 3299 mV |
| 0.9 V | 899 mV |
| 2.5 V | 2500 mV |
| 3.3 V bias | 3294 mV |
| 12.0 V | 12296 mV |
| 12.0 V i | 2825 mA |
| SIB 7 status: | |
| State | Online |
| Exhaust Temperature | 30 degrees C / 86 degrees F |
| Junction Temperature | 36 degrees C / 96 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1200 mV |
| 3.3 V | 3300 mV |
| 0.9 V | 899 mV |
| 2.5 V | 2499 mV |
| 3.3 V bias | 3316 mV |
| 12.0 V | 12312 mV |
| 12.0 V i | 2844 mA |
| SIB 8 status: | |
| State | Online |
| Exhaust Temperature | 31 degrees C / 87 degrees F |
| Junction Temperature | 38 degrees C / 100 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1499 mV |
| 1.2 V | 1199 mV |
| 3.3 V | 3299 mV |
| 0.9 V | 900 mV |
| 2.5 V | 2500 mV |

| | |
|------------|----------|
| 3.3 V bias | 3333 mV |
| 12.0 V | 12328 mV |
| 12.0 V i | 2900 mA |

show chassis environment sib (PTX5000 Packet Transport Router with SIB-I-8SE)

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

SIB 0 status:

| | |
|----------------------|------------------------------|
| State | Online |
| Exhaust Temperature | 29 degrees C / 84 degrees F |
| Junction Temperature | 42 degrees C / 107 degrees F |
| Power | |
| 1.0 V | 999 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1200 mV |
| 3.3 V | 3300 mV |
| 0.9 V | 900 mV |
| 2.5 V | 2500 mV |
| 3.3 V bias | 3289 mV |
| 12.0 V | 12484 mV |
| 2.5 V LDO | 2502 mV |
| 12.0 V i | 3494 mA |

SIB 1 status:

| | |
|----------------------|-----------------------------|
| State | Online |
| Exhaust Temperature | 28 degrees C / 82 degrees F |
| Junction Temperature | 33 degrees C / 91 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1199 mV |
| 3.3 V | 3300 mV |
| 0.9 V | 899 mV |
| 2.5 V | 2500 mV |
| 3.3 V bias | 3313 mV |
| 12.0 V | 12484 mV |
| 2.5 V LDO | 2513 mV |
| 12.0 V i | 3099 mA |

SIB 2 status:

| | |
|----------------------|------------------------------|
| State | Online |
| Exhaust Temperature | 29 degrees C / 84 degrees F |
| Junction Temperature | 39 degrees C / 102 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1199 mV |
| 3.3 V | 3300 mV |
| 0.9 V | 900 mV |
| 2.5 V | 2500 mV |
| 3.3 V bias | 3307 mV |
| 12.0 V | 12484 mV |
| 2.5 V LDO | 2512 mV |
| 12.0 V i | 3336 mA |

SIB 3 status:

| | |
|----------------------|-----------------------------|
| State | Online |
| Exhaust Temperature | 28 degrees C / 82 degrees F |
| Junction Temperature | 34 degrees C / 93 degrees F |
| Power | |
| 1.0 V | 999 mV |
| 1.5 V | 1500 mV |

| | |
|----------------------|------------------------------|
| 1.2 V | 1200 mV |
| 3.3 V | 3300 mV |
| 0.9 V | 900 mV |
| 2.5 V | 2500 mV |
| 3.3 V bias | 3299 mV |
| 12.0 V | 12500 mV |
| 2.5 V LDO | 2494 mV |
| 12.0 V i | 3479 mA |
| SIB 4 status: | |
| State | Online |
| Exhaust Temperature | 28 degrees C / 82 degrees F |
| Junction Temperature | 38 degrees C / 100 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1199 mV |
| 3.3 V | 3299 mV |
| 0.9 V | 900 mV |
| 2.5 V | 2499 mV |
| 3.3 V bias | 3309 mV |
| 12.0 V | 12484 mV |
| 2.5 V LDO | 2499 mV |
| 12.0 V i | 3159 mA |
| SIB 5 status: | |
| State | Online |
| Exhaust Temperature | 27 degrees C / 80 degrees F |
| Junction Temperature | 33 degrees C / 91 degrees F |
| Power | |
| 1.0 V | 1000 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1200 mV |
| 3.3 V | 3299 mV |
| 0.9 V | 900 mV |
| 2.5 V | 2499 mV |
| 3.3 V bias | 3308 mV |
| 12.0 V | 12468 mV |
| 2.5 V LDO | 2495 mV |
| 12.0 V i | 3054 mA |
| SIB 6 status: | |
| State | Online |
| Exhaust Temperature | 28 degrees C / 82 degrees F |
| Junction Temperature | 38 degrees C / 100 degrees F |
| Power | |
| 1.0 V | 999 mV |
| 1.5 V | 1500 mV |
| 1.2 V | 1199 mV |
| 3.3 V | 3299 mV |
| 0.9 V | 899 mV |
| 2.5 V | 2499 mV |
| 3.3 V bias | 3313 mV |
| 12.0 V | 12468 mV |
| 2.5 V LDO | 2510 mV |
| 12.0 V i | 3122 mA |
| SIB 7 status: | |
| State | Online |
| Exhaust Temperature | 26 degrees C / 78 degrees F |
| Junction Temperature | 34 degrees C / 93 degrees F |
| Power | |
| 1.0 V | 999 mV |
| 1.5 V | 1499 mV |

```

1.2 V          1199 mV
3.3 V          3300 mV
0.9 V          900 mV
2.5 V          2499 mV
3.3 V bias     3278 mV
12.0 V         12468 mV
2.5 V LDO      2504 mV
12.0 V i       3234 mA
SIB 8 status:
State          Online
Exhaust Temperature 26 degrees C / 78 degrees F
Junction Temperature 34 degrees C / 93 degrees F
Power
1.0 V          999 mV
1.5 V          1499 mV
1.2 V          1199 mV
3.3 V          3300 mV
0.9 V          900 mV
2.5 V          2499 mV
3.3 V bias     3278 mV
12.0 V         12468 mV
2.5 V LDO      2504 mV
12.0 V i       3234 mA

```

show chassis environment sib (PTX10008 Router)

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

```

SIB 0 status:
State          Online
SIB 0 Intake-A Temp Sensor 37 degrees C / 98 degrees F
SIB 0 Intake-B Temp Sensor 31 degrees C / 87 degrees F
SIB 0 Exhaust-A Temp Sensor34 degrees C / 93 degrees F
SIB 0 Exhaust-B Temp Sensor38 degrees C / 100 degrees F
SIB 0 PF0 Temp Sensor      47 degrees C / 116 degrees F
SIB 0 PF1 Temp Sensor      40 degrees C / 104 degrees F
Power
  PF0 Core 0.9V            925 mV   28929 mA   26835 mW
  PF0 AVDD 1V              1000 mV   32656 mA   32718 mW
  PF1 Core 0.9V            922 mV   28351 mA   26210 mW
  PF1 AVDD 1V              1000 mV   30890 mA   30937 mW
  12V                      12311 mV   10880 mA   134744 mW
SIB 1 status:
State          Online
SIB 1 Intake-A Temp Sensor 43 degrees C / 109 degrees F
SIB 1 Intake-B Temp Sensor 35 degrees C / 95 degrees F
SIB 1 Exhaust-A Temp Sensor37 degrees C / 98 degrees F
SIB 1 Exhaust-B Temp Sensor45 degrees C / 113 degrees F
SIB 1 PF0 Temp Sensor      54 degrees C / 129 degrees F
SIB 1 PF1 Temp Sensor      42 degrees C / 107 degrees F
Power
  PF0 Core 0.9V            951 mV   30468 mA   29007 mW
  PF0 AVDD 1V              999 mV   32921 mA   32921 mW
  PF1 Core 0.9V            924 mV   29046 mA   26828 mW
  PF1 AVDD 1V              1000 mV   30796 mA   30796 mW
  12V                      12298 mV   11356 mA   140682 mW
SIB 2 status:
State          Online
SIB 2 Intake-A Temp Sensor 45 degrees C / 113 degrees F
SIB 2 Intake-B Temp Sensor 36 degrees C / 96 degrees F

```

```

SIB 2 Exhaust-A Temp Sensor38 degrees C / 100 degrees F
SIB 2 Exhaust-B Temp Sensor46 degrees C / 114 degrees F
SIB 2 PF0 Temp Sensor      55 degrees C / 131 degrees F
SIB 2 PF1 Temp Sensor      43 degrees C / 109 degrees F
Power
    PF0 Core 0.9V          924 mV   28273 mA   26140 mW
    PF0 AVDD 1V            1000 mV   32562 mA   32625 mW
    PF1 Core 0.9V          925 mV   29351 mA   27265 mW
    PF1 AVDD 1V            999 mV   31812 mA   31859 mW
    12V                    12351 mV   11010 mA   137481 mW
SIB 3 status:
State                               Online
SIB 3 Intake-A Temp Sensor 44 degrees C / 111 degrees F
SIB 3 Intake-B Temp Sensor 36 degrees C / 96 degrees F
SIB 3 Exhaust-A Temp Sensor37 degrees C / 98 degrees F
SIB 3 Exhaust-B Temp Sensor45 degrees C / 113 degrees F
SIB 3 PF0 Temp Sensor      54 degrees C / 129 degrees F
SIB 3 PF1 Temp Sensor      43 degrees C / 109 degrees F
Power
    PF0 Core 0.9V          924 mV   28820 mA   26695 mW
    PF0 AVDD 1V            999 mV   32265 mA   32281 mW
    PF1 Core 0.9V          923 mV   28933 mA   26757 mW
    PF1 AVDD 1V            999 mV   31281 mA   31265 mW
    12V                    12285 mV   11096 mA   137296 mW
SIB 4 status:
State                               Online
SIB 4 Intake-A Temp Sensor 45 degrees C / 113 degrees F
SIB 4 Intake-B Temp Sensor 36 degrees C / 96 degrees F
SIB 4 Exhaust-A Temp Sensor37 degrees C / 98 degrees F
SIB 4 Exhaust-B Temp Sensor46 degrees C / 114 degrees F
SIB 4 PF0 Temp Sensor      54 degrees C / 129 degrees F
SIB 4 PF1 Temp Sensor      43 degrees C / 109 degrees F
Power
    PF0 Core 0.9V          950 mV   29757 mA   28281 mW
    PF0 AVDD 1V            999 mV   32109 mA   32093 mW
    PF1 Core 0.9V          948 mV   29460 mA   27921 mW
    PF1 AVDD 1V            999 mV   30687 mA   30671 mW
    12V                    12193 mV   11183 mA   137352 mW
SIB 5 status:
State                               Online
SIB 5 Intake-A Temp Sensor 38 degrees C / 100 degrees F
SIB 5 Intake-B Temp Sensor 32 degrees C / 89 degrees F
SIB 5 Exhaust-A Temp Sensor35 degrees C / 95 degrees F
SIB 5 Exhaust-B Temp Sensor39 degrees C / 102 degrees F
SIB 5 PF0 Temp Sensor      45 degrees C / 113 degrees F
SIB 5 PF1 Temp Sensor      43 degrees C / 109 degrees F
Power
    PF0 Core 0.9V          951 mV   29546 mA   28156 mW
    PF0 AVDD 1V            999 mV   31468 mA   31468 mW
    PF1 Core 0.9V          948 mV   30007 mA   28515 mW
    PF1 AVDD 1V            999 mV   31812 mA   31859 mW
    12V                    12179 mV   11399 mA   139720 mW

```

show chassis environment sib (PTX10016 Router)

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

```

SIB 0 status:
State                               Online
SIB 0 Intake-A Temp Sensor 22 degrees C / 71 degrees F

```



```

SIB 0 Intake-B Temp Sensor 21 degrees C / 69 degrees F
SIB 0 Intake-C Temp Sensor 17 degrees C / 62 degrees F
SIB 0 Exhaust-A Temp Sensor 29 degrees C / 84 degrees F
SIB 0 Exhaust-B Temp Sensor 30 degrees C / 86 degrees F
SIB 0 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
SIB 0 PF0 Temp Sensor      31 degrees C / 87 degrees F
SIB 0 PF1 Temp Sensor      31 degrees C / 87 degrees F
SIB 0 PF2 Temp Sensor      32 degrees C / 89 degrees F
SIB 0 PF3 Temp Sensor      33 degrees C / 91 degrees F
SIB 0 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 0 PF5 Temp Sensor      27 degrees C / 80 degrees F
Power
  PF0 Core 0.9V            924 mV    24429 mA    22664 mW
  PF0 AVDD 1V              999 mV    19515 mA    19531 mW
  PF1 Core 0.9V            924 mV    24531 mA    22679 mW
  PF1 AVDD 1V              999 mV    17796 mA    17812 mW
  PF2 Core 0.9V            924 mV    24308 mA    22503 mW
  PF2 AVDD 1V              999 mV    16250 mA    16265 mW
  PF3 Core 0.9V            925 mV    24414 mA    22601 mW
  PF3 AVDD 1V              999 mV    15023 mA    15023 mW
  PF4 Core 0.9V            924 mV    24089 mA    22285 mW
  PF4 AVDD 1V              1000 mV    15148 mA    15156 mW
  PF5 Core 0.9V            898 mV    23601 mA    21273 mW
  PF5 AVDD 1V              999 mV    15453 mA    15453 mW
  12V                      12311 mV    11399 mA    141366 mW
  12V_1                    12325 mV    11053 mA    137204 mW

SIB 1 status:
State                               Online
SIB 1 Intake-A Temp Sensor 23 degrees C / 73 degrees F
SIB 1 Intake-B Temp Sensor 23 degrees C / 73 degrees F
SIB 1 Intake-C Temp Sensor 18 degrees C / 64 degrees F
SIB 1 Exhaust-A Temp Sensor 30 degrees C / 86 degrees F
SIB 1 Exhaust-B Temp Sensor 32 degrees C / 89 degrees F
SIB 1 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
SIB 1 PF0 Temp Sensor      33 degrees C / 91 degrees F
SIB 1 PF1 Temp Sensor      32 degrees C / 89 degrees F
SIB 1 PF2 Temp Sensor      34 degrees C / 93 degrees F
SIB 1 PF3 Temp Sensor      39 degrees C / 102 degrees F
SIB 1 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 1 PF5 Temp Sensor      28 degrees C / 82 degrees F
Power
  PF0 Core 0.9V            949 mV    24101 mA    22910 mW
  PF0 AVDD 1V              1000 mV    19046 mA    19062 mW
  PF1 Core 0.9V            924 mV    24375 mA    22546 mW
  PF1 AVDD 1V              999 mV    17843 mA    17859 mW
  PF2 Core 0.9V            923 mV    24183 mA    22355 mW
  PF2 AVDD 1V              999 mV    16109 mA    16117 mW
  PF3 Core 0.9V            949 mV    24246 mA    23097 mW
  PF3 AVDD 1V              1000 mV    14632 mA    14632 mW
  PF4 Core 0.9V            925 mV    23613 mA    21882 mW
  PF4 AVDD 1V              1000 mV    14742 mA    14710 mW
  PF5 Core 0.9V            924 mV    24328 mA    22515 mW
  PF5 AVDD 1V              1000 mV    14640 mA    14664 mW
  12V                      12351 mV    11096 mA    138036 mW
  12V_1                    12219 mV    11226 mA    137500 mW

SIB 2 status:
State                               Online
SIB 2 Intake-A Temp Sensor 25 degrees C / 77 degrees F
SIB 2 Intake-B Temp Sensor 22 degrees C / 71 degrees F
SIB 2 Intake-C Temp Sensor 18 degrees C / 64 degrees F

```

```

SIB 2 Exhaust-A Temp Sensor29 degrees C / 84 degrees F
SIB 2 Exhaust-B Temp Sensor33 degrees C / 91 degrees F
SIB 2 Exhaust-C Temp Sensor24 degrees C / 75 degrees F
SIB 2 PF0 Temp Sensor      33 degrees C / 91 degrees F
SIB 2 PF1 Temp Sensor      31 degrees C / 87 degrees F
SIB 2 PF2 Temp Sensor      34 degrees C / 93 degrees F
SIB 2 PF3 Temp Sensor      42 degrees C / 107 degrees F
SIB 2 PF4 Temp Sensor      28 degrees C / 82 degrees F
SIB 2 PF5 Temp Sensor      27 degrees C / 80 degrees F
Power
  PF0 Core 0.9V              899 mV   24046 mA  21656 mW
  PF0 AVDD 1V                999 mV   19265 mA  19250 mW
  PF1 Core 0.9V              900 mV   24234 mA  21867 mW
  PF1 AVDD 1V                999 mV   18000 mA  18015 mW
  PF2 Core 0.9V              900 mV   23250 mA  20953 mW
  PF2 AVDD 1V                999 mV   16328 mA  16343 mW
  PF3 Core 0.9V              899 mV   23976 mA  21570 mW
  PF3 AVDD 1V                999 mV   14976 mA  15007 mW
  PF4 Core 0.9V              924 mV   23718 mA  21976 mW
  PF4 AVDD 1V               1000 mV   14781 mA  14765 mW
  PF5 Core 0.9V              899 mV   23265 mA  20937 mW
  PF5 AVDD 1V                999 mV   15125 mA  15132 mW
  12V                        12298 mV  10750 mA  133523 mW
  12V_1                      12245 mV  10880 mA  134041 mW

SIB 3 status:
State                               Online
SIB 3 Intake-A Temp Sensor 23 degrees C / 73 degrees F
SIB 3 Intake-B Temp Sensor 25 degrees C / 77 degrees F
SIB 3 Intake-C Temp Sensor 17 degrees C / 62 degrees F
SIB 3 Exhaust-A Temp Sensor30 degrees C / 86 degrees F
SIB 3 Exhaust-B Temp Sensor32 degrees C / 89 degrees F
SIB 3 Exhaust-C Temp Sensor25 degrees C / 77 degrees F
SIB 3 PF0 Temp Sensor       33 degrees C / 91 degrees F
SIB 3 PF1 Temp Sensor       31 degrees C / 87 degrees F
SIB 3 PF2 Temp Sensor       32 degrees C / 89 degrees F
SIB 3 PF3 Temp Sensor       40 degrees C / 104 degrees F
SIB 3 PF4 Temp Sensor       28 degrees C / 82 degrees F
SIB 3 PF5 Temp Sensor       27 degrees C / 80 degrees F
Power
  PF0 Core 0.9V              924 mV   24558 mA  22734 mW
  PF0 AVDD 1V                999 mV   19500 mA  19515 mW
  PF1 Core 0.9V              925 mV   24570 mA  22750 mW
  PF1 AVDD 1V                999 mV   17609 mA  17625 mW
  PF2 Core 0.9V              899 mV   23144 mA  20832 mW
  PF2 AVDD 1V               1000 mV   16375 mA  16390 mW
  PF3 Core 0.9V              925 mV   24203 mA  22414 mW
  PF3 AVDD 1V               1000 mV   15039 mA  15023 mW
  PF4 Core 0.9V              899 mV   23523 mA  21183 mW
  PF4 AVDD 1V                999 mV   15273 mA  15296 mW
  PF5 Core 0.9V              924 mV   24125 mA  22367 mW
  PF5 AVDD 1V               1000 mV   14953 mA  14968 mW
  12V                        12245 mV  10880 mA  133652 mW
  12V_1                      12259 mV  11053 mA  136464 mW

SIB 4 status:
State                               Online
SIB 4 Intake-A Temp Sensor 23 degrees C / 73 degrees F
SIB 4 Intake-B Temp Sensor 26 degrees C / 78 degrees F
SIB 4 Intake-C Temp Sensor 18 degrees C / 64 degrees F
SIB 4 Exhaust-A Temp Sensor30 degrees C / 86 degrees F
SIB 4 Exhaust-B Temp Sensor33 degrees C / 91 degrees F

```

```

SIB 4 Exhaust-C Temp Sensor 24 degrees C / 75 degrees F
SIB 4 PF0 Temp Sensor      34 degrees C / 93 degrees F
SIB 4 PF1 Temp Sensor      32 degrees C / 89 degrees F
SIB 4 PF2 Temp Sensor      33 degrees C / 91 degrees F
SIB 4 PF3 Temp Sensor      41 degrees C / 105 degrees F
SIB 4 PF4 Temp Sensor      28 degrees C / 82 degrees F
SIB 4 PF5 Temp Sensor      27 degrees C / 80 degrees F
Power
  PF0 Core 0.9V            925 mV   24644 mA   22824 mW
  PF0 AVDD 1V              999 mV   19375 mA   19390 mW
  PF1 Core 0.9V            900 mV   24109 mA   21703 mW
  PF1 AVDD 1V              999 mV   17687 mA   17695 mW
  PF2 Core 0.9V            899 mV   24085 mA   21710 mW
  PF2 AVDD 1V              999 mV   16578 mA   16570 mW
  PF3 Core 0.9V            949 mV   24652 mA   23410 mW
  PF3 AVDD 1V              1000 mV   14445 mA   14453 mW
  PF4 Core 0.9V            924 mV   23902 mA   22097 mW
  PF4 AVDD 1V              999 mV   14750 mA   14742 mW
  PF5 Core 0.9V            925 mV   24082 mA   22308 mW
  PF5 AVDD 1V              999 mV   14671 mA   14671 mW
  12V                      12338 mV   11139 mA   138277 mW
  12V_1                    12325 mV   11356 mA   140978 mW
SIB 5 status:
State                               Online
SIB 5 Intake-A Temp Sensor 22 degrees C / 71 degrees F
SIB 5 Intake-B Temp Sensor 22 degrees C / 71 degrees F
SIB 5 Intake-C Temp Sensor 18 degrees C / 64 degrees F
SIB 5 Exhaust-A Temp Sensor 28 degrees C / 82 degrees F
SIB 5 Exhaust-B Temp Sensor 28 degrees C / 82 degrees F
SIB 5 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
SIB 5 PF0 Temp Sensor      32 degrees C / 89 degrees F
SIB 5 PF1 Temp Sensor      31 degrees C / 87 degrees F
SIB 5 PF2 Temp Sensor      32 degrees C / 89 degrees F
SIB 5 PF3 Temp Sensor      33 degrees C / 91 degrees F
SIB 5 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 5 PF5 Temp Sensor      28 degrees C / 82 degrees F
Power
  PF0 Core 0.9V            924 mV   25093 mA   23210 mW
  PF0 AVDD 1V              999 mV   19781 mA   19796 mW
  PF1 Core 0.9V            899 mV   24113 mA   21753 mW
  PF1 AVDD 1V              1000 mV   17968 mA   17984 mW
  PF2 Core 0.9V            925 mV   24218 mA   22437 mW
  PF2 AVDD 1V              1000 mV   16539 mA   16531 mW
  PF3 Core 0.9V            898 mV   23511 mA   21164 mW
  PF3 AVDD 1V              999 mV   15015 mA   15023 mW
  PF4 Core 0.9V            975 mV   25328 mA   24718 mW
  PF4 AVDD 1V              1000 mV   14578 mA   14601 mW
  PF5 Core 0.9V            923 mV   24175 mA   22367 mW
  PF5 AVDD 1V              1000 mV   14789 mA   14765 mW
  12V                      12259 mV   11053 mA   136464 mW
  12V_1                    12272 mV   11226 mA   138221 mW

```

show chassis ethernet-switch

List of Syntax [Syntax on page 952](#)
 [Syntax \(EX8200 Switch\) on page 952](#)
 [Syntax \(T4000 Router\) on page 952](#)
 [Syntax \(TX Matrix Router\) on page 952](#)
 [Syntax \(TX Matrix Plus Router\) on page 952](#)
 [Syntax \(MX Series Router\) on page 952](#)
 [Syntax \(MX2010, MX2020, and MX2008 Universal Routing Platforms\) on page 952](#)
 [Syntax \(MX10008 Universal Routing Platforms\) on page 953](#)
 [Syntax \(PTX Series Packet Transport Routers\) on page 953](#)

Syntax `show chassis ethernet-switch
<errors <port>>`

Syntax (EX8200 Switch) `show chassis ethernet-switch
<statistics <port> | switch <number>`

Syntax (T4000 Router) `show chassis ethernet-switch
<errors <port> | statistics <port>>`

Syntax (TX Matrix Router) `show chassis ethernet-switch
<errors <port> | statistics <port>>
<lcc <number> | scc>`

Syntax (TX Matrix Plus Router) `show chassis ethernet-switch
<errors <port> | switch <number>
<lcc number | sfc number>
<statistics <port> | switch <number>`

Syntax (MX Series Router) `show chassis ethernet-switch
<all-members>
<errors <port>>
<local>
<member member-id>`

Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms) `show chassis ethernet-switch
<errors <port> | statistics <port>>
<old-rom-packet-count>`

| | |
|--|---|
| Syntax (MX10008 Universal Routing Platforms) | statistics <port>> |
| Syntax (PTX Series Packet Transport Routers) | show chassis ethernet-switch <errors <port>> <statistics <port>> <port-state <port>> |
| 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 in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</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 18.2 for MX10008 Universal Routing Platforms.</p> |
| Description | (M10i, M40e, M120, M160, M320, MX Series, and T Series routers and EX8200 and PTX Series routers only) Display information about the ports on the Control Board (CB) Ethernet switch. |
| Options | <p>none—Display information about each connected port on the Ethernet switch. On a TX Matrix router, display information about each connected port on the Ethernet switch on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display information about each connected port on the Ethernet switch on the TX Matrix Plus router and its attached routers.</p> <p>all-members—(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on all the members of the Virtual Chassis configuration.</p> <p>errors—(Optional) Display the numbers and types of errors accumulated on all ports of the Ethernet switch.</p> <p>errors port—(Optional) Display the numbers and types of errors accumulated on the specified port (0 through 15) of the Ethernet switch. On the TX Matrix router, replace port with a value from 0 through 15. On the TX Matrix Plus router and EX8200 switch, replace port with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace port with a value from 0 through 25. On the T4000 routers, MX2020 routers, MX2010 routers, and MX2008 routers, replace port with a value from 0 through 27.</p> <p>errors switch number—(TX Matrix Plus router only) (Optional) Display the numbers and types of errors accumulated on the specified switch. Replace number with a value from 0 through 2.</p> |

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 the ports on the CB Ethernet switch on the local Virtual Chassis member.

member member-id—(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

old-rom-packet-count—(MX 2020 Routers only) (Optional) Display information about installed linecards. A non-zero number indicates that the bootrom on that linecard needs to be updated.

port-state—(PTX Series only) (Optional) Display information about current port operation (**Blocking**, **Listening**, or **Disabled**).

scc—(TX Matrix router only) (Optional) Display information about the ports on the CB's Ethernet switch on the TX Matrix router (switch-card chassis).

sfc number—(TX Matrix Plus router only) (Optional) Display information about the ports on the CB's Ethernet switch on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

statistics—(Optional) Display traffic statistics for each connected port on the Ethernet switch.

statistics port—(Optional) Display traffic statistics for the specified port on the Ethernet switch. On the TX Matrix router, replace *port* with a value from 0 through 25. On the TX Matrix Plus router or EX8200 switch, replace *port* with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace *port* with a value from 0 through 25. On the T4000 routers, MX2020 routers, MX2010 routers, and MX2008 routers, replace *port* with a value from 0 through 27.

statistics switch number—(TX Matrix Plus routers and EX8200 switch only) (Optional) Display traffic statistics for the specified Ethernet switch number. On the TX Matrix Plus router and EX8216 switch, replace *number* with a value from 0 through 2. On the EX8208 switch, replace *number* with a value from 0 through 1.

Required Privilege Level view

List of Sample Output

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- [show chassis ethernet-switch \(MX480 Router with MPC4E\) on page 960](#)
- [show chassis ethernet-switch \(MX2010 Router\) on page 961](#)
- [show chassis ethernet-switch statistics \(MX2010 Router\) on page 962](#)
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- [show chassis ethernet-switch \(T4000 Router\) on page 993](#)
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- [show chassis ethernet-switch statistics \(PTX5000 Packet Transport Router\) on page 996](#)
- [show chassis ethernet-switch port-state \(PTX5000 Packet Transport Router\) on page 999](#)

Output Fields [Table 58 on page 955](#) lists the output fields for the **show chassis ethernet-switch** command. Output fields are listed in the approximate order in which they appear.

Table 58: show chassis ethernet-switch Output Fields

| Field Name | Field Description |
|---|--|
| Link is good on port n connected to device | Information about the link between each port on the CB's Ethernet switch and one of the following devices: |
| or | <ul style="list-style-type: none"> FPC0 (Flexible PIC Concentrator 0) through FPC7 |
| Link is good on Fast Ethernet port n connected to device | <ul style="list-style-type: none"> Local controller Routing Engine Other Routing Engine (on a system with two Routing Engines) SPMB (Switch Processor Mezzanine Board) |
| or | <ul style="list-style-type: none"> (TX Matrix router only) LCC0 (line-card chassis 0) through LCC3 |
| Link is good on Gigabit Ethernet port n connected to device | |
| or | |
| Link is down on Gigabit Ethernet port connected to device | |

Table 58: show chassis ethernet-switch Output Fields (continued)

| Field Name | Field Description |
|---|---|
| Speed is | Speed at which the Ethernet link is running: 10 Mb or 100 Mb . When the device is RE or Other RE on the TX Matrix router, the speed is 1000 Mb . NOTE: Irrespective of the device, the speed is 1000 Mb on the MX2010, MX2020, and MX2008 routers. |
| Duplex is | Duplex type of the Ethernet link: full or half . |
| Autonegotiate is Enabled (or Disabled) | By default, built-in Fast Ethernet ports on a PIC autonegotiate whether to operate at 10 Mbps or 100 Mbps. All other interfaces automatically choose the correct speed based on the PIC type and whether the PIC is configured to operate in multiplexed mode (using the no-concatenate statement at the [edit chassis] hierarchy level, as described in the <i>Junos OS System Basics Configuration Guide</i>). |
| Flow Control TX is Enabled (or Disabled) | (MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series) Flow control in the transmit direction is enabled (or disabled). Flow control regulates the flow of packets from the switch to the remote side of the connection. |
| Flow Control RX is Enabled (or Disabled) | (MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series) Flow control in the receive direction is enabled (or disabled). Flow control regulates the flow of packets from the remote side of the connection to the switch. |
| MLT3 | Number of multilevel threshold-3 (MLT-3) Fast Ethernet errors detected. |
| Accumulated error counts for port <i>n</i> connected to device FPC <i>n</i> : (error output only) | |
| Lock | Number of lock errors detected. |
| Xmit | Number of transmission errors detected. |
| ESD | Number of electrostatic discharge (ESD) errors detected. |
| False Carrier | Number of false carrier errors detected. This number is increased by one if a FRU is removed. |
| Disconnects | Number of disconnect errors detected. |
| FX mode | Number of errors detected on an Ethernet link over optical fiber. |
| Statistics for port <i>n</i> connected to device FPC <i>n</i> (statistics output only) | |
| TX Packets 64 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets transmitted. |
| TX Packets 65 - 127 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets transmitted. |
| TX Packets 128 - 255 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets transmitted. |
| TX Packets 256 - 511 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets transmitted. |

Table 58: show chassis ethernet-switch Output Fields (continued)

| Field Name | Field Description |
|--------------------------------------|---|
| TX Packets 512 - 1023 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets transmitted. |
| TX Packets 1024 - 1518 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets transmitted. |
| TX Packets 1519 - 2047 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets transmitted. |
| TX Packets 2048 - 4095 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets transmitted. |
| TX Packets 4096 - 9216 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets transmitted. |
| TX 1519 - 1522 Good Vlan frms | (MX2010, MX2020, and MX2008 routers) Number of transmitted frames of size 1519 through 1522 octets that are good VLAN frames. |
| TX Octets | Number of octets sent. |
| TX Unicast packets | Number of unicast packets sent. |
| TX Multicast packets | Number of multicast packets sent. |
| TX Broadcast packets | Number of broadcast packets sent. |
| TX Single Collision frames | (MX2010, MX2020, and MX2008 routers) Number of packets sent after one collision. |
| TX Mult. Collision frames | (MX2010, MX2020, and MX2008 routers) Number of packets sent after multiple collisions. |
| TX Late collisions | Number of packets aborted during sending because of collisions after 64 bytes. |
| TX Excessive collisions | Number of packets not sent because of too many collisions. |
| TX Dropped packets | Number of transmitted packets that were dropped. |
| TX PAUSEMAC Ctrl Frames | Number of Media Access Control (MAC) frames containing PAUSE commands that were sent. |
| TX Oversize Packets | Number of oversize packets that were sent. |
| TX FCS Error Counter | Number of packets discarded because of frame check sequence errors. |
| TX Fragment Counter | Number of fragmented packets sent. |
| TX Byte Counter | Number of bytes sent. |

Table 58: show chassis ethernet-switch Output Fields (continued)

| Field Name | Field Description |
|--------------------------------------|---|
| TX Packet OK Counter | Number of viable packets sent. |
| TX Pause Packet Counter | Number of PAUSE packets sent. |
| RX Packets 64 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets received. |
| RX Packets 65 - 127 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets received. |
| RX Packets 128 - 255 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets received. |
| RX Packets 256 - 511 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets received. |
| RX Packets 512 - 1023 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets received. |
| RX Packets 1024 - 1518 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets received. |
| RX Packets 1519 - 2047 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets received. |
| RX Packets 2048 - 4095 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets received. |
| RX Packets 4096 - 9216 Octets | (MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets received. |
| RX Octets | Number of octets received. |
| RX Unicast packets | Number of unicast packets received. |
| RX Multicast packets | Number of multicast packets received. |
| RX Broadcast packets | Number of broadcast packets received. |
| RX FCS Errors | Number of packets discarded because of frame check sequence errors. |
| RX Alignment Errors | Number of incomplete octets received. |
| RX Dropped Packets | Number of incoming packets that were dropped. |
| RX Fragments | Number of fragmented packets received. |
| RX Symbol Errors | Number of symbols received that the router did not correctly decode. |

Table 58: show chassis ethernet-switch Output Fields (continued)

| Field Name | Field Description |
|--------------------------|---|
| RX MAC Control | Number of Media Access Control (MAC) packets received. |
| RX Oversize Packets | Number of oversize packets received. |
| RX Undersize Packets | Number of undersize packets received. |
| RX Jabbers | Total number of frames received that exceed the maximum byte count and contain CRC errors . |
| RX Control Frame Counter | Number of control frames received. |
| RX Pause Frame Counter | Number of pause frames received. |
| RX FCS Errors | Number of packets discarded because of frame check sequence errors. |
| RX Fragments | Number of fragmented packets received. |
| RX Byte Counter | Number of bytes received. |
| RX Packet OK Counter | Number of viable packets received. |

Sample Output

show chassis ethernet-switch

```

user@host> show chassis ethernet-switch

Link is good on port 0 connected to device: FPC0
  Speed is 100 MB
  Duplex is full

Link is good on port 1 connected to device: FPC1
  Speed is 100 MB
  Duplex is full

Link is good on port 2 connected to device: FPC2
  Speed is 100 MB
  Duplex is full

Link is good on port 3 connected to device: FPC3
  Speed is 100 MBb
  Duplex is full

Link is good on port 7 connected to device: Local controller
  Speed is 100 MB
  Duplex is full

Link is good on port 9 connected to device: SPMB
  Speed is 100 MB
  Duplex is full

```

```
Link is good on port 13 connected to device: FPC5
Speed is 100 MB
Duplex is full
```

show chassis ethernet-switch (MX480 Router with MPC4E)

```
user@host > show chassis ethernet-switch

Displaying summary for switch 0
Link is down on GE port 0 connected to device: FPC0

Link is down on GE port 1 connected to device: FPC1

Link is good on GE port 2 connected to device: FPC2
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 3 connected to device: FPC3
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 4 connected to device: FPC4
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 5 connected to device: FPC5

Link is down on GE port 6 connected to device: FPC6

Link is down on GE port 7 connected to device: FPC7

Link is down on GE port 8 connected to device: FPC8

Link is down on GE port 9 connected to device: FPC9

Link is down on GE port 10 connected to device: FPC10

Link is down on GE port 11 connected to device: FPC11

Link is good on GE port 12 connected to device: Other RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 13 connected to device: RE-GigE
Speed is 1000Mb
Duplex is full
```

```

Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

Link is down on GE port 14 connected to device: Debug-GigE

show chassis ethernet-switch (MX2010 Router)

```
user@host > show chassis ethernet-switch
```

Displaying summary for switch 0

Link is good on GE port 0 connected to device: FPC0

```

Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

Link is good on GE port 1 connected to device: FPC1

```

Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

Link is good on GE port 2 connected to device: FPC3

```

Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

Link is good on GE port 3 connected to device: FPC2

```

Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

Link is good on GE port 4 connected to device: FPC5

```

Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

Link is good on GE port 5 connected to device: FPC4

```

Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

Link is good on GE port 6 connected to device: FPC6

```

Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

```

```

Link is good on GE port 7 connected to device: FPC7
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 8 connected to device: FPC8
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 9 connected to device: FPC9
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 21 connected to device: RE-GigE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE

```

show chassis ethernet-switch statistics (MX2010 Router)

```

user@host > show chassis ethernet-switch statistics

Displaying port statistics for switch 0
Statistics for port 0 connected to device FPC0:
  TX Packets 64 Octets          5088623
  TX Packets 65-127 Octets     2637257

```

```

TX Packets 128-255 Octets      84829
TX Packets 256-511 Octets     120193
TX Packets 512-1023 Octets    252371
TX Packets 1024-1518 Octets   7189736
TX Packets 1519-2047 Octets    0
TX Packets 2048-4095 Octets    0
TX Packets 4096-9216 Octets    0
TX 1519-1522 Good Vlan frms   0
TX Octets                     15373009
TX Multicast Packets          14
TX Broadcast Packets          1679654
TX Single Collision frames     0
TX Mult. Collision frames      0
TX Late Collisions             0
TX Excessive Collisions        0
TX Collision frames            0
TX PAUSEMAC Ctrl Frames        0
TX MAC ctrl frames             0
TX Frame deferred Xmins        0
TX Frame excessive deferl      0
TX Oversize Packets            0
TX Jabbers                     0
TX FCS Error Counter           0
TX Fragment Counter            0
TX Byte Counter                3041239292
RX Packets 64 Octets           874260
RX Packets 65-127 Octets       26066124
RX Packets 128-255 Octets      1386532
RX Packets 256-511 Octets      150539
RX Packets 512-1023 Octets     4636799
RX Packets 1024-1518 Octets    92601
RX Packets 1519-2047 Octets    0
RX Packets 2048-4095 Octets    0
RX Packets 4096-9216 Octets    0
RX Octets                     33206855
RX Multicast Packets           0
RX Broadcast Packets           279416
RX FCS Errors                  0
RX Align Errors                0
RX Fragments                   0
RX Symbol errors               0
RX Unsupported opcodes         0
RX Out of Range Length         0
RX False Carrier Errors        0
RX Undersize Packets           0
RX Oversize Packets            0
RX Jabbers                     0
RX 1519-1522 Good Vlan frms    0
RX MTU Exceed Counter          0
RX Control Frame Counter       0
RX Pause Frame Counter         0
RX Byte Counter                958929187
Statistics for port 1 connected to device FPC1:
TX Packets 64 Octets           5109146
TX Packets 65-127 Octets       2779473
TX Packets 128-255 Octets      2441286
TX Packets 256-511 Octets      173102
TX Packets 512-1023 Octets     1547504
TX Packets 1024-1518 Octets    7190581
TX Packets 1519-2047 Octets    0

```

```

TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 19241092
TX Multicast Packets 14
TX Broadcast Packets 1673369
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xmsns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 4213380187
RX Packets 64 Octets 865914
RX Packets 65-127 Octets 26612151
RX Packets 128-255 Octets 1090153
RX Packets 256-511 Octets 25126
RX Packets 512-1023 Octets 101158
RX Packets 1024-1518 Octets 78092
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 28772594
RX Multicast Packets 0
RX Broadcast Packets 285669
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 2327283837

```

Link is down on GE port 2 connected to device: FPC3

Link is down on GE port 3 connected to device: FPC2

Link is down on GE port 4 connected to device: FPC5

Link is down on GE port 5 connected to device: FPC4

Link is down on GE port 6 connected to device: FPC6

Link is down on GE port 7 connected to device: FPC7

Statistics for port 8 connected to device FPC8:

| | |
|-----------------------------|------------|
| TX Packets 64 Octets | 5341094 |
| TX Packets 65-127 Octets | 2625310 |
| TX Packets 128-255 Octets | 3315158 |
| TX Packets 256-511 Octets | 174805 |
| TX Packets 512-1023 Octets | 976908 |
| TX Packets 1024-1518 Octets | 7181498 |
| TX Packets 1519-2047 Octets | 0 |
| TX Packets 2048-4095 Octets | 0 |
| TX Packets 4096-9216 Octets | 0 |
| TX 1519-1522 Good Vlan frms | 0 |
| TX Octets | 19614773 |
| TX Multicast Packets | 14 |
| TX Broadcast Packets | 1673831 |
| TX Single Collision frames | 0 |
| TX Mult. Collision frames | 0 |
| TX Late Collisions | 0 |
| TX Excessive Collisions | 0 |
| TX Collision frames | 0 |
| TX PAUSEMAC Ctrl Frames | 0 |
| TX MAC ctrl frames | 0 |
| TX Frame deferred Xms | 0 |
| TX Frame excessive deferl | 0 |
| TX Oversize Packets | 0 |
| TX Jabbers | 0 |
| TX FCS Error Counter | 0 |
| TX Fragment Counter | 0 |
| TX Byte Counter | 3946762991 |
| RX Packets 64 Octets | 955509 |
| RX Packets 65-127 Octets | 27568588 |
| RX Packets 128-255 Octets | 1460936 |
| RX Packets 256-511 Octets | 153248 |
| RX Packets 512-1023 Octets | 2856206 |
| RX Packets 1024-1518 Octets | 76419 |
| RX Packets 1519-2047 Octets | 0 |
| RX Packets 2048-4095 Octets | 0 |
| RX Packets 4096-9216 Octets | 0 |
| RX Octets | 33070906 |
| RX Multicast Packets | 0 |
| RX Broadcast Packets | 285183 |
| RX FCS Errors | 0 |
| RX Align Errors | 0 |
| RX Fragments | 0 |
| RX Symbol errors | 0 |
| RX Unsupported opcodes | 0 |
| RX Out of Range Length | 0 |
| RX False Carrier Errors | 0 |
| RX Undersize Packets | 0 |
| RX Oversize Packets | 0 |
| RX Jabbers | 0 |
| RX 1519-1522 Good Vlan frms | 0 |
| RX MTU Exceed Counter | 0 |
| RX Control Frame Counter | 0 |
| RX Pause Frame Counter | 0 |
| RX Byte Counter | 4256093824 |

Statistics for port 9 connected to device FPC9:

| | |
|---------------------------|---------|
| TX Packets 64 Octets | 5237213 |
| TX Packets 65-127 Octets | 3268775 |
| TX Packets 128-255 Octets | 2320476 |

```

TX Packets 256-511 Octets 1789844
TX Packets 512-1023 Octets 501022
TX Packets 1024-1518 Octets 7800455
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 20917785
TX Multicast Packets 14
TX Broadcast Packets 1673368
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xms 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 747012161
RX Packets 64 Octets 1036527
RX Packets 65-127 Octets 27590367
RX Packets 128-255 Octets 1590059
RX Packets 256-511 Octets 328257
RX Packets 512-1023 Octets 75975
RX Packets 1024-1518 Octets 73556
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 30694741
RX Multicast Packets 0
RX Broadcast Packets 285586
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 2727836941

```

Statistics for port 20 connected to device Other RE-GigE:

```

TX Packets 64 Octets 1682540
TX Packets 65-127 Octets 3454
TX Packets 128-255 Octets 659
TX Packets 256-511 Octets 0
TX Packets 512-1023 Octets 1
TX Packets 1024-1518 Octets 0
TX Packets 1519-2047 Octets 0

```

```

TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 1686654
TX Multicast Packets 6
TX Broadcast Packets 1673798
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xmsns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 108042476
RX Packets 64 Octets 710214
RX Packets 65-127 Octets 35785510
RX Packets 128-255 Octets 4616
RX Packets 256-511 Octets 232
RX Packets 512-1023 Octets 565
RX Packets 1024-1518 Octets 28798
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 36529935
RX Multicast Packets 8
RX Broadcast Packets 285546
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 2676440958

```

Statistics for port 21 connected to device RE-GigE:

```

TX Packets 64 Octets 4805310
TX Packets 65-127 Octets 143798628
TX Packets 128-255 Octets 5532385
TX Packets 256-511 Octets 671059
TX Packets 512-1023 Octets 7684123
TX Packets 1024-1518 Octets 344021
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 162835526

```

```

TX Multicast Packets      8
TX Broadcast Packets     1673409
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions       0
TX Excessive Collisions  0
TX Collision frames      0
TX PAUSEMAC Ctrl Frames  0
TX MAC ctrl frames       0
TX Frame deferred Xmsns  0
TX Frame excessive deferl 0
TX Oversize Packets      0
TX Jabbers               0
TX FCS Error Counter     0
TX Fragment Counter      0
TX Byte Counter          105857355
RX Packets 64 Octets     14537137
RX Packets 65-127 Octets 11445505
RX Packets 128-255 Octets 8161767
RX Packets 256-511 Octets 2257944
RX Packets 512-1023 Octets 3277807
RX Packets 1024-1518 Octets 29373209
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                69053369
RX Multicast Packets     6
RX Broadcast Packets     285935
RX FCS Errors            0
RX Align Errors          0
RX Fragments             0
RX Symbol errors         0
RX Unsupported opcodes   0
RX Out of Range Length   0
RX False Carrier Errors  0
RX Undersize Packets     0
RX Oversize Packets      0
RX Jabbers               0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter    0
RX Control Frame Counter 0
RX Pause Frame Counter   0
RX Byte Counter          2980410755

```

Link is down on GE port 22 connected to device: Debug-GigE
 Statistics for port 23 connected to device SPMB:

```

TX Packets 64 Octets     1885878
TX Packets 65-127 Octets 138845
TX Packets 128-255 Octets 18
TX Packets 256-511 Octets 1
TX Packets 512-1023 Octets 2
TX Packets 1024-1518 Octets 16391
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                2041135
TX Multicast Packets     14
TX Broadcast Packets     1707267
TX Single Collision frames 0

```

```

TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xms 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 148066476
RX Packets 64 Octets 374994
RX Packets 65-127 Octets 183398
RX Packets 128-255 Octets 749
RX Packets 256-511 Octets 13658
RX Packets 512-1023 Octets 13421
RX Packets 1024-1518 Octets 9
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 586229
RX Multicast Packets 0
RX Broadcast Packets 252034
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 51431942

```

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE

show chassis ethernet-switch (MX2020 Router)

```
user@host > show chassis ethernet-switch
```

Displaying summary for switch 0

Link is good on GE port 0 connected to device: FPC0

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 1 connected to device: FPC1
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 2 connected to device: FPC3
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 3 connected to device: FPC2
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 4 connected to device: FPC5
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 5 connected to device: FPC4
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 6 connected to device: FPC6
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 7 connected to device: FPC7
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 8 connected to device: FPC8
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 9 connected to device: FPC9
Speed is 1000Mb
Duplex is full

```
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 10 connected to device: FPC10
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 11 connected to device: FPC11
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 12 connected to device: FPC13
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 13 connected to device: FPC12
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 14 connected to device: FPC14
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 15 connected to device: FPC15
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 16 connected to device: FPC17
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 17 connected to device: FPC16
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled
```

```

Link is good on GE port 18 connected to device: FPC18
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 19 connected to device: FPC19
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 21 connected to device: RE-GigE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE

```

show chassis ethernet-switch statistics (MX2020 Router)

```

user@host > show chassis ethernet-switch statistics

Displaying port statistics for switch 0
Statistics for port 0 connected to device FPC0:
  TX Packets 64 Octets      1468564
  TX Packets 65-127 Octets  153896
  TX Packets 128-255 Octets 237
  TX Packets 256-511 Octets 286
  TX Packets 512-1023 Octets 599
  TX Packets 1024-1518 Octets 22803
  TX Packets 1519-2047 Octets 0
  TX Packets 2048-4095 Octets 0
  TX Packets 4096-9216 Octets 0

```



```

TX 1519-1522 Good Vlan frms 0
TX Octets 1646385
TX Multicast Packets 6
TX Broadcast Packets 970939
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xms 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 130470290
RX Packets 64 Octets 180266
RX Packets 65-127 Octets 519030
RX Packets 128-255 Octets 1390
RX Packets 256-511 Octets 42857
RX Packets 512-1023 Octets 3482
RX Packets 1024-1518 Octets 8147
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 755172
RX Multicast Packets 0
RX Broadcast Packets 42822
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 75374021
Statistics for port 1 connected to device FPC1:
TX Packets 64 Octets 1493739
TX Packets 65-127 Octets 126996
TX Packets 128-255 Octets 241
TX Packets 256-511 Octets 283
TX Packets 512-1023 Octets 604
TX Packets 1024-1518 Octets 33687
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 1655550
TX Multicast Packets 6
TX Broadcast Packets 969032
TX Single Collision frames 0

```

```

TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xms 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 141832690
RX Packets 64 Octets 155655
RX Packets 65-127 Octets 545561
RX Packets 128-255 Octets 1394
RX Packets 256-511 Octets 42811
RX Packets 512-1023 Octets 3514
RX Packets 1024-1518 Octets 8171
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 757106
RX Multicast Packets 0
RX Broadcast Packets 44509
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 75691392
Statistics for port 2 connected to device FPC3:
TX Packets 64 Octets 1465749
TX Packets 65-127 Octets 152849
TX Packets 128-255 Octets 238
TX Packets 256-511 Octets 289
TX Packets 512-1023 Octets 602
TX Packets 1024-1518 Octets 38903
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 1658630
TX Multicast Packets 6
TX Broadcast Packets 968873
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0

```

```

TX MAC ctrl frames      0
TX Frame deferred Xmsns 0
TX Frame excessive deferl 0
TX Oversize Packets     0
TX Jabbers              0
TX FCS Error Counter    0
TX Fragment Counter     0
TX Byte Counter         147427010
RX Packets 64 Octets    181636
RX Packets 65-127 Octets 517526
RX Packets 128-255 Octets 1405
RX Packets 256-511 Octets 42806
RX Packets 512-1023 Octets 3515
RX Packets 1024-1518 Octets 8168
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                755056
RX Multicast Packets     0
RX Broadcast Packets     44490
RX FCS Errors            0
RX Align Errors          0
RX Fragments             0
RX Symbol errors         0
RX Unsupported opcodes   0
RX Out of Range Length   0
RX False Carrier Errors  0
RX Undersize Packets     0
RX Oversize Packets     0
RX Jabbers               0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter    0
RX Control Frame Counter 0
RX Pause Frame Counter   0
RX Byte Counter          75381869
Statistics for port 3 connected to device FPC2:
TX Packets 64 Octets    1473828
TX Packets 65-127 Octets 145643
TX Packets 128-255 Octets 253
TX Packets 256-511 Octets 285
TX Packets 512-1023 Octets 612
TX Packets 1024-1518 Octets 26603
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                1647224
TX Multicast Packets     6
TX Broadcast Packets     968925
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions       0
TX Excessive Collisions  0
TX Collision frames      0
TX PAUSEMAC Ctrl Frames  0
TX MAC ctrl frames      0
TX Frame deferred Xmsns  0
TX Frame excessive deferl 0
TX Oversize Packets     0
TX Jabbers               0

```

```

TX FCS Error Counter      0
TX Fragment Counter      0
TX Byte Counter          134293832
RX Packets 64 Octets     174230
RX Packets 65-127 Octets 525756
RX Packets 128-255 Octets 1404
RX Packets 256-511 Octets 42815
RX Packets 512-1023 Octets 3530
RX Packets 1024-1518 Octets 8176
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                755911
RX Multicast Packets     0
RX Broadcast Packets     44499
RX FCS Errors            0
RX Align Errors          0
RX Fragments             0
RX Symbol errors         0
RX Unsupported opcodes   0
RX Out of Range Length   0
RX False Carrier Errors  0
RX Undersize Packets     0
RX Oversize Packets     0
RX Jabbers               0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter    0
RX Control Frame Counter 0
RX Pause Frame Counter   0
RX Byte Counter          75517355
Statistics for port 4 connected to device FPC5:
TX Packets 64 Octets     1466664
TX Packets 65-127 Octets 151155
TX Packets 128-255 Octets 238
TX Packets 256-511 Octets 277
TX Packets 512-1023 Octets 615
TX Packets 1024-1518 Octets 54674
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                1673623
TX Multicast Packets     6
TX Broadcast Packets     968610
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions       0
TX Excessive Collisions  0
TX Collision frames      0
TX PAUSEMAC Ctrl Frames  0
TX MAC ctrl frames       0
TX Frame deferred Xmsns  0
TX Frame excessive deferl 0
TX Oversize Packets     0
TX Jabbers               0
TX FCS Error Counter     0
TX Fragment Counter      0
TX Byte Counter          164247790
RX Packets 64 Octets     180006
RX Packets 65-127 Octets 518217

```

```

RX Packets 128-255 Octets 1406
RX Packets 256-511 Octets 42787
RX Packets 512-1023 Octets 3515
RX Packets 1024-1518 Octets 8164
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 754095
RX Multicast Packets 0
RX Broadcast Packets 44457
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 75311970
Statistics for port 5 connected to device FPC4:
TX Packets 64 Octets 1464770
TX Packets 65-127 Octets 154498
TX Packets 128-255 Octets 225
TX Packets 256-511 Octets 280
TX Packets 512-1023 Octets 637
TX Packets 1024-1518 Octets 26355
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 1646765
TX Multicast Packets 6
TX Broadcast Packets 968730
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xtns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 134058606
RX Packets 64 Octets 169269
RX Packets 65-127 Octets 515285
RX Packets 128-255 Octets 1527
RX Packets 256-511 Octets 42804
RX Packets 512-1023 Octets 3521
RX Packets 1024-1518 Octets 9142
RX Packets 1519-2047 Octets 0

```

```

RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 741548
RX Multicast Packets 0
RX Broadcast Packets 44470
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 75498393
Statistics for port 6 connected to device FPC6:
TX Packets 64 Octets 1475260
TX Packets 65-127 Octets 143324
TX Packets 128-255 Octets 260
TX Packets 256-511 Octets 274
TX Packets 512-1023 Octets 603
TX Packets 1024-1518 Octets 40631
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 1660352
TX Multicast Packets 6
TX Broadcast Packets 968466
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xms 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 149212764
RX Packets 64 Octets 172275
RX Packets 65-127 Octets 526519
RX Packets 128-255 Octets 1394
RX Packets 256-511 Octets 42777
RX Packets 512-1023 Octets 3514
RX Packets 1024-1518 Octets 8161
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 754640
RX Multicast Packets 0
RX Broadcast Packets 44443

```

```

RX FCS Errors          0
RX Align Errors        0
RX Fragments           0
RX Symbol errors       0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets   0
RX Oversize Packets    0
RX Jabbers             0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter  0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter        75386517
Statistics for port 7 connected to device FPC7:
TX Packets 64 Octets    1472361
TX Packets 65-127 Octets 145646
TX Packets 128-255 Octets 251
TX Packets 256-511 Octets 250
TX Packets 512-1023 Octets 580
TX Packets 1024-1518 Octets 49530
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets              1668618
TX Multicast Packets   6
TX Broadcast Packets   968317
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions     0
TX Excessive Collisions 0
TX Collision frames     0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames     0
TX Frame deferred Xtns 0
TX Frame excessive deferl 0
TX Oversize Packets    0
TX Jabbers             0
TX FCS Error Counter   0
TX Fragment Counter    0
TX Byte Counter        158689814
RX Packets 64 Octets    174618
RX Packets 65-127 Octets 523421
RX Packets 128-255 Octets 1393
RX Packets 256-511 Octets 42764
RX Packets 512-1023 Octets 3514
RX Packets 1024-1518 Octets 8158
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets              753868
RX Multicast Packets   0
RX Broadcast Packets   44429
RX FCS Errors          0
RX Align Errors        0
RX Fragments           0
RX Symbol errors       0
RX Unsupported opcodes 0

```

```

RX Out of Range Length      0
RX False Carrier Errors    0
RX Undersize Packets       0
RX Oversize Packets        0
RX Jabbers                 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter      0
RX Control Frame Counter    0
RX Pause Frame Counter     0
RX Byte Counter            75309863
Statistics for port 8 connected to device FPC8:
...
```

show chassis ethernet-switch (MX2020 Router with MPC4E)

```

user@ host > show chassis ethernet-switch

Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on GE port 1 connected to device: FPC1

Link is down on GE port 2 connected to device: FPC3

Link is down on GE port 3 connected to device: FPC2

Link is down on GE port 4 connected to device: FPC5

Link is down on GE port 5 connected to device: FPC4

Link is down on GE port 6 connected to device: FPC6

Link is down on GE port 7 connected to device: FPC7

Link is down on GE port 8 connected to device: FPC8

Link is good on GE port 9 connected to device: FPC9
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 10 connected to device: FPC10
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on GE port 11 connected to device: FPC11

Link is down on GE port 12 connected to device: FPC13

Link is down on GE port 13 connected to device: FPC12
```



```

Link is good on GE port 14 connected to device: FPC14
  Speed is 1000Mb
  Duplex is full
Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on GE port 15 connected to device: FPC15

Link is down on GE port 16 connected to device: FPC17

Link is down on GE port 17 connected to device: FPC16

Link is down on GE port 18 connected to device: FPC18

Link is good on GE port 19 connected to device: FPC19
  Speed is 1000Mb
  Duplex is full
Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE
  Speed is 1000Mb
  Duplex is full
Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on GE port 21 connected to device: RE-GigE
  Speed is 1000Mb
  Duplex is full
Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE

```

show chassis ethernet-switch (MX2008 Router)

```

user@host> show chassis ethernet-switch

Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0

```

```
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 1 connected to device: FPC1

Link is good on GE port 2 connected to device: FPC3
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 3 connected to device: FPC2

Link is good on GE port 4 connected to device: FPC5
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 5 connected to device: FPC4

Link is down on GE port 6 connected to device: FPC6

Link is good on GE port 7 connected to device: FPC7
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 8 connected to device: FPC8

Link is good on GE port 9 connected to device: FPC9
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 20 connected to device: CB-to-CB-GigE 1
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 21 connected to device: CB-to-CB-GigE 2
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 22 connected to device: (null)
```

```

Link is down on GE port 23 connected to device: (null)

Link is good on XE port 24 connected to device: Other RE-10GigE
Speed is 10000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 25 connected to device: RE-10GigE
Speed is 10000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on XE port 26 connected to device: SFP+ 0

Link is down on XE port 27 connected to device: SFP+ 1

```

show chassis ethernet-switch statistics (Mx10008 Router)

```
user@host> show chassis ethernet-switch statistics
```

```

Switch Status: Online
Link is Disabled on port connected to QPHY_0
Link is Disabled on port connected to QPHY_1
Link is Down on port connected to PTP_FPGA
Link is Disabled on port connected to Unused
Link is Up on port connected to LC0
    Speed      : 10G
    Duplexity   : FD
    Autoneg     : No
    tx_packets  : 2835539
    rx_packets  : 2624197
    tx_errors   : 0
    rx_errors   : 0
Link is Down on port connected to LC1
Link is Up on port connected to LC2
    Speed      : 10G
    Duplexity   : FD
    Autoneg     : No
    tx_packets  : 2889426
    rx_packets  : 2441270
    tx_errors   : 0
    rx_errors   : 0
Link is Up on port connected to LC3
    Speed      : 10G
    Duplexity   : FD
    Autoneg     : No
    tx_packets  : 2776323
    rx_packets  : 2322320
    tx_errors   : 0
    rx_errors   : 0
Link is Disabled on port connected to LC8
Link is Down on port connected to LC4
Link is Disabled on port connected to LC12
Link is Disabled on port connected to LC9
Link is Down on port connected to LC5
Link is Disabled on port connected to LC13

```

```

Link is Disabled on port connected to LC10
Link is Down on port connected to LC6
Link is Disabled on port connected to LC14
Link is Disabled on port connected to LC11
Link is Down on port connected to LC7
Link is Disabled on port connected to LC15
Link is Disabled on port connected to OCB_SW
Link is Disabled on port connected to Unused
Link is Disabled on port connected to Fortville_1
Link is Up on port connected to Fortville_0
    Speed      : 10G
    Duplexity   : FD
    Autoneg     : Yes
    tx_packets  : 7387765
    rx_packets  : 8348292
    tx_errors   : 0
    rx_errors   : 0

```

show chassis ethernet-switch (TX Matrix Router)

```
user@host> show chassis ethernet-switch
```

```
scc-re0:
```

```
-----
Link is good on FE port 4 connected to device: LCC0
    Speed is 100 MB
    Duplex is full
    Autonegotiate is Enabled

```

```
Link is good on FE port 6 connected to device: LCC2
    Speed is 100 MB
    Duplex is full
    Autonegotiate is Enabled

```

```
Link is good on FE port 8 connected to device: SPMB
    Speed is 100 MB
    Duplex is full
    Autonegotiate is Enabled

```

```
lcc0-re0:
```

```
-----
Link is good on FE port 1 connected to device: FPC1
    Speed is 100 MB
    Duplex is full
    Autonegotiate is Enabled

```

```
Link is good on FE port 2 connected to device: FPC2
    Speed is 100 MB
    Duplex is full
    Autonegotiate is Enabled

```

```
Link is good on FE port 8 connected to device: SPMB
    Speed is 100 MB
    Duplex is full
    Autonegotiate is Enabled

```

```
Link is good on FE port 10 connected to device: SCC
    Speed is 100 MB
    Duplex is full
    Autonegotiate is Enabled

```

```

lcc2-re0:
-----
Link is good on FE port 0 connected to device: FPC0
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

Link is good on FE port 1 connected to device: FPC1
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

Link is good on FE port 2 connected to device: FPC2
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

Link is good on FE port 8 connected to device: SPMB
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

Link is good on FE port 10 connected to device: SCC
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

```

show chassis ethernet-switch errors

```

user@host> show chassis ethernet-switch errors

Accumulated error counts for port 0 connected to device FPC0:
  MLT3          2
  Lock          0
  Xmit          0
  ESD           0
  False carrier 2
  Disconnects   0
  FX mode       0

Accumulated error counts for port 1 connected to device FPC1:
  MLT3          2
  Lock          0
  Xmit          0
  ESD           0
  False carrier 2
  Disconnects   0
  FX mode       0

Accumulated error counts for port 2 connected to device FPC2:
  MLT3          2
  Lock          0
  Xmit          0
  ESD           0
  False carrier 3
  Disconnects   0
  FX mode       0

Accumulated error counts for port 3 connected to device FPC3:
  MLT3          0
  Lock          0
  Xmit          0

```

```

ESD          0
False carrier 0
Disconnects  0
Accumulated error counts for port 4 connected to device Nothing:
MLT3         0
Lock         0
Xmit         0
ESD          0
False carrier 0
Disconnects  0
FX mode      0
...

```

show chassis ethernet-switch statistics

```

user@host> show chassis ethernet-switch statistics

Statistics for port 0 connected to device FPC0:
TX Unicast packets      68113
TX Multicast packets    0
TX Broadcast packets    20851
TX Late collisions      0
TX Excessive collisions 0
TX Dropped packets      0

RX Unicast packets      67410
RX Multicast packets    0
RX Broadcast packets    20852
RX FCS Errors           0
RX Alignment Errors     0
RX Dropped Packets      0
RX Fragments            0
RX Symbol Errors        0

Statistics for port 1 connected to device FPC1:
TX Unicast packets      66496
TX Multicast packets    0
TX Broadcast packets    20080
TX Late collisions      0
TX Excessive collisions 0
TX Dropped packets      0

RX Unicast packets      66037
RX Multicast packets    0
RX Broadcast packets    20080
RX FCS Errors           0
RX Alignment Errors     0
RX Dropped Packets      0
RX Fragments            0
RX Symbol Errors        0

Statistics for port 2 connected to device FPC2:
TX Unicast packets      64206
TX Multicast packets    0
TX Broadcast packets    21183
TX Late collisions      0
TX Excessive collisions 0
TX Dropped packets      0

RX Unicast packets      63671

```

```

RX Multicast packets      0
RX Broadcast packets     21183
RX FCS Errors             0
RX Alignment Errors       0
RX Dropped Packets        0
RX Fragments              0
RX Symbol Errors          0
Statistics for port 3 connected to device FPC3:
...

```

show chassis ethernet-switch errors (TX Matrix Plus Router)

```

user@host> show chassis ethernet-switch errors

sfc0-re0:
-----
Displaying error for switch 0

Displaying error for switch 1
Accumulated error counts for port 0 connected to device LCC0:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 0
Disconnects   0
FX mode       0

lcc0-re0:
-----
Displaying error for switch 0
Accumulated error counts for port 6 connected to device FPC0:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 5
Disconnects   0
FX mode       0
Accumulated error counts for port 7 connected to device FPC1:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 7
Disconnects   0
FX mode       0
Accumulated error counts for port 19 connected to device Other RE:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 0
Disconnects   0
FX mode       0
Accumulated error counts for port 20 connected to device SFC0:
MLT3          0
Lock          0
Xmit          0
ESD           0

```

```
False carrier 0
Disconnects   0
FX mode       0
```

show chassis ethernet-switch sfc errors (TX Matrix Plus Router)

```
user@host> show chassis ethernet-switch errors switch sfc
```

```
sfc0-re0:
```

```
-----
Displaying error for switch 1
```

```
Accumulated error counts for port 0 connected to device LCC0:
```

```
MLT3      0
Lock      0
Xmit      0
ESD       0
False carrier 0
Disconnects 0
FX mode   0
```

```
Accumulated error counts for port 2 connected to device LCC1:
```

```
MLT3      0
Lock      0
Xmit      0
ESD       0
False carrier 0
Disconnects 0
FX mode   0
```

```
Accumulated error counts for port 4 connected to device LCC2:
```

```
MLT3      0
Lock      0
Xmit      0
ESD       0
False carrier 0
Disconnects 0
FX mode   0
```

```
Accumulated error counts for port 6 connected to device LCC3:
```

```
MLT3      0
Lock      0
Xmit      0
ESD       0
False carrier 0
Disconnects 0
FX mode   0
```

```
lcc0-re0:
```

```
-----
error: command is not valid on the t1600
```

```
lcc1-re0:
```

```
-----
error: command is not valid on the t1600
```

```
lcc2-re0:
```

```
-----
error: command is not valid on the t1600
```

```
lcc3-re0:
```

```
-----
error: command is not valid on the t1600
```


show chassis ethernet-switch statistics (TX Matrix Plus Router)

```
user@host> show chassis ethernet-switch statistics
```

```
sfc0-re0:
```

```
-----
```

Displaying port statistics for switch 0

Statistics for port 1 connected to device 1GSW:

| | |
|------------------------------|-----------|
| TX Packets 64 Octets | 5183577 |
| TX Packets 65-127 Octets | 67820 |
| TX Packets 128-255 Octets | 772 |
| TX Packets 256-511 Octets | 136 |
| TX Packets 512-1023 Octets | 68 |
| TX Packets 1024-1518 Octets | 10881 |
| TX Packets 1519-2047 Octets | 0 |
| TX Packets 2048-4095 Octets | 0 |
| TX Packets 4096-9216 Octets | 0 |
| TX Packets 9217-16383 Octets | 0 |
| TX Octets | 5263254 |
| TX Multicast Packets | 16 |
| TX Broadcast Packets | 723403 |
| TX PAUSEMAC Ctrl Frames | 0 |
| TX Oversize Packets | 0 |
| TX FCS Error Counter | 0 |
| TX Fragment Counter | 0 |
| TX Byte Counter | 349922253 |
| TX Packet OK Counter | 5263254 |
| TX Pause Packet Counter | 0 |
| TX Unicast Counter | 4539835 |
| RX Packets 64 Octets | 6513629 |
| RX Packets 65-127 Octets | 88761 |
| RX Packets 128-255 Octets | 6382 |
| RX Packets 256-511 Octets | 22027 |
| RX Packets 512-1023 Octets | 4319 |
| RX Packets 1024-1518 Octets | 49922 |
| RX Packets 1519-2047 Octets | 0 |
| RX Packets 2048-4095 Octets | 0 |
| RX Packets 4096-9216 Octets | 0 |
| RX Packets 9217-16383 Octets | 0 |
| RX Octets | 6685040 |
| RX Multicast Packets | 4 |
| RX Broadcast Packets | 2137376 |
| RX FCS Errors | 0 |
| RX Fragments | 0 |
| RX MAC Control Packets | 0 |
| RX Out of Range Length | 0 |
| RX Undersize Packets | 0 |
| RX Oversize Packets | 0 |
| RX Jabbers | 0 |
| RX Control Frame Counter | 0 |
| RX Pause Frame Counter | 0 |
| RX Byte Counter | 509224602 |
| RX Unicast Frame Count | 4547660 |
| RX Packet OK Count | 6685040 |

Statistics for port 9 connected to device RE1:

| | |
|----------------------------|---------|
| TX Packets 64 Octets | 2500318 |
| TX Packets 65-127 Octets | 443 |
| TX Packets 128-255 Octets | 0 |
| TX Packets 256-511 Octets | 0 |
| TX Packets 512-1023 Octets | 0 |

```

TX Packets 1024-1518 Octets 0
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets 2500761
TX Multicast Packets 4
TX Broadcast Packets 2500757
TX PAUSEMAC Ctrl Frames 0
TX Oversize Packets 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 160049670
TX Packet OK Counter 0
TX Pause Packet Counter 0
TX Unicast Counter 0
RX Packets 64 Octets 701191
RX Packets 65-127 Octets 5882
RX Packets 128-255 Octets 2
RX Packets 256-511 Octets 0
RX Packets 512-1023 Octets 17965
RX Packets 1024-1518 Octets 7
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets 725047
RX Multicast Packets 8
RX Broadcast Packets 2500757
RX FCS Errors 0
RX Fragments 0
RX MAC Control Packets 0
RX Out of Range Length 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 62402656
RX Unicast Frame Count 0
RX Packet OK Count 0
Statistics for port 17 connected to device RE0:
TX Packets 64 Octets 7214818
TX Packets 65-127 Octets 94640
TX Packets 128-255 Octets 6384
TX Packets 256-511 Octets 22027
TX Packets 512-1023 Octets 22284
TX Packets 1024-1518 Octets 49929
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets 7410082
TX Multicast Packets 12
TX Broadcast Packets 2497247
TX PAUSEMAC Ctrl Frames 0
TX Oversize Packets 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 571626932

```

```

TX Packet OK Counter      0
TX Pause Packet Counter   0
TX Unicast Counter        0
RX Packets 64 Octets      4823701
RX Packets 65-127 Octets  67812
RX Packets 128-255 Octets 772
RX Packets 256-511 Octets 136
RX Packets 512-1023 Octets 68
RX Packets 1024-1518 Octets 10881
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets                  4903370
RX Multicast Packets       8
RX Broadcast Packets       2497247
RX FCS Errors              0
RX Fragments              0
RX MAC Control Packets     0
RX Out of Range Length     0
RX Undersize Packets       0
RX Oversize Packets       0
RX Jabbers                0
RX Control Frame Counter   0
RX Pause Frame Counter     0
RX Byte Counter            326889517
RX Unicast Frame Count     0
RX Packet OK Count        0

```

Displaying port statistics for switch 1
 Statistics for port 0 connected to device LCC0:

```

TX Packets 64 Octets      5053443
TX Packets 65-127 Octets  59737
TX Packets 128-255 Octets 768
TX Packets 256-511 Octets 87
TX Packets 512-1023 Octets 68
TX Packets 1024-1518 Octets 85
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                  5114188
TX Multicast Packets       16
TX Broadcast Packets       1125742
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions        0
TX Excessive Collisions   0
TX Collision frames       0
TX PAUSEMAC Ctrl Frames   0
TX MAC ctrl frames        0
TX Frame deferred Xmsns   0
TX Frame excessive deferl 0
TX Oversize Packets       0
TX Jabbers                0
TX FCS Error Counter      0
TX Fragment Counter       0
TX Byte Counter            329291449
RX Packets 64 Octets      5640175
RX Packets 65-127 Octets  79875

```

```

RX Packets 128-255 Octets  6338
RX Packets 256-511 Octets  165
RX Packets 512-1023 Octets 4317
RX Packets 1024-1518 Octets 10
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 5730880
RX Multicast Packets 4
RX Broadcast Packets 1735007
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 371282850
Statistics for port 18 connected to device SPMB:
TX Packets 64 Octets 2990326
TX Packets 65-127 Octets 8572
TX Packets 128-255 Octets 4
TX Packets 256-511 Octets 49
TX Packets 512-1023 Octets 0
TX Packets 1024-1518 Octets 10793
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets 3009744
TX Multicast Packets 20
TX Broadcast Packets 2458322
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions 0
TX Excessive Collisions 0
TX Collision frames 0
TX PAUSEMAC Ctrl Frames 0
TX MAC ctrl frames 0
TX Frame deferred Xmns 0
TX Frame excessive deferl 0
TX Oversize Packets 0
TX Jabbers 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 203712524
RX Packets 64 Octets 873454
RX Packets 65-127 Octets 8886
RX Packets 128-255 Octets 44
RX Packets 256-511 Octets 21862
RX Packets 512-1023 Octets 2
RX Packets 1024-1518 Octets 49912
RX Packets 1519-2047 Octets 0

```

```

RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets 954160
RX Multicast Packets 0
RX Broadcast Packets 402369
RX FCS Errors 0
RX Align Errors 0
RX Fragments 0
RX Symbol errors 0
RX Unsupported opcodes 0
RX Out of Range Length 0
RX False Carrier Errors 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 137941752
...

```

show chassis ethernet-switch (T4000 Router)

```

user@host> show chassis ethernet-switch

Displaying summary for switch 0
Link is good on GE port 6 connected to device: FPC0
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 04

Link is good on GE port 9 connected to device: FPC3
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 03

Link is good on GE port 11 connected to device: FPC5
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 03

Link is good on GE port 12 connected to device: FPC6
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 03

Link is good on GE port 14 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled

Link is good on GE port 18 connected to device: RE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled

```

```
Link is good on GE port 19 connected to device: Other RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
```

show chassis ethernet-switch errors (T4000 Router)

```
user@host> show chassis ethernet-switch errors

Displaying error for switch 0
Accumulated error counts for port 6 connected to device FPC0:
  MLT3      0
  Lock      0
  Xmit      0
  ESD       0
  False carrier 4
  Disconnects 0
  FX mode   0
Accumulated error counts for port 9 connected to device FPC3:
  MLT3      0
  Lock      0
  Xmit      0
  ESD       0
  False carrier 3
  Disconnects 0
  FX mode   0
Accumulated error counts for port 11 connected to device FPC5:
  MLT3      0
  Lock      0
  Xmit      0
  ESD       0
  False carrier 3
  Disconnects 0
  FX mode   0
Accumulated error counts for port 12 connected to device FPC6:
  MLT3      0
  Lock      0
  Xmit      0
  ESD       0
  False carrier 3
  Disconnects 0
  FX mode   0
Accumulated error counts for port 19 connected to device Other RE:
  MLT3      0
  Lock      0
  Xmit      0
  ESD       0
  False carrier 0
  Disconnects 0
  FX mode   0
```

show chassis ethernet-switch (PTX5000 Packet Transport Router)

```
user@host> show chassis ethernet-switch

Displaying summary for switch 0
Link is good on XE port 2 connected to device: SPMB
```

```
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 11 connected to device: FPC7
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 12 connected to device: FPC6
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 13 connected to device: FPC5
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 15 connected to device: FPC3
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 16 connected to device: FPC2
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 18 connected to device: FPC0
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 19 connected to device: OTHER RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 20 connected to device: RE
Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
```

```
Flow Control TX is Disabled
Flow Control RX is Disabled
```

show chassis ethernet-switch statistics (PTX5000 Packet Transport Router)

```
user@host> show chassis ethernet-switch statistics
```

```
Displaying port statistics for switch 0
```

```
Statistics for port 2 connected to device SPMB:
```

```
TX Packets 64 Octets      10942
TX Packets 65-127 Octets  843
TX Packets 128-255 Octets 2
TX Packets 256-511 Octets 2
TX Packets 512-1023 Octets 0
TX Packets 1024-1518 Octets 6862
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets                  18651
TX Multicast Packets       6
TX Broadcast Packets      10331
TX PAUSEMAC Ctrl Frames    0
TX Oversize Packets        0
TX FCS Error Counter       0
TX Fragment Counter        0
TX Byte Counter            8105166
TX Packet OK Counter       0
TX Pause Packet Counter    0
TX Unicast Counter         0
RX Packets 64 Octets      8679
RX Packets 65-127 Octets  2364
RX Packets 128-255 Octets 531
RX Packets 256-511 Octets 112
RX Packets 512-1023 Octets 26
RX Packets 1024-1518 Octets 8
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets                  11720
RX Multicast Packets       0
RX Broadcast Packets      10331
RX FCS Errors              0
RX Fragments               0
RX MAC Control Packets     0
RX Out of Range Length     0
RX Undersize Packets       0
RX Oversize Packets        0
RX Jabbers                 0
RX Control Frame Counter   0
RX Pause Frame Counter     0
RX Byte Counter            938105
RX Unicast Frame Count     0
RX Packet OK Count         0
```

```
Statistics for port 11 connected to device FPC7:
```

```
TX Packets 64 Octets      14492
TX Packets 65-127 Octets  3542
TX Packets 128-255 Octets  6
TX Packets 256-511 Octets  45
```



```
TX Packets 512-1023 Octets 60
```

Continued...

Statistics for port 18 connected to device FPC0:

```
TX Packets 64 Octets      15212
TX Packets 65-127 Octets  3810
TX Packets 128-255 Octets 6
TX Packets 256-511 Octets 43
TX Packets 512-1023 Octets 66
TX Packets 1024-1518 Octets 169
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets                  19306
TX Multicast Packets       0
TX Broadcast Packets       10886
TX PAUSEMAC Ctrl Frames    0
TX Oversize Packets        0
TX FCS Error Counter       0
TX Fragment Counter        0
TX Byte Counter            1569412
TX Packet OK Counter       0
TX Pause Packet Counter    0
TX Unicast Counter         0
RX Packets 64 Octets       17994
RX Packets 65-127 Octets   8006
RX Packets 128-255 Octets  230
RX Packets 256-511 Octets  19
RX Packets 512-1023 Octets  53
RX Packets 1024-1518 Octets 11
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets                  26313
RX Multicast Packets       0
RX Broadcast Packets       10886
RX FCS Errors              0
RX Fragments               0
RX MAC Control Packets     0
RX Out of Range Length     0
RX Undersize Packets       0
RX Oversize Packets        0
RX Jabbers                 0
RX Control Frame Counter   2
RX Pause Frame Counter     2
RX Byte Counter            1836287
RX Unicast Frame Count     0
RX Packet OK Count         0
```

Statistics for port 19 connected to device OTHER RE:

```
TX Packets 64 Octets      10234
TX Packets 65-127 Octets  162
TX Packets 128-255 Octets 0
TX Packets 256-511 Octets 0
TX Packets 512-1023 Octets 0
TX Packets 1024-1518 Octets 0
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
```

```

TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets 10396
TX Multicast Packets 8
TX Broadcast Packets 10317
TX PAUSEMAC Ctrl Frames 0
TX Oversize Packets 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 666260
TX Packet OK Counter 0
TX Pause Packet Counter 0
TX Unicast Counter 0
RX Packets 64 Octets 4073
RX Packets 65-127 Octets 325
RX Packets 128-255 Octets 1
RX Packets 256-511 Octets 0
RX Packets 512-1023 Octets 0
RX Packets 1024-1518 Octets 72
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets 4471
RX Multicast Packets 0
RX Broadcast Packets 10317
RX FCS Errors 0
RX Fragments 0
RX MAC Control Packets 0
RX Out of Range Length 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 387333
RX Unicast Frame Count 0
RX Packet OK Count 0
Statistics for port 20 connected to device RE:
TX Packets 64 Octets 658856
TX Packets 65-127 Octets 45535
TX Packets 128-255 Octets 1900
TX Packets 256-511 Octets 532
TX Packets 512-1023 Octets 372
TX Packets 1024-1518 Octets 191
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets 707386
TX Multicast Packets 0
TX Broadcast Packets 10421
TX PAUSEMAC Ctrl Frames 0
TX Oversize Packets 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 46608676
TX Packet OK Counter 0
TX Pause Packet Counter 0
TX Unicast Counter 0

```

```

RX Packets 64 Octets      27394
RX Packets 65-127 Octets 20271
RX Packets 128-255 Octets 78
RX Packets 256-511 Octets 215
RX Packets 512-1023 Octets 269
RX Packets 1024-1518 Octets 253370
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets                  301597
RX Multicast Packets       8
RX Broadcast Packets      10421
RX FCS Errors              0
RX Fragments              0
RX MAC Control Packets    0
RX Out of Range Length    0
RX Undersize Packets      0
RX Oversize Packets       0
RX Jabbers                0
RX Control Frame Counter  0
RX Pause Frame Counter    0
RX Byte Counter           275043436
RX Unicast Frame Count    0
RX Packet OK Count        0

```

Continued ...

show chassis ethernet-switch port-state (PTX5000 Packet Transport Router)

```
user@host> show chassis ethernet-switch port-state
```

Displaying port state for switch 0

Port : 02

Target : SPMB

Error reading port 2 connected to device: SPMB

show chassis fan

List of Syntax

- Syntax on page 1000
- Syntax (ACX4000 Series Router) on page 1000
- Syntax (ACX5048 and ACX5096 Routers) on page 1000
- Syntax (MX Series Routers) on page 1000
- Syntax (T Series Routers) on page 1000
- Syntax (MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform) on page 1000
- Syntax (MX10003 Universal Routing Platform) on page 1000
- Syntax (PTX Series) on page 1000
- Syntax (QFX Series) on page 1001
- Syntax (OCX Series) on page 1001
- Syntax (TX Matrix Router) on page 1001
- Syntax (TX Matrix Plus Router) on page 1001
- Syntax (EX9251, EX9253 Switches) on page 1001

| | |
|---------------|------------------|
| 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 <i>member-id</i> > |
|-----------------------------------|--|

| | |
|----------------------------------|------------------|
| Syntax (T Series Routers) | show chassis fan |
|----------------------------------|------------------|

| | |
|--|--|
| Syntax (MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform) | show chassis fan <satellite [slot-id <i>slot-id</i> [device-alias <i>alias-name</i>]]> |
|--|--|

| | |
|--|------------------|
| Syntax (MX10003 Universal Routing Platform) | show chassis fan |
|--|------------------|

| | |
|----------------------------|------------------|
| Syntax (PTX Series) | show chassis fan |
|----------------------------|------------------|

| | |
|---|---|
| Syntax (QFX Series) | show chassis fan <interconnect-device <i>name</i> > |
| Syntax (OCX Series) | show chassis fan |
| Syntax (TX Matrix Router) | show chassis fan <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | show chassis fan <lcc <i>number</i> sfc <i>number</i> > |
| Syntax (EX9251, EX9253 Switches) | show chassis fan |
| 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> <p>Command output introduced for Junos OS Evolved Release 19.1R1.</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 | all-members —(MX Series routers only) (Optional) Display information about the fan tray and fans for all members of the Virtual Chassis configuration. |

local—(MX Series routers only) (Optional) Display information about the fan tray and fans for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display information about the fan tray and fans for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* variable with a value 0 or 1.

interconnect-device *name*—(QFX3000-G QFabric systems only) (Optional) Display information about the fan tray and fans for the specified QFX3008-I Interconnect device.

lcc *number*—(TX Matrix 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 \(QFabric Systems\) on page 1004](#)
[show chassis fan \(EX Series Switches\) on page 1006](#)
[show chassis fan \(T320 Router\) on page 1006](#)
[show chassis fan \(T640 Router\) on page 1006](#)
[show chassis fan \(T1600 Router\) on page 1007](#)
[show chassis fan \(T4000 Core Router\) on page 1007](#)

[show chassis fan \(TX Matrix Router\) on page 1008](#)
[show chassis fan \(TX Matrix Plus Router\) on page 1009](#)
[show chassis fan \(TX Matrix Plus Router with 3D SIBs\) on page 1010](#)
[show chassis fan \(PTX5000 Packet Transport Router\) on page 1012](#)
[show chassis fan \(PTX10008 Router\) on page 1013](#)
[show chassis fan \(MX150\) on page 1013](#)
[show chassis fan \(MX104 Router\) on page 1013](#)
[show chassis fan \(MX2010 Router\) on page 1013](#)
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[show chassis fan \(MX10003 Router\) on page 1015](#)
[show chassis fan \(MX204 Router\) on page 1015](#)
[show chassis fan \(MX10008 Router\) on page 1015](#)
[show chassis fan \(ACX4000 Router\) on page 1016](#)
[show chassis fan \(ACX5048 Router\) on page 1016](#)
[show chassis fan \(QFX5100 Switch and OCX Series\) on page 1016](#)
[show chassis fan \(EX9251 switches\) on page 1016](#)
[show chassis fan \(EX9253 switches\) on page 1017](#)
[show chassis fan \(Junos OS Evolved\) on page 1017](#)

Output Fields [Table 59 on page 1003](#) lists the output fields for the **show chassis fan** command. Output fields are listed in the approximate order in which they appear.

Table 59: 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 | (PTX10003, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series Packet Transport Routers only) Percentage of the fan speed being used. |

Table 59: show chassis fan Output Fields (continued)

| Field Name | Field Description |
|-------------|---|
| Measurement | <p>(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:</p> <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) <p>(PTX10003, 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.</p> |

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

```

```
lcc0-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 |

1cc2-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 fan (Junos OS Evolved)

user@device> show chassis fan

| Item | Status | % RPM | Measurement |
|------------------|--------|-------|-------------|
| Fan Tray 1 Fan 1 | Ok | 48% | 6597 RPM |
| Fan Tray 1 Fan 2 | Ok | 49% | 5649 RPM |
| Fan Tray 2 Fan 1 | Ok | 49% | 6687 RPM |
| Fan Tray 2 Fan 2 | Ok | 49% | 5649 RPM |
| Fan Tray 3 Fan 1 | Ok | 49% | 6642 RPM |
| Fan Tray 3 Fan 2 | Ok | 49% | 5649 RPM |

show chassis fabric degraded-fabric-reachability

Syntax `show chassis fabric degraded-fabric-reachability`

Release Information Command introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Routers.
Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Description Display the current state of reachability between the Packet Forwarding Engines in the system.

Additional Information

Required Privilege Level view

Related Documentation

- [show chassis fabric errors on page 1054](#)
- [show chassis fabric reachability on page 1197](#)
- [degraded on page 277](#)

List of Sample Output [show chassis fabric degraded-fabric-reachability on page 1018](#)

Output Fields [Table 60 on page 1018](#) lists the output fields for the **show chassis fabric degraded-fabric-reachability** command. Output fields are listed in the approximate order in which they appear.

Table 60: show chassis fabric degraded-fabric-reachability Output Fields

| Field Name | Field Description |
|----------------------|--|
| FPC | Display fabric reachability for the displayed FPC slot. |
| PFE | Display fabric reachability for the displayed PFE slot on a per SIB and plane basis. |
| SIBx_Plane y | Display the SIB (x) and plane (y) where link errors occurred. |
| Link errors FPC/PFEs | Display the list of FPC and PFE slots that are unreachable for the displayed SIB and plane due to link errors. |

Sample Output

show chassis fabric degraded-fabric-reachability

```
user@host> show chassis fabric degraded-fabric-reachability
Degraded Fabric reachability Information:
FPC #0
```

```
PFE #0
  SIB0_Plane 0
    Link errors FPC/PFEs 2/0 5/0 5/1 5/2 5/3
  SIB0_Plane 1
    Link errors FPC/PFEs 2/0 5/0
PFE #1
  SIB0_Plane 0
    Link errors FPC/PFEs 2/0 5/0 5/1 5/2 5/3
  SIB0_Plane 1
    Link errors FPC/PFEs 2/0 5/0
```

show chassis fabric destinations

| | |
|--|--|
| List of Syntax | Syntax on page 1020 Syntax (MX240, MX480, MX960 , MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms) on page 1020 Syntax (EX9253 Switches) on page 1020 |
| Syntax | show chassis fabric destinations |
| Syntax (MX240, MX480, MX960 , MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms) | show chassis fabric destinations fpc < <i>fpc-slot-number</i> > <extended> |
| Syntax (EX9253 Switches) | show chassis fabric destinations |
| Release Information | Command introduced in Junos OS Release 12.1 for MX240, MX480, and MX960 routers. Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. extended option introduced in Junos OS Release 16.1 for MX2010 and MX2020 Routers. Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms. Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms. Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms. Command introduced in Junos OS Release 18.2 for EX9253 Switches. |
| Description | Display the state of fabric destinations for all FPCs. |
| Options | none —Display information about the fabric destinations of all FPCs. <i>fpc-slot-number</i> —(Optional) Display information about the specified FPC. For MX2020 routers, replace <i>fpc-slot-number</i> with a value from 0 through 19. For MX2010 and MX2008 routers, replace <i>fpc-slot-number</i> with a value from 0 through 9. For MX10003, replace <i>fpc-slot-number</i> with a value from 0 through 1. extended —(Optional) (MX2020, MX2010, and MX2008 routers with SFB2 only) Display information about the fabric destination of all 24 planes for each FPC. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> show chassis fabric redundancy-mode on page 1196 |

- [Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers on page 84](#)
- [MX Series Routers Fabric Resiliency on page 100](#)
- [Fabric Plane Management on MPC4E on page 78](#)

List of Sample Output

[show chassis fabric destinations fpc 1 \(MX240 Router\) on page 1021](#)
[show chassis fabric destinations fpc 2 \(MX480 Router\) on page 1022](#)
[show chassis fabric destinations \(MX10008 Router\) on page 1023](#)
[show chassis fabric destinations fpc 4 \(MX480 Router with MPC4E\) on page 1024](#)
[show chassis fabric destinations \(MX960 Router\) on page 1025](#)
[show chassis fabric destinations fpc 1 \(MX2020 Router\) on page 1026](#)
[show chassis fabric destinations fpc 14 \(MX2020 Router with MPC4E\) on page 1027](#)
[show chassis fabric destinations extended \(MX2020 Router with SFB2\) on page 1028](#)
[show chassis fabric destinations fpc-slot-no \(MX2020 router with SFB2\) on page 1036](#)
[show chassis fabric destinations \(MX2010 Router\) on page 1039](#)
[show chassis fabric destinations \(MX2008 Router\) on page 1043](#)
[show chassis fabric destinations \(MX10003 Router\) on page 1045](#)
[show chassis fabric destinations \(MX10003 Router\) on page 1047](#)

Output Fields

Table 61 on page 1021 lists the output fields for the **show chassis fabric destinations** command. Output fields are listed in the approximate order in which they appear.

Table 61: show chassis fabric destinations Output Fields

| Field Name | Field Description |
|--|---|
| Fabric destinations state | Indicates the state of the fabric destinations: <ul style="list-style-type: none"> • 0—Destination is non-existent. • 2—Destination is enabled. • 3—Destination is disabled. • 6—Destination is in erroneous state and is disabled. |
| Flexible PIC Concentrator (FPC) number | Source FPC number. |
| Packet Forwarding Engine number | Source Packet Forwarding Engine number. |
| Plane number | Source plane number. |

Sample Output

show chassis fabric destinations fpc 1 (MX240 Router)

In the output, the values followed by the plane number denote multiple quadruples. The first quadruple specifies FPC1, the second quadruple specifies FPC2 and so on. Each quadruple specifies the states of the fabric plane to the Packet Forwarding Engines.

```
user@host> show chassis fabric destinations fpc 1
```

```
Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled
```

```
FPC 1
```

```
PFE 0
```

```
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
```

```
PFE 1
```

```
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
```

show chassis fabric destinations fpc 2 (MX480 Router)

```
user@host> show chassis fabric destinations fpc 2
```

```
Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled
```

```
FPC 2
```

```
PFE 0
```

```
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
```

```
PFE 1
```

```
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
```

```
PFE 2
```

```
Plane 0  0000 3300 3333
```

```

Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
PFE 3
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333

```

show chassis fabric destinations (MX10008 Router)

```
user@host> show chassis fabric destinations
```

Fabric destinations state:

```

0: non-existent
2: enabled
3: disabled
6: dest-err and disabled

```

FPC 1

PFE 0

```

Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000

```

PFE 1

```

Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000

```

PFE 2

```

Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000

```

PFE 3

```

Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000

```

PFE 4

```

Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000

```

[illegible]

show chassis fabric destinations fpc 4 (MX480 Router with MPC4E)

```
user@host > show chassis fabric destinations fpc 4
```

```

Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled

FPC 4
PFE 0
Plane 0  2200 2222 0000    2000 2200 0000
Plane 1  2200 2222 0000    2000 2200 0000
Plane 2  2200 2222 0000    2000 2200 0000
Plane 3  2200 2222 0000    2000 2200 0000
Plane 4  3300 3333 0000    3000 3300 0000
Plane 5  3300 3333 0000    3000 3300 0000
Plane 6  3300 3333 0000    3000 3300 0000
Plane 7  3300 3333 0000    3000 3300 0000
PFE 1
Plane 0  2200 2222 0000    2000 2200 0000
Plane 1  2200 2222 0000    2000 2200 0000
Plane 2  2200 2222 0000    2000 2200 0000
Plane 3  2200 2222 0000    2000 2200 0000
Plane 4  3300 3333 0000    3000 3300 0000
Plane 5  3300 3333 0000    3000 3300 0000
Plane 6  3300 3333 0000    3000 3300 0000
Plane 7  3300 3333 0000    3000 3300 0000

```

show chassis fabric destinations (MX960 Router)

```
user@host> show chassis fabric destinations
```

```

Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled

FPC 1
PFE 0
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
PFE 1
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
FPC 2
PFE 0
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222

```

```

Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
PFE 1
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
PFE 2
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333
PFE 3
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333

```

show chassis fabric destinations fpc 1 (MX2020 Router)

```
user@host> show chassis fabric destinations fpc 1
```

```
Fabric destinations state:
```

```

0: non-existent
2: enabled
3: disabled
6: dest-err and disabled

```

```
FPC 1
```

```

PFE 0
Plane 0  3333 3333 3333  3333 3333 3333  3333 3333 3333  3333 3333 3333
3333 3333 3333  3333 3333 3333  3333 3333 3333
Plane 1  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222 2222
Plane 2  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222 2222
Plane 3  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222 2222
Plane 4  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222 2222
Plane 5  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222 2222
Plane 6  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222

```

```

2222 2222 2222 2222 2222 2222 2222 2222
Plane 7 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
PFE 1
Plane 0 3333 3333 3333 3333 3333 3333 3333
3333 3333 3333 3333 3333 3333 3333 3333
Plane 1 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 2 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 3 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 4 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 5 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 6 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 7 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
PFE 2
Plane 0 3333 3333 3333 3333 3333 3333 3333
3333 3333 3333 3333 3333 3333 3333 3333
Plane 1 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 2 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 3 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 4 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 5 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 6 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 7 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
PFE 3
Plane 0 3333 3333 3333 3333 3333 3333 3333
3333 3333 3333 3333 3333 3333 3333 3333
Plane 1 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 2 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 3 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 4 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 5 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 6 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222
Plane 7 2222 2222 2222 2222 2222 2222 2222
2222 2222 2222 2222 2222 2222 2222 2222

```

show chassis fabric destinations fpc 14 (MX2020 Router with MPC4E)

```
user@ host > show chassis fabric destinations fpc 14
```

Fabric destinations state:

0: non-existent
 2: enabled
 3: disabled
 6: dest-err and disabled

FPC 14

PFE 0

| | | | | | |
|---------|---------------------|---------------------|---------------------|---------------------|------|
| Plane 0 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 1 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 2 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 3 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 4 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 5 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 6 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 7 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |

PFE 1

| | | | | | |
|---------|---------------------|---------------------|---------------------|---------------------|------|
| Plane 0 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 1 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 2 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 3 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 4 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 5 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 6 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |
| Plane 7 | 2200 0000 0000 0000 | 0000 0000 0000 0000 | 0000 0000 0000 0000 | 2200 2000 0000 0000 | 0000 |
| | 2200 0000 | 0000 0000 | 0000 2222 | | |

show chassis fabric destinations extended (MX2020 Router with SFB2)

```
user@host> show chassis fabric destinations extended
```

Fabric destinations state:

0: non-existent
 2: enabled
 3: disabled
 6: dest-err and disabled

FPC 0

PFE 0

| | | | |
|---------|---------------------|---------------------|---------------------|
| Plane 0 | 2000 2222 2200 2200 | 0000 0000 2000 2000 | 0000 0000 0000 3300 |
| | 2200 0000 | 0000 2200 2200 0000 | 2222 |
| Plane 1 | 2000 2222 2200 2200 | 0000 0000 2000 2000 | 0000 0000 0000 3300 |
| | 2200 0000 | 0000 2200 2200 0000 | 2222 |
| Plane 2 | 2000 2222 2200 2200 | 0000 0000 2000 2000 | 0000 0000 0000 3300 |
| | 2200 0000 | 0000 2200 2200 0000 | 2222 |

| | | | | | | | | | | | | | | | |
|----------------|------|------|------|------|------|-----------|------|------|------|------|------|------|------|------|------|
| Plane 3 | 6000 | 3333 | 3300 | 3300 | 0000 | 0000 | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 | 3300 | |
| 3300 0000 | | 0000 | 3300 | 3300 | | 0000 3333 | | | | | | | | | |
| Plane 4 | 2000 | 2222 | 2200 | 2200 | 0000 | 0000 | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | 3300 | |
| 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 5 | 2000 | 2222 | 2200 | 2200 | 0000 | 0000 | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | 3300 | |
| 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 6 | 2000 | 2222 | 2200 | 2200 | 0000 | 0000 | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | 3300 | |
| 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 7 | 2000 | 2222 | 2200 | 2200 | 0000 | 0000 | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | 3300 | |
| 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 8 | 6000 | 3333 | 3300 | 3300 | 0000 | 0000 | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 | 3300 | |
| 3300 0000 | | 0000 | 3300 | 3300 | | 0000 3333 | | | | | | | | | |
| Plane 9 | 6000 | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 3300 0000 | | 0000 | 3300 | 3300 | | 0000 3333 | | | | | | | | | |
| Plane 10 | 6000 | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 3300 0000 | | 0000 | 3300 | 3300 | | 0000 3333 | | | | | | | | | |
| Plane 11 | 6000 | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 3300 0000 | | 0000 | 3300 | 3300 | | 0000 3333 | | | | | | | | | |
| Plane 12 | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 13 | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 14 | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 15 | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 16 | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 17 | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 2200 0000 | | 0000 | 2200 | 2200 | | 0000 2222 | | | | | | | | | |
| Plane 18 | 3000 | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 3300 0000 | | 0000 | 3300 | 3300 | | 0000 3333 | | | | | | | | | |
| Plane 19 | 3000 | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 3300 0000 | | 0000 | 3300 | 3300 | | 0000 3333 | | | | | | | | | |
| Plane 20 | 3000 | 3333 | 3300 | | 3300 | | | | | | | | | | |

[illegible]

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[illegible]

| | | | | | | | | | | | | | | | |
|----------|------|------|--|------|------|------|------|------|------|--|------|------|------|--|----------------|
| 3300 | 3200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | |
| Plane 10 | 3000 | | | 2222 | 2200 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 0000 0000 |
| 3300 | 3200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 11 | 3000 | | | 2222 | 2200 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 0000 0000 |
| 3300 | 3200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 12 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 13 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 14 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 15 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 16 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 17 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 18 | 3000 | | | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 0000 0000 |
| 3300 | 3300 | 0000 | | 0000 | 3300 | 3300 | | 0000 | 3333 | | | | | | |
| Plane 19 | 3000 | | | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 0000 0000 |
| 3300 | 3300 | 0000 | | 0000 | 3300 | 3300 | | 0000 | 3333 | | | | | | |
| Plane 20 | 3000 | | | 3333 | 3300 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 0000 0000 |
| 3300 | 3300 | 0000 | | 0000 | 3300 | 3300 | | 0000 | 3333 | | | | | | |
| Plane 21 | 3000 | | | 2222 | 2200 | | 3300 | 0000 | 0000 | | 3000 | 3000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 22 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 23 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| PFE 3 | | | | | | | | | | | | | | | |
| Plane 0 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 1 | 2000 | | | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 0000 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | | 0000 | 2222 | | | | | | |
| Plane 2 | 2000 | | | 2222 | 2200 | | 2200 | | | | | | | | |

```

Plane 15  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 16  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 17  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 18  3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 0000 3333
Plane 19  3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 0000 3333
Plane 20  3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 0000 3333
Plane 21  3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 22  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 23  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222

```

show chassis fabric destinations fpc-slot-no (MX2020 router with SFB2)

```
user@host> show chassis fabric destination fpc 19 extended
```

```
Fabric destinations state:
```

```

0: non-existent
2: enabled
3: disabled
6: dest-err and disabled

```

```
FPC 19
```

```
PFE 0
```

```

Plane 0  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 1  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 2  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 3  3000 2222 2200  2200 0000 0000  3000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 4  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 5  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 6  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 7  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 8  3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 0000 2222
Plane 9  3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 0000 2222
Plane 10 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 0000 2222
Plane 11 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 0000 2222
Plane 12 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 13 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 0000 2222
Plane 14 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000

```


| | | | | | | | | | | | | | | | | | | | | | | |
|----------|------|------|--|------|------|------|------|------|------|------|--|------|------|------|--|------|------|------|--|------|--------|------|
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 15 | | | | | | | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 16 | | | | | | | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 17 | | | | | | | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 18 | | | | | | | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 3300 | 0000 | | 0000 | 3300 | 3300 | 0000 | 3333 | | | | | | | | | | | | | | |
| Plane 19 | | | | | | | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 3300 | 0000 | | 0000 | 3300 | 3300 | 0000 | 3333 | | | | | | | | | | | | | | |
| Plane 20 | | | | | | | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 3300 | 0000 | | 0000 | 3300 | 3300 | 0000 | 3333 | | | | | | | | | | | | | | |
| Plane 21 | | | | | | | | 3000 | 3000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 22 | | | | | | | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 23 | | | | | | | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 | | | | | | | | |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| PFE 1 | | | | | | | | | | | | | | | | | | | | | | |
| Plane 0 | | | | | | | | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 1 | | | | | | | | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 2 | | | | | | | | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 3 | | | | | | | | 3000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 3000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 4 | | | | | | | | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 5 | | | | | | | | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 6 | | | | | | | | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000 | 0000 |
| 3300 | 2200 | 0000 | | 0000 | 2200 | 2200 | 0000 | 2222 | | | | | | | | | | | | | | |
| Plane 7 | | | | | | | | 2000 | 2222 | 2200 | | 2200 | 0000 | 0000 | | 2000 | 2000 | 0000 | | 0000 | 0000</ | |


```

Plane 1  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 2  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 3  3000 2222 2200  2200 0000 0000  3000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 4  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 5  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 6  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 7  2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 8  3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 2222
Plane 9  3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 2222
Plane 10 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 2222
Plane 11 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 2222
Plane 12 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 13 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 14 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 15 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 16 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 17 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 18 3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
Plane 19 3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
Plane 20 3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
Plane 21 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 22 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 23 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222

```

show chassis fabric destinations (MX2010 Router)

```
user@host> show chassis fabric destinations
```

```
Fabric destinations state:
```

```

0: non-existent
2: enabled
3: disabled
6: dest-err and disabled

```

```
FPC 0
```

```
PFE 0
```

```
Plane 0  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
```

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```

Plane 0  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 1  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 2  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 3  3300 3000 3300  3333 3000 3300  3333 3300 3000  3300
Plane 4  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 5  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 6  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 7  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
PFE 1
Plane 0  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 1  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 2  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 3  3300 3000 3300  3333 3000 3300  3333 3300 3000  3300
Plane 4  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 5  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 6  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 7  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200

```

show chassis fabric destinations (MX2008 Router)

```
user@host> show chassis fabric destinations
```

```
Fabric destinations state:
```

```

0: non-existent
2: enabled
3: disabled
6: dest-err and disabled

```

```
FPC 0
```

```
PFE 0
```

```

Plane 0  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000
Plane 1  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 2  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 3  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 4  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000
Plane 5  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 6  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 7  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000

```

```
PFE 1
```

```

Plane 0  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000
Plane 1  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 2  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 3  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 4  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000
Plane 5  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 6  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 7  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000

```

```
PFE 2
```

```

Plane 0  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000
Plane 1  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 2  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 3  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 4  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000
Plane 5  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 6  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 7  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000

```

```
PFE 3
```

```

Plane 0  3333 3333 0000  3000 0000 3000  0000 0000 0000  0000
Plane 1  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000
Plane 2  2222 2222 0000  2000 0000 2000  0000 0000 0000  0000

```

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| | | | | | | | | | | |
|---------|------|------|------|------|------|------|------|------|------|------|
| Plane 6 | 2222 | 2222 | 0000 | 2000 | 0000 | 2000 | 0000 | 0000 | 0000 | 0000 |
| Plane 7 | 3333 | 3333 | 0000 | 3000 | 0000 | 3000 | 0000 | 0000 | 0000 | 0000 |

show chassis fabric destinations (MX10003 Router)

```
user@host> show chassis fabric destinations
```

```
Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled
```

```
FPC 0
PFE 0
Plane 0  2220 2220
Plane 1  2220 2220
Plane 2  2220 2220
Plane 3  2220 2220
Plane 4  2220 2220
Plane 5  2220 2220
Plane 6  2220 2220
Plane 7  2220 2220
Plane 8  2220 2220
Plane 9  2220 2220
Plane 10 2220 2220
Plane 11 2220 2220
Plane 12 2220 2220
Plane 13 2220 2220
Plane 14 2220 2220
Plane 15 2220 2220
Plane 16 2220 2220
Plane 17 2220 2220
Plane 18 2220 2220
Plane 19 2220 2220
Plane 20 2220 2220
Plane 21 2220 2220
```

```
PFE 1
Plane 0  2220 2220
Plane 1  2220 2220
Plane 2  2220 2220
Plane 3  2220 2220
Plane 4  2220 2220
Plane 5  2220 2220
Plane 6  2220 2220
Plane 7  2220 2220
Plane 8  2220 2220
Plane 9  2220 2220
Plane 10 2220 2220
Plane 11 2220 2220
Plane 12 2220 2220
Plane 13 2220 2220
Plane 14 2220 2220
Plane 15 2220 2220
Plane 16 2220 2220
Plane 17 2220 2220
Plane 18 2220 2220
Plane 19 2220 2220
Plane 20 2220 2220
```

```
Plane 21  2220 2220
PFE 2
Plane 0    2220 2220
Plane 1    2220 2220
Plane 2    2220 2220
Plane 3    2220 2220
Plane 4    2220 2220
Plane 5    2220 2220
Plane 6    2220 2220
Plane 7    2220 2220
Plane 8    2220 2220
Plane 9    2220 2220
Plane 10   2220 2220
Plane 11   2220 2220
Plane 12   2220 2220
Plane 13   2220 2220
Plane 14   2220 2220
Plane 15   2220 2220
Plane 16   2220 2220
Plane 17   2220 2220
Plane 18   2220 2220
Plane 19   2220 2220
Plane 20   2220 2220
Plane 21   2220 2220
FPC 1
PFE 0
Plane 0    2220 2220
Plane 1    2220 2220
Plane 2    2220 2220
Plane 3    2220 2220
Plane 4    2220 2220
Plane 5    2220 2220
Plane 6    2220 2220
Plane 7    2220 2220
Plane 8    2220 2220
Plane 9    2220 2220
Plane 10   2220 2220
Plane 11   2220 2220
Plane 12   2220 2220
Plane 13   2220 2220
Plane 14   2220 2220
Plane 15   2220 2220
Plane 16   2220 2220
Plane 17   2220 2220
Plane 18   2220 2220
Plane 19   2220 2220
Plane 20   2220 2220
Plane 21   2220 2220
PFE 1
Plane 0    2220 2220
Plane 1    2220 2220
Plane 2    2220 2220
Plane 3    2220 2220
Plane 4    2220 2220
Plane 5    2220 2220
Plane 6    2220 2220
Plane 7    2220 2220
Plane 8    2220 2220
Plane 9    2220 2220
Plane 10   2220 2220
```

```

Plane 11 2220 2220
Plane 12 2220 2220
Plane 13 2220 2220
Plane 14 2220 2220
Plane 15 2220 2220
Plane 16 2220 2220
Plane 17 2220 2220
Plane 18 2220 2220
Plane 19 2220 2220
Plane 20 2220 2220
Plane 21 2220 2220
PFE 2
Plane 0 2220 2220
Plane 1 2220 2220
Plane 2 2220 2220
Plane 3 2220 2220
Plane 4 2220 2220
Plane 5 2220 2220
Plane 6 2220 2220
Plane 7 2220 2220
Plane 8 2220 2220
Plane 9 2220 2220
Plane 10 2220 2220
Plane 11 2220 2220
Plane 12 2220 2220
Plane 13 2220 2220
Plane 14 2220 2220
Plane 15 2220 2220
Plane 16 2220 2220
Plane 17 2220 2220
Plane 18 2220 2220
Plane 19 2220 2220
Plane 20 2220 2220
Plane 21 2220 2220

```

show chassis fabric destinations (MX10003 Router)

```
user@switch> show chassis fabric destinations
```

```

Fabric destinations state:
0: non-existent
2: enabled
3: disabled
6: dest-err and disabled

```

```
FPC 0
```

```
PFE 0
```

```

Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000

```

```
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 16 222000 222000
Plane 17 222000 222000
Plane 18 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
PFE 1
Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000
---(more)---
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 16 222000 222000
---(more 32%)---
Plane 17 222000 222000
Plane 18 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
PFE 2
Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
PFE 1
Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
```

```
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 16 222000 222000
Plane 17 222000 222000
Plane 18 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
PFE 2
Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 16 222000 222000
Plane 17 222000 222000
Plane 18 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
FPC 1
PFE 0
Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 16 222000 222000
```

```
Plane 17 222000 222000
Plane 18 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
PFE 1
Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 16 222000 222000
Plane 17 222000 222000
Plane 18 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
PFE 2
Plane 0 222000 222000
Plane 1 222000 222000
Plane 2 222000 222000
Plane 3 222000 222000
Plane 4 222000 222000
Plane 5 222000 222000
Plane 6 222000 222000
Plane 7 222000 222000
Plane 8 222000 222000
Plane 9 222000 222000
Plane 10 222000 222000
Plane 11 222000 222000
Plane 12 222000 222000
Plane 13 222000 222000
Plane 14 222000 222000
Plane 15 222000 222000
Plane 16 222000 222000
Plane 17 222000 222000
Plane 18 222000 222000
Plane 19 222000 222000
Plane 20 222000 222000
Plane 21 222000 222000
```

show chassis fabric faults recovery-actions

| | |
|---------------------------------|---|
| Syntax | show chassis fabric faults recovery-actions |
| Release Information | Command introduced in Junos OS Release 14.2 for TX Matrix Plus routers with 3D SIBs. |
| Description | Display the last 64 recovery actions related to a fabric black-hole condition. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • auto-recovery-disable on page 257 |
| List of Sample Output | show chassis fabric faults recovery-actions on page 1051 |
| Output Fields | Table 60 on page 1018 lists the output fields for the show chassis fabric faults recovery-actions command. Output fields are listed in the approximate order in which they appear. |

Table 62: show chassis fabric faults recovery-actions Output Fields

| Field Name | Field Description |
|----------------------------|---|
| Fault Name | <p>The name of fault detected. The fault name appears in a message such as:</p> <p>CLOS LINK ERROR detected on F2S or F13 slot <i>slot number</i> xf chip <i>chip number</i> and Link Number <i>link number</i></p> |
| Recovery Start Time | The time when recovery actions were initiated. |
| Recovery Action | <p>The recovery action that was used to recover from the mentioned fault. Recovery options depend on the type of faults and can include:</p> <ul style="list-style-type: none"> • SFC SIB Reboot: The SFC SIB was rebooted. • LCC SIB Reboot: The LCC SIB was rebooted. • FPC Reboot: The FPC was rebooted. • Destination Reprogramming: Reenabling the data flow between Packet Forwarding Engines. • Interchassis Link Retraining: Retraining of optical links between an LCC SIB and an SFC SIB. |

Sample Output

show chassis fabric faults recovery-actions

```
user@host> show chassis fabric faults recovery-actions
```

```
Fault Name      :CLOS LINK ERROR on F2SSlot3Chip0LinkNum2
Recovery Start Time :2014-03-25 19:52:50 PDT
Recovery Action   :F2S slot 3 Reboot
```


show chassis fabric feb

| | |
|---------------------------------|---|
| Syntax | show chassis fabric feb |
| Release Information | Command introduced in Junos OS Release 8.0. |
| Description | (M120 router only) Display the state of the electrical and optical switching fabric links between the Forwarding Engine Boards (FEBs) and the fabric planes, as interpreted by the FEB. |
| Options | This command has no options. |
| Required Privilege Level | view |
| List of Sample Output | show chassis fabric feb on page 1053 |
| Output Fields | Table 63 on page 1053 lists the output fields for the show chassis fabric feb command. |

Table 63: show chassis fabric feb Output Fields

| Field Name | Field Description |
|------------------------------------|--|
| Fabric management FEB state | State of the switching fabric link between each FEB and fabric plane: desalination error, disabled, enabled, link error, link ok, or unused. |

Sample Output

show chassis fabric feb

```

user@host> show chassis fabric feb
Fabric management FEB state
FEB 0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
FEB 4
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled

```

show chassis fabric errors

List of Syntax [Syntax on page 1054](#)
[Syntax \(PTX Series Packet Transport Routers\) on page 1054](#)

Syntax show chassis fabric errors
 <autoheal>
 <fpc slot-number lcc number>
 <sib (slot | f13 sib-slot | f2s sib-slot/sib-f2s-slot-number | lcc number)>

Syntax (PTX Series Packet Transport Routers) show chassis fabric errors
 (autoheal | fpc slot-number | sib sib-slot)

Release Information Command introduced in Junos OS Release 10.0.
 Command introduced in Junos OS Release 12.1X48 for the PTX Series Packet Transport Routers.
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Description Display the first ten and last ten fabric errors for the FPC or Switch Interface Boards (SIBs).



NOTE: This command can only be issued on a master Routing Engine.

Options **autoheal**—(TX Matrix Plus routers and PTX Series Packet Transport Routers only) Show an error log of the first 100 autoheal actions taken on the system.

fpc slot-number—Show error log of the first ten and last ten errors for the specified FPC.

(PTX3000 routers only)—Replace **slot-number** with an FPC slot number: **0, 2, 4, 6, 8, 10, 12, or 14**.

(PTX5000 routers only)—Replace **slot-number** with a value from **0** through **7**.

(TX Matrix Plus routers only)—Replace **fpc slot-number** with the following values depending on the LCC configuration:

- On a TX Matrix Plus router with the TXP-T1600 configuration, if you specify the number of a T1600 LCC by using the **lcc number** option (the recommended method), replace **fpc slot-number** with a value from **0** through **7**. Otherwise, use a value from **0** through **31**.
- On a TX Matrix Plus router with the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 LCC by using the **lcc number** option (the recommended method), replace **fpc**

slot-number with a value from 0 through 7. Otherwise, use a value from 0 through 63.

- **lcc number**—Show error log of the first ten and last ten errors for the specified FPC on a specific network device (line-card chassis) that is part of the routing matrix.

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

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

If you specify the number of the network device by using only the **lcc number** option (the recommended method), replace **slot-number** with a value from 0 through 7. Otherwise, replace **slot-number** with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis fabric errors fpc 1 lcc 1
user@host> show chassis fabric errors fpc 9
```

sib—Show error log of the first ten and last ten errors for the specified SIB. This option has the following suboptions:

- (TX Matrix Plus routers only) **sib-slot**—Specify a value ranging from 0 through 4.
- (PTX3000 and PTX5000 routers) **sib-slot**—Specify a value ranging from 0 through 8.
- (TX Matrix Plus routers only) **f13 sib-slot**—(Optional) Show SIB F13 errors. Specify a valid SIB value number: 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12.
- (TX Matrix Plus routers only) **f2s sib-slot/sib-f2s-slot-number**—(Optional) Show SIB F2S errors. Replace **sib-slot** with a value from 0 through 4, followed by a **sib-f2s-slot-number** value 0, 2, 4 or 6.
- (TX Matrix Plus routers only) **lcc number**—(Optional) Show error log of the first ten and last ten SIB errors for the specified network device (line-card chassis).

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

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

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



NOTE: The `lcc number` suboption is mandatory when using the following format for the command: `show chassis fabric errors sib lcc number sib slot-number`. For instance, issuing `show chassis fabric errors sib lcc 2 3` displays errors detected on LCC 2, SIB 3.

This suboption is not required when the `f13` or `f2s` suboptions are used with the `sib slot-number` option.

Required Privilege Level view

List of Sample Output [show chassis fabric errors \(F13 SIB Errors on a TX Matrix Plus Router\) on page 1057](#)
[show chassis fabric errors \(F2S SIB Errors on a TX Matrix Plus Router\) on page 1057](#)
[show chassis fabric errors \(SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router\) on page 1057](#)
[show chassis fabric errors \(FPC Errors Specific to an LCC Connected to a TX Matrix Plus Router\) on page 1058](#)
[show chassis fabric errors \(SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router with 3D SIBs\) on page 1058](#)
[show chassis fabric errors fpc or sib \(PTX Series Packet Transport Routers\) on page 1058](#)
[show chassis fabric errors autoheal \(PTX Series Packet Transport Routers\) on page 1058](#)
[show chassis fabric errors autoheal \(TX Matrix Plus Router with 3D SIBs\) on page 1058](#)

Output Fields [Table 64 on page 1056](#) lists the output fields for the `show chassis fabric errors` command. Output fields are listed in the approximate order in which they appear.

Table 64: show chassis fabric errors Output Fields

| Field Name | Field Description |
|------------------------------|---|
| Time | Time the error was logged. (TX Matrix Plus routers and PTX Series Packet Transport Routers only) For the <code>autoheal</code> option, shows the timestamp when autoheal was attempted on a SIB that was in fault state. |
| Error log of first 10 errors | List of the first ten errors. |
| Error log of last 10 errors | List of the last ten errors. |

Table 64: show chassis fabric errors Output Fields (continued)

| Field Name | Field Description |
|--------------------------------------|---|
| Error log of first 100 errors | <p>Indicates the autoheal action taken on the SIB. The following actions can occur:</p> <ul style="list-style-type: none"> • Req—A SIB autoheal request was made on a faulty SIB. • Action—Autohealing (taking the SIB offline and then online) is initiated. • Denied—Autohealing (taking the SIB offline and then online) is denied because the SIB went to a fault state before the autoheal configuration period completed. • Set info—Setting information to force skipping autoheal on the SIB so that no further attempts to autoheal the faulty SIB are made. • Clear info— if a user takes a SIB offline and then online, then the autoheal information of the SIB is cleared. If the SIB goes to a fault state, autoheal is attempted on the SIB. • (PTX3000 and PTX5000 routers only) Completed—Autohealing is completed. This message is displayed whether autohealing is succesful or not. |
| fpc slot number | (PTX5000 Packet Transport Router only)—Range is 0 through 7. |
| sib slot number | (PTX Series Packet Transport Routers only)—Range is 0 through 8. |
| lcc number | Not supported on PTX Series Packet Transport Routers. |

Sample Output

show chassis fabric errors (F13 SIB Errors on a TX Matrix Plus Router)

```
user@host> show chassis fabric errors sib f13 11
```

```
Time                               Error log of first 10 errors
2009-10-06 02:21:17 PDT           LOS on Cable-D(1,0)
```

show chassis fabric errors (F2S SIB Errors on a TX Matrix Plus Router)

```
user@host> show chassis fabric errors sib f2s 0/0
```

```
Time                               Error log of first 10 errors
2009-10-06 13:51:42 PDT           Cell drop errors on CLOS F2 SF 0 Port 0 link
```

show chassis fabric errors (SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router)

```
user@host> show chassis fabric errors sib 1 lcc 0
```

```
lcc0-re0:
```

| Time | Error log of first 10 errors |
|-------------------------|---------------------------------|
| 2009-10-06 02:23:16 PDT | Cell drop errors on FPC7_T link |
| 2009-10-06 02:23:16 PDT | Cell drop errors on FPC7_B link |

show chassis fabric errors (FPC Errors Specific to an LCC Connected to a TX Matrix Plus Router)

```
user@host> show chassis fabric errors fpc 5 lcc 0
```

lcc0-re0:

| Time | Error log of first 10 errors |
|-------------------------|---------------------------------|
| 2009-10-06 13:56:59 PDT | PFE_T has link error on plane 1 |

show chassis fabric errors (SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric errors sib 1 lcc 0
```

lcc0-re0:

| Time | Error log of first 10 errors |
|-------------------------|--------------------------------------|
| 2013-02-11 04:46:42 PST | CRC errors on XC link SIB01_XF3#11,0 |

show chassis fabric errors fpc or sib (PTX Series Packet Transport Routers)

```
user@host> show chassis fabric errors fpc 1
```

| Time | Error log of first 10 errors |
|-------------------------|------------------------------------|
| 2012-01-06 16:27:03 PST | Link errs on PFE 2, SIB 0, Plane 0 |

```
user@host> show chassis fabric errors sib 1
```

| Time | Error log of first 10 errors |
|-------------------------|--|
| 2015-01-16 15:34:33 PST | Link errs on PFE 0, FPC 0, Plane 2 |
| 2015-01-16 15:44:33 PST | CM set ASIC 1 to FAULT (Fault due to PIO errors) |

show chassis fabric errors autoheal (PTX Series Packet Transport Routers)

```
user@host> show chassis fabric errors autoheal
```

Mar 30 01:43:00

| Time | Error log of first 100 errors |
|-------------------------|-------------------------------|
| 2016-03-29 23:46:23 PDT | Req: sib 0 |
| 2016-03-29 23:46:23 PDT | Action: SIB 0 (autohealing) |
| 2016-03-29 23:54:52 PDT | Completed: SIB 0 (autoheal) |

show chassis fabric errors autoheal (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric errors autoheal
```

| Time | Error log of first 100 errors |
|-------------------------|--|
| 2013-03-25 00:16:10 PDT | Req: Plane 3 F13 8 Cb1 4 (tx) LCC0-SIB3 Cb1 4 (rx) |
| 2013-03-25 00:16:12 PDT | Action: Plane 3 F13 8 Cb1 4 (autohealing) |

```
2013-03-25 00:17:24 PDT Req: Plane 3 F13 8 Cbl 4 (tx) LCC0-SIB3 Cbl 4 (rx)
2013-03-25 00:17:24 PDT Denied: Plane 3 F13 8 Cbl 4 (time < configured)
2013-03-25 00:17:24 PDT Set info: Plane 3 F13 8 Cbl 4 (skip autoheal)
2013-03-25 01:20:17 PDT Clear info: Plane 3
```

show chassis fabric fpcs

| | |
|---|--|
| List of Syntax | Syntax on page 1060 Syntax (MX Series Routers) on page 1060 Syntax (MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) on page 1060 Syntax (T4000 Core Router) on page 1060 Syntax (PTX Series Packet Transport Routers) on page 1060 Syntax (TX Matrix Plus Router) on page 1060 Syntax (QFX Series Switches) on page 1060 |
| Syntax | <pre>show chassis fabric fpcs <lcc number></pre> |
| Syntax (MX Series Routers) | <pre>show chassis fabric fpcs <extended> <all-members> <local> <member member-id></pre> |
| Syntax (MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) | <pre>show chassis fabric fpcs</pre> |
| Syntax (T4000 Core Router) | <pre>show chassis fabric fpcs</pre> |
| Syntax (PTX Series Packet Transport Routers) | <pre>show chassis fabric fpcs <slot fpc-slot></pre> |
| Syntax (TX Matrix Plus Router) | <pre>show chassis fabric fpcs <lcc number></pre> |
| Syntax (QFX Series Switches) | <pre>show chassis fabric fpcs <slot fpc-slot></pre> |
| 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>Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches.</p> |

extended option introduced in JunosOS Release 16.1 for MX2020 and MX2010 Routers.
 Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.
 Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.

Description Display the state of the electrical switch fabric links between the Flexible PIC Concentrators (FPCs) and the Switch Interface Boards (SIBs).

Options **none**—Display the switch fabric link state. On a TX Matrix router, display the switching fabric link states for the FPCs in all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display the switching fabric link states for the FPCs in all routers connected to the TX Matrix Plus router.

extended—(MX2020 and MX2010 Routers with SFB2) (Optional) Display the fabric link state for all 24 fabric planes.

all-members—(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in all members of the Virtual Chassis configuration.

lcc *number*—(TX Matrix router and TX Matrix Plus router only) (Optional) On a TX Matrix router, display the switch fabric link state for the FPCs in the specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the switch fabric link state for the FPCs in the specified router (line-card chassis) that is connected to the TX Matrix Plus router. Replace ***number*** with a following value depending on the LCC configurations:

- From **0** through **3** on a T640 router on the routing matrix with TX Matrix routers.
- From **0** through **3** on a T1600 router on the routing matrix with TX Matrix Plus routers.
- From **0** through **7** on a T1600 router in a routing matrix with TX Matrix Plus router with 3D SIBs.
- **0, 2, 4, 6** on a T4000 router in a routing matrix with TX Matrix Plus router with 3D SIBs.

local—(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the specified member of the Virtual Chassis configuration. Replace ***member-id*** with a value of 0 or 1.

slot *fpc-slot*—(PTX Series Packet Transport Routers and QFX Series switches only) (Optional) Display the fabric state of the specified FPC slot. If no value is provided, display the status of all FPCs.

Required Privilege Level view

- Related Documentation**
- [request chassis fabric fpc](#)
 - [show chassis fpc on page 1309](#)
 - [Displaying Information About DPCs or FPCs in an MX Series Router](#)

- List of Sample Output**
- [show chassis fabric fpcs \(M320 Router\) on page 1063](#)
 - [show chassis fabric fpcs \(MX240 Router\) on page 1064](#)
 - [show chassis fabric fpcs \(MX480 Router\) on page 1064](#)
 - [show chassis fabric fpcs \(MX960 Router\) on page 1066](#)
 - [show chassis fabric fpcs \(MX240 with AS MLC Modular Carrier Card\) on page 1067](#)
 - [show chassis fabric fpcs \(MX480 with AS MLC Modular Carrier Card\) on page 1067](#)
 - [show chassis fabric fpcs \(MX480 Router with MPC4E\) on page 1068](#)
 - [show chassis fabric fpcs \(MX960 with AS MLC Modular Carrier Card on page 1069](#)
 - [show chassis fabric fpcs \(MX2010 Router\) on page 1071](#)
 - [show chassis fabric fpcs \(MX2020 Router\) on page 1074](#)
 - [show chassis fabric fpcs \(MX2020 Router with MPC4E\) on page 1077](#)
 - [show chassis fabric fpcs \(MX2020 Router with SFB2\) on page 1079](#)
 - [show chassis fabric fpcs \(MX2008 Router\) on page 1083](#)
 - [show chassis fabric fpcs \(MX10003 Router\) on page 1085](#)
 - [show chassis fabric fpcs \(T320 Router\) on page 1086](#)
 - [show chassis fabric fpcs \(T640 Router\) on page 1086](#)
 - [show chassis fabric fpcs \(TX Matrix Router\) on page 1087](#)
 - [show chassis fabric fpcs \(TX Matrix Router with 3D SIBs\) on page 1088](#)
 - [show chassis fabric fpcs lcc \(TX Matrix Router with 3D SIBs\) on page 1091](#)
 - [show chassis fabric fpcs \(T1600 Router\) on page 1092](#)
 - [show chassis fabric fpcs \(T4000 Core Router\) on page 1094](#)
 - [show chassis fabric fpcs \(TX Matrix Plus Router\) on page 1095](#)
 - [show chassis fabric fpcs lcc \(TX Matrix Plus Router\) on page 1102](#)
 - [show chassis fabric fpcs \(EX8200 Switch\) on page 1103](#)
 - [show chassis fabric fpcs \(PTX3000 Router\) on page 1104](#)
 - [show chassis fabric fpcs \(Junos OS Evolved\) on page 1105](#)
 - [show chassis fabric fpcs \(PTX10008 Router\) on page 1105](#)
 - [show chassis fabric fpcs \(PTX10016 Router\) on page 1107](#)
 - [show chassis fabric fpcs \(QFX10008 Switch\) on page 1109](#)

- Output Fields** [Table 65 on page 1063](#) lists the output fields for the **show chassis fabric fpcs** command. Output fields are listed in the approximate order in which they appear.

Table 65: show chassis fabric fpcs Output Fields

| Field Name | Field Description |
|------------------------------------|---|
| Fabric management FPC state | <p>Switching fabric link (link from SIB to FPC) state for each FPC:</p> <ul style="list-style-type: none"> • Unused—FPC is not present. (On MX240 and MX480 routers with AS- MLC modular carrier card or MPC4E only) the fabric plane from the pair that share physical links (1 and 5, and 3 and 7) is inactive. • Destination error on PFEs list of PFE numbers—Destination errors to the listed Packet Forwarding Engines. Indicates that the link is not carrying traffic to the listed Packet Forwarding Engines. NOTE: In Junos OS Release 9.6 and later, the list of Packet Forwarding Engines with destination errors is displayed in the output. In Junos OS Releases before 9.6, the output only indicates that there are destination errors. However, the list of Packet Forwarding Engines with destination errors is not displayed. • Links ok—Link between the spare SIB and FPC is eligible to carry traffic. • Link error—Link between the SIB and FPC has CRC errors. However, the link is still eligible to carry traffic. • Plane disabled—Fabric plane has been disabled for the following reasons: <ul style="list-style-type: none"> • Destination errors have exceeded the thresholds. • Run-time link errors have exceeded the thresholds. • Initialization time link errors detected, and link training was unsuccessful. • Plane Disabled, Links Error (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the FPC RX. • Plane Disabled, Links Down (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the SIB RX. • Plane enabled—Link between the active SIB and FPC is eligible to carry traffic. NOTE: On the Enhanced MX SCB with MPC, a maximum of 4 planes are operational and running. On all the other SCBs with MPC, all the planes are operational and running. • Plane Enabled, Links OK (PTX Series Packet Transport Routers and QFX Series switches only)—The FPC CCL RX link is eligible to carry traffic. • Plane Enabled, Links OK (TX Matrix and TX Matrix Plus routers only)—The FPC HSL RX link is eligible to carry traffic. |

Sample Output

show chassis fabric fpcs (M320 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
FPC #2
  PFE #1
    SIB #0
      Plane enabled
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
```

show chassis fabric fpcs (MX240 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
```

show chassis fabric fpcs (MX480 Router)

```
user@host> show chassis fabric fpcs
```

```
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
```

show chassis fabric fpcs (MX960 Router)

```
user@host> show chassis fabric fpcs
```

```
FPC 0
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
```

```
PFE #1
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
```

```
PFE #2
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
```

```
PFE #3
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
```

```
FPC 1
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
```

```
PFE #1
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
```

```
FPC 2
```

```
PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
```

```
PFE #1
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
```

```

    Plane 4: Links ok
    Plane 5: Links ok
PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
...

```

show chassis fabric fpcs (MX240 with AS MLC Modular Carrier Card)

In the following output, FPC 1 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
```

```

FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Unused
    Plane 6: Plane enabled
    Plane 7: Unused
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled

```

show chassis fabric fpcs (MX480 with AS MLC Modular Carrier Card)

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
```

```

FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 4
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled

```

```

Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
FPC 5
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused

```

show chassis fabric fpcs (MX480 Router with MPC4E)

In the following output, **FPC4** is the MPC4E (MPC4E-3D-32XGE-SFPP) card.

```
user@host > show chassis fabric fpcs
```

```
Fabric management FPC state:
FPC 0
```

```

PFE #0
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok

```

```

FPC 1
PFE #0
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok

```



```

PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #2
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #3
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled

FPC 3
PFE #0
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
FPC 4
PFE #0
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused
PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused

```

show chassis fabric fpcs (MX960 with AS MLC Modular Carrier Card)

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC 0
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
```

```
  PFE #1
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
```

```
FPC 1
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
```

```
FPC 4
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
```

```
  PFE #1
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
```

```
  PFE #2
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
```

```
  PFE #3
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
```

```
FPC 5
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
```

```

        Plane 4: Links ok
        Plane 5: Links ok
FPC 8
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok

```

show chassis fabric fpcs (MX2010 Router)

```

user@host> show chassis fabric fpcs

Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled

```

```
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 3
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
```

```
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 4
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 5
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 6
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #3
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane disabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 7
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 8
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 9
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane disabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
```

show chassis fabric fpcs (MX2020 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
```

```
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 2
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 3
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
```



```

        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #1
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #2
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #3
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    FPC 4
    ...

```

show chassis fabric fpcs (MX2020 Router with MPC4E)

```
user@host > show chassis fabric fpcs
```

```

Fabric management FPC state:
FPC 0
    PFE #0
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
    PFE #1
        Plane 0: Plane enabled
        Plane 1: Plane enabled
        Plane 2: Plane enabled
        Plane 3: Plane enabled
        Plane 4: Plane enabled
        Plane 5: Plane enabled
        Plane 6: Plane enabled
        Plane 7: Plane enabled
FPC 9
    PFE #0
        Plane 0: Plane enabled
        Plane 1: Plane enabled

```

```
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 10
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 14
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 19
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
```

```

Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

```

show chassis fabric fpcs (MX2020 Router with SFB2)

```
user@host> show chassis fabric fpcs extended
```

```
Fabric management FPC state:
```

```
FPC 0
```

```
PFE #0
```

```

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Destination error
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Destination error
Plane 9: Destination error
Plane 10: Destination error
Plane 11: Destination error
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Destination error
Plane 22: Plane enabled
Plane 23: Plane enabled

```

```
FPC 1
```

```
PFE #0
```

```

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled

```

Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

PFE #1

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

PFE #2

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled

```
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
...
FPC 19
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
```

```
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
```

```

Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

```

show chassis fabric fpcs (MX2008 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC 0
```

```
PFE #0
```

```

Plane 0: Plane disabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane disabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane disabled

```

```
PFE #1
```

```

Plane 0: Plane disabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane disabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane disabled

```

```
PFE #2
```

```

Plane 0: Plane disabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane disabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane disabled

```

```
PFE #3
```

```

Plane 0: Plane disabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane disabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane disabled

```

```
FPC 1
  PFE #0
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #1
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #2
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
  PFE #3
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
FPC 3
  PFE #0
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
FPC 5
  PFE #0
    Plane 0: Plane disabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane disabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane disabled
```


show chassis fabric fpcs (MX10003 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC 1
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
    Plane 8: Plane enabled
    Plane 9: Plane enabled
    Plane 10: Plane enabled
    Plane 11: Plane enabled
    Plane 12: Plane enabled
    Plane 13: Plane enabled
    Plane 14: Plane enabled
    Plane 15: Plane enabled
    Plane 16: Plane enabled
    Plane 17: Plane enabled
    Plane 18: Plane enabled
    Plane 19: Plane enabled
    Plane 20: Plane enabled
    Plane 21: Plane enabled
```

```
  PFE #1
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
    Plane 8: Plane enabled
    Plane 9: Plane enabled
    Plane 10: Plane enabled
    Plane 11: Plane enabled
    Plane 12: Plane enabled
    Plane 13: Plane enabled
    Plane 14: Plane enabled
    Plane 15: Plane enabled
    Plane 16: Plane enabled
    Plane 17: Plane enabled
    Plane 18: Plane enabled
    Plane 19: Plane enabled
    Plane 20: Plane enabled
    Plane 21: Plane enabled
```

```
  PFE #2
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
```

```
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane enabled
Plane 19: Plane enabled
Plane 20: Plane enabled
Plane 21: Plane enabled
```

show chassis fabric fpcs (T320 Router)

```
user@host> show chassis fabric fpcs
```

```
FPC #3
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
FPC #5
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
FPC #7
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
```

show chassis fabric fpcs (T640 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC #2
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
```

```

SIB #3
    Plane enabled
SIB #4
    Plane enabled
FPC #3
  PFE #1
    SIB #2
      Plane enabled
    SIB #3
      Link error
      Destination error on PFes
      8   9   10  11  12  13  14  15  16  17  18  19  20  21
    SIB #4
      Destination error on PFes
      8   9   10  11  12  13  14  15  16  17  18  19  20  21
...

```

show chassis fabric fpcs (TX Matrix Router)

```

user@host> show chassis fabric fpcs

lcc0-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #1
    SIB #0
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #2
  PFE #1
    SIB #0
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #2
      Plane enabled
    SIB #3
      Link error
      Destination error on PFes
      8   9   10  11  12  13  14  15  16  17  18  19  20  21
    SIB #4
      Destination error on PFes
      8   9   10  11  12  13  14  15  16  17  18  19  20  21
...
FPC #4
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok

```

```

FPC #5
  PFE #1
    SIB #4 Links ok
FPC #6
  PFE #1
    SIB #4 Links ok

lcc2-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #1
    SIB #4 Links ok
FPC #1
  PFE #1
    SIB #4 Links ok
FPC #2
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #4
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #5
  PFE #1
    SIB #4 Links ok

```

show chassis fabric fpcs (TX Matrix Router with 3D SIBs)

```
user@host> show chassis fabric fpcs
```

```

lcc0-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok

```

```
FPC #3
PFE #0
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
PFE #1
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
FPC #4
PFE #0
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
PFE #1
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
FPC #5
PFE #0
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
PFE #1
  SIB #0
```

```

        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
FPC #6
  PFE #0
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
  PFE #1
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
```

lcc2-re0:

lcc4-re0:

Fabric management FPC state:

```

FPC #2
  PFE #0
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
  PFE #1
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
```

```

        SIB #4
        Links ok
FPC #3
  PFE #0
    SIB #0
    Links ok
    SIB #1
    Links ok
    SIB #2
    Links ok
    SIB #3
    Links ok
    SIB #4
    Links ok
  PFE #1
    SIB #0
    Links ok
    SIB #1
    Links ok
    SIB #2
    Links ok
    SIB #3
    Links ok
    SIB #4
    Links ok

```

```
lcc6-re0:
```

show chassis fabric fpcs lcc (TX Matrix Router with 3D SIBs)

```
user@host> show chassis fabric fpcs lcc 4
```

```
lcc4-re0:
```

```
Fabric management FPC state:
```

```

FPC #2
  PFE #0
    SIB #0
    Links ok
    SIB #1
    Links ok
    SIB #2
    Links ok
    SIB #3
    Links ok
    SIB #4
    Links ok
  PFE #1
    SIB #0
    Links ok
    SIB #1
    Links ok
    SIB #2
    Links ok
    SIB #3
    Links ok
    SIB #4
    Links ok
FPC #3

```

```
PFE #0
  SIB #0    Links ok
  SIB #1    Links ok
  SIB #2    Links ok
  SIB #3    Links ok
  SIB #4    Links ok
PFE #1
  SIB #0    Links ok
  SIB #1    Links ok
  SIB #2    Links ok
  SIB #3    Links ok
  SIB #4    Links ok
```

show chassis fabric fpcs (TI600 Router)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state:
```

```
FPC #0
  PFE #0
    SIB #0    Links ok
    SIB #1    Plane enabled
    SIB #2    Plane enabled
    SIB #3    Plane enabled
    SIB #4    Plane enabled
  PFE #1
    SIB #0    Links ok
    SIB #1    Plane enabled
    SIB #2    Plane enabled
    SIB #3    Plane enabled
    SIB #4    Plane enabled
FPC #1
  PFE #0
    SIB #0    Links ok
    SIB #1    Plane enabled
    SIB #2    Plane enabled
    SIB #3
```



```

        Plane enabled
    SIB #4
        Plane enabled
PFE #1
    SIB #0
        Links ok
    SIB #1
        Plane enabled
    SIB #2
        Plane enabled
    SIB #3
        Plane enabled
    SIB #4
        Plane enabled
FPC #2
    PFE #0
        SIB #0
            Links ok
        SIB #1
            Plane enabled
        SIB #2
            Plane enabled
        SIB #3
            Plane enabled
        SIB #4
            Plane enabled
    PFE #1
        SIB #0
            Links ok
        SIB #1
            Plane enabled
        SIB #2
            Plane enabled
        SIB #3
            Plane enabled
        SIB #4
            Plane enabled
FPC #3
    PFE #1
        SIB #2
            Plane enabled
        SIB #3
            Link error
            Destination error on PFes      0   1   2   3   4   5   6   7
            8   9  10  11  12  13  14  15  16  17  18  19  20  21
        SIB #4
            Destination error on PFes      0   1   2   3   4   5   6   7
            8   9  10  11  12  13  14  15  16  17  18  19  20  21

```

show chassis fabric fpcs (T4000 Core Router)

```
Fabric management FPC state:
FPC #2
  PFE #0
    SIB #0      Links ok
    SIB #1      Plane enabled
    SIB #2      Plane enabled
    SIB #3      Plane enabled
    SIB #4      Plane enabled
FPC #3
  PFE #0
    SIB #0      Links ok
    SIB #1      Plane enabled
    SIB #2      Plane enabled
    SIB #3      Plane enabled
    SIB #4      Plane enabled
FPC #5
  PFE #0
    SIB #0      Links ok
    SIB #1      Plane enabled
    SIB #2      Plane enabled
    SIB #3      Plane enabled
    SIB #4      Plane enabled
  PFE #1
    SIB #0      Links ok
    SIB #1      Plane enabled
    SIB #2      Plane enabled
    SIB #3      Plane enabled
    SIB #4      Plane enabled
FPC #6
  PFE #0
    SIB #0      Links ok
    SIB #1      Plane enabled
    SIB #2      Plane enabled
    SIB #3
```

```

        Plane enabled
    SIB #4
        Plane enabled
PFE #1
    SIB #0
        Links ok
    SIB #1
        Plane enabled
    SIB #2
        Plane enabled
    SIB #3
        Plane enabled
    SIB #4
        Plane enabled

```

show chassis fabric fpcs (TX Matrix Plus Router)

```
user@host> show chassis fabric fpcs
```

```
lcc0-re0:
```

```
-----
Fabric management FPC state:
```

```
FPC #0
```

```

    PFE #1
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok

```

```
FPC #2
```

```

    PFE #0
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok

```

```

    PFE #1
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok

```

```
FPC #3
```

```

    PFE #1
        SIB #2

```



```

SIB #2
    Links ok
SIB #3
    Links ok
SIB #4
    Links ok

lcc1-re0:
-----
Fabric management FPC state:
FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #4
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Destination error on PFES      1      8      9      29      40      65      72      73
                                         93 104
    SIB #4
      Links ok
FPC #6
  PFE #0

```

```
SIB #0
  Links ok
SIB #1
  Links ok
SIB #2
  Links ok
SIB #3
  Links ok
SIB #4
  Links ok
PFE #1
  SIB #0
    Links ok
  SIB #1
    Links ok
  SIB #2
    Links ok
  SIB #3
    Links ok
  SIB #4
    Links ok
FPC #7
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
```

lcc2-re0:

Fabric management FPC state:

```
FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
```

```
FPC #2
  PFE #0
    SIB #0      Links ok
    SIB #1      Links ok
    SIB #2      Links ok
    SIB #3      Links ok
    SIB #4      Links ok
  PFE #1
    SIB #0      Links ok
    SIB #1      Links ok
    SIB #2      Links ok
    SIB #3      Links ok
    SIB #4      Links ok
FPC #4
  PFE #0
    SIB #0      Links ok
    SIB #1      Links ok
    SIB #2      Links ok
    SIB #3      Links ok
    SIB #4      Links ok
FPC #5
  PFE #0
    SIB #0      Links ok
    SIB #1      Links ok
    SIB #2      Links ok
    SIB #3      Links ok
    SIB #4      Links ok
  PFE #1
    SIB #0      Links ok
    SIB #1      Links ok
    SIB #2      Links ok
    SIB #3      Links ok
    SIB #4      Links ok
FPC #6
  PFE #0
```

```
SIB #0
  Links ok
SIB #1
  Links ok
SIB #2
  Links ok
SIB #3
  Links ok
SIB #4
  Links ok
PFE #1
  SIB #0
    Links ok
  SIB #1
    Links ok
  SIB #2
    Links ok
  SIB #3
    Links ok
  SIB #4
    Links ok
FPC #7
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
```

lcc3-re0:

Fabric management FPC state:

```
FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
```



```
FPC #2
PFE #0
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
PFE #1
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
FPC #4
PFE #0
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
PFE #1
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
FPC #5
PFE #0
  SIB #0      Links ok
  SIB #1      Links ok
  SIB #2      Links ok
  SIB #3      Links ok
  SIB #4      Links ok
PFE #1
  SIB #0
```

```

        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
FPC #6
  PFE #0
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
  PFE #1
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
FPC #7
  PFE #0
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok

```

show chassis fabric fpcs lcc (TX Matrix Plus Router)

```
user@host> show chassis fabric fpcs lcc 0
```

```
lcc0-re1:
```

```
-----
Fabric management FPC state:
```

```
FPC #3
```

```
  PFE #1
```

```
    SIB #2
```

```
        Plane enabled
```

```
    SIB #3
```

```
        Link error
```

```
Destination error on PFEs      0   1   2   3   4   5   6   7
                                8   9  10  11  12  13  14  15  16  17  18  19  20  21
```

```

      SIB #4
      Destination error on PFes      0   1   2   3   4   5   6   7
      8   9  10  11  12  13  14  15  16  17  18  19  20  21
FPC #4
  PFE #0
    SIB #0 Links ok
    SIB #1 Links ok
    SIB #2 Links ok
    SIB #3 Links ok
    SIB #4 Links ok
  PFE #1
    SIB #0 Links ok
    SIB #1 Links ok
    SIB #2 Links ok
    SIB #3 Links ok
    SIB #4 Links ok
FPC #6
  PFE #0
    SIB #0 Links ok
    SIB #1 Links ok
    SIB #2 Links ok
    SIB #3 Links ok
    SIB #4 Links ok
  PFE #1
    SIB #0 Links ok
    SIB #1 Links ok
    SIB #2 Links ok
    SIB #3 Links ok
    SIB #4 Links ok
FPC #7
  PFE #0
    SIB #0 Links ok
    SIB #1 Links ok
    SIB #2 Links ok
    SIB #3 Links ok
    SIB #4 Links ok

```

show chassis fabric fpcs (EX8200 Switch)

```
user@host> show chassis fabric fpcs
```

```

Fabric management FPC state
FPC 6
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
    Plane 8: Plane enabled
    Plane 9: Plane enabled
    Plane 10: Plane enabled
    Plane 11: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled

```

```

Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
FPC 7
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled

```

show chassis fabric fpcs (PTX3000 Router)

```
user@host> show chassis fabric fpcs slot 8
```

```
Fabric management FPC state:
```

```

FPC #8
PFE #0
SIB0_Fcore0 (plane 0)  Plane Enabled, Links OK
SIB0_Fcore1 (plane 1)  Plane Enabled, Links OK
SIB1_Fcore0 (plane 2)  Plane Enabled, Links OK
SIB1_Fcore1 (plane 3)  Plane Enabled, Links OK
SIB2_Fcore0 (plane 4)  Plane Enabled, Links OK
SIB2_Fcore1 (plane 5)  Plane Enabled, Links OK
SIB3_Fcore0 (plane 6)  Plane Enabled, Links OK
SIB3_Fcore1 (plane 7)  Plane Enabled, Links OK
SIB4_Fcore0 (plane 8)  Plane Enabled, Links OK
SIB4_Fcore1 (plane 9)  Plane Enabled, Links OK
SIB5_Fcore0 (plane 10) Plane Enabled, Links OK
SIB5_Fcore1 (plane 11) Plane Enabled, Links OK
SIB6_Fcore0 (plane 12) Plane Enabled, Links OK
SIB6_Fcore1 (plane 13) Plane Enabled, Links OK
SIB7_Fcore0 (plane 14) Plane Enabled, Links OK
SIB7_Fcore1 (plane 15) Plane Enabled, Links OK

```

```

SIB8_Fcore0 (plane 16) Plane Enabled, Links OK
SIB8_Fcore1 (plane 17) Plane Enabled, Links OK
PFE #1
SIB0_Fcore0 (plane 0) Plane Enabled, Links OK
SIB0_Fcore1 (plane 1) Plane Enabled, Links OK
SIB1_Fcore0 (plane 2) Plane Enabled, Links OK
SIB1_Fcore1 (plane 3) Plane Enabled, Links OK
SIB2_Fcore0 (plane 4) Plane Enabled, Links OK
SIB2_Fcore1 (plane 5) Plane Enabled, Links OK
SIB3_Fcore0 (plane 6) Plane Enabled, Links OK
SIB3_Fcore1 (plane 7) Plane Enabled, Links OK
SIB4_Fcore0 (plane 8) Plane Enabled, Links OK
SIB4_Fcore1 (plane 9) Plane Enabled, Links OK
SIB5_Fcore0 (plane 10) Plane Enabled, Links OK
SIB5_Fcore1 (plane 11) Plane Enabled, Links OK
SIB6_Fcore0 (plane 12) Plane Enabled, Links OK
SIB6_Fcore1 (plane 13) Plane Enabled, Links OK
SIB7_Fcore0 (plane 14) Plane Enabled, Links OK
SIB7_Fcore1 (plane 15) Plane Enabled, Links OK
SIB8_Fcore0 (plane 16) Plane Enabled, Links OK
SIB8_Fcore1 (plane 17) Plane Enabled, Links OK

```

show chassis fabric fpcs (Junos OS Evolved)

The output of the **show chassis fabric fpcs** command is modified to include ASIC information. In the earlier releases, this command displayed ASICs as FCORES. With this modification, for every FPC and SIB, information about ASIC and FCORE is presented separately in the output.

```
user@host> show chassis fabric fpcs slot 0
```

```

Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_Asic1_Fcore0 (plane 1) Plane Enabled, Links ok
  SIB1_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
  SIB1_Asic1_Fcore0 (plane 3) Plane Enabled, Links ok
  SIB2_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
  SIB2_Asic1_Fcore0 (plane 5) Plane Enabled, Links ok
  SIB3_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
  SIB3_Asic1_Fcore0 (plane 7) Plane Enabled, Links ok
  SIB4_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
  SIB4_Asic1_Fcore0 (plane 9) Plane Enabled, Links ok

```

show chassis fabric fpcs (PTX10008 Router)

```
user@host> show chassis fabric fpcs slot 8
```

```

Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
    SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
  PFE #1
    SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
    SIB1_FASIC0 (plane 2) Plane Enabled, Links OK

```

| | | | |
|--------|-------------|-----------|-------------------------|
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #2 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| FPC #5 | | | |
| PFE #0 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #1 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #2 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #3 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #4 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #5 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| FPC #6 | | | |
| PFE #0 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #1 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #2 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #3 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| | SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| | SIB1_FASIC0 | (plane 2) | Plane Enabled, Links OK |
| | SIB1_FASIC1 | (plane 3) | Plane Enabled, Links OK |
| PFE #4 | | | |
| | SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |

```

SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #5
SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASIC0 (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```

show chassis fabric fpcs (PTX10016 Router)

```
user@host> show chassis fabric fpcs slot 8
```

```
Fabric management FPC state:
```

```
FPC #8
```

```
PFE #0
```

```

SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB0_FASIC2 (plane 2) Plane Enabled, Links OK
SIB0_FASIC3 (plane 3) Plane Enabled, Links OK
SIB0_FASIC4 (plane 4) Plane Enabled, Links OK
SIB0_FASIC5 (plane 5) Plane Enabled, Links OK
SIB1_FASIC0 (plane 6) Plane Enabled, Links OK
SIB1_FASIC1 (plane 7) Plane Enabled, Links OK
SIB1_FASIC2 (plane 8) Plane Enabled, Links OK
SIB1_FASIC3 (plane 9) Plane Enabled, Links OK
SIB1_FASIC4 (plane 10) Plane Enabled, Links OK
SIB1_FASIC5 (plane 11) Plane Enabled, Links OK
SIB2_FASIC0 (plane 12) Plane Enabled, Links OK
SIB2_FASIC1 (plane 13) Plane Enabled, Links OK
SIB2_FASIC2 (plane 14) Plane Enabled, Links OK
SIB2_FASIC3 (plane 15) Plane Enabled, Links OK
SIB2_FASIC4 (plane 16) Plane Enabled, Links OK
SIB2_FASIC5 (plane 17) Plane Enabled, Links OK
SIB3_FASIC0 (plane 18) Plane Enabled, Links OK
SIB3_FASIC1 (plane 19) Plane Enabled, Links OK
SIB3_FASIC2 (plane 20) Plane Enabled, Links OK
SIB3_FASIC3 (plane 21) Plane Enabled, Links OK
SIB3_FASIC4 (plane 22) Plane Enabled, Links OK
SIB3_FASIC5 (plane 23) Plane Enabled, Links OK
SIB4_FASIC0 (plane 24) Plane Enabled, Links OK
SIB4_FASIC1 (plane 25) Plane Enabled, Links OK
SIB4_FASIC2 (plane 26) Plane Enabled, Links OK
SIB4_FASIC3 (plane 27) Plane Enabled, Links OK
SIB4_FASIC4 (plane 28) Plane Enabled, Links OK
SIB4_FASIC5 (plane 29) Plane Enabled, Links OK
SIB5_FASIC0 (plane 30) Plane Enabled, Links OK
SIB5_FASIC1 (plane 31) Plane Enabled, Links OK
SIB5_FASIC2 (plane 32) Plane Enabled, Links OK
SIB5_FASIC3 (plane 33) Plane Enabled, Links OK
SIB5_FASIC4 (plane 34) Plane Enabled, Links OK
SIB5_FASIC5 (plane 35) Plane Enabled, Links OK

```

```
PFE #1
```

```

SIB0_FASIC0 (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB0_FASIC2 (plane 2) Plane Enabled, Links OK
SIB0_FASIC3 (plane 3) Plane Enabled, Links OK
SIB0_FASIC4 (plane 4) Plane Enabled, Links OK
SIB0_FASIC5 (plane 5) Plane Enabled, Links OK
SIB1_FASIC0 (plane 6) Plane Enabled, Links OK

```

| | | |
|-------------|------------|-------------------------|
| SIB1_FASIC1 | (plane 7) | Plane Enabled, Links OK |
| SIB1_FASIC2 | (plane 8) | Plane Enabled, Links OK |
| SIB1_FASIC3 | (plane 9) | Plane Enabled, Links OK |
| SIB1_FASIC4 | (plane 10) | Plane Enabled, Links OK |
| SIB1_FASIC5 | (plane 11) | Plane Enabled, Links OK |
| SIB2_FASIC0 | (plane 12) | Plane Enabled, Links OK |
| SIB2_FASIC1 | (plane 13) | Plane Enabled, Links OK |
| SIB2_FASIC2 | (plane 14) | Plane Enabled, Links OK |
| SIB2_FASIC3 | (plane 15) | Plane Enabled, Links OK |
| SIB2_FASIC4 | (plane 16) | Plane Enabled, Links OK |
| SIB2_FASIC5 | (plane 17) | Plane Enabled, Links OK |
| SIB3_FASIC0 | (plane 18) | Plane Enabled, Links OK |
| SIB3_FASIC1 | (plane 19) | Plane Enabled, Links OK |
| SIB3_FASIC2 | (plane 20) | Plane Enabled, Links OK |
| SIB3_FASIC3 | (plane 21) | Plane Enabled, Links OK |
| SIB3_FASIC4 | (plane 22) | Plane Enabled, Links OK |
| SIB3_FASIC5 | (plane 23) | Plane Enabled, Links OK |
| SIB4_FASIC0 | (plane 24) | Plane Enabled, Links OK |
| SIB4_FASIC1 | (plane 25) | Plane Enabled, Links OK |
| SIB4_FASIC2 | (plane 26) | Plane Enabled, Links OK |
| SIB4_FASIC3 | (plane 27) | Plane Enabled, Links OK |
| SIB4_FASIC4 | (plane 28) | Plane Enabled, Links OK |
| SIB4_FASIC5 | (plane 29) | Plane Enabled, Links OK |
| SIB5_FASIC0 | (plane 30) | Plane Enabled, Links OK |
| SIB5_FASIC1 | (plane 31) | Plane Enabled, Links OK |
| SIB5_FASIC2 | (plane 32) | Plane Enabled, Links OK |
| SIB5_FASIC3 | (plane 33) | Plane Enabled, Links OK |
| SIB5_FASIC4 | (plane 34) | Plane Enabled, Links OK |
| SIB5_FASIC5 | (plane 35) | Plane Enabled, Links OK |
| PFE #2 | | |
| SIB0_FASIC0 | (plane 0) | Plane Enabled, Links OK |
| SIB0_FASIC1 | (plane 1) | Plane Enabled, Links OK |
| SIB0_FASIC2 | (plane 2) | Plane Enabled, Links OK |
| SIB0_FASIC3 | (plane 3) | Plane Enabled, Links OK |
| SIB0_FASIC4 | (plane 4) | Plane Enabled, Links OK |
| SIB0_FASIC5 | (plane 5) | Plane Enabled, Links OK |
| SIB1_FASIC0 | (plane 6) | Plane Enabled, Links OK |
| SIB1_FASIC1 | (plane 7) | Plane Enabled, Links OK |
| SIB1_FASIC2 | (plane 8) | Plane Enabled, Links OK |
| SIB1_FASIC3 | (plane 9) | Plane Enabled, Links OK |
| SIB1_FASIC4 | (plane 10) | Plane Enabled, Links OK |
| SIB1_FASIC5 | (plane 11) | Plane Enabled, Links OK |
| SIB2_FASIC0 | (plane 12) | Plane Enabled, Links OK |
| SIB2_FASIC1 | (plane 13) | Plane Enabled, Links OK |
| SIB2_FASIC2 | (plane 14) | Plane Enabled, Links OK |
| SIB2_FASIC3 | (plane 15) | Plane Enabled, Links OK |
| SIB2_FASIC4 | (plane 16) | Plane Enabled, Links OK |
| SIB2_FASIC5 | (plane 17) | Plane Enabled, Links OK |
| SIB3_FASIC0 | (plane 18) | Plane Enabled, Links OK |
| SIB3_FASIC1 | (plane 19) | Plane Enabled, Links OK |
| SIB3_FASIC2 | (plane 20) | Plane Enabled, Links OK |
| SIB3_FASIC3 | (plane 21) | Plane Enabled, Links OK |
| SIB3_FASIC4 | (plane 22) | Plane Enabled, Links OK |
| SIB3_FASIC5 | (plane 23) | Plane Enabled, Links OK |
| SIB4_FASIC0 | (plane 24) | Plane Enabled, Links OK |
| SIB4_FASIC1 | (plane 25) | Plane Enabled, Links OK |
| SIB4_FASIC2 | (plane 26) | Plane Enabled, Links OK |
| SIB4_FASIC3 | (plane 27) | Plane Enabled, Links OK |
| SIB4_FASIC4 | (plane 28) | Plane Enabled, Links OK |
| SIB4_FASIC5 | (plane 29) | Plane Enabled, Links OK |


```

SIB5_FASIC0 (plane 30)  Plane Enabled, Links OK
SIB5_FASIC1 (plane 31)  Plane Enabled, Links OK
SIB5_FASIC2 (plane 32)  Plane Enabled, Links OK
SIB5_FASIC3 (plane 33)  Plane Enabled, Links OK
SIB5_FASIC4 (plane 34)  Plane Enabled, Links OK
SIB5_FASIC5 (plane 35)  Plane Enabled, Links OK

```

show chassis fabric fpcs (QFX10008 Switch)

```
user@host> show chassis fabric fpcs slot 0
```

```
Fabric management FPC state:
```

```
FPC #0
```

```
PFE #0
```

```

SIB0_PFO (plane 0)  Plane Enabled, Links OK
SIB0_PF1 (plane 1)  Plane Enabled, Links OK
SIB1_PFO (plane 2)  Plane Enabled, Links OK
SIB1_PF1 (plane 3)  Plane Enabled, Links OK
SIB2_PFO (plane 4)  Plane Enabled, Links OK
SIB2_PF1 (plane 5)  Plane Enabled, Links OK
SIB3_PFO (plane 6)  Plane Enabled, Links OK
SIB3_PF1 (plane 7)  Plane Enabled, Links OK
SIB4_PFO (plane 8)  Plane Enabled, Links OK
SIB4_PF1 (plane 9)  Plane Enabled, Links OK
SIB5_PFO (plane 10) Plane Enabled, Links OK
SIB5_PF1 (plane 11) Plane Enabled, Links OK

```

```
PFE #1
```

```

SIB0_PFO (plane 0)  Plane Enabled, Links OK
SIB0_PF1 (plane 1)  Plane Enabled, Links OK
SIB1_PFO (plane 2)  Plane Enabled, Links OK
SIB1_PF1 (plane 3)  Plane Enabled, Links OK
SIB2_PFO (plane 4)  Plane Enabled, Links OK
SIB2_PF1 (plane 5)  Plane Enabled, Links OK
SIB3_PFO (plane 6)  Plane Enabled, Links OK
SIB3_PF1 (plane 7)  Plane Enabled, Links OK
SIB4_PFO (plane 8)  Plane Enabled, Links OK
SIB4_PF1 (plane 9)  Plane Enabled, Links OK
SIB5_PFO (plane 10) Plane Enabled, Links OK
SIB5_PF1 (plane 11) Plane Enabled, Links OK

```

```
PFE #2
```

```

SIB0_PFO (plane 0)  Plane Enabled, Links OK
SIB0_PF1 (plane 1)  Plane Enabled, Links OK
SIB1_PFO (plane 2)  Plane Enabled, Links OK
SIB1_PF1 (plane 3)  Plane Enabled, Links OK
SIB2_PFO (plane 4)  Plane Enabled, Links OK
SIB2_PF1 (plane 5)  Plane Enabled, Links OK
SIB3_PFO (plane 6)  Plane Enabled, Links OK
SIB3_PF1 (plane 7)  Plane Enabled, Links OK
SIB4_PFO (plane 8)  Plane Enabled, Links OK
SIB4_PF1 (plane 9)  Plane Enabled, Links OK
SIB5_PFO (plane 10) Plane Enabled, Links OK
SIB5_PF1 (plane 11) Plane Enabled, Links OK

```

```
PFE #3
```

```

SIB0_PFO (plane 0)  Plane Enabled, Links OK
SIB0_PF1 (plane 1)  Plane Enabled, Links OK
SIB1_PFO (plane 2)  Plane Enabled, Links OK
SIB1_PF1 (plane 3)  Plane Enabled, Links OK
SIB2_PFO (plane 4)  Plane Enabled, Links OK
SIB2_PF1 (plane 5)  Plane Enabled, Links OK
SIB3_PFO (plane 6)  Plane Enabled, Links OK

```

| | |
|---------------------|-------------------------|
| SIB3_PF1 (plane 7) | Plane Enabled, Links OK |
| SIB4_PF0 (plane 8) | Plane Enabled, Links OK |
| SIB4_PF1 (plane 9) | Plane Enabled, Links OK |
| SIB5_PF0 (plane 10) | Plane Enabled, Links OK |
| SIB5_PF1 (plane 11) | Plane Enabled, Links OK |

show chassis fabric map

List of Syntax [Syntax on page 1111](#)
 [Syntax \(MX Series Router\) on page 1111](#)

Syntax show chassis fabric map
 plane <plane-number>

Syntax (MX Series Router) show chassis fabric map
 <all-members>
 <local>
 <member *member-id*>
 <plane *plane-number*>

Release Information Command introduced in Junos OS Release 8.0.
 Command introduced in Junos OS Release 9.4 for EX Series switches.

Description (M120 and MX Series routers and EX8200 switches only) On the M120 router, display the state of the switching fabric map for connections from the Forwarding Engine Boards (FEBs) to the ports on the fabric planes, as interpreted by the fabric plane. On the MX Series router and the EX8200 switch, display the state of the switching fabric map for connections from each Packet Forwarding Engine on the Dense Port Concentrators (DPCs) to the ports on the fabric planes, as interpreted by the fabric plane. For information about the meaning of “fabric plane”, “DPCs”, and “SIBs” on the switches, see the hardware documentation for your switch.

Options **none**—Display the switching fabric map state for the M120 or MX Series router or EX8200 switch.

all-members—(MX Series routers only) (Optional) Display the switching fabric map state for all the members of the Virtual Chassis configuration.

local—(MX Series routers only) (Optional) Display the switching fabric map state for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the switching fabric map state for the specified member of the Virtual Chassis configuration. Replace the *member-id* with a value of 0 or 1.

plane *plane-number*—(Optional) Display the state of the fabric link for the specified plane number.

- For the M120 router, replace *plane-number* with a value from 0 through 3.
- For the MX480 and MX240 routers, replace *plane-number* with a value from 0 through 7.
- For the MX960 router, replace *plane-number* with a value from 0 through 5.

- For the EX8208 switch, replace *plane-number* with a value from 0 through 11.
- For the EX8216 switch, replace *plane-number* with a value from 0 through 7.

Required Privilege Level view

List of Sample Output [show chassis fabric map \(MX480 Router\) on page 1112](#)
[show chassis fabric map \(M120 Router\) on page 1113](#)
[show chassis fabric map \(MX Series Routers\) on page 1113](#)
[show chassis fabric map plane 1 \(EX8200 Switch\) on page 1117](#)

Output Fields [Table 66 on page 1112](#) lists the output fields for the **show chassis fabric map** command. Output fields are listed in the approximate order in which they appear.

Table 66: show chassis fabric map Output Fields

| Field Name | Field Description |
|------------|--|
| in-links | Fabric map for receive side links. |
| out-links | Fabric map for transmit side links. |
| state | <p>State of the fabric link:</p> <ul style="list-style-type: none"> • RESET—Link between SIB and FPC/DPC is powered down on purpose. This is done in all non-dual PFE based boards. • UP—Link between SIB and FPC/DPC is up and running. • DOWN—Link between SIB and FPC/DPC is powered down. • FAULT—SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. |

Sample Output

show chassis fabric map (MX480 Router)

This sample applies to Junos OS Releases 18.2R2, 18.3R2, and 18.4R1 and later, in which the output of the CLI command **show chassis fabric map**, on MX series routers carrying MPCs with SF and XF ASICs, uses the label FPC instead of DPC (for example, 'FPC5PFE0').

```
user@host> show chassis fabric map plane 0
```

| | | | |
|----------------------|------|----------------------|------|
| FPC5PFE0->CB0F0_02_0 | Up | CB0F0_02_0->FPC5PFE0 | Up |
| FPC5PFE1->CB0F0_02_1 | Up | CB0F0_02_1->FPC5PFE1 | Up |
| FPC5PFE2->CB0F0_02_2 | Down | CB0F0_02_2->FPC5PFE2 | Down |
| FPC5PFE3->CB0F0_02_3 | Down | CB0F0_02_3->FPC5PFE3 | Down |

```

FPC5PFE0->CB0F0_03_0 Up CB0F0_03_0->FPC5PFE0 Up
FPC5PFE1->CB0F0_03_1 Up CB0F0_03_1->FPC5PFE1 Up
FPC5PFE2->CB0F0_03_2 Down CB0F0_03_2->FPC5PFE2 Down
FPC5PFE3->CB0F0_03_3 Down CB0F0_03_3->FPC5PFE3 Down
FPC3PFE0->CB0F0_04_0 Up CB0F0_04_0->FPC3PFE0 Up
FPC3PFE1->CB0F0_04_1 Up CB0F0_04_1->FPC3PFE1 Up
FPC3PFE2->CB0F0_04_2 Down CB0F0_04_2->FPC3PFE2 Down
FPC3PFE3->CB0F0_04_3 Down CB0F0_04_3->FPC3PFE3 Down
FPC3PFE0->CB0F0_05_0 Up CB0F0_05_0->FPC3PFE0 Up
FPC3PFE1->CB0F0_05_1 Up CB0F0_05_1->FPC3PFE1 Up
FPC3PFE2->CB0F0_05_2 Down CB0F0_05_2->FPC3PFE2 Down
FPC3PFE3->CB0F0_05_3 Down CB0F0_05_3->FPC3PFE3 Down
FPC1PFE0->CB0F0_06_0 Down CB0F0_06_0->FPC1PFE0 Down
FPC1PFE1->CB0F0_06_1 Down CB0F0_06_1->FPC1PFE1 Down
FPC1PFE2->CB0F0_06_2 Down CB0F0_06_2->FPC1PFE2 Down
FPC1PFE3->CB0F0_06_3 Down CB0F0_06_3->FPC1PFE3 Down
[...Output truncated...]

```

show chassis fabric map (M120 Router)

```

user@host> show chassis fabric map
FEB0->CB0F0_00 up CB0F0_08->FEB7 Down
FEB1->CB0F0_01 Down CB0F0_09->FEB6 Down
FEB6->CB0F0_02 Down CB0F0_10->FEB1 Down
FEB2->CB0F0_03 Down CB0F0_11->FEB0 up
FEB3->CB0F0_04 Down CB0F0_12->FEB3 Down
FEB4->CB0F0_05 up CB0F0_13->FEB2 Down
FEB7->CB0F0_06 Down CB0F0_14->FEB5 Down
FEB5->CB0F0_07 Down CB0F0_15->FEB4 up:

```

show chassis fabric map (MX Series Routers)

```

user@host> show chassis fabric map
DPC4PFE0->CB0F0_00_0 up CB0F0_00_0->DPC4PFE0 up
DPC4PFE1->CB0F0_00_1 up CB0F0_00_1->DPC4PFE1 up
DPC4PFE2->CB0F0_00_2 up CB0F0_00_2->DPC4PFE2 up
DPC4PFE3->CB0F0_00_3 up CB0F0_00_3->DPC4PFE3 up
DPC7PFE0->CB0F0_01_0 Down CB0F0_01_0->DPC7PFE0 Down
DPC7PFE1->CB0F0_01_1 Down CB0F0_01_1->DPC7PFE1 Down
DPC7PFE2->CB0F0_01_2 Down CB0F0_01_2->DPC7PFE2 Down
DPC7PFE3->CB0F0_01_3 Down CB0F0_01_3->DPC7PFE3 Down
DPC3PFE0->CB0F0_03_0 Down CB0F0_03_0->DPC3PFE0 Down
DPC3PFE1->CB0F0_03_1 Down CB0F0_03_1->DPC3PFE1 Down
DPC3PFE2->CB0F0_03_2 Down CB0F0_03_2->DPC3PFE2 Down
DPC3PFE3->CB0F0_03_3 Down CB0F0_03_3->DPC3PFE3 Down
DPC8PFE0->CB0F0_05_0 Down CB0F0_05_0->DPC8PFE0 Down
DPC8PFE1->CB0F0_05_1 Down CB0F0_05_1->DPC8PFE1 Down
DPC8PFE2->CB0F0_05_2 Down CB0F0_05_2->DPC8PFE2 Down
DPC8PFE3->CB0F0_05_3 Down CB0F0_05_3->DPC8PFE3 Down
DPC1PFE0->CB0F0_06_0 Down CB0F0_06_0->DPC1PFE0 Down

```

| | | | |
|-----------------------|------|-----------------------|------|
| DPC1PFE1->CB0F0_06_1 | Down | CB0F0_06_1->DPC1PFE1 | Down |
| DPC1PFE2->CB0F0_06_2 | Down | CB0F0_06_2->DPC1PFE2 | Down |
| DPC1PFE3->CB0F0_06_3 | Down | CB0F0_06_3->DPC1PFE3 | Down |
| DPC10PFE0->CB0F0_07_0 | Down | CB0F0_07_0->DPC10PFE0 | Down |
| DPC10PFE1->CB0F0_07_1 | Down | CB0F0_07_1->DPC10PFE1 | Down |
| DPC10PFE2->CB0F0_07_2 | Down | CB0F0_07_2->DPC10PFE2 | Down |
| DPC10PFE3->CB0F0_07_3 | Down | CB0F0_07_3->DPC10PFE3 | Down |
| DPC11PFE0->CB0F0_08_0 | Down | CB0F0_08_0->DPC11PFE0 | Down |
| DPC11PFE1->CB0F0_08_1 | Down | CB0F0_08_1->DPC11PFE1 | Down |
| DPC11PFE2->CB0F0_08_2 | Down | CB0F0_08_2->DPC11PFE2 | Down |
| DPC11PFE3->CB0F0_08_3 | Down | CB0F0_08_3->DPC11PFE3 | Down |
| DPC0PFE0->CB0F0_09_0 | Down | CB0F0_09_0->DPC0PFE0 | Down |
| DPC0PFE1->CB0F0_09_1 | Down | CB0F0_09_1->DPC0PFE1 | Down |
| DPC0PFE2->CB0F0_09_2 | Down | CB0F0_09_2->DPC0PFE2 | Down |
| DPC0PFE3->CB0F0_09_3 | Down | CB0F0_09_3->DPC0PFE3 | Down |
| DPC9PFE0->CB0F0_11_0 | Down | CB0F0_11_0->DPC9PFE0 | Down |
| DPC9PFE1->CB0F0_11_1 | Down | CB0F0_11_1->DPC9PFE1 | Down |
| DPC9PFE2->CB0F0_11_2 | Down | CB0F0_11_2->DPC9PFE2 | Down |
| DPC9PFE3->CB0F0_11_3 | Down | CB0F0_11_3->DPC9PFE3 | Down |
| DPC2PFE0->CB0F0_13_0 | up | CB0F0_13_0->DPC2PFE0 | up |
| DPC2PFE1->CB0F0_13_1 | up | CB0F0_13_1->DPC2PFE1 | up |
| DPC2PFE2->CB0F0_13_2 | up | CB0F0_13_2->DPC2PFE2 | up |
| DPC2PFE3->CB0F0_13_3 | up | CB0F0_13_3->DPC2PFE3 | up |
| DPC6PFE0->CB0F0_14_0 | Down | CB0F0_14_0->DPC6PFE0 | Down |
| DPC6PFE1->CB0F0_14_1 | Down | CB0F0_14_1->DPC6PFE1 | Down |
| DPC6PFE2->CB0F0_14_2 | Down | CB0F0_14_2->DPC6PFE2 | Down |
| DPC6PFE3->CB0F0_14_3 | Down | CB0F0_14_3->DPC6PFE3 | Down |
| DPC5PFE0->CB0F0_15_0 | Down | CB0F0_15_0->DPC5PFE0 | Down |
| DPC5PFE1->CB0F0_15_1 | Down | CB0F0_15_1->DPC5PFE1 | Down |
| DPC5PFE2->CB0F0_15_2 | Down | CB0F0_15_2->DPC5PFE2 | Down |
| DPC5PFE3->CB0F0_15_3 | Down | CB0F0_15_3->DPC5PFE3 | Down |
| DPC4PFE0->CB0F1_00_0 | up | CB0F1_00_0->DPC4PFE0 | up |
| DPC4PFE1->CB0F1_00_1 | up | CB0F1_00_1->DPC4PFE1 | up |
| DPC4PFE2->CB0F1_00_2 | up | CB0F1_00_2->DPC4PFE2 | up |
| DPC4PFE3->CB0F1_00_3 | up | CB0F1_00_3->DPC4PFE3 | up |
| DPC7PFE0->CB0F1_01_0 | Down | CB0F1_01_0->DPC7PFE0 | Down |
| DPC7PFE1->CB0F1_01_1 | Down | CB0F1_01_1->DPC7PFE1 | Down |
| DPC7PFE2->CB0F1_01_2 | Down | CB0F1_01_2->DPC7PFE2 | Down |
| DPC7PFE3->CB0F1_01_3 | Down | CB0F1_01_3->DPC7PFE3 | Down |
| DPC3PFE0->CB0F1_03_0 | Down | CB0F1_03_0->DPC3PFE0 | Down |
| DPC3PFE1->CB0F1_03_1 | Down | CB0F1_03_1->DPC3PFE1 | Down |
| DPC3PFE2->CB0F1_03_2 | Down | CB0F1_03_2->DPC3PFE2 | Down |
| DPC3PFE3->CB0F1_03_3 | Down | CB0F1_03_3->DPC3PFE3 | Down |
| DPC8PFE0->CB0F1_05_0 | Down | CB0F1_05_0->DPC8PFE0 | Down |
| DPC8PFE1->CB0F1_05_1 | Down | CB0F1_05_1->DPC8PFE1 | Down |
| DPC8PFE2->CB0F1_05_2 | Down | CB0F1_05_2->DPC8PFE2 | Down |
| DPC8PFE3->CB0F1_05_3 | Down | CB0F1_05_3->DPC8PFE3 | Down |
| DPC1PFE0->CB0F1_06_0 | Down | CB0F1_06_0->DPC1PFE0 | Down |
| DPC1PFE1->CB0F1_06_1 | Down | CB0F1_06_1->DPC1PFE1 | Down |
| DPC1PFE2->CB0F1_06_2 | Down | CB0F1_06_2->DPC1PFE2 | Down |
| DPC1PFE3->CB0F1_06_3 | Down | CB0F1_06_3->DPC1PFE3 | Down |
| DPC10PFE0->CB0F1_07_0 | Down | CB0F1_07_0->DPC10PFE0 | Down |
| DPC10PFE1->CB0F1_07_1 | Down | CB0F1_07_1->DPC10PFE1 | Down |
| DPC10PFE2->CB0F1_07_2 | Down | CB0F1_07_2->DPC10PFE2 | Down |
| DPC10PFE3->CB0F1_07_3 | Down | CB0F1_07_3->DPC10PFE3 | Down |
| DPC11PFE0->CB0F1_08_0 | Down | CB0F1_08_0->DPC11PFE0 | Down |
| DPC11PFE1->CB0F1_08_1 | Down | CB0F1_08_1->DPC11PFE1 | Down |
| DPC11PFE2->CB0F1_08_2 | Down | CB0F1_08_2->DPC11PFE2 | Down |
| DPC11PFE3->CB0F1_08_3 | Down | CB0F1_08_3->DPC11PFE3 | Down |
| DPC0PFE0->CB0F1_09_0 | Down | CB0F1_09_0->DPC0PFE0 | Down |

| | | | |
|-----------------------|------|-----------------------|------|
| DPC0PFE1->CB0F1_09_1 | Down | CB0F1_09_1->DPC0PFE1 | Down |
| DPC0PFE2->CB0F1_09_2 | Down | CB0F1_09_2->DPC0PFE2 | Down |
| DPC0PFE3->CB0F1_09_3 | Down | CB0F1_09_3->DPC0PFE3 | Down |
| DPC9PFE0->CB0F1_11_0 | Down | CB0F1_11_0->DPC9PFE0 | Down |
| DPC9PFE1->CB0F1_11_1 | Down | CB0F1_11_1->DPC9PFE1 | Down |
| DPC9PFE2->CB0F1_11_2 | Down | CB0F1_11_2->DPC9PFE2 | Down |
| DPC9PFE3->CB0F1_11_3 | Down | CB0F1_11_3->DPC9PFE3 | Down |
| DPC2PFE0->CB0F1_13_0 | up | CB0F1_13_0->DPC2PFE0 | up |
| DPC2PFE1->CB0F1_13_1 | up | CB0F1_13_1->DPC2PFE1 | up |
| DPC2PFE2->CB0F1_13_2 | up | CB0F1_13_2->DPC2PFE2 | up |
| DPC2PFE3->CB0F1_13_3 | up | CB0F1_13_3->DPC2PFE3 | up |
| DPC6PFE0->CB0F1_14_0 | Down | CB0F1_14_0->DPC6PFE0 | Down |
| DPC6PFE1->CB0F1_14_1 | Down | CB0F1_14_1->DPC6PFE1 | Down |
| DPC6PFE2->CB0F1_14_2 | Down | CB0F1_14_2->DPC6PFE2 | Down |
| DPC6PFE3->CB0F1_14_3 | Down | CB0F1_14_3->DPC6PFE3 | Down |
| DPC5PFE0->CB0F1_15_0 | Down | CB0F1_15_0->DPC5PFE0 | Down |
| DPC5PFE1->CB0F1_15_1 | Down | CB0F1_15_1->DPC5PFE1 | Down |
| DPC5PFE2->CB0F1_15_2 | Down | CB0F1_15_2->DPC5PFE2 | Down |
| DPC5PFE3->CB0F1_15_3 | Down | CB0F1_15_3->DPC5PFE3 | Down |
| DPC4PFE0->CB1F0_00_0 | up | CB1F0_00_0->DPC4PFE0 | up |
| DPC4PFE1->CB1F0_00_1 | up | CB1F0_00_1->DPC4PFE1 | up |
| DPC4PFE2->CB1F0_00_2 | up | CB1F0_00_2->DPC4PFE2 | up |
| DPC4PFE3->CB1F0_00_3 | up | CB1F0_00_3->DPC4PFE3 | up |
| DPC7PFE0->CB1F0_01_0 | Down | CB1F0_01_0->DPC7PFE0 | Down |
| DPC7PFE1->CB1F0_01_1 | Down | CB1F0_01_1->DPC7PFE1 | Down |
| DPC7PFE2->CB1F0_01_2 | Down | CB1F0_01_2->DPC7PFE2 | Down |
| DPC7PFE3->CB1F0_01_3 | Down | CB1F0_01_3->DPC7PFE3 | Down |
| DPC3PFE0->CB1F0_03_0 | Down | CB1F0_03_0->DPC3PFE0 | Down |
| DPC3PFE1->CB1F0_03_1 | Down | CB1F0_03_1->DPC3PFE1 | Down |
| DPC3PFE2->CB1F0_03_2 | Down | CB1F0_03_2->DPC3PFE2 | Down |
| DPC3PFE3->CB1F0_03_3 | Down | CB1F0_03_3->DPC3PFE3 | Down |
| DPC8PFE0->CB1F0_05_0 | Down | CB1F0_05_0->DPC8PFE0 | Down |
| DPC8PFE1->CB1F0_05_1 | Down | CB1F0_05_1->DPC8PFE1 | Down |
| DPC8PFE2->CB1F0_05_2 | Down | CB1F0_05_2->DPC8PFE2 | Down |
| DPC8PFE3->CB1F0_05_3 | Down | CB1F0_05_3->DPC8PFE3 | Down |
| DPC1PFE0->CB1F0_06_0 | Down | CB1F0_06_0->DPC1PFE0 | Down |
| DPC1PFE1->CB1F0_06_1 | Down | CB1F0_06_1->DPC1PFE1 | Down |
| DPC1PFE2->CB1F0_06_2 | Down | CB1F0_06_2->DPC1PFE2 | Down |
| DPC1PFE3->CB1F0_06_3 | Down | CB1F0_06_3->DPC1PFE3 | Down |
| DPC10PFE0->CB1F0_07_0 | Down | CB1F0_07_0->DPC10PFE0 | Down |
| DPC10PFE1->CB1F0_07_1 | Down | CB1F0_07_1->DPC10PFE1 | Down |
| DPC10PFE2->CB1F0_07_2 | Down | CB1F0_07_2->DPC10PFE2 | Down |
| DPC10PFE3->CB1F0_07_3 | Down | CB1F0_07_3->DPC10PFE3 | Down |
| DPC11PFE0->CB1F0_08_0 | Down | CB1F0_08_0->DPC11PFE0 | Down |
| DPC11PFE1->CB1F0_08_1 | Down | CB1F0_08_1->DPC11PFE1 | Down |
| DPC11PFE2->CB1F0_08_2 | Down | CB1F0_08_2->DPC11PFE2 | Down |
| DPC11PFE3->CB1F0_08_3 | Down | CB1F0_08_3->DPC11PFE3 | Down |
| DPC0PFE0->CB1F0_09_0 | Down | CB1F0_09_0->DPC0PFE0 | Down |
| DPC0PFE1->CB1F0_09_1 | Down | CB1F0_09_1->DPC0PFE1 | Down |
| DPC0PFE2->CB1F0_09_2 | Down | CB1F0_09_2->DPC0PFE2 | Down |
| DPC0PFE3->CB1F0_09_3 | Down | CB1F0_09_3->DPC0PFE3 | Down |
| DPC9PFE0->CB1F0_11_0 | Down | CB1F0_11_0->DPC9PFE0 | Down |
| DPC9PFE1->CB1F0_11_1 | Down | CB1F0_11_1->DPC9PFE1 | Down |
| DPC9PFE2->CB1F0_11_2 | Down | CB1F0_11_2->DPC9PFE2 | Down |
| DPC9PFE3->CB1F0_11_3 | Down | CB1F0_11_3->DPC9PFE3 | Down |
| DPC2PFE0->CB1F0_13_0 | up | CB1F0_13_0->DPC2PFE0 | up |
| DPC2PFE1->CB1F0_13_1 | up | CB1F0_13_1->DPC2PFE1 | up |
| DPC2PFE2->CB1F0_13_2 | up | CB1F0_13_2->DPC2PFE2 | up |
| DPC2PFE3->CB1F0_13_3 | up | CB1F0_13_3->DPC2PFE3 | up |
| DPC6PFE0->CB1F0_14_0 | Down | CB1F0_14_0->DPC6PFE0 | Down |

| | | | |
|-----------------------|------|-----------------------|------|
| DPC6PFE1->CB1F0_14_1 | Down | CB1F0_14_1->DPC6PFE1 | Down |
| DPC6PFE2->CB1F0_14_2 | Down | CB1F0_14_2->DPC6PFE2 | Down |
| DPC6PFE3->CB1F0_14_3 | Down | CB1F0_14_3->DPC6PFE3 | Down |
| DPC5PFE0->CB1F0_15_0 | Down | CB1F0_15_0->DPC5PFE0 | Down |
| DPC5PFE1->CB1F0_15_1 | Down | CB1F0_15_1->DPC5PFE1 | Down |
| DPC5PFE2->CB1F0_15_2 | Down | CB1F0_15_2->DPC5PFE2 | Down |
| DPC5PFE3->CB1F0_15_3 | Down | CB1F0_15_3->DPC5PFE3 | Down |
| DPC4PFE0->CB1F1_00_0 | up | CB1F1_00_0->DPC4PFE0 | up |
| DPC4PFE1->CB1F1_00_1 | up | CB1F1_00_1->DPC4PFE1 | up |
| DPC4PFE2->CB1F1_00_2 | up | CB1F1_00_2->DPC4PFE2 | up |
| DPC4PFE3->CB1F1_00_3 | up | CB1F1_00_3->DPC4PFE3 | up |
| DPC7PFE0->CB1F1_01_0 | Down | CB1F1_01_0->DPC7PFE0 | Down |
| DPC7PFE1->CB1F1_01_1 | Down | CB1F1_01_1->DPC7PFE1 | Down |
| DPC7PFE2->CB1F1_01_2 | Down | CB1F1_01_2->DPC7PFE2 | Down |
| DPC7PFE3->CB1F1_01_3 | Down | CB1F1_01_3->DPC7PFE3 | Down |
| DPC3PFE0->CB1F1_03_0 | Down | CB1F1_03_0->DPC3PFE0 | Down |
| DPC3PFE1->CB1F1_03_1 | Down | CB1F1_03_1->DPC3PFE1 | Down |
| DPC3PFE2->CB1F1_03_2 | Down | CB1F1_03_2->DPC3PFE2 | Down |
| DPC3PFE3->CB1F1_03_3 | Down | CB1F1_03_3->DPC3PFE3 | Down |
| DPC8PFE0->CB1F1_05_0 | Down | CB1F1_05_0->DPC8PFE0 | Down |
| DPC8PFE1->CB1F1_05_1 | Down | CB1F1_05_1->DPC8PFE1 | Down |
| DPC8PFE2->CB1F1_05_2 | Down | CB1F1_05_2->DPC8PFE2 | Down |
| DPC8PFE3->CB1F1_05_3 | Down | CB1F1_05_3->DPC8PFE3 | Down |
| DPC1PFE0->CB1F1_06_0 | Down | CB1F1_06_0->DPC1PFE0 | Down |
| DPC1PFE1->CB1F1_06_1 | Down | CB1F1_06_1->DPC1PFE1 | Down |
| DPC1PFE2->CB1F1_06_2 | Down | CB1F1_06_2->DPC1PFE2 | Down |
| DPC1PFE3->CB1F1_06_3 | Down | CB1F1_06_3->DPC1PFE3 | Down |
| DPC10PFE0->CB1F1_07_0 | Down | CB1F1_07_0->DPC10PFE0 | Down |
| DPC10PFE1->CB1F1_07_1 | Down | CB1F1_07_1->DPC10PFE1 | Down |
| DPC10PFE2->CB1F1_07_2 | Down | CB1F1_07_2->DPC10PFE2 | Down |
| DPC10PFE3->CB1F1_07_3 | Down | CB1F1_07_3->DPC10PFE3 | Down |
| DPC11PFE0->CB1F1_08_0 | Down | CB1F1_08_0->DPC11PFE0 | Down |
| DPC11PFE1->CB1F1_08_1 | Down | CB1F1_08_1->DPC11PFE1 | Down |
| DPC11PFE2->CB1F1_08_2 | Down | CB1F1_08_2->DPC11PFE2 | Down |
| DPC11PFE3->CB1F1_08_3 | Down | CB1F1_08_3->DPC11PFE3 | Down |
| DPC0PFE0->CB1F1_09_0 | Down | CB1F1_09_0->DPC0PFE0 | Down |
| DPC0PFE1->CB1F1_09_1 | Down | CB1F1_09_1->DPC0PFE1 | Down |
| DPC0PFE2->CB1F1_09_2 | Down | CB1F1_09_2->DPC0PFE2 | Down |
| DPC0PFE3->CB1F1_09_3 | Down | CB1F1_09_3->DPC0PFE3 | Down |
| DPC9PFE0->CB1F1_11_0 | Down | CB1F1_11_0->DPC9PFE0 | Down |
| DPC9PFE1->CB1F1_11_1 | Down | CB1F1_11_1->DPC9PFE1 | Down |
| DPC9PFE2->CB1F1_11_2 | Down | CB1F1_11_2->DPC9PFE2 | Down |
| DPC9PFE3->CB1F1_11_3 | Down | CB1F1_11_3->DPC9PFE3 | Down |
| DPC2PFE0->CB1F1_13_0 | up | CB1F1_13_0->DPC2PFE0 | up |
| DPC2PFE1->CB1F1_13_1 | up | CB1F1_13_1->DPC2PFE1 | up |
| DPC2PFE2->CB1F1_13_2 | up | CB1F1_13_2->DPC2PFE2 | up |
| DPC2PFE3->CB1F1_13_3 | up | CB1F1_13_3->DPC2PFE3 | up |
| DPC6PFE0->CB1F1_14_0 | Down | CB1F1_14_0->DPC6PFE0 | Down |
| DPC6PFE1->CB1F1_14_1 | Down | CB1F1_14_1->DPC6PFE1 | Down |
| DPC6PFE2->CB1F1_14_2 | Down | CB1F1_14_2->DPC6PFE2 | Down |
| DPC6PFE3->CB1F1_14_3 | Down | CB1F1_14_3->DPC6PFE3 | Down |
| DPC5PFE0->CB1F1_15_0 | Down | CB1F1_15_0->DPC5PFE0 | Down |
| DPC5PFE1->CB1F1_15_1 | Down | CB1F1_15_1->DPC5PFE1 | Down |
| DPC5PFE2->CB1F1_15_2 | Down | CB1F1_15_2->DPC5PFE2 | Down |
| DPC5PFE3->CB1F1_15_3 | Down | CB1F1_15_3->DPC5PFE3 | Down |
| plane 4 is not up | | | |
| plane 5 is not up | | | |

show chassis fabric map plane 1 (EX8200 Switch)

```
user@host> show chassis fabric map plane 1
```

```
user@host> show chassis fabric map plane 1
DPC6PFE0->CB0F0_00_0    Down    CB0F0_00_0->DPC6PFE0    Down
DPC6PFE1->CB0F0_00_1    Down    CB0F0_00_1->DPC6PFE1    Down
DPC6PFE2->CB0F0_00_2    Down    CB0F0_00_2->DPC6PFE2    Down
DPC6PFE3->CB0F0_00_3    Down    CB0F0_00_3->DPC6PFE3    Down
DPC0PFE0->CB0F0_01_0    Down    CB0F0_01_0->DPC0PFE0    Down
DPC0PFE1->CB0F0_01_1    Down    CB0F0_01_1->DPC0PFE1    Down
DPC0PFE2->CB0F0_01_2    Down    CB0F0_01_2->DPC0PFE2    Down
DPC0PFE3->CB0F0_01_3    Down    CB0F0_01_3->DPC0PFE3    Down
DPC5PFE0->CB0F0_02_0    Down    CB0F0_02_0->DPC5PFE0    Down
DPC5PFE1->CB0F0_02_1    Down    CB0F0_02_1->DPC5PFE1    Down
DPC5PFE2->CB0F0_02_2    Down    CB0F0_02_2->DPC5PFE2    Down
DPC5PFE3->CB0F0_02_3    Down    CB0F0_02_3->DPC5PFE3    Down
DPC3PFE0->CB0F0_03_0    Down    CB0F0_03_0->DPC3PFE0    Down
DPC3PFE1->CB0F0_03_1    Down    CB0F0_03_1->DPC3PFE1    Down
DPC3PFE2->CB0F0_03_2    Down    CB0F0_03_2->DPC3PFE2    Down
DPC3PFE3->CB0F0_03_3    Down    CB0F0_03_3->DPC3PFE3    Down
DPC4PFE0->CB0F0_04_0    Down    CB0F0_04_0->DPC4PFE0    Down
DPC4PFE1->CB0F0_04_1    Down    CB0F0_04_1->DPC4PFE1    Down
DPC4PFE2->CB0F0_04_2    Down    CB0F0_04_2->DPC4PFE2    Down
DPC4PFE3->CB0F0_04_3    Down    CB0F0_04_3->DPC4PFE3    Down
DPC2PFE0->CB0F0_05_0    Down    CB0F0_05_0->DPC2PFE0    Down
DPC2PFE1->CB0F0_05_1    Down    CB0F0_05_1->DPC2PFE1    Down
DPC2PFE2->CB0F0_05_2    Down    CB0F0_05_2->DPC2PFE2    Down
DPC2PFE3->CB0F0_05_3    Down    CB0F0_05_3->DPC2PFE3    Down
DPC7PFE0->CB0F0_06_0    Down    CB0F0_06_0->DPC7PFE0    Down
DPC7PFE1->CB0F0_06_1    Down    CB0F0_06_1->DPC7PFE1    Down
DPC7PFE2->CB0F0_06_2    Down    CB0F0_06_2->DPC7PFE2    Down
DPC7PFE3->CB0F0_06_3    Down    CB0F0_06_3->DPC7PFE3    Down
DPC1PFE0->CB0F0_07_0    Down    CB0F0_07_0->DPC1PFE0    Down
DPC1PFE1->CB0F0_07_1    Down    CB0F0_07_1->DPC1PFE1    Down
DPC1PFE2->CB0F0_07_2    Down    CB0F0_07_2->DPC1PFE2    Down
DPC1PFE3->CB0F0_07_3    Down    CB0F0_07_3->DPC1PFE3    Down
DPC0PFE0->CB0F0_08_0    Down    CB0F0_08_0->DPC0PFE0    Down
DPC0PFE1->CB0F0_08_1    Down    CB0F0_08_1->DPC0PFE1    Down
DPC0PFE2->CB0F0_08_2    Down    CB0F0_08_2->DPC0PFE2    Down
DPC0PFE3->CB0F0_08_3    Down    CB0F0_08_3->DPC0PFE3    Down
DPC7PFE0->CB0F0_09_0    Down    CB0F0_09_0->DPC7PFE0    Down
DPC7PFE1->CB0F0_09_1    Down    CB0F0_09_1->DPC7PFE1    Down
DPC7PFE2->CB0F0_09_2    Down    CB0F0_09_2->DPC7PFE2    Down
DPC7PFE3->CB0F0_09_3    Down    CB0F0_09_3->DPC7PFE3    Down
DPC1PFE0->CB0F0_10_0    Down    CB0F0_10_0->DPC1PFE0    Down
DPC1PFE1->CB0F0_10_1    Down    CB0F0_10_1->DPC1PFE1    Down
DPC1PFE2->CB0F0_10_2    Down    CB0F0_10_2->DPC1PFE2    Down
DPC1PFE3->CB0F0_10_3    Down    CB0F0_10_3->DPC1PFE3    Down
DPC4PFE0->CB0F0_11_0    Down    CB0F0_11_0->DPC4PFE0    Down
DPC4PFE1->CB0F0_11_1    Down    CB0F0_11_1->DPC4PFE1    Down
DPC4PFE2->CB0F0_11_2    Down    CB0F0_11_2->DPC4PFE2    Down
DPC4PFE3->CB0F0_11_3    Down    CB0F0_11_3->DPC4PFE3    Down
DPC2PFE0->CB0F0_12_0    Down    CB0F0_12_0->DPC2PFE0    Down
DPC2PFE1->CB0F0_12_1    Down    CB0F0_12_1->DPC2PFE1    Down
DPC2PFE2->CB0F0_12_2    Down    CB0F0_12_2->DPC2PFE2    Down
DPC2PFE3->CB0F0_12_3    Down    CB0F0_12_3->DPC2PFE3    Down
DPC5PFE0->CB0F0_13_0    Down    CB0F0_13_0->DPC5PFE0    Down
DPC5PFE1->CB0F0_13_1    Down    CB0F0_13_1->DPC5PFE1    Down
DPC5PFE2->CB0F0_13_2    Down    CB0F0_13_2->DPC5PFE2    Down
DPC5PFE3->CB0F0_13_3    Down    CB0F0_13_3->DPC5PFE3    Down
```

| | | | |
|----------------------|------|----------------------|------|
| DPC3PFE0->CB0F0_14_0 | Down | CB0F0_14_0->DPC3PFE0 | Down |
| DPC3PFE1->CB0F0_14_1 | Down | CB0F0_14_1->DPC3PFE1 | Down |
| DPC3PFE2->CB0F0_14_2 | Down | CB0F0_14_2->DPC3PFE2 | Down |
| DPC3PFE3->CB0F0_14_3 | Down | CB0F0_14_3->DPC3PFE3 | Down |
| DPC6PFE0->CB0F0_15_0 | Down | CB0F0_15_0->DPC6PFE0 | Down |
| DPC6PFE1->CB0F0_15_1 | Down | CB0F0_15_1->DPC6PFE1 | Down |
| DPC6PFE2->CB0F0_15_2 | Down | CB0F0_15_2->DPC6PFE2 | Down |
| DPC6PFE3->CB0F0_15_3 | Down | CB0F0_15_3->DPC6PFE3 | Down |

show chassis fabric optics

| | |
|--|---|
| Syntax (TX Matrix Plus Router with 3D SIBs) | <pre>show chassis fabric optics <sib-slot> <lcc number sfc number> <brief detail></pre> |
| Release Information | Command introduced in Junos OS Release 13.1 for the TX Matrix Plus router with 3D SIBs. |
| Description | (TX Matrix Plus routers with 3D SIBs only) Display information about the optical ports on the TX Matrix Plus router (or the switch-fabric chassis (SFC)) and on the T1600 or T4000 line-card chassis (LCCs) connected to it in a routing matrix. |
| Options | <p>none—Display brief information about the optical ports on the SFC and LCCs in the routing matrix.</p> <p>sib-number—(Optional) Display information about the optical ports for the specified SIB number.</p> <p>lcc number—(Optional) Display information about the optical ports for the specified T1600 or T4000 LCC that is connected to a TX Matrix Plus router with 3D SIBs. Replace number with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> From 0 through 7 on a T1600 router connected to a TX Matrix Plus router with 3D SIBs. 0, 2, 4, or 6 on a T4000 router connected to a TX Matrix Plus router with 3D SIBs. <p>sfc number—(Optional) Display information about the optical ports for the specified SFC number. Replace number with 0.</p> <p>brief—(Optional) Display brief information about the optical ports.</p> <p>detail—(Optional) Display detailed information about the optical ports.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> <i>Overview of a Routing Matrix with a TX Matrix Plus Router</i> |
| List of Sample Output | show chassis fabric optics (TX Matrix Plus Router with 3D SIBs) on page 1120 show chassis fabric optics (TX Matrix Plus Router with 3D SIBs) on page 1125 show chassis fabric optics sfc (TX Matrix Plus Router with 3D SIBs) on page 1126 show chassis fabric optics lcc (TX Matrix Plus Router with 3D SIBs) on page 1128 |
| Output Fields | Table 67 on page 1120 lists the output fields for the show chassis fabric optics command. Output fields are listed in the approximate order in which they appear. |

Table 67: show chassis fabric optics Output Fields

| Field Name | Field Description |
|--------------------|--|
| Port | Indicates port number. |
| Cable state | <p>Indicates the cable state:</p> <ul style="list-style-type: none"> • CABLE_CONNECTED—Cable is connected properly and is in an operable state. • CABLE_LOOPBACK—A loopback cable is connected to the port. • CABLE_NOT_CONNECTED—The optical port is not connected with any cable or all the channels are powered off on the remote side. • CABLE_MIS_CONNECTED—Cable is connected to an incorrect optical port. • CABLE_CONNECTED_WITH_ERROR—Cable is connected to the optical port, but indicates a cable issue. Refer to the optical cable fault alarms to identify the cable issue. • CABLE_NOT_SUPPORTED—The connected optics module is not supported. Only optics modules having Juniper Networks part numbers are supported. • CABLE_MODULE_ABSENT—No optics module is connected. • CABLE_MODULE_FAULT— The connected optics module has an irrecoverable fault. The optics module must be replaced for the device to recover from this error. This state can be caused by a device failure during initialization, a device crossing the high-temperature threshold, or a voltage failure on the optics module during normal operation. • CABLE_ELEC_LOOPBACK—An electrical loopback module is connected to the optics port. <p>NOTE: Only electrical loopback modules from ELPEUS are supported.</p> <ul style="list-style-type: none"> • CABLE_ERROR—Cable cannot be detected, probably because the SIB is not online yet. |
| Module Type | Indicates module type. |

Sample Output

show chassis fabric optics (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric optics
```

```
sfc0-re0:
```

```
-----
Port      Cable state      Module Type
sfc0-f13sib0:
0          MODULE_ABSENT    No Module
1          MODULE_ABSENT    No Module
2          CABLE_CONNECTED   CXP Module
3          CABLE_CONNECTED   CXP Module
4          MODULE_ABSENT    No Module
5          MODULE_ABSENT    No Module
6          MODULE_ABSENT    No Module
7          MODULE_ABSENT    No Module
8          CABLE_CONNECTED   CXP Module
9          MODULE_ABSENT    No Module
```

```

10      MODULE_ABSENT      No Module
11      MODULE_ABSENT      No Module
12      MODULE_ABSENT      No Module
13      MODULE_ABSENT      No Module
14      MODULE_ABSENT      No Module
15      MODULE_ABSENT      No Module
sfc0-f13sib1:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      MODULE_ABSENT      No Module
9      CABLE_CONNECTED    CXP Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     CABLE_CONNECTED    CXP Module
sfc0-f13sib2: SIB slot invalid
sfc0-f13sib3:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      CABLE_CONNECTED    CXP Module
3      CABLE_CONNECTED    CXP Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      CABLE_CONNECTED    CXP Module
9      MODULE_ABSENT      No Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     MODULE_ABSENT      No Module
sfc0-f13sib4:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      MODULE_ABSENT      No Module
9      CABLE_CONNECTED    CXP Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     CABLE_CONNECTED    CXP Module
sfc0-f13sib5: SIB slot invalid
sfc0-f13sib6:

```

| | | |
|---------------|-----------------|------------|
| 0 | MODULE_ABSENT | No Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | CABLE_CONNECTED | CXP Module |
| 3 | CABLE_CONNECTED | CXP Module |
| 4 | MODULE_ABSENT | No Module |
| 5 | MODULE_ABSENT | No Module |
| 6 | MODULE_ABSENT | No Module |
| 7 | MODULE_ABSENT | No Module |
| 8 | CABLE_CONNECTED | CXP Module |
| 9 | MODULE_ABSENT | No Module |
| 10 | MODULE_ABSENT | No Module |
| 11 | MODULE_ABSENT | No Module |
| 12 | MODULE_ABSENT | No Module |
| 13 | MODULE_ABSENT | No Module |
| 14 | MODULE_ABSENT | No Module |
| 15 | MODULE_ABSENT | No Module |
| sfc0-f13sib7: | | |
| 0 | MODULE_ABSENT | No Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | MODULE_ABSENT | No Module |
| 3 | MODULE_ABSENT | No Module |
| 4 | CABLE_CONNECTED | CXP Module |
| 5 | CABLE_CONNECTED | CXP Module |
| 6 | MODULE_ABSENT | No Module |
| 7 | MODULE_ABSENT | No Module |
| 8 | MODULE_ABSENT | No Module |
| 9 | CABLE_CONNECTED | CXP Module |
| 10 | MODULE_ABSENT | No Module |
| 11 | MODULE_ABSENT | No Module |
| 12 | MODULE_ABSENT | No Module |
| 13 | MODULE_ABSENT | No Module |
| 14 | MODULE_ABSENT | No Module |
| 15 | CABLE_CONNECTED | CXP Module |
| sfc0-f13sib8: | | |
| 0 | MODULE_ABSENT | No Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | CABLE_CONNECTED | CXP Module |
| 3 | CABLE_CONNECTED | CXP Module |
| 4 | MODULE_ABSENT | No Module |
| 5 | MODULE_ABSENT | No Module |
| 6 | MODULE_ABSENT | No Module |
| 7 | MODULE_ABSENT | No Module |
| 8 | CABLE_CONNECTED | CXP Module |
| 9 | MODULE_ABSENT | No Module |
| 10 | MODULE_ABSENT | No Module |
| 11 | MODULE_ABSENT | No Module |
| 12 | MODULE_ABSENT | No Module |
| 13 | MODULE_ABSENT | No Module |
| 14 | MODULE_ABSENT | No Module |
| 15 | MODULE_ABSENT | No Module |
| sfc0-f13sib9: | | |
| 0 | MODULE_ABSENT | No Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | MODULE_ABSENT | No Module |
| 3 | MODULE_ABSENT | No Module |
| 4 | CABLE_CONNECTED | CXP Module |
| 5 | CABLE_CONNECTED | CXP Module |
| 6 | MODULE_ABSENT | No Module |
| 7 | MODULE_ABSENT | No Module |
| 8 | MODULE_ABSENT | No Module |

```

9      CABLE_CONNECTED      CXP Module
10     MODULE_ABSENT        No Module
11     MODULE_ABSENT        No Module
12     MODULE_ABSENT        No Module
13     MODULE_ABSENT        No Module
14     MODULE_ABSENT        No Module
15     CABLE_CONNECTED      CXP Module
sfc0-f13sib10: SIB slot invalid
sfc0-f13sib11: SIB slot empty
sfc0-f13sib12: SIB slot empty
sfc0-f13sib13: SIB slot invalid
sfc0-f13sib14: SIB slot invalid
sfc0-f13sib15: SIB slot invalid

```

```
lcc0-re0:
```

```

-----
Port      Cable state      Module Type
lcc0-sib0:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib1:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib2:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib3:
0          MODULE_ABSENT      No Module
1          MODULE_ABSENT      No Module
2          CABLE_CONNECTED    CXP Module
3          CABLE_CONNECTED    CXP Module
4          MODULE_ABSENT      No Module
5          MODULE_ABSENT      No Module
6          MODULE_ABSENT      No Module
7          MODULE_ABSENT      No Module
lcc0-sib4: SIB slot empty

```

```
lcc4-re0:
```

```

-----
Port      Cable state      Module Type
lcc4-sib0:
0          MODULE_ABSENT      No Module

```

```

1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
lcc4-sib1:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
lcc4-sib2:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
lcc4-sib3:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
lcc4-sib4: SIB slot empty

lcc7-re0:
-----
Port    Cable state      Module Type
lcc7-sib0:
0      CABLE_CONNECTED    CXP Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      CABLE_CONNECTED    CXP Module
7      MODULE_ABSENT      No Module
lcc7-sib1:
0      CABLE_CONNECTED    CXP Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      CABLE_CONNECTED    CXP Module
7      MODULE_ABSENT      No Module
lcc7-sib2:
0      CABLE_CONNECTED    CXP Module
1      MODULE_ABSENT      No Module

```



```

2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      CABLE_CONNECTED    CXP Module
7      MODULE_ABSENT      No Module
lcc7-sib3:
0      CABLE_CONNECTED    CXP Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      CABLE_CONNECTED    CXP Module
7      MODULE_ABSENT      No Module
lcc7-sib4: SIB slot empty

```

show chassis fabric optics (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric optics 0
```

```
sfc0-re0:
```

```

-----
Port      Cable state      Module Type
sfc0-f13sib0:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      CABLE_CONNECTED    CXP Module
3      CABLE_CONNECTED    CXP Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      CABLE_CONNECTED    CXP Module
9      MODULE_ABSENT      No Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     MODULE_ABSENT      No Module

```

```
lcc0-re0:
```

```

-----
Port      Cable state      Module Type
lcc0-sib0:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      CABLE_CONNECTED    CXP Module
3      CABLE_CONNECTED    CXP Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module

```

```
lcc4-re0:
```

```

-----
Port      Cable state      Module Type
lcc4-sib0:
0      MODULE_ABSENT      No Module

```

```

1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module

```

```
lcc7-re0:
```

```

-----
Port    Cable state      Module Type
lcc7-sib0:
0      CABLE_CONNECTED  CXP Module
1      MODULE_ABSENT    No Module
2      MODULE_ABSENT    No Module
3      MODULE_ABSENT    No Module
4      MODULE_ABSENT    No Module
5      MODULE_ABSENT    No Module
6      CABLE_CONNECTED  CXP Module
7      MODULE_ABSENT    No Module

```

show chassis fabric optics sfc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric optics sfc 0
```

```
sfc0-re0:
```

```

-----
Port    Cable state      Module Type
sfc0-f13sib0:
0      MODULE_ABSENT    No Module
1      MODULE_ABSENT    No Module
2      CABLE_CONNECTED  CXP Module
3      CABLE_CONNECTED  CXP Module
4      MODULE_ABSENT    No Module
5      MODULE_ABSENT    No Module
6      MODULE_ABSENT    No Module
7      MODULE_ABSENT    No Module
8      CABLE_CONNECTED  CXP Module
9      MODULE_ABSENT    No Module
10     MODULE_ABSENT    No Module
11     MODULE_ABSENT    No Module
12     MODULE_ABSENT    No Module
13     MODULE_ABSENT    No Module
14     MODULE_ABSENT    No Module
15     MODULE_ABSENT    No Module
sfc0-f13sib1:
0      MODULE_ABSENT    No Module
1      MODULE_ABSENT    No Module
2      MODULE_ABSENT    No Module
3      MODULE_ABSENT    No Module
4      CABLE_CONNECTED  CXP Module
5      CABLE_CONNECTED  CXP Module
6      MODULE_ABSENT    No Module
7      MODULE_ABSENT    No Module
8      MODULE_ABSENT    No Module
9      CABLE_CONNECTED  CXP Module
10     MODULE_ABSENT    No Module
11     MODULE_ABSENT    No Module
12     MODULE_ABSENT    No Module
13     MODULE_ABSENT    No Module

```

```

14      MODULE_ABSENT      No Module
15      CABLE_CONNECTED    CXP Module
sfc0-f13sib2: SIB slot invalid
sfc0-f13sib3:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      CABLE_CONNECTED    CXP Module
3      CABLE_CONNECTED    CXP Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      CABLE_CONNECTED    CXP Module
9      MODULE_ABSENT      No Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     MODULE_ABSENT      No Module
sfc0-f13sib4:
sfc0-f13sib4:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      MODULE_ABSENT      No Module
9      CABLE_CONNECTED    CXP Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     CABLE_CONNECTED    CXP Module
sfc0-f13sib5: SIB slot invalid
sfc0-f13sib6:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      CABLE_CONNECTED    CXP Module
3      CABLE_CONNECTED    CXP Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      CABLE_CONNECTED    CXP Module
9      MODULE_ABSENT      No Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     MODULE_ABSENT      No Module
sfc0-f13sib7:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module

```

```

3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      MODULE_ABSENT      No Module
9      CABLE_CONNECTED    CXP Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     CABLE_CONNECTED    CXP Module
sfc0-f13sib8:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      CABLE_CONNECTED    CXP Module
3      CABLE_CONNECTED    CXP Module
4      MODULE_ABSENT      No Module
5      MODULE_ABSENT      No Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      CABLE_CONNECTED    CXP Module
9      MODULE_ABSENT      No Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     MODULE_ABSENT      No Module
sfc0-f13sib9:
0      MODULE_ABSENT      No Module
1      MODULE_ABSENT      No Module
2      MODULE_ABSENT      No Module
3      MODULE_ABSENT      No Module
4      CABLE_CONNECTED    CXP Module
5      CABLE_CONNECTED    CXP Module
6      MODULE_ABSENT      No Module
7      MODULE_ABSENT      No Module
8      MODULE_ABSENT      No Module
9      CABLE_CONNECTED    CXP Module
10     MODULE_ABSENT      No Module
11     MODULE_ABSENT      No Module
12     MODULE_ABSENT      No Module
13     MODULE_ABSENT      No Module
14     MODULE_ABSENT      No Module
15     CABLE_CONNECTED    CXP Module
sfc0-f13sib10: SIB slot invalid
sfc0-f13sib11: SIB slot empty
sfc0-f13sib12: SIB slot empty
sfc0-f13sib13: SIB slot invalid
sfc0-f13sib14: SIB slot invalid
sfc0-f13sib15: SIB slot invalid

```

show chassis fabric optics lcc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric topology lcc 7

lcc7-re0:
-----

```

| Port | Cable state | Module Type |
|---------------------------|-----------------|-------------|
| lcc7-sib0: | | |
| 0 | CABLE_CONNECTED | CXP Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | MODULE_ABSENT | No Module |
| 3 | MODULE_ABSENT | No Module |
| 4 | MODULE_ABSENT | No Module |
| 5 | MODULE_ABSENT | No Module |
| 6 | CABLE_CONNECTED | CXP Module |
| 7 | MODULE_ABSENT | No Module |
| lcc7-sib1: | | |
| 0 | CABLE_CONNECTED | CXP Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | MODULE_ABSENT | No Module |
| 3 | MODULE_ABSENT | No Module |
| 4 | MODULE_ABSENT | No Module |
| 5 | MODULE_ABSENT | No Module |
| 6 | CABLE_CONNECTED | CXP Module |
| 7 | MODULE_ABSENT | No Module |
| lcc7-sib2: | | |
| 0 | CABLE_CONNECTED | CXP Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | MODULE_ABSENT | No Module |
| 3 | MODULE_ABSENT | No Module |
| 4 | MODULE_ABSENT | No Module |
| 5 | MODULE_ABSENT | No Module |
| 6 | CABLE_CONNECTED | CXP Module |
| 7 | MODULE_ABSENT | No Module |
| lcc7-sib3: | | |
| 0 | CABLE_CONNECTED | CXP Module |
| 1 | MODULE_ABSENT | No Module |
| 2 | MODULE_ABSENT | No Module |
| 3 | MODULE_ABSENT | No Module |
| 4 | MODULE_ABSENT | No Module |
| 5 | MODULE_ABSENT | No Module |
| 6 | CABLE_CONNECTED | CXP Module |
| 7 | MODULE_ABSENT | No Module |
| lcc7-sib4: SIB slot empty | | |

show chassis fabric plane

| | |
|---|--|
| List of Syntax | Syntax on page 1130 Syntax (TX Matrix Plus Router) on page 1130 Syntax (MX Series Routers) on page 1130 Syntax (MX2010, MX2020, MX10008, and MX2008 Universal Routing Platforms) on page 1130 Syntax (EX9253 Switches) on page 1130 |
| Syntax | show chassis fabric plane |
| Syntax (TX Matrix Plus Router) | show chassis fabric plane <detail extensive terse> <lcc <i>number</i> sfc <i>number</i> > |
| Syntax (MX Series Routers) | show chassis fabric plane <extended> <detail extensive terse> <all-members> <local> <member <i>member-id</i> > |
| Syntax (MX2010, MX2020, MX10008, and MX2008 Universal Routing Platforms) | show chassis fabric plane |
| Syntax (EX9253 Switches) | show chassis fabric plane |
| Release Information | <p>Command introduced in Junos OS Release 8.0.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p>detail, extensive, lcc, sfc, and terse options introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>extended option introduced in Junos OS Release 16.1 for MX2020 and MX2010 Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> |
| Description | <p>(TX Matrix Plus router, T4000, T1600, M120, and MX Series routers and EX8200 switches only) On the M120 router, display the state of all fabric plane connections to the Forwarding Engine Boards (FEBs). On MX Series routers, display the state of all fabric plane connections to the Dense Port Concentrators (DPCs) and Packet Forwarding</p> |

Engines (PFEs) on the Flexible PIC Concentrators (FPCs). On the TX Matrix Plus router, and on T1600 or T4000 routers in a routing matrix, display the state of the fabric management plane and the logical planes on the switch-fabric chassis (SFC) and line-card chassis (LCC). On EX8200 switches, display the state of all fabric planes. This command can be used on the master Routing Engine only.

Options **none**—(MX2010, MX2020, and MX2008 Routers only) (Optional) Display the state of the fabric management plane.

extended—(MX2020, MX2010, and MX2008 Routers only) (Optional) Display the state of the fabric management planes (all 24 fabric planes).

detail—(TX Matrix Plus routers, T1600 or T4000 routers in a routing matrix, and MX Series routers only) (Optional) Display detailed output for the fabric management plane. Show Switch Interface Board (SIB) states for the TXP-F13 SIB and the TXP-F2S SIB.

extensive—(TX Matrix Plus routers, T1600 or T4000 routers in a routing matrix, and MX Series routers only) (Optional) Display extensive output for the fabric management plane.

terse—(TX Matrix Plus routers and MX Series routers only) (Optional) Display terse output for the fabric management plane.

all-members—(MX Series routers only) (Optional) Display the state of all fabric plane connections on all members of the Virtual Chassis configuration.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.

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

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

local—(MX Series routers only) (Optional) Display the state of all fabric plane connections on the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the state of all fabric plane connections on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

sfc number—(TX Matrix Plus router only) (Optional) Show information about the TX Matrix Plus router (SFC). Replace *number* with 0.

Required Privilege Level view

Related Documentation

- [request chassis fabric plane on page 488](#)
- [show chassis fabric plane-location on page 1185](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

- [show chassis fabric plane \(M120 Router\) on page 1139](#)
- [show chassis fabric plane \(MX240 Router\) on page 1140](#)
- [show chassis fabric plane \(MX10008 Router\) on page 1141](#)
- [show chassis fabric plane \(MX480 Router\) on page 1143](#)
- [show chassis fabric plane \(MX960 Router\) on page 1144](#)
- [show chassis fabric plane \(MX240 with AS MLC Modular Carrier Card\) on page 1144](#)
- [show chassis fabric plane \(MX480 with AS MLC Modular Carrier Card\) on page 1145](#)
- [show chassis fabric plane \(MX480 Router with MPC4E\) on page 1146](#)
- [show chassis fabric plane \(MX960 with AS-MLC Modular Carrier Card\) on page 1149](#)
- [show chassis fabric plane \(MX2010 Router\) on page 1151](#)
- [show chassis fabric plane \(MX2020 Router\) on page 1155](#)
- [show chassis fabric plane \(MX2020 Router with MPC4E\) on page 1160](#)
- [show chassis fabric plane \(MX2020 Routers with SFB2\) on page 1162](#)
- [show chassis fabric plane \(MX2008\) on page 1166](#)
- [show chassis fabric plane \(TX Matrix Plus Router\) on page 1168](#)
- [show chassis fabric plane \(TX Matrix Plus Router with 3D SIBs\) on page 1168](#)
- [show chassis fabric plane detail \(TX Matrix Plus Router\) on page 1169](#)
- [show chassis fabric plane extensive \(TX Matrix Plus Router \) on page 1170](#)
- [show chassis fabric plane extensive \(TX Matrix Plus Router with 3D SIBs\) on page 1172](#)
- [show chassis fabric plane terse \(TX Matrix Plus Router\) on page 1174](#)
- [show chassis fabric plane terse \(TX Matrix Plus Router with 3D SIBs\) on page 1175](#)
- [show chassis fabric plane lcc \(TX Matrix Plus Router\) on page 1175](#)
- [show chassis fabric plane lcc \(TX Matrix Plus Router with 3D SIBs\) on page 1176](#)
- [show chassis fabric plane sfc \(TX Matrix Plus Router\) on page 1176](#)
- [show chassis fabric plane sfc \(TX Matrix Plus Router with 3D SIBs\) on page 1176](#)
- [show chassis fabric plane \(T1600 Router\) on page 1176](#)
- [show chassis fabric plane extensive \(T1600 Router\) on page 1177](#)
- [show chassis fabric plane detail \(T1600 Router\) on page 1179](#)
- [show chassis fabric plane \(EX8200 Switch\) on page 1180](#)
- [show chassis fabric plane \(EX9253 Switch\) on page 1180](#)

Output Fields [Table 68 on page 1133](#) lists the output fields for the **show chassis fabric plane** command. Output fields are listed in the approximate order in which they appear.

Table 68: show chassis fabric plane Output Fields

| Field Name | Field Description | Level of output |
|-------------|---|-----------------|
| Plane | (TX Matrix Plus, MX Series routers, M120 routers, and EX8200 switches only) Number of the plane. | none |
| Plane state | <p>(MX Series and M120 routers and EX8200 switches only) State of each plane:</p> <ul style="list-style-type: none"> ACTIVE—SIB is operational and running. <p>NOTE: On the Enhanced MX SCB with MPCs, a maximum of 4 planes are operational and running. On all the other SCBs with MPCs, all the planes are operational and running.</p> <ul style="list-style-type: none"> FAULTY— SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> On-board fabric ASIC is not operational. Fiber optic connector faults. FPC connector faults. SIB midplane connector faults. <p>(MX2010, MX2020, MX10003, and MX2008 Routers only) State of each plane:</p> <ul style="list-style-type: none"> ACTIVE—SFB is operational and running. OFFLINE— SFB is in offline. | none |
| FEB | <p>(M120 routers only) FEB number and state of links to each FEB:</p> <ul style="list-style-type: none"> Link error—Link between SIB and FPC is not operational. Links ok—Link between SIB and FPC is active. Unused—No FPC is present. | none |
| FPC | (MX Series routers only) Slot number of each Dense Port Concentrator (DPC) or Flexible PIC Concentrator (FPC). An FPC occupies two DPC slots on an MX Series router. The interface corresponds to the lowest numbered DPC slot for which the FPC is installed. | none |

Table 68: show chassis fabric plane Output Fields (continued)

| Field Name | Field Description | Level of output |
|-------------|---|-----------------|
| PFE | <p>(MX Series and M120 routers only) Slot number of each Packet Forwarding Engine and the state of the links to the DCP: Links ok, Link error, or Unused. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> • Links ok: Link between SIB and FPC is active. • Link error: Link between SIB and FPC is not operational. • Unused: No FPC is present. <p>(On MX240 and MX480 routers with AS MLC modular carrier card and MPC4E only) Indicates that the link between the fabric plane and the hardware link on the modular carrier card or MPC4E is not operational.</p> <p>(MX2010, MX2020, and MX2008 routers only) Slot number of each Packet Forwarding Engine and the state of the links to the DPC: Links ok, Link error, or Unused. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> • Links ok: Link between SFB and FPC is active. • Link error: Link between SFB and FPC is not operational. • Unused: No FPC is present. | none |
| State | <p>(TX Matrix Plus, and T1600 or T4000 routers in a routing matrix only)—State of the fabric plane:</p> <ul style="list-style-type: none"> • Online: Fabric plane is operational and running and links on the SIB are operational. • Offline: Fabric plane state is Offline because the plane does not have four or more F2S and one F13 online. • Empty: Fabric plane state is Empty if all SIBs in the plane are absent. • Spare: Fabric plane is redundant and can be operational if the operational fabric plane encounters an error. • Check: Fabric plane is in alarmed state due to the following reason and the cause of the error must be resolved: <ul style="list-style-type: none"> • One or more SIBs (belonging to the fabric plane) in the Online or Spare states has transitioned to the Check state. Check state of the SIB can be caused by link errors or destination errors. • Fault: Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the Fault state. A SIB can be in the Fault state because of the following reasons: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Link errors have exceeded the threshold. | none |
| Link Errors | <p>(TX Matrix Plus routers with 3D SIBs only) indicate the number of links which are marked faulty because the errors on them have crossed threshold.</p> | none |

Table 68: show chassis fabric plane Output Fields (continued)

| Field Name | Field Description | Level of output |
|---------------------------|--|-----------------|
| Cable Errors | (TX Matrix Plus routers with 3D SIBs only) Indicate the number of mandatory cables that are not connected, or in up state for that plane | none |
| Destination Errors | (TX Matrix Plus routers with 3D SIBs only) Indicates the number of destinations that are not reachable on this plane. | none |
| Uptime | (TX Matrix Plus, and T1600 or T4000 routers in a routing matrix only)—Time the fabric plane has been up and running. | none |

Fabric Management Plane State Output Fields for the show chassis fabric plane extensive Command on a TX Matrix Plus Router

| PLANE <i>number</i> | State of the fabric plane: | extensive |
|---------------------|---|-----------|
| | <ul style="list-style-type: none"> • Online: Fabric plane is operational and running and links on the SIB are operational. • Offline: Fabric plane state is Offline because the plane does not have 4 or more F2S and 1 F13 online. • Empty: Fabric plane state is Empty if all SIBs in the plane are absent. • Spare: Fabric plane is redundant and can be operational if the operational fabric plane encounters an error. • Check: Fabric plane is in alarmed state due to the following reasons and the cause of the error must be resolved: <ul style="list-style-type: none"> • One or more SIBs (belonging to the fabric plane) in the Online or Spare states has transitioned to the Check state. Check state of the SIB can be caused because of link errors or destination errors. • Fault: Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the Fault state. A SIB can be in the Fault state because of the following reasons: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Link errors have exceeded the threshold. | |

Table 68: show chassis fabric plane Output Fields (continued)

| Field Name | Field Description | Level of output |
|---|---|------------------|
| SIB F13/F2S slot-number | <p>State of the TXP-F13 SIB or TXP-F2S SIB:</p> <ul style="list-style-type: none"> • Activating—Transitional state when the SIB is transitioning to the Online or Spare state. • Deactivating—Transitional state when the SIB is going offline. • Online—SIB is operational and running. • Offline—SIB is powered down. • Spare—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic. • Empty—No SIB is present. • Fault—SIB is in alarmed state because of the following reasons and the cause of the error must be resolved: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Link errors have exceeded the threshold • Check—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is Online or Spare can transition to the Check state. <p>NOTE: If a SIB is not inserted properly, the SIB cannot transition to the Online or Spare state, and therefore cannot transition to the Check state.</p> | extensive |
| SIB F13 slot-number Odd/Even | <p>State of the TXP-F13 SIB even and odd port connection optical links from the TX Matrix Plus router (SFC) to the router (LCC) in the routing matrix. The left four ports on the SFC are labeled Even and provide connections to one even-numbered LCC—LCC0 or LCC2. The right four ports on the SFC are labeled Odd and provide connections to one odd-numbered LCC—LCC1 or LCC3.</p> | extensive |
| LCC number, SIB slot-number | <p>State of the SIB on the LCC that is connected to the Even or Odd port on the TXP-F13 SIB faceplate:</p> <ul style="list-style-type: none"> • Links ok—Links between the TXP-F13 SIB on the SFC and the LCC are active. • Links error—One or more links between the TXP-F13 SIB on the SFC and the LCC, have experienced an error, but the affected links remain operational. • Unused—No SIB is present. | extensive |

Table 68: show chassis fabric plane Output Fields (continued)

| Field Name | Field Description | Level of output |
|------------------------------|--|------------------|
| SG number Port number | State of the SG chip ports on the LCC: <ul style="list-style-type: none"> • Links ok—Link is active. • Link error—Link is operational with errors. • Link error crc saturated—CRC has exceeded the rate threshold and reached saturation without optical issues—that is, a cable has not been cut, removed, or otherwise experienced an error. • Link error crc saturated with optical errors—CRC has exceeded the rate threshold and reached saturation with optical issues—that is, a cable has been cut, removed, or otherwise experienced an error. • Unused—Port is not in use. | extensive |
| SIB F2S slot-number | State of the intra-chassis links between the TXP-F2S and TXP-F13 SIBs. | extensive |

Fabric Management SIB State Output Fields for the show chassis fabric plane extensive Command on a TX Matrix Plus Router

Table 68: show chassis fabric plane Output Fields (continued)

| Field Name | Field Description | Level of output |
|------------------------|--|------------------|
| SIB slot-number | <p>State of the SIBs on the T1600/T4000 router (LCC) in the routing matrix:</p> <ul style="list-style-type: none"> • Activating—Transitional state when the SIB is coming online. • Deactivating—Transitional state when the SIB is going offline. • Connected—SIBs on an LCC are connected and trained, but are either not online or are spare, because the plane on the the TX Matrix Plus router (SFC) is still offline. The LCC SIB transitions to the Connected state when the F13 SIB to which it connects is online but the SFC plane (to which the LCC SIB connects) is offline for some reason; for instance, when there are insufficient number of F2 SIBs in the plane. • Disconnected—If an F13 SIB on the TX Matrix Plus router (SFC) goes offline, then the SIBs on the LCCs connected to the F13 SIB get disconnected. On the TX Matrix Plus router with 3D SIBs, the LCC SIB is also disconnected if the F13 SIB is online, but none of the cables are connected or trained. The Disconnected state is valid only for SIBs on an LCC. An LCC SIB transitions to the Disconnected state when the F13 SIB to which it connects goes Offline, irrespective of the state of the SFC plane. SFC Error—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the Fault state (because of link errors, for instance), and if an LCC SIB connected to the F13 SIB comes online, the LCC SIB transitions to the SFC Error state. This state indicates that the F13 SIB to which the LCC SIB is connected has errors. NOTE: The Connected, Disconnected, and SFC Error states are applicable only to the SIBs on an LCC. • Online—SIB is operational and running. • Offline—SIB is powered down. • Spare—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic. • Empty—No SIB is present. • Fault—SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Link errors have exceeded the threshold • Check—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is Online or Spare can transition to the Check state. NOTE: If a SIB is not inserted properly, the SIB cannot transition to the Online or Spare state, and therefore cannot transition to the Check state. | extensive |

Table 68: show chassis fabric plane Output Fields (continued)

| Field Name | Field Description | Level of output |
|-----------------------|--|-----------------|
| LCC SIB Link State | State of the LCC SIB link: <ul style="list-style-type: none"> • Links ok—Link is active. • Links error—A link error has occurred, but the link remains operational. • Unused—SIB is not in use. | extensive |
| SG number Port number | State of the SG chip ports on the LCC: <ul style="list-style-type: none"> • Links ok—Link is active. • Link error—Link is operational with errors. • Link error crc saturated—CRC has exceeded the rate threshold and reached saturation without optical issues—that is, a cable has not been cut, removed, or otherwise experienced an error. • Link error crc saturated with optical errors—CRC has exceeded the rate threshold and reached saturation with optical issues—that is, a cable has been cut, removed, or otherwise experienced an error. • Unused—Port is not in use. | extensive |

Sample Output

show chassis fabric plane (M120 Router)

```
user@host> show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
Plane state: ACTIVE
```

```
FEB 0: Links ok
```

```
FEB 1: Links ok
```

```
FEB 2: Links ok
```

```
FEB 3: Links ok
```

```
FEB 4: Links ok
```

```
FEB 5: Links ok
```

```
Plane 1
```

```
Plane state: ACTIVE
```

```
FEB 0: Links ok
```

```
FEB 1: Links ok
```

```
FEB 2: Links ok
```

```
FEB 3: Links ok
```

```
FEB 4: Links ok
```

```
FEB 5: Links ok
```

```
Plane 2
```

```
Plane state: ACTIVE
```

```
FEB 0: Links ok
```

```
FEB 1: Links ok
```

```
FEB 2: Links ok
```

```
FEB 3: Links ok
```

```
FEB 4: Links ok
```

```
FEB 5: Links ok
```

```
Plane 3
```

```
Plane state: ACTIVE
```

```
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
```

show chassis fabric plane (MX240 Router)

```
user@host> show chassis fabric plane
```

```
Plane 0
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 4
```



```

Plane state: SPARE
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 5
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 6
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 7
  Plane state: SPARE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok

```

show chassis fabric plane (MX10008 Router)

```
user@host> show chassis fabric plane
```

```

Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok

```

```
        PFE 3 :Links ok
        PFE 4 :Links ok
        PFE 5 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
        PFE 4 :Links ok
        PFE 5 :Links ok
Plane 1
  Plane state: ACTIVE
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
  FPC 5
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
Plane 2
  Plane state: ACTIVE
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
  FPC 5
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
Plane 3
  Plane state: ACTIVE
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
  FPC 5
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
```

show chassis fabric plane (MX480 Router)

```
user@host> show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
Plane state: ACTIVE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 1
```

```
Plane state: ACTIVE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 2
```

```
Plane state: ACTIVE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 3
```

```
Plane state: ACTIVE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 4
```

```
Plane state: SPARE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 5
```

```
Plane state: SPARE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 6
```

```
Plane state: SPARE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 7
```

```
Plane state: SPARE
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

show chassis fabric plane (MX960 Router)

```
user@host> show chassis fabric plane
```

```
Plane 0
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
```

show chassis fabric plane (MX240 with AS MLC Modular Carrier Card)

In the following output, FPC 1 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric plane
```

```
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 1
  Plane state: ACTIVE
    Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
```

```

        FPC 5
          PFE 0 :Links ok
Plane 3
  Plane state: ACTIVE
    Plane state: ACTIVE
      FPC 1
        PFE 0 :Links ok
      FPC 2
        PFE 0 :Links ok
Plane 4
  Plane state: ACTIVE
    Plane state: ACTIVE
      FPC 1
        PFE 0 :Links ok
      FPC 2
        PFE 0 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Unused
    FPC 2
      PFE 0 :Links ok
Plane 6
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Unused
    FPC 2
      PFE 0 :Links ok

```

show chassis fabric plane (MX480 with AS MLC Modular Carrier Card)

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric plane
```

```

Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5

```

```

        PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 4
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Unused
Plane 6
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Unused
```

show chassis fabric plane (MX480 Router with MPC4E)

```
user@host > show chassis fabric plane
```

Fabric management PLANE state

Plane 0

Plane state: ACTIVE

FPC 0

PFE 0 :Links ok

PFE 1 :Links ok

FPC 1

PFE 0 :Links ok

PFE 1 :Links ok

PFE 2 :Links ok

PFE 3 :Links ok

FPC 3

PFE 0 :Links ok

FPC 4

PFE 0 :Links ok

PFE 1 :Links ok

Plane 1

Plane state: ACTIVE

FPC 0

PFE 0 :Links ok

PFE 1 :Links ok

FPC 1

PFE 0 :Links ok

PFE 1 :Links ok

PFE 2 :Links ok

PFE 3 :Links ok

FPC 3

PFE 0 :Links ok

FPC 4

PFE 0 :Links ok

PFE 1 :Links ok

Plane 2

Plane state: ACTIVE

FPC 0

PFE 0 :Links ok

PFE 1 :Links ok

FPC 1

PFE 0 :Links ok

PFE 1 :Links ok

PFE 2 :Links ok

PFE 3 :Links ok

FPC 3

PFE 0 :Links ok

FPC 4

PFE 0 :Links ok

PFE 1 :Links ok

Plane 3

Plane state: ACTIVE

FPC 0

PFE 0 :Links ok

PFE 1 :Links ok

FPC 1

PFE 0 :Links ok

PFE 1 :Links ok

PFE 2 :Links ok

PFE 3 :Links ok

FPC 3

PFE 0 :Links ok

FPC 4

PFE 0 :Links ok

```
        PFE 1 :Links ok
Plane 4
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 5
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 6
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 7
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 4
```



```
PFE 0 :Links ok
PFE 1 :Links ok
```

show chassis fabric plane (MX960 with AS-MLC Modular Carrier Card)

In the following output, FPC 1 is a modular carrier card.

```
user@host>show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 5
```

```
PFE 0 :Links ok
```

```
FPC 8
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 1
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 5
```

```
PFE 0 :Links ok
```

```
FPC 8
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 2
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 5
  PFE 0 :Links ok
FPC 8
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 5
      PFE 0 :Links ok
    FPC 8
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 4
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 5
      PFE 0 :Links ok
    FPC 8
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 5
  Plane state: SPARE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 5
      PFE 0 :Links ok
    FPC 8
```

```
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
```

show chassis fabric plane (MX2010 Router)

```
user@host>show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 3
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
FPC 5
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 6
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 7
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 8
```

```
PFE 0 :Links ok
```

```
FPC 9
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
Plane 1
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 1
```

```
PFE 0 :Links ok
```

```
FPC 2
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 3
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
FPC 4
```

```
PFE 0 :Links ok
```

```
FPC 5
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 6
PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 7
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 8
  PFE 0 :Links ok
FPC 9
  PFE 0 :Links ok
  PFE 1 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 4
      PFE 0 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 7
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 8
      PFE 0 :Links ok
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
Plane 3
  Plane state: OFFLINE
Plane 4
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
```

```
PFE 1 :Links ok
  FPC 3
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 4
    PFE 0 :Links ok
  FPC 5
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 6
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 7
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 8
    PFE 0 :Links ok
  FPC 9
    PFE 0 :Links ok
    PFE 1 :Links ok
Plane 5
  Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 1
    PFE 0 :Links ok
  FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 3
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 4
    PFE 0 :Links ok
  FPC 5
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 6
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 7
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 8
    PFE 0 :Links ok
  FPC 9
    PFE 0 :Links ok
  PFE 1 :Links ok
Plane 6
  Plane state: ACTIVE
  FPC 0
```

```
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 1
        PFE 0 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 7
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 8
        PFE 0 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
Plane 7
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 1
        PFE 0 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
    PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 7
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 8
        PFE 0 :Links ok
```

```
FPC 9
  PFE 0 :Links ok
  PFE 1 :Links ok
```

show chassis fabric plane (MX2020 Router)

```
user@host>show chassis fabric plane
```

```
Fabric management PLANE state
Plane 0
```

```
  Plane state: ACTIVE
```

```
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 4
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 6
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 7
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 8
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
```

```
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
```

```
    PFE 3 :Links ok
FPC 10
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 11
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 12
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 13
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 14
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 15
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 16
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 17
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 18
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 19
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
  FPC 1
    PFE 0 :Links ok
```



```
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 2
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 3
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 4
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 5
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 6
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 7
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 8
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 9
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 10
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 11
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 12
PFE 0 :Links ok
PFE 1 :Links ok
PFE 2 :Links ok
PFE 3 :Links ok
FPC 13
PFE 0 :Links ok
```

```
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 15
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 16
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 17
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 18
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 4
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
```

```
FPC 5
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 6
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 7
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 8
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 9
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 10
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 11
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 12
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 13
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 14
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 15
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 16
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
```

```

FPC 17
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 18
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
FPC 19
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
Plane 3
...
```

show chassis fabric plane (MX2020 Router with MPC4E)

```
user@host > show chassis fabric plane
```

```
Fabric management PLANE state
```

```
Plane 0
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 9
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 10
```

```
PFE 0 :Links ok
```

```
FPC 14
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 19
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 1
```

```
Plane state: ACTIVE
```

```
FPC 0
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 9
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 10
```

```
PFE 0 :Links ok
```

```
FPC 14
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
FPC 19
```

```
PFE 0 :Links ok
```

```
PFE 1 :Links ok
```

```
PFE 2 :Links ok
```

```
PFE 3 :Links ok
```

```
Plane 2
```

```
Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 9
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 10
    PFE 0 :Links ok
  FPC 14
    PFE 0 :Links ok
    PFE 1 :Links ok
  FPC 19
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 10
      PFE 0 :Links ok
    FPC 14
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 4
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 9
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 10
      PFE 0 :Links ok
    FPC 14
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 9
      PFE 0 :Links ok
```

```
        PFE 1 :Links ok
    FPC 10
        PFE 0 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 6
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 10
        PFE 0 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 9
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 10
        PFE 0 :Links ok
    FPC 14
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
```

show chassis fabric plane (MX2020 Routers with SFB2)

```
user@host> show chassis fabric plane
```

```
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
```

```
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
    FPC 7
        PFE 0 :Links ok
    FPC 11
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 12
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 13
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 18
        PFE 0 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
    FPC 7
        PFE 0 :Links ok
    FPC 11
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 12
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 13
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 18
        PFE 0 :Links ok
    FPC 19
        PFE 0 :Links ok
```

```
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
    FPC 7
      PFE 0 :Links ok
    FPC 11
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 12
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 13
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 18
      PFE 0 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    ...
Plane 18
  Plane state: OFFLINE
Plane 19
  Plane state: OFFLINE
Plane 20
  Plane state: OFFLINE
Plane 21
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
```



```
FPC 6
  PFE 0 :Links ok
FPC 7
  PFE 0 :Links ok
FPC 11
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 12
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 13
  PFE 0 :Links ok
  PFE 1 :Links ok
FPC 18
  PFE 0 :Links ok
FPC 19
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
  PFE 3 :Links ok
Plane 22
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
    FPC 7
      PFE 0 :Links ok
    FPC 11
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 12
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 13
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 18
      PFE 0 :Links ok
    FPC 19
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
Plane 23
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
```

```
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
    FPC 7
        PFE 0 :Links ok
    FPC 11
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 12
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 13
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 18
        PFE 0 :Links ok
    FPC 19
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
```

show chassis fabric plane (MX2008)

```
user@host> show chassis fabric plane
```

```
Fabric management PLANE state
Plane 0
  Plane state: OFFLINE
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 3
      PFE 0 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
```

```
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 3
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
Plane 3
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 3
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
Plane 4
    Plane state: OFFLINE
Plane 5
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 3
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
Plane 6
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 3
        PFE 0 :Links ok
    FPC 5
        PFE 0 :Links ok
```

```
Plane 7
Plane state: OFFLINE
```

show chassis fabric plane (TX Matrix Plus Router)

```
user@host> show chassis fabric plane
```

```
sfc0-re0:
```

| Plane | State | Link errors | Destination errors | Uptime |
|-------|--------|-------------|--------------------|----------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 10 hours, 16 seconds |
| 2 | Online | NONE | NONE | 10 hours, 13 seconds |
| 3 | Online | NONE | NONE | 10 hours, 9 seconds |
| 4 | Online | NONE | NONE | 10 hours, 7 seconds |

```
lcc0-re0:
```

| SIB | State | Link errors | Destination errors | Uptime |
|-----|--------|-------------|--------------------|----------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 10 hours, 16 seconds |
| 2 | Online | NONE | NONE | 10 hours, 13 seconds |
| 3 | Online | NONE | NONE | 10 hours, 9 seconds |
| 4 | Online | NONE | NONE | 10 hours, 7 seconds |

```
lcc2-re0:
```

| SIB | State | Link errors | Destination errors | Uptime |
|-----|--------|-------------|--------------------|----------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 10 hours, 16 seconds |
| 2 | Online | NONE | NONE | 10 hours, 12 seconds |
| 3 | Online | NONE | NONE | 10 hours, 9 seconds |
| 4 | Online | NONE | NONE | 10 hours, 7 seconds |

show chassis fabric plane (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric plane
```

```
sfc0-re0:
```

| Plane | State | Cable errors | Link errors | Destination errors | Uptime |
|-------|--------|--------------|-------------|--------------------|--------------------------------|
| 0 | Spare | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 5 hours, 11 minutes, 3 seconds |
| 2 | Online | NONE | NONE | NONE | 8 hours, 4 minutes, 24 seconds |
| 3 | Online | NONE | NONE | NONE | 8 hours, 3 minutes, 16 seconds |
| 4 | Online | NONE | NONE | NONE | 8 hours, 2 minutes, 12 seconds |

```
lcc2-re0:
```

| SIB | State | Cable errors | Link errors | Destination errors | Uptime |
|-----|--------|--------------|-------------|--------------------|--------------------------------|
| 0 | Spare | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 5 hours, 11 minutes, 3 seconds |
| 2 | Online | NONE | NONE | NONE | 8 hours, 4 minutes, 57 seconds |
| 3 | Online | NONE | NONE | NONE | 8 hours, 3 minutes |

```

minutes, 53 seconds
4    Online      NONE      NONE      NONE      8 hours, 2
minutes, 45 seconds

lcc4-re0:
-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
0     Spare      NONE         NONE         NONE                5 hours, 11
1     Online     NONE         NONE         NONE                minutes, 12 seconds
2     Online     NONE         NONE         NONE                8 hours, 4
minutes, 24 seconds
3     Online     NONE         NONE         NONE                8 hours, 3
minutes, 16 seconds
4     Online     NONE         NONE         NONE                8 hours, 2
minutes, 12 seconds

lcc5-re0:
-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
0     Spare      NONE         NONE         NONE                5 hours, 11
1     Online     NONE         NONE         NONE                minutes, 12 seconds
2     Online     NONE         NONE         NONE                8 hours, 4
minutes, 24 seconds
3     Online     NONE         NONE         NONE                8 hours, 3
minutes, 15 seconds
4     Online     NONE         NONE         NONE                8 hours, 2
minutes, 11 seconds

```

show chassis fabric plane detail (TX Matrix Plus Router)

```
user@host> show chassis fabric plane detail
```

```

sfc0-re0:
-----
Fabric Management PLANE State:
PLANE 0:   Spare
  SIB F13 0 :   Spare
  SIB F13 1 :   Empty
  SIB F2S 0/0 :   Spare
  SIB F2S 0/2 :   Spare
  SIB F2S 0/4 :   Spare
  SIB F2S 0/6 :   Spare
PLANE 1:   Online
  SIB F13 3 :   Online
  SIB F13 4 :   Empty
  SIB F2S 1/0 :   Online
  SIB F2S 1/2 :   Online
  SIB F2S 1/4 :   Online
  SIB F2S 1/6 :   Online
PLANE 2:   Online
  SIB F13 6 :   Online
  SIB F13 7 :   Empty
  SIB F2S 2/0 :   Online
  SIB F2S 2/2 :   Online
  SIB F2S 2/4 :   Online
  SIB F2S 2/6 :   Online
PLANE 3:   Online
  SIB F13 8 :   Online

```

```

SIB F13 9 : Online
SIB F2S 3/0 : Online
SIB F2S 3/2 : Online
SIB F2S 3/4 : Online
SIB F2S 3/6 : Online
PLANE 4: Online
SIB F13 11 : Online
SIB F13 12 : Online
SIB F2S 4/0 : Online
SIB F2S 4/2 : Online
SIB F2S 4/4 : Online
SIB F2S 4/6 : Online

```

```
lcc0-re0:
```

```
-----
Fabric Management SIB State:
```

```

SIB 0 : Spare
SIB 1 : Online
SIB 2 : Online
SIB 3 : Online
SIB 4 : Online

```

```
lcc1-re0:
```

```
-----
Fabric Management SIB State:
```

```

SIB 0 : Spare
SIB 1 : Online
SIB 2 : Online
SIB 3 : Online
SIB 4 : Online

```

```
...
```

show chassis fabric plane extensive (TX Matrix Plus Router)

```
user@host> show chassis fabric plane extensive
```

```
sfc0-re0:
```

```
-----
Fabric Management PLANE State:
```

```
PLANE 0: Spare
```

```

SIB F13 0 : Spare
SIB F13 1 : Empty
SIB F2S 0/0 : Spare
SIB F2S 0/2 : Spare
SIB F2S 0/4 : Spare
SIB F2S 0/6 : Spare

```

```
SIB F13 0 Even:
```

```
LCC 0, SIB 0 : Links ok
```

```
SG 0
```

```

Port 0 : Links ok
Port 1 : Links ok
Port 2 : Links ok
Port 3 : Links ok

```

```
SG 1
```

```

Port 0 : Links ok
Port 1 : Links ok
Port 2 : Links ok
Port 3 : Links ok

```

```
SG 2
```

```
Port 0 : Links ok
```

```

        Port 1 : Links ok
        Port 2 : Links ok
        Port 3 : Links ok
    SG 3
        Port 0 : Links ok
        Port 1 : Links ok
        Port 2 : Links ok
        Port 3 : Links ok
SIB F13 0 Odd:
    LCC 1, SIB 0 : Links ok
    SG 0
        Port 0 : Links ok
        Port 1 : Links ok
        Port 2 : Links ok
        Port 3 : Links ok
    SG 1
        Port 0 : Links ok
        Port 1 : Links ok
        Port 2 : Links ok
        Port 3 : Links ok
    SG 2
        Port 0 : Links ok
        Port 1 : Links ok
        Port 2 : Links ok
        Port 3 : Links ok
    SG 3
        Port 0 : Links ok
        Port 1 : Links ok
        Port 2 : Links ok
        Port 3 : Links ok
SIB F2S 0/0: Links ok
SIB F2S 0/2: Links ok
SIB F2S 0/4: Links ok
SIB F2S 0/6: Links ok
SIB F13 1 Even:
    LCC 2, SIB 0 : Unused
    SG 0
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 1
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 2
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 3
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
SIB F13 1 Odd:
    LCC 3, SIB 0 : Unused
    SG 0
        Port 0 : Unused

```

```

        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 1
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 2
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SG 3
        Port 0 : Unused
        Port 1 : Unused
        Port 2 : Unused
        Port 3 : Unused
    SIB F2S 0/0: Unused
    SIB F2S 0/2: Unused
    SIB F2S 0/4: Unused
    SIB F2S 0/6: Unused
    PLANE 1: Online
    SIB F13 3 : Online
    SIB F13 4 : Empty
    SIB F2S 1/0 : Online
    SIB F2S 1/2 : Online
    SIB F2S 1/4 : Online
    SIB F2S 1/6 : Online
    SIB F13 3 Even:
    ...

```

show chassis fabric plane extensive (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric plane extensive
```

```
sfc0-re0:
```

```
-----
Fabric Management PLANE State:
```

```

PLANE 0: Online
    SIB F13 0 : Empty
    SIB F13 1 : Online
    SIB F2S 0/0 : Online
    SIB F2S 0/2 : Online
    SIB F2S 0/4 : Online
    SIB F2S 0/6 : Online
    SIB F13 0
        LCC 0, SIB 0 : Unused
        PFE 0 : Unused
        PFE 1 : Unused
        PFE 2 : Unused
        PFE 3 : Unused
        PFE 4 : Unused
        PFE 5 : Unused
        PFE 6 : Unused
        PFE 7 : Unused
        PFE 8 : Unused
        PFE 9 : Unused
        PFE 10 : Unused
        PFE 11 : Unused

```



```

        PFE 12 : Unused
        PFE 13 : Unused
        PFE 14 : Unused
        PFE 15 : Unused
    LCC 1, SIB 0 : Unused
        PFE 0 : Unused
        PFE 1 : Unused
        PFE 2 : Unused
        PFE 3 : Unused
        PFE 4 : Unused
        PFE 5 : Unused
        PFE 6 : Unused
        PFE 7 : Unused
        PFE 8 : Unused
        PFE 9 : Unused
        PFE 10 : Unused
        PFE 11 : Unused
        PFE 12 : Unused
        PFE 13 : Unused
        PFE 14 : Unused
        PFE 15 : Unused
    LCC 2, SIB 0 : Unused
        PFE 0 : Unused
        PFE 1 : Unused
        PFE 2 : Unused
        PFE 3 : Unused
        PFE 4 : Unused
        PFE 5 : Unused
        PFE 6 : Unused
        PFE 7 : Unused
        PFE 8 : Unused
        PFE 9 : Unused
        PFE 10 : Unused
    ...
lcc5-re0:
-----
Fabric Management SIB State:
  SIB 0 : Online
    LCC SIB Link State : Links ok
      PFE 0 : Links ok
      PFE 1 : Links ok
      PFE 2 : Links ok
      PFE 3 : Links ok
      PFE 4 : Links ok
      PFE 5 : Links ok
      PFE 6 : Links ok
      PFE 7 : Links ok
      PFE 8 : Links ok
      PFE 9 : Links ok
      PFE 10 : Links ok
      PFE 11 : Links ok
      PFE 12 : Links ok
      PFE 13 : Links ok
      PFE 14 : Links ok
      PFE 15 : Links ok
    FPC 1
      PFE 0 : Links ok
    FPC 2
      PFE 0 : Links ok
    FPC 3

```

```

        PFE 0      : Links ok
        PFE 1      : Links ok
    FPC 4
        PFE 0      : Links ok
SIB    1      : Online
LCC SIB Link State : Links ok
    PFE 0      : Links ok
    PFE 1      : Links ok
    PFE 2      : Links ok
    PFE 3      : Links ok
    PFE 4      : Links ok
    PFE 5      : Links ok
    PFE 6      : Links ok
    PFE 7      : Links ok
    PFE 8      : Links ok
    PFE 9      : Links ok
    PFE 10     : Links ok
    PFE 11     : Links ok
    PFE 12     : Links ok
    PFE 13     : Links ok
    PFE 14     : Links ok
    PFE 15     : Links ok
    FPC 1
        PFE 0      : Links ok
    FPC 2
        PFE 0      : Links ok
    FPC 3
        PFE 0      : Links ok
        PFE 1      : Links ok
    FPC 4
        PFE 0      : Links ok

```

show chassis fabric plane terse (TX Matrix Plus Router)

```
user@host> show chassis fabric plane terse
```

```
sfc0-re0:
```

| Plane | State | Link errors | Destination errors | Uptime |
|-------|--------|-------------|--------------------|------------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 18 minutes, 37 seconds |
| 2 | Online | NONE | NONE | 18 minutes, 36 seconds |
| 3 | Online | NONE | NONE | 18 minutes, 33 seconds |
| 4 | Online | NONE | NONE | 18 minutes, 31 seconds |

```
lcc1-re0:
```

| SIB | State | Link errors | Destination errors | Uptime |
|-----|--------|-------------|--------------------|------------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 18 minutes, 37 seconds |
| 2 | Online | NONE | NONE | |
| 3 | Online | NONE | NONE | |
| 4 | Empty | NONE | NONE | |

```
lcc2-re0:
```

| SIB | State | Link errors | Destination errors | Uptime |
|-----|--------|-------------|--------------------|------------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 18 minutes, 37 seconds |
| 2 | Online | NONE | NONE | 18 minutes, 36 seconds |
| 3 | Online | NONE | NONE | 18 minutes, 32 seconds |
| 4 | Online | NONE | NONE | 18 minutes, 31 seconds |

show chassis fabric plane terse (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric plane terse
```

```
sfc0-re0:
```

| Plane | State | Cable errors | Link errors | Destination errors | Uptime |
|-------|---------|--------------|-------------|--------------------|---|
| 0 | Offline | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 1 day, 18 hours, 14 minutes, 26 seconds |
| 2 | Offline | NONE | NONE | NONE | |
| 3 | Offline | NONE | NONE | NONE | |
| 4 | Offline | NONE | NONE | NONE | |

```
lcc2-re0:
```

| SIB | State | Cable errors | Link errors | Destination errors | Uptime |
|-----|---------|--------------|-------------|--------------------|-----------------------------|
| 0 | Offline | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 1 day, 18 hours, 17 minutes |
| 2 | Offline | NONE | NONE | NONE | |
| 3 | Offline | NONE | NONE | NONE | |
| 4 | Offline | NONE | NONE | NONE | |

```
lcc4-re0:
```

| SIB | State | Cable errors | Link errors | Destination errors | Uptime |
|-----|---------|--------------|-------------|--------------------|---|
| 0 | Offline | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 1 day, 18 hours, 14 minutes, 38 seconds |
| 2 | Offline | NONE | NONE | NONE | |
| 3 | Offline | NONE | NONE | NONE | |
| 4 | Offline | NONE | NONE | NONE | |

```
lcc5-re0:
```

| SIB | State | Cable errors | Link errors | Destination errors | Uptime |
|-----|---------|--------------|-------------|--------------------|---|
| 0 | Offline | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 1 day, 18 hours, 14 minutes, 34 seconds |
| 2 | Offline | NONE | NONE | NONE | |
| 3 | Offline | NONE | NONE | NONE | |
| 4 | Offline | NONE | NONE | NONE | |

show chassis fabric plane lcc (TX Matrix Plus Router)

```
user@host> show chassis fabric plane lcc 1
```

```
lcc1-re0:
```

| SIB | State | Link errors | Destination errors | Uptime |
|-----|--------------|-------------|--------------------|------------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 25 minutes, 17 seconds |
| 2 | Disconnected | NONE | NONE | |
| 3 | Disconnected | NONE | NONE | |
| 4 | Empty | NONE | NONE | |

show chassis fabric plane lcc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric plane lcc 2
```

```
lcc2-re0:
```

| SIB | State | Cable errors | Link errors | Destination errors | Uptime |
|-----|---------|--------------|-------------|--------------------|---|
| 0 | Offline | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 1 day, 18 hours, 16 minutes, 44 seconds |
| 2 | Offline | NONE | NONE | NONE | |
| 3 | Offline | NONE | NONE | NONE | |
| 4 | Offline | NONE | NONE | NONE | |

show chassis fabric plane sfc (TX Matrix Plus Router)

```
user@host> show chassis fabric plane sfc 0
```

```
sfc0-re0:
```

| Plane | State | Link errors | Destination errors | Uptime |
|-------|--------|-------------|--------------------|-----------------------|
| 0 | Spare | NONE | NONE | |
| 1 | Online | NONE | NONE | 27 minutes, 7 seconds |
| 2 | Online | NONE | NONE | 27 minutes, 6 seconds |
| 3 | Online | NONE | NONE | 27 minutes, 3 seconds |
| 4 | Online | NONE | NONE | 27 minutes, 1 second |

show chassis fabric plane sfc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric plane sfc 0
```

```
sfc0-re0:
```

| Plane | State | Cable errors | Link errors | Destination errors | Uptime |
|-------|---------|--------------|-------------|--------------------|---|
| 0 | Offline | NONE | NONE | NONE | |
| 1 | Online | NONE | NONE | NONE | 1 day, 18 hours, 14 minutes, 20 seconds |
| 2 | Offline | NONE | NONE | NONE | |
| 3 | Offline | NONE | NONE | NONE | |
| 4 | Offline | NONE | NONE | NONE | |

show chassis fabric plane (T1600 Router)

```
user@host> show chassis fabric plane
```

| Plane | State | Uptime |
|-------|--------|---------------------------------|
| 0 | Online | 15 hours, 42 minutes, 9 seconds |
| 1 | Online | 15 hours, 42 minutes, 9 seconds |
| 2 | Fault | |
| 3 | Online | 15 hours, 42 minutes, 9 seconds |
| 4 | Online | 15 hours, 42 minutes, 9 seconds |

show chassis fabric plane extensive (T1600 Router)

```
user@host> show chassis fabric plane extensive
```

```
Fabric Management PLANE State:
```

```
PLANE 0: Online
```

```
ST-SIB-L 0: Links ok
```

```
SG 0
```

```
Port 0 : Links ok
```

```
Port 1 : Links ok
```

```
Port 2 : Links ok
```

```
Port 3 : Links ok
```

```
SG 1
```

```
Port 0 : Links ok
```

```
Port 1 : Links ok
```

```
Port 2 : Links ok
```

```
Port 3 : Links ok
```

```
SG 2
```

```
Port 0 : Links ok
```

```
Port 1 : Links ok
```

```
Port 2 : Links ok
```

```
Port 3 : Links ok
```

```
SG 3
```

```
Port 0 : Links ok
```

```
Port 1 : Links ok
```

```
Port 2 : Links ok
```

```
Port 3 : Links ok
```

```
ST-SIB-L 0
```

```
FPC 4
```

```
PFE 0: Links ok
```

```
PFE 1: Links ok
```

```
FPC 6
```

```
PFE 0: Links ok
```

```
PFE 1: Links ok
```

```
FPC 7
```

```
PFE 0: Links ok
```

```
PLANE 1: Online
```

```
ST-SIB-L 1: Links ok
```

```
SG 0
```

```
Port 0 : Links ok
```

```
Port 1 : Links ok
```

```
Port 2 : Links ok
```

```
Port 3 : Links ok
```

```
SG 1
```

```
Port 0 : Links ok
```

```
Port 1 : Links ok
```

```
Port 2 : Links ok
```

```
Port 3 : Links ok
```

```
SG 2
```

```
Port 0 : Links ok
```

```
Port 1 : Links ok
```

```
Port 2 : Links ok
```

```
Port 3 : Links ok
```

```
SG 3
  Port 0    : Links ok
  Port 1    : Links ok
  Port 2    : Links ok
  Port 3    : Links ok
ST-SIB-L 1
  FPC 4
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 6
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 7
    PFE 0: Links ok
PLANE 2:    Online
ST-SIB-L 2: Links ok
SG 0
  Port 0    : Links ok
  Port 1    : Links ok
  Port 2    : Links ok
  Port 3    : Links ok
SG 1
  Port 0    : Links ok
  Port 1    : Links ok
  Port 2    : Links ok
  Port 3    : Links ok
SG 2
  Port 0    : Links ok
  Port 1    : Links ok
  Port 2    : Links ok
  Port 3    : Links ok
SG 3
  Port 0    : Links ok
  Port 1    : Links ok
  Port 2    : Links ok
  Port 3    : Links ok
ST-SIB-L 2
  FPC 4
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 6
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 7
    PFE 0: Links ok
PLANE 3:    Spare
ST-SIB-L 3: Links ok
SG 0
  Port 0    : Links ok
  Port 1    : Links ok
  Port 2    : Links ok
  Port 3    : Links ok
SG 1
  Port 0    : Links ok
  Port 1    : Links ok
  Port 2    : Links ok
  Port 3    : Links ok
SG 2
  Port 0    : Links ok
  Port 1    : Links ok
```

```

        Port 2    : Links ok
        Port 3    : Links ok
    SG 3
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    ST-SIB-L 3
    FPC 4
        PFE 0: Links ok
        PFE 1: Links ok
    FPC 6
        PFE 0: Links ok
        PFE 1: Links ok
    FPC 7
        PFE 0: Links ok
    PLANE 4:    Online
    ST-SIB-L 4: Links ok
    SG 0
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    SG 1
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    SG 2
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    SG 3
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    ST-SIB-L 4
    FPC 4
        PFE 0: Links ok
        PFE 1: Links ok
    FPC 6
        PFE 0: Links ok
        PFE 1: Links ok
    FPC 7
        PFE 0: Links ok

```

show chassis fabric plane detail (T1600 Router)

```
user@host> show chassis fabric plane detail
```

```

Fabric Management PLANE State:
PLANE 0:    Online
PLANE 1:    Online
PLANE 2:    Online
PLANE 3:    Spare
PLANE 4:    Online

```

show chassis fabric plane (EX8200 Switch)

```
user@host> show chassis fabric plane
```

```
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
Plane 1
  Plane state: ACTIVE
Plane 2
  Plane state: ACTIVE
Plane 3
  Plane state: ACTIVE
Plane 4
  Plane state: SPARE
Plane 5
  Plane state: SPARE
Plane 6
  Plane state: SPARE
Plane 7
  Plane state: SPARE
Plane 8
  Plane state: ACTIVE
Plane 9
  Plane state: ACTIVE
Plane 10
  Plane state: ACTIVE
Plane 11
  Plane state: ACTIVE
```

show chassis fabric plane (EX9253 Switch)

```
user@switch> show chassis fabric plane
```

```
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
```



```
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 3
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 4
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 5
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 6
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 7
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 8
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
```

```
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 9
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 10
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 11
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 12
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 13
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 14
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
```

```
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 15
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 16
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 17
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 18
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 19
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 20
    Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
```

```
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 21
  Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
```

show chassis fabric plane-location

| | |
|---|---|
| List of Syntax | Syntax on page 1185 Syntax (MX Series Routers) on page 1185 Syntax (MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms) on page 1185 Syntax (TX Matrix Plus Router) on page 1185 Syntax (QFX Switches) on page 1185 Syntax (EX9253 Switches) on page 1185 Syntax (EX9253 Switches) on page 1185 |
| Syntax | show chassis fabric plane-location |
| Syntax (MX Series Routers) | show chassis fabric plane-location <all-members> <local> <member <i>member-id</i> > |
| Syntax (MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms) | show chassis fabric plane-location <extended> |
| Syntax (TX Matrix Plus Router) | show chassis fabric plane-location |
| Syntax (QFX Switches) | show chassis fabric plane-location |
| Syntax (EX9253 Switches) | show chassis fabric plane-location |
| Syntax (EX9253 Switches) | show chassis fabric plane-location |
| Release Information | Command introduced in Junos OS Release 8.0. Command introduced in Junos OS Release 9.4 for EX Series switches. Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers. Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches. extended option introduced in Junos OS Release 16.1R1 for MX2020 and MX2010 Universal Routing Platforms. 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 18.2 for MX10008 Universal Routing Platforms.

Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Description (M120, MX Series routers, and EX8200 switches only) Display the Control Board (CB) location of each plane. This command can be used on the master Routing Engine or the backup Routing Engine. For information about the meaning of “CBs” and “fabric plane” on the switches, see the hardware documentation for your switch.

(TX Matrix Plus routers only) Display the SIB location of each fabric plane.

(PTX Series Packet Transport Routers and QFX Series switches only) Display the fabric plane location of each SIB.

(MX2010, MX2020, and MX2008 Routers only) Display the fabric plane location of each Switch Fabric Board (SFB).

Options **all-members**—(MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in all member routers in the Virtual Chassis configuration.

local—(MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the specified member in the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

extended—(MX2020, MX2010, and MX2008 routers only) (Optional) Display the fabric plane location of all 3 planes of each Switch Fabric Board (SFB) or enhanced Switch Fabric Board (SFB2).

Required Privilege Level

view

List of Sample Output

- [show chassis fabric plane-location \(M120 Router\) on page 1187](#)
- [show chassis fabric plane-location \(MX240 and MX480 Routers\) on page 1188](#)
- [show chassis fabric plane-location \(MX960 Router\) on page 1188](#)
- [show chassis fabric plane-location \(MX10008 Router\) on page 1188](#)
- [show chassis fabric plane-location \(MX2010 Router\) on page 1189](#)
- [show chassis fabric plane-location \(MX2020 Router\) on page 1189](#)
- [show chassis fabric plane-location \(MX2020 Router with SFB2\) on page 1189](#)
- [show chassis fabric plane-location \(MX2008 Router\) on page 1190](#)
- [show chassis fabric plane-location \(MX10003 Router\) on page 1190](#)
- [show chassis fabric plane-location \(TX Matrix Plus Router\) on page 1191](#)
- [show chassis fabric plane-location \(TX Matrix Plus Router with 3D SIBs\) on page 1191](#)
- [show chassis fabric plane-location \(EX8200 Switch\) on page 1191](#)
- [show chassis fabric plane-location \(EX9253 Switch\) on page 1192](#)
- [show chassis fabric plane-location \(EX9253 Switch\) on page 1193](#)

[show chassis fabric plane-location \(PTX Series Packet Transport Routers\) on page 1194](#)

[show chassis fabric plane-location \(PTX10008 Routers\) on page 1194](#)

[show chassis fabric plane-location \(QFX 10008 Switch\) on page 1195](#)

Output Fields Table 69 on page 1187 lists the output fields for the **show chassis fabric plane-location** command. Output fields are listed in the approximate order in which they appear.

Table 69: show chassis fabric plane-location Output Fields

| Field Name | Field Description |
|------------------------------|--|
| Plane <i>n</i> | Plane number. (PTX Series Packet Transport Routers and QFX Series switches) Plane numbers associated with the SIB. (MX2010, MX2020, and MX2008 Routers only) Plane numbers associated with the SFB. |
| Control Board <i>n</i> | Control board number. |
| SFC ABS-SIB-F13 | (TX Matrix Plus routers only) Switch Interface Board (SIB) slot number on the F13 SIB. |
| SFC ABS-SIB-F2S | (TX Matrix Plus routers only) SIB slot number on the F2S SIB. |
| LCC ST-SIB-L | (TX Matrix Plus routers only) Line-card chassis (LCC) SIB slot number. |
| SFC SIB F13 | (TX Matrix Plus routers with 3D SIBs only) Switch Interface Board (SIB) slot number on the F13 SIB. |
| SFC SIB F2S | (TX Matrix Plus routers with 3D SIBs only) SIB slot number on the F2S SIB. |
| LCC SIB | (TX Matrix Plus routers with 3D SIBs only) Line-card chassis (LCC) SIB slot number. |
| SIB | (PTX Series Packet Transport Routers and QFX Series switches) SIB number. |
| Switch Fabric Board <i>n</i> | (MX2010, MX2020, and MX2008 Routers only) SFB number. |

Sample Output

show chassis fabric plane-location (M120 Router)

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Control Board 0
Plane 1          Control Board 0
Plane 2          Control Board 1
Plane 3          Control Board 1
```

show chassis fabric plane-location (MX240 and MX480 Routers)

```
user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0                Control Board 0
Plane 1                Control Board 0
Plane 2                Control Board 0
Plane 3                Control Board 0
Plane 4                Control Board 1
Plane 5                Control Board 1
Plane 6                Control Board 1
Plane 7                Control Board 1
```

show chassis fabric plane-location (MX960 Router)

```
user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0                Control Board 0
Plane 1                Control Board 0
Plane 2                Control Board 1
Plane 3                Control Board 1
Plane 4                Control Board 2
Plane 5                Control Board 2
```

show chassis fabric plane-location (MX10008 Router)

```
user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0                Switch Fabric Board 0
Plane 1                Switch Fabric Board 0
Plane 2                Switch Fabric Board 0
Plane 3                Switch Fabric Board 0
Plane 4                Switch Fabric Board 1
Plane 5                Switch Fabric Board 1
Plane 6                Switch Fabric Board 1
Plane 7                Switch Fabric Board 1
Plane 8                Switch Fabric Board 2
Plane 9                Switch Fabric Board 2
Plane 10               Switch Fabric Board 2
Plane 11               Switch Fabric Board 2
Plane 12               Switch Fabric Board 3
Plane 13               Switch Fabric Board 3
Plane 14               Switch Fabric Board 3
Plane 15               Switch Fabric Board 3
Plane 16               Switch Fabric Board 4
Plane 17               Switch Fabric Board 4
Plane 18               Switch Fabric Board 4
Plane 19               Switch Fabric Board 4
Plane 20               Switch Fabric Board 5
Plane 21               Switch Fabric Board 5
Plane 22               Switch Fabric Board 5
Plane 23               Switch Fabric Board 5
```


show chassis fabric plane-location (MX2010 Router)

```

user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 1
Plane 2          Switch Fabric Board 2
Plane 3          Switch Fabric Board 3
Plane 4          Switch Fabric Board 4
Plane 5          Switch Fabric Board 5
Plane 6          Switch Fabric Board 6
Plane 7          Switch Fabric Board 7

```

show chassis fabric plane-location (MX2020 Router)

```

user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 1
Plane 2          Switch Fabric Board 2
Plane 3          Switch Fabric Board 3
Plane 4          Switch Fabric Board 4
Plane 5          Switch Fabric Board 5
Plane 6          Switch Fabric Board 6
Plane 7          Switch Fabric Board 7

```

show chassis fabric plane-location (MX2020 Router with SFB2)

```

user@host> show chassis fabric plane-location extended

-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 0
Plane 2          Switch Fabric Board 0
Plane 3          Switch Fabric Board 1
Plane 4          Switch Fabric Board 1
Plane 5          Switch Fabric Board 1
Plane 6          Switch Fabric Board 2
Plane 7          Switch Fabric Board 2
Plane 8          Switch Fabric Board 2
Plane 9          Switch Fabric Board 3
Plane 10         Switch Fabric Board 3
Plane 11         Switch Fabric Board 3
Plane 12         Switch Fabric Board 4
Plane 13         Switch Fabric Board 4
Plane 14         Switch Fabric Board 4
Plane 15         Switch Fabric Board 5
Plane 16         Switch Fabric Board 5
Plane 17         Switch Fabric Board 5
Plane 18         Switch Fabric Board 6
Plane 19         Switch Fabric Board 6
Plane 20         Switch Fabric Board 6
Plane 21         Switch Fabric Board 7
Plane 22         Switch Fabric Board 7
Plane 23         Switch Fabric Board 7

```

show chassis fabric plane-location (MX2008 Router)

```
user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 1
Plane 2          Switch Fabric Board 2
Plane 3          Switch Fabric Board 3
Plane 4          Switch Fabric Board 4
Plane 5          Switch Fabric Board 5
Plane 6          Switch Fabric Board 6
Plane 7          Switch Fabric Board 7
```

show chassis fabric plane-location (MX10003 Router)

```
user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0
    FPC 0
    FPC 1
Plane 1
    FPC 0
    FPC 1
Plane 2
    FPC 0
    FPC 1
Plane 3
    FPC 0
    FPC 1
Plane 4
    FPC 0
    FPC 1
Plane 5
    FPC 0
    FPC 1
Plane 6
    FPC 0
    FPC 1
Plane 7
    FPC 0
    FPC 1
Plane 8
    FPC 0
    FPC 1
Plane 9
    FPC 0
    FPC 1
Plane 10
    FPC 0
    FPC 1
Plane 11
    FPC 0
    FPC 1
Plane 12
    FPC 0
    FPC 1
Plane 13
```

```

        FPC 0
        FPC 1
Plane 14
        FPC 0
        FPC 1
Plane 15
        FPC 0
        FPC 1
Plane 16
        FPC 0
        FPC 1
Plane 17
        FPC 0
        FPC 1
Plane 18
        FPC 0
        FPC 1
Plane 19
        FPC 0
        FPC 1
Plane 20
        FPC 0
        FPC 1
Plane 21
        FPC 0
        FPC 1

```

show chassis fabric plane-location (TX Matrix Plus Router)

```
user@host> show chassis fabric plane-location
```

```

Fabric Plane Locations :
Plane      SFC ABS-SIB-F13      SFC ABS-SIB-F2      LCC ST-SIB-L
0          0, 1                0/0, 0/2, 0/4, 0/6      0
1          3, 4                1/0, 1/2, 1/4, 1/6      1
2          6, 7                2/0, 2/2, 2/4, 2/6      2
3          8, 9                3/0, 3/2, 3/4, 3/6      3
4          11, 12              4/0, 4/2, 4/4, 4/6      4

```

show chassis fabric plane-location (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric plane-location
```

```
sfc0-re0
```

```

-----Fabric Plane Locations-----
Plane      SFC SIB F13      SFC SIB F2      LCC SIB
0          0, 1                0/0, 0/2, 0/4, 0/6      0
1          3, 4                1/0, 1/2, 1/4, 1/6      1
2          6, 7                2/0, 2/2, 2/4, 2/6      2
3          8, 9                3/0, 3/2, 3/4, 3/6      3
4          11, 12              4/0, 4/2, 4/4, 4/6      4

```

show chassis fabric plane-location (EX8200 Switch)

```
user@host> show chassis fabric plane-location
```

```

-----Fabric Plane Locations-----
Plane  0                      Control Board 0

```

| | |
|----------|-----------------|
| Plane 1 | Control Board 0 |
| Plane 2 | Control Board 0 |
| Plane 3 | Control Board 0 |
| Plane 4 | Control Board 1 |
| Plane 5 | Control Board 1 |
| Plane 6 | Control Board 1 |
| Plane 7 | Control Board 1 |
| Plane 8 | Control Board 2 |
| Plane 9 | Control Board 2 |
| Plane 10 | Control Board 2 |
| Plane 11 | Control Board 2 |

show chassis fabric plane-location (EX9253 Switch)

```
user@switch> show chassis fabric plane-location
```

```
-----Fabric Plane Locations-----  
Plane 0  
    FPC 0  
    FPC 1  
Plane 1  
    FPC 0  
    FPC 1  
Plane 2  
    FPC 0  
    FPC 1  
Plane 3  
    FPC 0  
    FPC 1  
Plane 4  
    FPC 0  
    FPC 1  
Plane 5  
    FPC 0  
    FPC 1  
Plane 6  
    FPC 0  
    FPC 1  
Plane 7  
    FPC 0  
    FPC 1  
Plane 8  
    FPC 0  
    FPC 1  
Plane 9  
    FPC 0  
    FPC 1  
Plane 10  
    FPC 0  
    FPC 1  
Plane 11  
    FPC 0  
    FPC 1  
Plane 12  
    FPC 0  
    FPC 1  
Plane 13  
    FPC 0  
    FPC 1  
Plane 14
```

```

        FPC 0
        FPC 1
Plane 15
        FPC 0
        FPC 1
Plane 16
        FPC 0
        FPC 1
Plane 17
        FPC 0
        FPC 1
Plane 18
        FPC 0
        FPC 1
Plane 19
        FPC 0
        FPC 1
Plane 20
        FPC 0
        FPC 1
Plane 21
        FPC 0
        FPC 1

```

show chassis fabric plane-location (EX9253 Switch)

```
user@switch> show chassis fabric plane-location
```

```

-----Fabric Plane Locations-----
Plane 0
        FPC 0
        FPC 1
Plane 1
        FPC 0
        FPC 1
Plane 2
        FPC 0
        FPC 1
Plane 3
        FPC 0
        FPC 1
Plane 4
        FPC 0
        FPC 1
Plane 5
        FPC 0
        FPC 1
Plane 6
        FPC 0
        FPC 1
Plane 7
        FPC 0
        FPC 1
Plane 8
        FPC 0
        FPC 1
Plane 9
        FPC 0
        FPC 1
Plane 10

```

```

FPC 0
FPC 1
Plane 11
FPC 0
FPC 1
Plane 12
FPC 0
FPC 1
Plane 13
FPC 0
FPC 1
Plane 14
FPC 0
FPC 1
Plane 15
FPC 0
FPC 1
Plane 16
FPC 0
FPC 1
Plane 17
FPC 0
FPC 1
Plane 18
FPC 0
FPC 1
Plane 19
FPC 0
FPC 1
Plane 20
FPC 0
FPC 1
Plane 21
FPC 0
FPC 1

```

show chassis fabric plane-location (PTX Series Packet Transport Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB      Planes
0         0   1
1         2   3
2         4   5
3         6   7
4         8   9
5        10  11
6        12  13
7        14  15
8        16  17

```

show chassis fabric plane-location (PTX10008 Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB      Planes
0         0   1

```

| | | |
|---|----|----|
| 1 | 2 | 3 |
| 2 | 4 | 5 |
| 3 | 6 | 7 |
| 4 | 8 | 9 |
| 5 | 10 | 11 |

show chassis fabric plane-location (QFX 10008 Switch)

```
user@host> show chassis fabric plane-location
```

```
-----Fabric Plane Locations-----  
SIB      Planes  
0         0  1  
1         2  3  
2         4  5  
3         6  7  
4         8  9  
5        10 11
```

show chassis fabric redundancy-mode

| | |
|---------------------------------|--|
| Syntax | show chassis fabric redundancy-mode |
| Release Information | Command introduced in Junos OS Release 12.2. |
| Description | (MX240, MX480, and MX960 routers only) Display whether redundancy mode is configured for active control boards to enable increased fabric bandwidth usage. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers on page 102 • Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers on page 98 • MX Series Routers Fabric Resiliency on page 100 • redundancy-mode on page 400 • Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers on page 84 |
| List of Sample Output | show chassis fabric redundancy-mode on page 1196 |
| Output Fields | Table 70 on page 1196 lists the output fields for the show chassis fabric redundancy-mode command. Output fields are listed in the approximate order in which they appear. |

Table 70: show chassis fabric redundancy mode Output Fields

| Field name | Field Description |
|------------------------|---|
| Fabric redundancy mode | Currently configured mode of the fabric |

Sample Output

show chassis fabric redundancy-mode

```
user@host> show chassis fabric redundancy-mode
Fabric redundancy mode: Redundant Fabric
```


show chassis fabric reachability

| | |
|---------------------------------|---|
| Syntax | show chassis fabric reachability <detail> <extended> |
| Release Information | <p>Command introduced before Junos OS Release 11.4.</p> <p>Command introduced in Junos OS Release 12.1 for MX240, MX480, and MX960 routers.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Switches.</p> <p>Command introduced in Junos OS Release 13.1R3 for TX Matrix routers.</p> <p>extended option introduced in Junos OS Release 16.1R1 for MX2010 and MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> |
| Description | (M320, MX240, MX480, MX960, and T Series routers only) Display the current state of fabric destination reachability. Additionally, display the details of the automated actions taken by the system to stop blackholing and attempt healing, and the final resolution of the actions. |
| Options | <p>none—Display the state of fabric destination reachability for M320, MX240, MX480, MX960, T640, T1600, and TX Matrix routers, based on periodic reachability checks. Display the system's action phase sequences to stop the black hole and attempt healing, and the final resolution.</p> <p>detail—(Optional) Display the details of the actions carried out by the system in the different action phases and the final resolution.</p> <p>extended—(MX2020 and MX2010 Routers only) (Optional) Display the state of fabric destination reachability for MX2010 and MX2020 routers.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • show chassis fabric unreachable-destinations on page 1265 |
| List of Sample Output | <p>show chassis fabric reachability (T640 and T1600 routers) on page 1201</p> <p>show chassis fabric reachability detail (T640 and T1600 routers) on page 1201</p> <p>show chassis fabric reachability (PTX5000 system) on page 1202</p> <p>show chassis fabric reachability (PTX10008 Router) on page 1202</p> <p>show chassis fabric reachability (MX2020 Router with SFB2) on page 1203</p> <p>show chassis fabric reachability detail (MX10003 Router) on page 1203</p> <p>show chassis fabric reachability (TX Matrix router) on page 1203</p> <p>show chassis fabric reachability detail (TX Matrix router) on page 1203</p> <p>show chassis fabric reachability detail (MX960 router) on page 1204</p> |

Output Fields The table lists the output fields for the **show chassis fabric reachability** command. Output fields are listed in the approximate order in which they appear.

Table 71: show chassis fabric reachability Output Fields

| Field Name | Field Description | Level of Output |
|----------------------------|---|-----------------|
| Fabric reachability status | Display the reachability status of the fabric. <ul style="list-style-type: none"> • Enabled destinations transitioned to unreachable, Fabric down action in progress—Some enabled destinations that were originally reachable have become unreachable. The system is trying to stop the fabric down condition and attempt healing. • Enabled destinations reachable—The enabled destinations are reachable. • Unreachable destinations healed—The unreachable destinations are healed and are reachable. • Unreachable destinations removed—The unreachable destinations are removed. • Unreachable destinations present—Unreachable destinations are present in the system. • Unreachable destinations present due to FPC restart disable configuration—Unreachable destinations are present as a result of user configuration set to disable FPC restart. | All levels |
| Unreachable destinations | Number of FPCs that have unreachable destinations. | All levels |
| Detected on | Date and time when unreachable destinations are detected. | All levels |
| Reason | Reason for the destination turning unreachable. <ul style="list-style-type: none"> • Single FPC error—A single bad FPC is not reachable over the fabric. • Fabric plane error—Multiple FPCs are not able to forward traffic over the fabric planes. | All levels |
| Fabric reachability action | Action taken to handle the unreachable destination. <ul style="list-style-type: none"> • Plane Action—The healing is attempted only for the fabric planes. • SIB Action—(PTX Series system only) The healing is attempted only for the SIBs. • Plane and FPC Action—The healing is attempted both for the fabric planes and the FPCs. • SIB and FPC Action—(PTX Series system only) The healing is attempted both for the SIBs and the FPCs. • FPC Action—The healing is attempted only for the bad FPCs. | All levels |
| Acting on | Current action is being performed on: <ul style="list-style-type: none"> • Single FPC error—The current operation is for healing the single bad FPC. • Fabric Plane error—The current operation is for healing the fabric planes. | All levels |

Table 71: show chassis fabric reachability Output Fields (continued)

| Field Name | Field Description | Level of Output |
|---------------------------------|--|-----------------|
| Initial phase | Starting phase for the healing action. <ul style="list-style-type: none"> • Plane restart—The fabric planes are restarted. • SIB restart—(PTX Series system only) The SIBs are restarted. • Plane and FPC restart—Both the fabric planes and affected FPCs are restarted. • SIB and FPC restart—(PTX Series system only) SIBs and affected FPCs are restarted. | All levels |
| Current phase | Current phase for the healing action. <ul style="list-style-type: none"> • Plane restart—The fabric planes are restarted. • SIB restart—(PTX Series system only) The SIBs are restarted. • Plane and FPC restart—Both the fabric planes and affected FPCs are restarted. • SIB and FPC restart—(PTX Series system only) Both the SIBs and affected FPCs are restarted. • FPC offline—The FPCs are turned offline because the previously mentioned healing processes have failed. | All levels |
| Action started | Date and time when the system fabric down healing attempt is started. | All levels |
| Plane restart phase | The status of the plane restart phase. <ul style="list-style-type: none"> • Completed—The plane restart phase is completed. • In progress—The plane restart phase is in progress. | detail |
| Phase started | Date and time when the plane restart phase is started. | detail |
| Planes restarted | List of plane numbers restarted by the system. | detail |
| Planes timed out | List of plane numbers that have timed out waiting to be restarted by the system. | detail |
| Planes being offlined / onlined | Planes that are turned offline or turned online by the system, with date and time. | detail |
| Phase completed | Date and time when the plane restart phase is completed. | detail |
| Plane and FPC Restart Phase | Status of the plane and FPC restart phase. <ul style="list-style-type: none"> • Completed—The plane and FPC restart phase is completed. • In progress—The plane and FPC restart phase is in progress. | detail |
| Phase started | Date and time when the plane and FPC restart phase is started. | detail |
| FPC Offline Started | Date and time when the FPC offline action is started. | detail |
| Offlined FPCs | List of FPCs that are turned offline by the system. | detail |

Table 71: show chassis fabric reachability Output Fields (continued)

| Field Name | Field Description | Level of Output |
|---------------------------------|--|-----------------|
| FPCs timed out | List of FPCs that have timed out waiting to be turned offline by the system. | detail |
| FPC being offlined | FPC that is being turned offline by the system, with date and time. | detail |
| FPC Offline completed | Date and time when the FPC offline action is completed. | detail |
| Plane restarting started | Date and time when the plane restart action is started. | detail |
| Planes restarted | List of planes restarted by the system. | detail |
| Planes being offlined / onlined | Planes that are currently being turned offline or turned online by the system, with date and time. | detail |
| Plane restarting completed | Date and time when the plane restarting action is completed. | detail |
| FPC online started | Date and time when FPC online action is started. | detail |
| Onlined FPCs | List of FPCs that are turned online by the system. | detail |
| FPCs timed out | FPCs that have timed out waiting to be turned online by the system. | detail |
| FPC being onlined | FPC that is being turned online by the system, with date and time. | detail |
| FPC Online completed | Date and time when the action of turning the FPCs online is completed. | detail |
| Phase Completed | Date and time when the plane and FPC restart phase is completed. | detail |
| Phase started | Date and time when the plane and FPC restart phase is started. | detail |
| FPC restart time | Date and time when the FPC restart action is started. | detail |
| FPC restarted | FPC that is restarted by the system, with date and time. | detail |
| Phase Completed | Date and time when the plane and FPC restart phase is completed. | detail |
| FPC Offline Phase | Status of the FPC offline phase. <ul style="list-style-type: none"> • Completed— The FPC offline phase is completed. • In progress—The FPC offline phase is currently in progress. | detail |
| Phase started | Date and time when the FPC offline phase is started. | detail |
| FPC Offline started | Date and time when the FPC offline action is started. | detail |
| Offlined FPCs | List of FPCs turned offline by the system. | detail |
| FPCs timed out | List of FPCs that have timed out waiting to be turned offline by the system. | detail |

Table 71: show chassis fabric reachability Output Fields (continued)

| Field Name | Field Description | Level of Output |
|--------------------------------|--|-----------------|
| FPC being offlined | FPC that is being turned offline by the system, with date and time. | detail |
| FPC Offline completed | Date and time when the FPC offline action is completed. | detail |
| Phase Completed | Date and time when the FPC offline phase is completed. | detail |
| Action Completed | Date and time when the system fabric down healing attempt is completed. | All levels |
| Fabric reachability resolution | Status after the healing actions are performed. <ul style="list-style-type: none"> • Unreachable destinations healed after <i>phase name</i>—The unreachable destinations are healed after the healing actions are performed. The phase name indicates the last healing phase. • Unreachable destinations removed by FPCs <i>FPC number</i> offline—The unreachable destinations are removed by turning the FPCs offline. • Unreachable destinations present on FPC/PFE <i>FPC/PFE number</i>—The unreachable destinations are present on the FPCs or Packet Forwarding Engines and need to be acted upon. | All levels |

Sample Output

show chassis fabric reachability (T640 and T1600 routers)

```

user@host> show chassis fabric reachability

Fabric reachability status: Unreachable destinations removed

Fabric reachability detection:
  Unreachable destinations      : Present on 3 FPCs
  Detected on                  : 2010-11-22 15:19:45 PST
  Reason                       : Fabric plane error

Fabric reachability action:
  Fabric reachability action    : FPC action
  Acting on                    : Fabric plane error
  Initial phase                 : Plane restart
  Current phase                 : FPC offline is completed
  Action started                : 2010-11-22 15:08:05 PST
  Action completed              : 2010-11-22 15:19:45 PST

Fabric reachability resolution: Unreachable destinations removed by FPCs 2, 3, 5
offline

```

show chassis fabric reachability detail (T640 and T1600 routers)

```

user@host> show chassis fabric reachability detail

Fabric reachability status: Unreachable destinations removed
Fabric reachability detection:
  Unreachable destinations      : Present on 3 FPCs

```

```

Detected on          : 2010-11-15 15:50:32 PST
Reason               : Fabric plane error

Fabric reachability action:
Fabric reachability action : FPC action
Acting on               : Fabric plane error
Initial phase           : Plane restart
Current phase           : FPC offline is completed
Action started          : 2010-11-15 15:41:47 PST
  Plane restart phase    : Completed
    Phase started        : 2010-11-15 15:41:47 PST
      Planes restarted    : 0, 1, 2, 3, 4, 0
        Phase completed   : 2010-11-15 15:42:14 PST
  Plane and FPC Restart Phase : Completed
    Phase started         : 2010-11-15 15:45:52 PST
      FPC Offline Started  : 2010-11-15 15:45:52 PST
        Offlined FPCs     : 2, 3, 5, 7
          FPC Offline completed : 2010-11-15 15:45:52 PST
            Plane restarting started : 2010-11-15 15:45:52 PST
              Planes restarted : 0, 1, 2, 3, 4, 0
                Plane restarting completed : 2010-11-15 15:46:11 PST
                  FPC online started : 2010-11-15 15:46:11 PST
                    Onlined FPCs    : 2, 3, 5, 7
                      FPC online completed : 2010-11-15 15:46:50 PST
                        Phase completed : 2010-11-15 15:46:50 PST
  FPC offline phase      : Completed
    Phase started        : 2010-11-15 15:50:32 PST
      FPC offline started : 2010-11-15 15:50:32 PST
        Offlined FPCs     : 2, 3, 5
          FPC offline completed : 2010-11-15 15:50:32 PST
            Phase completed   : 2010-11-15 15:50:32 PST
  Action completed       : 2010-11-15 15:50:32 PST

Fabric reachability resolution: Unreachable destinations removed by FPCs 2, 3, 5
offline

```

show chassis fabric reachability (PTX5000 system)

```

user@host> show chassis fabric reachability

Fabric reachability status: Enabled destinations transitioned to unreachable,
Fabric down action in progress

Fabric reachability detection:
  Unreachable destinations : Present on 5 FPCs
    Detected on            : 2012-11-14 15:53:00 PST
      Reason               : Fabric plane error

Fabric reachability action:
Fabric reachability action : SIB action
Acting on                 : Fabric plane error
Initial phase             : SIB restart
Current phase             : SIB restart is in progress
Action started            : 2012-11-14 15:53:00 PST

```

show chassis fabric reachability (PTX10008 Router)

```

user@host> show chassis fabric reachability

```

```
Fabric reachability status: Enabled destinations reachable

Fabric reachability detection:
  Unreachable destinations      : Present on 0 FPCs
  Detected on                  : 2017-05-10 01:54:09 PDT
```

show chassis fabric reachability (MX2020 Router with SFB2)

```
user@host > show chassis fabric reachability

Fabric reachability status: No Fabric degradation detected now
```

show chassis fabric reachability detail (MX10003 Router)

```
user@host > show chassis fabric reachability detail

May 23 23:52:27

Fabric reachability status: Fabric degradation condition healed
  Detected on      : 2017-05-23 23:49:54 PDT
  Reason          : Fabric Degradation due to Plane
faults (fabric error)

Fabric reachability action:
  Fabric reachability action      : Plane action
  Current phase                  : Plane Restart Phase is completed
  Action started                 : 2017-05-23 23:50:04 PDT
  Action completed               : 2017-05-23 23:52:22 PDT
    Plane restart phase          : Completed
      Phase started              : 2017-05-23 23:50:04 PDT
        Planes restarted         : 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
      Phase completed            : 2017-05-23 23:52:22 PDT
```

show chassis fabric reachability (TX Matrix router)

```
user@host> show chassis fabric reachability

Fabric reachability status: Enabled destinations transitioned to unreachable,
Fabric down action in progress

Fabric reachability detection:
  Unreachable destinations      : Present on 14 FPCs
  Detected on                  : 2013-08-29 02:09:16 PDT
  Reason                       : Fabric plane error

Fabric reachability action:
  Fabric reachability action      : Plane action
  Acting on                     : Fabric plane error
  Initial phase                  : Plane restart
  Current phase                  : Plane restart is in progress
  Action started                 : 2013-08-29 02:09:16 PDT
```

show chassis fabric reachability detail (TX Matrix router)

```
user@host> show chassis fabric reachability detail
```

```
Fabric reachability status: Enabled destinations transitioned to unreachable,
Fabric down action in progress
```

```
Fabric reachability detection:
```

```
    Unreachable destinations      : Present on 14 FPCs
      Detected on                 : 2013-08-29 02:09:16 PDT
      Reason                     : Fabric plane error
```

```
Fabric reachability action:
```

```
    Fabric reachability action    : Plane action
      Acting on                  : Fabric plane error
      Initial phase               : Plane restart
      Current phase               : Plane restart is in progress
      Action started              : 2013-08-29 02:09:16 PDT
        Plane restart phase       : In progress
          Phase started           : 2013-08-29 02:09:16 PDT
            Planes restarted      : 0, 2, 3
            Planes being offlined : 4 : 2013-08-29 02:10:11 PDT
```

show chassis fabric reachability detail (MX960 router)

After triggering a phase action from an MPC, the **show chassis fabric reachability** command includes output from DPCs, MPCs, or FPCs.

```
user@host> show chassis fabric reachability detail
```

```
Fabric reachability status: Fabric degradation condition healed
```

```
    Detected on      : 2018-03-14 22:28:03 PDT
    Reason           : Fabric Degradation due to grant
timeouts seen by DPCs, MPCs, or FPCs
```

```
Fabric reachability action:
```

```
    Fabric reachability action    : Plane action
      Current phase               : Plane Restart Phase is completed
      Action started              : 2018-03-14 22:28:17 PDT
      Action completed            : 2018-03-14 22:29:28 PDT
        Plane restart phase       : Completed
          Phase started           : 2018-03-14 22:28:17 PDT
            Planes restarted      : 0, 1, 2, 3
            Phase completed       : 2018-03-14 22:29:28 PDT
```

```
Fabric reachability resolution: Fabric degradation healed after phase Plane restart
```


show chassis fabric sibs

| | |
|---------------------------------|--|
| Syntax | <pre>show chassis fabric sibs <fcc number scc> <slot slot-number></pre> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced on QFX Series switches in Junos OS Release 15.1X53-D30</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> |
| Description | <p>(TX Matrix routers only) Display the state of the electrical and optical switch fabric link between the SIBs in the TX Matrix router (TX-SIBs) and the SIBs in the T640 routers (T640 LCC SIBs).</p> <p>(M320, T640, T1600, T4000 and PTX Series routers and QFX Series switches) Display the state of the electrical switch fabric link between the SIBs and the FPCs.</p> |
| Options | <p>none—(TX Matrix routers only) Display the state of the electrical and optical switch fabric link between the SIBs in the TX Matrix router (TX-SIBs) and the SIBs in the T640 routers (T640 LCC SIBs).</p> <p>(M320, T640, T1600, T4000 and PTX Series routers and QFX Series switches) Display the state of the electrical switch fabric link between the SIBs and the FPCs.</p> <p>fcc number—(Optional) Display the switching fabric link state for the T640 SIBs on a specified T640 router (line-card chassis) connected to a TX Matrix router.</p> <p>scc—(Optional) Display the switching fabric link state for the TX-SIBs on the TX Matrix router (switch-card chassis).</p> <p>slot slot-number—(Optional) Display the state of the electrical switch fabric link between the specified SIB slot and the FPCs.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis sib on page 535 • show chassis sibs on page 1515 • <i>Monitoring the SIBs</i> • <i>Redundant SIBs Overview</i> |
| List of Sample Output | <p>show chassis fabric sibs (M320 Router) on page 1208</p> <p>show chassis fabric sibs (T640 Router) on page 1208</p> <p>show chassis fabric sibs (T1600 Router) on page 1209</p> <p>show chassis fabric sibs (T4000 Core Router) on page 1211</p> |

[show chassis fabric sibs \(TX Matrix Router\) on page 1212](#)
[show chassis fabric sibs lcc \(TX Matrix Router\) on page 1214](#)
[show chassis fabric sibs scc \(TX Matrix Router\) on page 1215](#)
[show chassis fabric sibs slot \(PTX3000 Router\) on page 1216](#)
[show chassis fabric sibs slot \(Junos OS Evolved\) on page 1216](#)
[show chassis fabric sibs \(PTX10008 Router\) on page 1216](#)
[show chassis fabric sibs \(QFX10008 Switch\) on page 1218](#)

Output Fields [Table 72 on page 1206](#) lists the output fields for the **show chassis fabric sibs** command. Output fields are listed in the approximate order in which they appear.

Table 72: show chassis fabric sibs Output Fields

| Field Name | Field Description |
|------------------------------------|---|
| Fabric management SIB state | Switching fabric link (link from FPC to SIB) state for each SIB: <ul style="list-style-type: none">• Unused—SIB is not present.• Links ok—Link between the SIB and the FPC is active.• Link error—Link between the SIB and the FPC is not operational. |

Table 72: show chassis fabric sibs Output Fields (continued)

| Field Name | Field Description |
|-------------|---|
| Plane state | <p>Possible plane state of the M320 SIB, TX-SIB or T640 SIB:</p> <ul style="list-style-type: none"> • S_ACTIVE—Links on the SIB are operational, and the fabric plane (SIB) is operational and running. • S_SPARE—Links on the SIB are operational and the fabric plane (SIB) is redundant and can be operational if any of the fabric planes in the S_ACTIVE state encounters an error. <p>NOTE: If the plane is unusable by any of the Packet Forwarding Engines, the command output displays an additional string, plane has link errors on # pfes, where, # indicates the total number of links (both from SIB to FPC, and from FPC to SIB) having link errors (detected either during initialization time or runtime) in this particular plane. This does not count links having destination errors.</p> <ul style="list-style-type: none"> • S_EMPTY—No links are present on the SIB, and the fabric plane (SIB) is powered down. • S_ACTIVATING—Links on the SIB are coming online; this is a transitional state. • S_DEACTIVATING—Links on the SIB are going offline; this is a transitional state. • S_FAULTING—Links on the SIB are being marked faulty, and the fabric plane (SIB) is not operational. • S_FAULT—Links on the SIB are in an alarmed state, and the fabric plane (SIB) is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults. <p>Possible plane state of the QFX Series SIB:</p> <ul style="list-style-type: none"> • Active—Links on the SIB are operational, and the fabric plane (SIB) is operational and running. • Spare—Links on the SIB are operational and the fabric plane (SIB) is redundant and can be operational if any of the fabric planes in the S_ACTIVE state encounters an error. • Empty—No links are present on the SIB, and the fabric plane (SIB) is powered down. • Activating—Links on the SIB are coming online; this is a transitional state. • Deactivating—Links on the SIB are going offline; this is a transitional state. • Faulting—Links on the SIB are being marked faulty, and the fabric plane (SIB) is not operational. • Fault—Links on the SIB are in an alarmed state, and the fabric plane (SIB) is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults. |

Sample Output

show chassis fabric sibs (M320 Router)

```
user@host> show chassis fabric sibs
```

```
Fabric management SIB state:
```

```
SIB #0
```

```
plane state: S_ACTIVE
```

```
FPC #0
```

```
PFE #1 : Links ok
```

```
FPC #1
```

```
PFE #1 : Links ok
```

```
FPC #2
```

```
PFE #1 : Links ok
```

```
FPC #3
```

```
PFE #1 : Links ok
```

```
SIB #1
```

```
plane state: S_ACTIVE
```

```
FPC #0
```

```
PFE #1 : Links ok
```

```
FPC #1
```

```
PFE #1 : Links ok
```

```
FPC #2
```

```
PFE #1 : Links ok
```

```
FPC #3
```

```
PFE #1 : Links ok
```

```
SIB #2
```

```
plane state: S_ACTIVE
```

```
FPC #0
```

```
PFE #1 : Links ok
```

```
FPC #1
```

```
PFE #1 : Links ok
```

```
FPC #2
```

```
PFE #1 : Links ok
```

```
FPC #3
```

```
PFE #1 : Links ok
```

```
SIB #3
```

```
plane state: S_ACTIVE
```

```
FPC #0
```

```
PFE #1 : Links ok
```

```
FPC #1
```

```
PFE #1 : Links ok
```

```
FPC #2
```

```
PFE #1 : Links ok
```

```
FPC #3
```

```
PFE #1 : Links ok
```

show chassis fabric sibs (T640 Router)

```
user@host> show chassis fabric sibs
```

```
Fabric management SIB state:
```

```
SIB #0
```

```
plane state: S_SPARE
```

```
FPC #0
```

```
PFE #1 : Links ok
```

```
FPC #2
```

```
PFE #1 : Links ok
```

```
FPC #3
```

```

        PFE #0 : Links ok
        PFE #1 : Links ok
SIB #1
  plane state: S_ACTIVE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #2
  plane state: S_ACTIVE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #3
  plane state: S_ACTIVE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #4
  plane state: S_ACTIVE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok

```

show chassis fabric sibs (T1600 Router)

```
user@host> show chassis fabric sibs
```

```

SIB #0
  plane state: S_SPARE
  FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #2
    PFE #0 : Links ok
  FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #5
    PFE #0 : Links ok
  FPC #6
    PFE #0 : Links ok

```

```

    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #1
    plane state: S_ACTIVE , plane has link errors on 2 pfes
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
    PFE #1 : Links okSIB #2
    plane state: S_ACTIVE
SIB #2
    plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #2
    PFE #0 : Links ok
FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #3
    plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #2
    PFE #0 : Links ok
FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #5
```

```

        PFE #0 : Links ok
FPC #6
        PFE #0 : Links ok
        PFE #1 : Links ok
FPC #7
        PFE #0 : Links ok
        PFE #1 : Links ok
SIB #4
plane state: S_ACTIVE
FPC #0
        PFE #0 : Links ok
        PFE #1 : Links ok
FPC #1
        PFE #0 : Links ok
        PFE #1 : Links ok
FPC #2
        PFE #0 : Links ok
FPC #4
        PFE #0 : Links ok
        PFE #1 : Links ok
FPC #5
        PFE #0 : Links ok
FPC #6
        PFE #0 : Links ok
        PFE #1 : Links ok
FPC #7
        PFE #0 : Links ok
        PFE #1 : Links ok

```

show chassis fabric sibs (T4000 Core Router)

```
user@host> show chassis fabric sibs
```

```
Fabric management SIB state:
```

```

SIB #0
plane state: S_SPARE
FPC #2
        PFE #0 : Links ok
FPC #3
        PFE #0 : Links ok
FPC #5
        PFE #0 : Links ok
        PFE #1 : Links ok
FPC #6
        PFE #0 : Links ok
        PFE #1 : Links ok
SIB #1
plane state: S_ACTIVE
FPC #2
        PFE #0 : Links ok
FPC #3
        PFE #0 : Links ok
FPC #5
        PFE #0 : Links ok
        PFE #1 : Links ok
FPC #6
        PFE #0 : Links ok
        PFE #1 : Links ok
SIB #2
plane state: S_ACTIVE

```

```

FPC #2
  PFE #0 : Links ok
FPC #3
  PFE #0 : Links ok
FPC #5
  PFE #0 : Links ok
  PFE #1 : Links ok
FPC #6
  PFE #0 : Links ok
  PFE #1 : Links ok
SIB #3
  plane state: S_ACTIVE
  FPC #2
    PFE #0 : Links ok
  FPC #3
    PFE #0 : Links ok
  FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #4
  plane state: S_ACTIVE
  FPC #2
    PFE #0 : Links ok
  FPC #3
    PFE #0 : Links ok
  FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok

```

show chassis fabric sibs (TX Matrix Router)

```
user@host> show chassis fabric sibs
```

```
scc-re0:
```

```
-----
Fabric management SIB state:
```

```

SIB #1
  plane state: S_ACTIVE , plane has link errors on 2 pfes
  FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #7

```



```

        PFE #0 : Links ok
        PFE #1 : Links ok
SIB #2
  plane state: S_ACTIVE
  LCC #0      : Links ok
  LCC #1      : Links ok
SIB #3
  plane state: S_ACTIVE
  LCC #0      : Links ok
  LCC #1      : Links ok
SIB #4
  plane state: S_ACTIVE
  LCC #0      : Links ok
  LCC #1      : Links ok

```

```
lcc0-re0:
```

```
-----
Fabric management SIB state:
```

```

SIB #1
  plane state: S_ACTIVE
  FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #1
    PFE #1 : Links ok
  FPC #2
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #3
    PFE #1 : Links ok
  FPC #4
    PFE #1 : Links ok
  FPC #5
    PFE #0 : Links ok
  FPC #6
    PFE #1 : Links ok
  FPC #7
    PFE #1 : Links ok
  SCC      : Links ok
SIB #2
  plane state: S_ACTIVE
  FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #1
    PFE #1 : Links ok
  FPC #2
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #3
    PFE #1 : Links ok
  FPC #4
    PFE #1 : Links ok
  FPC #5
    PFE #0 : Links ok
  FPC #6
    PFE #1 : Links ok
  FPC #7
    PFE #1 : Links ok
  SCC      : Links ok

```

```

SIB #3
plane state: S_ACTIVE
FPC #0
  PFE #0 : Links ok
  PFE #1 : Links ok
FPC #1
  PFE #1 : Links ok
FPC #2
  PFE #0 : Links ok
  PFE #1 : Links ok
FPC #3
  PFE #1 : Links ok
FPC #4
  PFE #1 : Links ok
FPC #5
  PFE #0 : Links ok
FPC #6
  PFE #1 : Links ok
FPC #7
  PFE #1 : Links ok
SCC      : Links ok

```

```

SIB #4
plane state: S_ACTIVE
FPC #0
  PFE #0 : Links ok
  PFE #1 : Links ok
FPC #1
  PFE #1 : Links ok
FPC #2
  PFE #0 : Links ok
  PFE #1 : Links ok
FPC #3
  PFE #1 : Links ok
FPC #4
  PFE #1 : Links ok
FPC #5
  PFE #0 : Links ok
FPC #6
  PFE #1 : Links ok
FPC #7
  PFE #1 : Links ok
SCC      : Links o

```

show chassis fabric sibs lcc (TX Matrix Router)

```
user@host> show chassis fabric sibs lcc 0
```

```
lcc1-re0:
```

```
-----
Fabric management SIB state:
```

```

SIB #1
plane state: S_ACTIVE
FPC #0
  PFE #0 : Links ok
FPC #2
  PFE #1 : Links ok
FPC #4
  PFE #0 : Links ok
FPC #5
  PFE #1 : Links ok

```

```

    FPC #7
      PFE #0 : Links ok
    SCC      : Links ok
SIB #2
  plane state: S_ACTIVE
  FPC #0
    PFE #0 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #4
    PFE #0 : Links ok
  FPC #5
    PFE #1 : Links ok
  FPC #7
    PFE #0 : Links ok
  SCC      : Links ok
SIB #3
  plane state: S_ACTIVE
  FPC #0
    PFE #0 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #4
    PFE #0 : Links ok
  FPC #5
    PFE #1 : Links ok
  FPC #7
    PFE #0 : Links ok
  SCC      : Links ok
SIB #4
  plane state: S_ACTIVE
  FPC #0
    PFE #0 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #4
    PFE #0 : Links ok
  FPC #5
    PFE #1 : Links ok
  FPC #7
    PFE #0 : Links ok
  SCC      : Links ok

```

show chassis fabric sibs scc (TX Matrix Router)

```
user@host> show chassis fabric sibs scc
```

```
scc-re0:
```

```
-----
Fabric management SIB state:
```

```

SIB #1
  plane state: S_ACTIVE
  LCC #0      : Links ok
  LCC #1      : Links ok
SIB #2
  plane state: S_ACTIVE
  LCC #0      : Links ok
  LCC #1      : Links ok
SIB #3
  plane state: S_ACTIVE

```

```
LCC #0      : Links ok
LCC #1      : Links ok
SIB #4
plane state: S_ACTIVE
LCC #0      : Links ok
LCC #1      : Links ok
```

show chassis fabric sibs slot (PTX3000 Router)

```
user@host> show chassis fabric sibs slot 0
```

```
Fabric management SIB state:
SIB #0 Online
  Fcore #0 (plane 0) Active
    FPC #8
      PFE #0 : OK
      PFE #1 : OK
    FPC #12
      PFE #0 : OK
      PFE #1 : OK
  Fcore #1 (plane 1) Active
    FPC #8
      PFE #0 : OK
      PFE #1 : OK
    FPC #12
      PFE #0 : OK
      PFE #1 : OK
```

show chassis fabric sibs slot (Junos OS Evolved)

The output of the **show chassis fabric sibs** command is modified to include ASIC information. In the earlier releases, this command displayed ASICs as FCOREs. With this modification, for every FPC and SIB, information about ASIC and FCORE is presented separately in the output.

```
user@host> show chassis fabric sibs slot 0
```

```
Fabric management SIB state:
SIB #0 Online
  Asic #0 Fcore #0 (plane 0) Empty
    FPC #0
      PFE #0 : Links ok
      PFE #1 : Links ok
      PFE #2 : Links ok
      PFE #3 : Links ok
```

show chassis fabric sibs (PTX10008 Router)

```
user@host> show chassis fabric sibs
```

```
Fabric management SIB state:
SIB #0 Online
  FASIC #0 (plane 0) Active
    FPC #0
      PFE #0 : OK
      PFE #1 : OK
      PFE #2 : OK
    FPC #5
```

```

        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
    FPC #6
        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
FASIC #1 (plane 1) Active
    FPC #0
        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
    FPC #5
        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
    FPC #6
        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
SIB #1 Online
    FASIC #0 (plane 2) Active
        FPC #0
            PFE #0 : OK
            PFE #1 : OK
            PFE #2 : OK
        FPC #5
            PFE #0 : OK
            PFE #1 : OK
            PFE #2 : OK
            PFE #3 : OK
            PFE #4 : OK
            PFE #5 : OK
        FPC #6
            PFE #0 : OK
            PFE #1 : OK
            PFE #2 : OK
            PFE #3 : OK
            PFE #4 : OK
            PFE #5 : OK
    FASIC #1 (plane 3) Active
        FPC #0
            PFE #0 : OK
            PFE #1 : OK
            PFE #2 : OK
        FPC #5
            PFE #0 : OK
            PFE #1 : OK
```

```
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
    FPC #6
        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
SIB #2 Empty
SIB #3 Empty
SIB #4 Empty
SIB #5 Empty
```

show chassis fabric sibs (QFX10008 Switch)

```
user@host> show chassis fabric sibs
```

```
Fabric management SIB state:
SIB #0 Online
    FASIC #0 (plane 0) Active
        FPC #0
            PFE #0 : OK
            PFE #1 : OK
            PFE #2 : OK
            PFE #3 : OK
        FPC #1
            PFE #0 : OK
            PFE #1 : OK
    FASIC #1 (plane 1) Active
        FPC #0
            PFE #0 : OK
            PFE #1 : OK
        FPC #12
            PFE #0 : OK
            PFE #1 : OK
SIB #1 Empty
SIB #2 Empty
SIB #3 Empty
SIB #4 Empty
SIB #5 Empty
```

show chassis fabric summary

| | |
|---------------------------------|--|
| List of Syntax | Syntax on page 1219 Syntax (EX9253 Switches) on page 1219 |
| Syntax | show chassis fabric summary <extended> |
| Syntax (EX9253 Switches) | show chassis fabric summary |
| Release Information | <p>Command introduced in Junos OS Release 8.4.</p> <p>Command introduced in Junos OS Release 9.4 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches.</p> <p>extended option added in Junos OS Release 14.1R2.</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 MX10003 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> |
| Description | <p>(MX Series routers and EX8200 switches only) Display the state of all fabric planes and the elapsed uptime.</p> <p>(QFX Series switches) Display the state of all fabric planes.</p> |
| Options | extended —(Optional) Display the extended summary of fabric planes. |
| Required Privilege Level | view |
| List of Sample Output | show chassis fabric summary (MX240 Router) on page 1222 show chassis fabric summary (MX480 Router) on page 1222 show chassis fabric summary (MX480 Router with MPC4E) on page 1223 show chassis fabric summary (MX960 Router) on page 1223 show chassis fabric summary (MX10008 Router) on page 1223 show chassis fabric summary (MX2010 Router) on page 1223 show chassis fabric summary (MX2020 Router) on page 1224 show chassis fabric summary (MX2020 Router with MPC4E) on page 1224 show chassis fabric summary (MX2008) on page 1224 show chassis fabric summary (EX8200 Switch) on page 1224 show chassis fabric summary (EX9253 Switch) on page 1225 show chassis fabric summary (PTX Series Packet Transport Router) on page 1225 |

[show chassis fabric summary \(PTX10008 Router\) on page 1225](#)

[show chassis fabric summary \(QFX 10008 Switch\) on page 1226](#)

[show chassis fabric summary extended \(MX960 Router\) on page 1226](#)

[show chassis fabric summary \(MX10003 Router\) on page 1227](#)

[show chassis fabric summary extended \(MX10003 Router\) on page 1227](#)

Output Fields [Table 73 on page 1220](#) lists the output fields for the **show chassis fabric summary** command. Output fields are listed in the approximate order in which they appear.

Table 73: show chassis fabric summary Output Fields

| Field Name | Field Description |
|------------|--|
| Plane | (MX Series, MX2020, MX2010, and MX2008 Routers only) Plane number. |

Table 73: *show chassis fabric summary* Output Fields (continued)

| Field Name | Field Description |
|---------------|--|
| State | <p>(MX Series and QFX Series) State of the SIB or FPC:</p> <ul style="list-style-type: none"> • Online—Switch Interface Board (SIB) is operational and running. <p>NOTE: On the Enhanced MX SCB with Trio MPC, a maximum of 4 planes are operational and running. On all the other SCBs with Trio MPC, all the planes are operational and running.</p> <ul style="list-style-type: none"> • Empty—SIB is powered down. • Check—SIB is in the Check state because of the following reasons: <ul style="list-style-type: none"> • SIB is not inserted properly. • Some destination errors are detected on the SIB. In this case, the Packet Forwarding Engine stops using the SIB to send traffic to the affected destination Packet Forwarding Engine. • Some link errors are detected on the channel between the SIB and a Packet Forwarding Engine. Link errors can be detected at initialization time or runtime: <ul style="list-style-type: none"> • Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The show chassis fabric fpcs command shows Plane disabled as status for this link. • Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The show chassis fabric fpcs command shows Link error as the status for this link. <p>NOTE: The Check state does not apply to PTX Series Packet Transport Routers because there are no SIBs in the Check state.</p> <p>For information about link and destination errors, issue the show chassis fabric fpcs commands.</p> <ul style="list-style-type: none"> • Spare—SIB is redundant and will move to active state if one of the working SIBs fails. <p>NOTE: Spare does not apply to PTX Series Packet Transport Routers because there are no spare SIBs in the device.</p> <p>(MX2010, MX2020, and MX2008 Routers) State of the SFB.</p> <ul style="list-style-type: none"> • Online—Switch Fabric Board (SFB) is operational and running. • Offline—Switch Fabric Board (SFB) is powered down. • Check—Switch Fabric Board (SFB) is in the check state. |
| Errors | <p>(PTX Series and QFX Series) Indicates whether there is any error on the SIB.</p> <ul style="list-style-type: none"> • None—No errors • Link Errors—Fabric link errors were found on the SIB RX link. • Cell drops—Fabric cell drops were found on the SIB ASIC. • Link, Cell drops—Both Link errors and cell drops were detected on at least one of the FPC's fabric links. |

Table 73: show chassis fabric summary Output Fields (continued)

| Field Name | Field Description |
|---------------------------|---|
| | <ul style="list-style-type: none"> Asic Errors—A fault affecting one of the ASICs on the SIB is detected. It can be an IO error or an internal error signaled by the ASIC. <p>NOTE: The Errors column is empty only when the FPC or SIB is offline.</p> |
| Uptime | (MX Series, MX2010, MX2020, and MX2008 Routers) Elapsed time the plane has been online. |
| Link Error | Fabric link errors were found on the SIB RX link. |
| Link TF | Fabric link training failure has occurred. |
| Destination errors | <ul style="list-style-type: none"> Local—Destination error detected on the FPC or PFE's own self-stream. Remote—Destination error detected on the FPC or PFE's non-self-streams. |

Sample Output

show chassis fabric summary (MX240 Router)

```
user@host> show chassis fabric summary
```

```
Plane  State  Uptime
0      Online 23 hours, 26 minutes, 54 seconds
1      Online 23 hours, 26 minutes, 54 seconds
2      Check 18 hours, 33 minutes, 42 seconds
3      Online 23 hours, 26 minutes, 54 seconds
4      Spare 23 hours, 26 minutes, 54 seconds
5      Spare 23 hours, 26 minutes, 54 seconds
6      Spare 23 hours, 26 minutes, 54 seconds
7      Spare 23 hours, 26 minutes, 54 seconds
```

show chassis fabric summary (MX480 Router)

```
user@host> show chassis fabric summary
```

```
Plane  State  Uptime
0      Online 8 hours, 45 minutes, 29 seconds
1      Online 8 hours, 45 minutes, 28 seconds
2      Online 8 hours, 45 minutes, 28 seconds
3      Online 8 hours, 45 minutes, 28 seconds
4      Spare 8 hours, 45 minutes, 28 seconds
5      Spare 8 hours, 45 minutes, 28 seconds
6      Spare 8 hours, 45 minutes, 28 seconds
7      Check 6 hours, 10 minutes, 12 seconds
```

show chassis fabric summary (MX480 Router with MPC4E)

```
user@host > show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|---------------------------------|
| 0 | Online | 6 hours, 57 minutes, 44 seconds |
| 1 | Online | 6 hours, 57 minutes, 40 seconds |
| 2 | Online | 6 hours, 57 minutes, 39 seconds |
| 3 | Online | 6 hours, 57 minutes, 34 seconds |
| 4 | Spare | 6 hours, 57 minutes, 34 seconds |
| 5 | Spare | 6 hours, 57 minutes, 29 seconds |
| 6 | Spare | 6 hours, 57 minutes, 29 seconds |
| 7 | Spare | 6 hours, 57 minutes, 24 seconds |

Note:
For FPC slots with MPC Type 4 or MCC:
Fabric planes 1 and 5, 3 and 7 use shared physical links.
Those slots may run in a reduced bandwidth in case both
plane 1 and 5, or both 3 and 7 are active.

show chassis fabric summary (MX960 Router)

```
user@host> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|--------------------------------|
| 0 | Online | 3 hours, 7 minutes, 9 seconds |
| 1 | Online | 3 hours, 7 minutes, 4 seconds |
| 2 | Online | 3 hours, 6 minutes, 59 seconds |
| 3 | Online | 3 hours, 6 minutes, 54 seconds |
| 4 | Empty | |
| 5 | Empty | |

show chassis fabric summary (MX10008 Router)

```
user@host> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|----------------------------------|
| 0 | Online | 19 hours, 27 minutes, 33 seconds |
| 1 | Online | 19 hours, 27 minutes, 7 seconds |
| 2 | Online | 19 hours, 26 minutes, 39 seconds |
| 3 | Online | 19 hours, 26 minutes, 11 seconds |
| 4 | Online | 19 hours, 26 minutes, 13 seconds |
| 5 | Online | 19 hours, 26 minutes, 22 seconds |

show chassis fabric summary (MX2010 Router)

```
user@host> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|---------|---|
| 0 | Online | 1 day, 13 hours, 20 minutes, 10 seconds |
| 1 | Online | 1 day, 13 hours, 19 minutes, 59 seconds |
| 2 | Online | 1 day, 13 hours, 19 minutes, 49 seconds |
| 3 | Offline | |
| 4 | Online | 1 day, 13 hours, 19 minutes, 28 seconds |
| 5 | Check | 1 day, 13 hours, 19 minutes, 17 seconds |
| 6 | Online | 1 day, 13 hours, 19 minutes, 6 seconds |
| 7 | Online | 1 hour, 43 minutes, 5 seconds |

show chassis fabric summary (MX2020 Router)

```
user@host> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|---------------------------------|
| 0 | Online | 8 hours, 24 minutes, 1 second |
| 1 | Online | 8 hours, 47 minutes, 54 seconds |
| 2 | Online | 8 hours, 47 minutes, 44 seconds |
| 3 | Online | 8 hours, 47 minutes, 33 seconds |
| 4 | Online | 8 hours, 47 minutes, 22 seconds |
| 5 | Online | 8 hours, 47 minutes, 12 seconds |
| 6 | Online | 8 hours, 47 minutes, 1 second |
| 7 | Online | 8 hours, 46 minutes, 50 seconds |

show chassis fabric summary (MX2020 Router with MPC4E)

```
user@host > show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|---|
| 0 | Online | 3 days, 6 hours, 58 minutes, 29 seconds |
| 1 | Online | 3 days, 6 hours, 58 minutes, 18 seconds |
| 2 | Online | 3 days, 6 hours, 58 minutes, 8 seconds |
| 3 | Online | 3 days, 6 hours, 57 minutes, 57 seconds |
| 4 | Online | 3 days, 6 hours, 57 minutes, 46 seconds |
| 5 | Online | 3 days, 6 hours, 57 minutes, 36 seconds |
| 6 | Online | 3 days, 6 hours, 57 minutes, 25 seconds |
| 7 | Online | 3 days, 6 hours, 57 minutes, 14 seconds |

show chassis fabric summary (MX2008)

```
user@host > show chassis fabric summary
```

| Plane | State | Uptime |
|-------|---------|----------------------------------|
| 0 | Offline | |
| 1 | Online | 16 hours, 38 minutes, 34 seconds |
| 2 | Online | 16 hours, 38 minutes, 29 seconds |
| 3 | Online | 16 hours, 38 minutes, 24 seconds |
| 4 | Offline | |
| 5 | Online | 16 hours, 38 minutes, 13 seconds |
| 6 | Online | 16 hours, 38 minutes, 8 seconds |
| 7 | Offline | |

show chassis fabric summary (EX8200 Switch)

```
user@host> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|---------------------------------|
| 0 | Online | 12 days, 50 minutes, 54 seconds |
| 1 | Online | 12 days, 50 minutes, 53 seconds |
| 2 | Online | 12 days, 50 minutes, 53 seconds |
| 3 | Online | 12 days, 50 minutes, 52 seconds |
| 4 | Spare | 12 days, 50 minutes, 49 seconds |
| 5 | Spare | 12 days, 50 minutes, 47 seconds |
| 6 | Spare | 12 days, 50 minutes, 47 seconds |
| 7 | Spare | 12 days, 50 minutes, 46 seconds |
| 8 | Online | 12 days, 50 minutes, 52 seconds |
| 9 | Online | 12 days, 50 minutes, 50 seconds |
| 10 | Online | 12 days, 50 minutes, 50 seconds |
| 11 | Online | 12 days, 50 minutes, 49 seconds |

show chassis fabric summary (EX9253 Switch)

```
user@switch> show chassis fabric summary
```

| Plane | State | Uptime |
|-------|--------|--------------------------------|
| 0 | Online | 21 days, 8 minutes, 41 seconds |
| 1 | Online | 21 days, 8 minutes, 41 seconds |
| 2 | Online | 21 days, 8 minutes, 41 seconds |
| 3 | Online | 21 days, 8 minutes, 41 seconds |
| 4 | Online | 21 days, 8 minutes, 41 seconds |
| 5 | Online | 21 days, 8 minutes, 41 seconds |
| 6 | Online | 21 days, 8 minutes, 41 seconds |
| 7 | Online | 21 days, 8 minutes, 41 seconds |
| 8 | Online | 21 days, 8 minutes, 41 seconds |
| 9 | Online | 21 days, 8 minutes, 41 seconds |
| 10 | Online | 21 days, 8 minutes, 41 seconds |
| 11 | Online | 21 days, 8 minutes, 41 seconds |
| 12 | Online | 21 days, 8 minutes, 41 seconds |
| 13 | Online | 21 days, 8 minutes, 41 seconds |
| 14 | Online | 21 days, 8 minutes, 41 seconds |
| 15 | Online | 21 days, 8 minutes, 41 seconds |
| 16 | Online | 21 days, 8 minutes, 41 seconds |
| 17 | Online | 21 days, 8 minutes, 41 seconds |
| 18 | Online | 21 days, 8 minutes, 41 seconds |
| 19 | Online | 21 days, 8 minutes, 41 seconds |
| 20 | Online | 21 days, 8 minutes, 41 seconds |
| 21 | Online | 21 days, 8 minutes, 41 seconds |

show chassis fabric summary (PTX Series Packet Transport Router)

```
user@host> show chassis fabric summary
```

| FRU | State | Errors |
|------|---------|------------------|
| SIB0 | Online | None |
| SIB1 | Online | Link Errors |
| SIB2 | Online | None |
| SIB3 | Online | Cell drops |
| SIB4 | Offline | |
| SIB5 | Online | None |
| SIB6 | Online | Link, Cell drops |
| SIB7 | Online | None |
| SIB8 | Online | Link, Cell drops |
| FPC0 | Online | None |
| FPC1 | Online | Link Errors |
| FPC2 | Online | None |
| FPC3 | Offline | |
| FPC4 | Online | None |
| FPC5 | Online | None |
| FPC6 | Empty | |
| FPC7 | Empty | |

show chassis fabric summary (PTX10008 Router)

```
user@host> show chassis fabric summary
```

| FRU | State | Errors |
|------|--------|--------|
| SIB0 | Online | None |

| | | |
|------|--------|------|
| SIB1 | Online | None |
| SIB2 | Empty | |
| SIB3 | Empty | |
| SIB4 | Empty | |
| SIB5 | Empty | |
| FPC0 | Online | None |
| FPC1 | Empty | |
| FPC2 | Empty | |
| FPC3 | Empty | |
| FPC4 | Empty | |
| FPC5 | Online | None |
| FPC6 | Online | None |
| FPC7 | Empty | |

show chassis fabric summary (QFX 10008 Switch)

```
user@host> show chassis fabric summary
```

| FRU | State | Errors |
|------|---------|-------------|
| FPC0 | Online | None |
| FPC1 | Online | Link Errors |
| FPC2 | Online | None |
| FPC3 | Offline | |
| FPC4 | Online | None |
| FPC5 | Online | None |
| FPC6 | Empty | |
| FPC7 | Empty | |
| SIB0 | Online | None |
| SIB1 | Online | Link Errors |
| SIB2 | Online | None |
| SIB3 | Online | Cell drops |
| SIB4 | Offline | |
| SIB5 | Online | None |

Sample Output

show chassis fabric summary extended (MX960 Router)

```
user@host> show chassis fabric summary extended
```

| Plane | State | Link Error | Link TF | Destination errors Local / Remote | Uptime |
|-------|--------|------------|---------|--------------------------------------|---|
| 0 | Online | NO | NO | NO/ NO | 7 days, 5 hours, 25 minutes, 20 seconds |
| 1 | Online | NO | NO | NO/ NO | 7 days, 5 hours, 25 minutes, 11 seconds |
| 2 | Online | NO | NO | NO/ NO | 7 days, 5 hours, 25 minutes, 5 seconds |
| 3 | Online | NO | NO | NO/ NO | 7 days, 5 hours, 24 minutes, 59 seconds |
| 4 | Spare | NO | NO | NO/ NO | 7 days, 5 hours, 24 minutes, 52 seconds |
| 5 | Spare | NO | NO | NO/ NO | 7 days, 5 hours, 24 minutes, 45 seconds |

show chassis fabric summary (MX10003 Router)

user@host> show chassis fabric summary

| Plane | State | Uptime |
|-------|--------|---|
| 0 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 1 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 2 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 3 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 4 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 5 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 6 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 7 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 8 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 9 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 10 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 11 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 12 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 13 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 14 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 15 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 16 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 17 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 18 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 19 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 20 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |
| 21 | Online | 1 day, 10 hours, 12 minutes, 52 seconds |

show chassis fabric summary extended (MX10003 Router)

user@host> show chassis fabric summary extended

| Plane | State | Link Error | Link TF | Destination errors Local / Remote | Uptime |
|-------|--------|------------|---------|--------------------------------------|---|
| 0 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 1 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 2 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 3 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 4 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 5 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 6 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 7 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 8 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 9 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 10 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |
| 11 | Online | NO | NO | NO/ NO | 1 day, 10 hours, 14 minutes, 26 seconds |

| | | | | | | |
|----|----------------------|----|----|-----|----|------------------------------|
| 12 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 13 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 14 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 15 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 16 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 17 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 18 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 19 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 20 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |
| 21 | Online 26 seconds | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, |

show chassis fabric topology

| | |
|---|---|
| List of Syntax | Syntax on page 1229 Syntax (TX Matrix Router) on page 1229 Syntax (TX Matrix Plus Router) on page 1229 Syntax (T4000 Core Router) on page 1229 Syntax (PTX Series Packet Transport Routers) on page 1229 Syntax (QTX Series Switches) on page 1229 |
| Syntax | <pre>show chassis fabric topology <lcc number scc> <sib-slot></pre> |
| Syntax (TX Matrix Router) | <pre>show chassis fabric topology <lcc number scc> <sib-slot></pre> |
| Syntax (TX Matrix Plus Router) | <pre>show chassis fabric topology <lcc number sfc number> <sib-slot></pre> |
| Syntax (T4000 Core Router) | <pre>show chassis fabric topology <sib-slot></pre> |
| Syntax (PTX Series Packet Transport Routers) | <pre>show chassis fabric topology</pre> |
| Syntax (QTX Series Switches) | <pre>show chassis fabric topology</pre> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> |
| Description | <p>(TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.</p> <p>(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the connected routers.</p> <p>(T320, T640, T1600, and T4000 routers only) Display the state of the switching fabric topology for the connection between the Switch Interface Board (SIB) and the FPCs.</p> |

(PTX Series Packet Transport Routers and QFX Series switches) Display the input-output link topology.

Options **none**—(TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.

(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the connected routers.

(T320, T640, T1600, and T4000 routers only) Display the state of the switching fabric topology for the connection between the Switch Interface Board (SIB) and the FPCs.

(QFX Series switches) Display the input-output link topology.

lcc number—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the fabric topology state for a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display the fabric topology state for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

scc—(TX Matrix routers only) (Optional) Display the fabric topology state for the TX Matrix router (or switch-card chassis).

sfc number—(TX Matrix Plus routers only) (Optional) Display the fabric topology for the switch-fabric chassis. Replace *number* with 0.

sib-slot—(Optional) Display the fabric topology state for a specified SIB slot. Replace *sib-slot* with a value from 0 through 4. On a TX Matrix Plus router, replace *sib-slot* with a value from 0 through 15.

Required Privilege Level view

Related Documentation • *Layer 2 Wholesale Network Topology Overview*

- List of Sample Output**
- [show chassis fabric topology scc \(TX Matrix Router\) on page 1234](#)
 - [show chassis fabric topology lcc on page 1236](#)
 - [show chassis fabric topology \(TX Matrix Plus Router\) on page 1238](#)
 - [show chassis fabric topology sfc \(TX Matrix Plus Router\) on page 1239](#)
 - [show chassis fabric topology lcc \(TX Matrix Plus Router\) on page 1240](#)
 - [show chassis fabric topology \(T4000 Core Router\) on page 1241](#)
 - [show chassis fabric topology lcc \(TX Matrix Plus Router with 3D SIBs\) on page 1242](#)
 - [show chassis fabric topology sfc \(TX Matrix Plus Router with 3D SIBs\) on page 1244](#)
 - [show chassis fabric topology \(PTX5000 Router\) on page 1249](#)
 - [show chassis fabric topology \(PTX3000 Router\) on page 1252](#)
 - [show chassis fabric topology \(PTX10008 Router\) on page 1259](#)
 - [show chassis fabric topology \(QFX10008 Switch\) on page 1263](#)

Output Fields [Table 74 on page 1231](#) lists the output fields for the **show chassis fabric topology** command. Output fields are listed in the approximate order in which they appear.

Table 74: show chassis fabric topology Output Fields

| Field Name | Field Description |
|------------------|--|
| in-links | Fabric topology for receive side links. |
| out-links | Fabric topology for transmit side links. |
| state | <p>State of the fabric link:</p> <ul style="list-style-type: none"> • RESET—Link between the SIB and the FPC/DPC is powered down on purpose. This is done in all non-dual Packet Forwarding Engine–based boards. • UP—Link between the SIB and the FPC/DCP is up and running. • DOWN—Link between the SIB and the FPC/DCP is powered down. • FAULT—The SIB is in the alarmed state, in which the SIB's plane is not operational for one or more of the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber-optic connector faults. • FPC connector faults. • SIB midplane connector faults. <p>NOTE: The following state descriptions are applicable only to PTX Series Packet Transport Routers.</p> <ul style="list-style-type: none"> • OK—The link between the SIB and the FPC is operational. • Down—The link between the SIB and the FPC is powered down. • Error—The CCL link between the SIB and FPC is not operational for one or more of the following reasons: <ul style="list-style-type: none"> • FPC midplane connector failure. • SIB midplane connector failure. • CCL link CRC error. |

Table 74: show chassis fabric topology Output Fields (continued)

| | |
|---|---|
| Out-Links: and In-Links (TX Matrix Plus router only) | <p>State of the links from the F13 SIB to the LCC or vice-versa. Out-Links indicate Tx links. In-Links indicate an Rx link. The following additional fields are displayed for each SIB:</p> <ul style="list-style-type: none"> • VCSEL Status—Optical (VCSEL channel) link status for the corresponding electrical (HSL2) link. The states include: <ul style="list-style-type: none"> • OK—Optical signal power is good. • Error—Internal error. • LOS—Loss of Signal detected. • High Cur—The Tx Bias-current is higher than threshold on this channel. This is applicable only to Tx Channels. • Low Cur—The Tx Bias-current is lower than threshold on this channel. This is applicable only to Tx Channels. • HSL2 Channel—HSL2 is the electrical link used to connect ASICs to the in-link and out-link. The channel number corresponds to the link and varies based on the ASIC or configuration. |
|---|---|

- **HSL2 Status** —The status of the HSL2 Channel. Includes the following states:
 - **Up**—Channel is up.
 - **Down**—Channel is down.
 - **Reset**—Channel has been reset.
 - **Fault**—Channel has faults.

The following is a representation of display output for links originating from the SIBs (LCC or SFC)

SF_[1|3]_port#_FB_[A-D] (VCSEL#, fiber)

- **SF_[1|3]**—Name of the ASIC, with Fabric F1 or F3 mode.
- **port#**—HSL2 port number on the SF ASIC in the LCC.
- **FB_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a representation of display output for links originating from the SIBs (LCC or SFC)

SF_[1|3]_port#_FB_[A-D] (VCSEL#, fiber)

- **SF_[1|3]**—Name of the ASIC, with Fabric F1 or F3 mode.
- **port#**—HSL2 port number on the SF ASIC in the LCC.
- **FB_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a sample output with description of the fields displayed in the output for Out-Links:

Out-Links:

=====

SF_30_13_FB_A(21,09) -> FPC7_B_SG(3,3,6)_FB_A(18,09) OK 203 Up

Table 74: show chassis fabric topology Output Fields (continued)

- **SF_30_13**—Name of the ASIC, with Fabric F1 or F3 mode. In this case, 3 is the F3 direction and is used in the Tx path and 0 identifies the serial link on the SF chip (in this case, link goes to sf-3 chip number 0). You can also have F1 mode and Rx path instead.
- **FB_A (21, 09)**—Fiber bundle A, with VCSEL unit number 21 within the SIB, and channel number 9 within the unit number.
- **FPC7_B_SG(3,3,6)**—FPC 7.with bottom Packet Forwarding Engine (T for top PFE and B for bottom PFE), SG ASIC, with number 3 and port number 3, with HSL2 link number with the SIB as 6.
- **FB_A(18, 09)**—Fiber Bundle, with VCSEL unit number 18 within the SIB, and VCSEL channel number 9 within the unit number.

The following is a representation of display output for links originating from the FPCs (In-Links)

FPC#_[T|B]_SG(ASIC#, port#, HSL2_bit)_FB_[A-D] (VCSEL#, fiber)

- **FPC#**—FPC number with PFE (0 or 1).
- **T**—Top Packet Forwarding Engine.
- **B**—Bottom Packet Forwarding Engine.
- **SG(ASIC#, port#, HSL2_bit)**—SG ASIC information (ASIC 0-3, port 0-3, HSL2_bit 0-7).
- **FB_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a representation of display output for links originating from the FPCs (In-Links)

FPC#_[T|B]_SG(ASIC#, port#, HSL2_bit)_FB_[A-D] (VCSEL#, fiber)

- **FPC#**—FPC number with PFE (0 or 1).
- **T**—Top Packet Forwarding Engine.
- **B**—Bottom Packet Forwarding Engine.
- **SG(ASIC#, port#, HSL2_bit)**—SG ASIC information (ASIC 0-3, port 0-3, HSL2_bit 0-7).
- **FB_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a sample output with description of the fields displayed in the output for In-Links:

In-Links :

=====

FPC0_T_SG(0,0,0)_FB_D(04,11) -> SF_10_00_FB_D(01,11) OK 0 Up

- **FPC0**—FPC 0.
- **T**—Top Packet Forwarding Engine.
- **SG (0, 0, 0)**—SG ASIC with port number 0 and link 0.
- **FB_D (04,11)**—Fiber Bundle D with VCSEL 4, channel 11.
- **SF_10**—Indicates F1 mode chip number 0 and Rx path.
- **SF_10_00_FB_D(01,11)** —Indicates F1 mode chip number 0 and Rx path with port 0, fiber bundle D, with VCSEL 1, channel 11.

Table 74: show chassis fabric topology Output Fields (continued)

| | | | | |
|--|--|-------|-----------------------------|-------|
| Out-links and In-links (TX Matrix Plus router with 3D SIBs only) | State of the links from the F13 SIB to the SFC/LCC or vice-versa. Out-Links indicate Tx links. In-Links indicate an Rx link. The following additional fields are displayed for each SIB: | | | |
| | <ul style="list-style-type: none"> Description of the fields displayed in the output for In-links and Out-links for SFC: | | | |
| | In-links | State | Out-links | State |
| | CXP0_Evn->F13_SIB0_XF2,04_0 | Up | F13_SIB0_XF2,04_0->CXP0_Evn | Up |

- CXP0_Evn**—CXP optics with type of port bits such as even or odd. In this case, it indicates CXP optics with even port bit number 0.
- F13_SIB0**—Name of the SFC data plane SIB with the SIB number. In this case, it indicates F13 SIB with number 0.
- XF2,04_0**—Name of the ASIC with port and subchannel number. In this case, it Indicates XF2 chip with port number 4 and subchannel number 0.

- Description of the fields displayed in the output for In-links and Out-links for LCC:

| | | | | |
|-------|-----------------------------|-------|-----------------------------|----|
| | In-links | State | Out-links | |
| State | | | | |
| | CXP0_Evn->LCC_SIB0_XF3,10_0 | Up | LCC_SIB0_XF3,10_0->CXP0_Evn | Up |

- CXP0_Evn**—CXP optics with the type of port bits such as even or odd. In this case, it indicates CXP optics with even port bit number 0.
- LCC_SIB0**—LCC SIB number. In this case, it indicates LCC SIB with number 0.
- XF3,10_0**—Name of the ASIC with port and subchannel number. In this case, it Indicates XF3 with port number 10 and subchannel number 0.

Sample Output

show chassis fabric topology scc (TX Matrix Router)

```

user@host> show chassis fabric topology scc
scc-re1:
-----
fchip (mode)
in-links      state  out-links      state
-----
Sib #0 :
-----
SIB0_F0 (F2 ):
LCC0_SIB-L0_F0,03->SIB-S0_F0,00  UP      SIB-S0_F0,00->LCC0_SIB-L0_F1,00  UP
LCC1_SIB-L0_F0,03->SIB-S0_F0,01  UP      SIB-S0_F0,01->LCC1_SIB-L0_F1,08  UP
LCC2_SIB-L0_F0,03->SIB-S0_F0,02  RESET   SIB-S0_F0,02->LCC2_SIB-L0_F1,08  UP
LCC3_SIB-L0_F0,03->SIB-S0_F0,03  RESET   SIB-S0_F0,03->LCC3_SIB-L0_F1,00  UP

```

| | | | |
|---------------------------------|-------|---------------------------------|----|
| LCC0_SIB-L0_F0,02->SIB-S0_F0,04 | UP | SIB-S0_F0,04->LCC0_SIB-L0_F1,01 | UP |
| LCC1_SIB-L0_F0,02->SIB-S0_F0,05 | UP | SIB-S0_F0,05->LCC1_SIB-L0_F1,09 | UP |
| LCC2_SIB-L0_F0,02->SIB-S0_F0,06 | RESET | SIB-S0_F0,06->LCC2_SIB-L0_F1,09 | UP |
| LCC3_SIB-L0_F0,02->SIB-S0_F0,07 | RESET | SIB-S0_F0,07->LCC3_SIB-L0_F1,01 | UP |
| LCC0_SIB-L0_F0,07->SIB-S0_F0,08 | UP | SIB-S0_F0,08->LCC0_SIB-L0_F1,04 | UP |
| LCC1_SIB-L0_F0,07->SIB-S0_F0,09 | UP | SIB-S0_F0,09->LCC1_SIB-L0_F1,12 | UP |
| LCC2_SIB-L0_F0,07->SIB-S0_F0,10 | RESET | SIB-S0_F0,10->LCC2_SIB-L0_F1,12 | UP |
| LCC3_SIB-L0_F0,07->SIB-S0_F0,11 | RESET | SIB-S0_F0,11->LCC3_SIB-L0_F1,04 | UP |
| LCC0_SIB-L0_F0,06->SIB-S0_F0,12 | UP | SIB-S0_F0,12->LCC0_SIB-L0_F1,05 | UP |
| LCC1_SIB-L0_F0,06->SIB-S0_F0,13 | UP | SIB-S0_F0,13->LCC1_SIB-L0_F1,13 | UP |
| LCC2_SIB-L0_F0,06->SIB-S0_F0,14 | RESET | SIB-S0_F0,14->LCC2_SIB-L0_F1,13 | UP |
| LCC3_SIB-L0_F0,06->SIB-S0_F0,15 | RESET | SIB-S0_F0,15->LCC3_SIB-L0_F1,05 | UP |
| SIB0_F1 (F2): | | | |
| LCC0_SIB-L0_F0,11->SIB-S0_F1,00 | UP | SIB-S0_F1,00->LCC0_SIB-L0_F1,08 | UP |
| LCC1_SIB-L0_F0,11->SIB-S0_F1,01 | UP | SIB-S0_F1,01->LCC1_SIB-L0_F1,00 | UP |
| LCC2_SIB-L0_F0,11->SIB-S0_F1,02 | RESET | SIB-S0_F1,02->LCC2_SIB-L0_F1,00 | UP |
| LCC3_SIB-L0_F0,11->SIB-S0_F1,03 | RESET | SIB-S0_F1,03->LCC3_SIB-L0_F1,08 | UP |
| LCC0_SIB-L0_F0,10->SIB-S0_F1,04 | UP | SIB-S0_F1,04->LCC0_SIB-L0_F1,09 | UP |
| LCC1_SIB-L0_F0,10->SIB-S0_F1,05 | UP | SIB-S0_F1,05->LCC1_SIB-L0_F1,01 | UP |
| LCC2_SIB-L0_F0,10->SIB-S0_F1,06 | RESET | SIB-S0_F1,06->LCC2_SIB-L0_F1,01 | UP |
| LCC3_SIB-L0_F0,10->SIB-S0_F1,07 | RESET | SIB-S0_F1,07->LCC3_SIB-L0_F1,09 | UP |
| LCC0_SIB-L0_F0,15->SIB-S0_F1,08 | UP | SIB-S0_F1,08->LCC0_SIB-L0_F1,12 | UP |
| LCC1_SIB-L0_F0,15->SIB-S0_F1,09 | UP | SIB-S0_F1,09->LCC1_SIB-L0_F1,04 | UP |
| LCC2_SIB-L0_F0,15->SIB-S0_F1,10 | RESET | SIB-S0_F1,10->LCC2_SIB-L0_F1,04 | UP |
| LCC3_SIB-L0_F0,15->SIB-S0_F1,11 | RESET | SIB-S0_F1,11->LCC3_SIB-L0_F1,12 | UP |
| LCC0_SIB-L0_F0,14->SIB-S0_F1,12 | UP | SIB-S0_F1,12->LCC0_SIB-L0_F1,13 | UP |
| LCC1_SIB-L0_F0,14->SIB-S0_F1,13 | UP | SIB-S0_F1,13->LCC1_SIB-L0_F1,05 | UP |
| LCC2_SIB-L0_F0,14->SIB-S0_F1,14 | RESET | SIB-S0_F1,14->LCC2_SIB-L0_F1,05 | |
| UP | | | |
| LCC3_SIB-L0_F0,14->SIB-S0_F1,15 | RESET | SIB-S0_F1,15->LCC3_SIB-L0_F1,13 | |
| UP | | | |
| SIB0_F2 (F2): | | | |
| LCC3_SIB-L0_F0,13->SIB-S0_F2,00 | RESET | SIB-S0_F2,00->LCC3_SIB-L0_F1,14 | UP |
| LCC2_SIB-L0_F0,13->SIB-S0_F2,01 | RESET | SIB-S0_F2,01->LCC2_SIB-L0_F1,06 | |
| UP | | | |
| LCC1_SIB-L0_F0,13->SIB-S0_F2,02 | UP | SIB-S0_F2,02->LCC1_SIB-L0_F1,06 | UP |
| LCC0_SIB-L0_F0,13->SIB-S0_F2,03 | UP | SIB-S0_F2,03->LCC0_SIB-L0_F1,14 | UP |
| LCC3_SIB-L0_F0,12->SIB-S0_F2,04 | RESET | SIB-S0_F2,04->LCC3_SIB-L0_F1,15 | |
| UP | | | |
| LCC2_SIB-L0_F0,12->SIB-S0_F2,05 | RESET | SIB-S0_F2,05->LCC2_SIB-L0_F1,07 | UP |
| LCC1_SIB-L0_F0,12->SIB-S0_F2,06 | UP | SIB-S0_F2,06->LCC1_SIB-L0_F1,07 | UP |
| LCC0_SIB-L0_F0,12->SIB-S0_F2,07 | UP | SIB-S0_F2,07->LCC0_SIB-L0_F1,15 | UP |
| LCC3_SIB-L0_F0,09->SIB-S0_F2,08 | RESET | SIB-S0_F2,08->LCC3_SIB-L0_F1,10 | |
| UP | | | |
| LCC2_SIB-L0_F0,09->SIB-S0_F2,09 | RESET | SIB-S0_F2,09->LCC2_SIB-L0_F1,02 | |
| UP | | | |
| LCC1_SIB-L0_F0,09->SIB-S0_F2,10 | UP | SIB-S0_F2,10->LCC1_SIB-L0_F1,02 | UP |
| LCC0_SIB-L0_F0,09->SIB-S0_F2,11 | UP | SIB-S0_F2,11->LCC0_SIB-L0_F1,10 | UP |
| LCC3_SIB-L0_F0,08->SIB-S0_F2,12 | RESET | SIB-S0_F2,12->LCC3_SIB-L0_F1,11 | |
| UP | | | |
| LCC2_SIB-L0_F0,08->SIB-S0_F2,13 | RESET | SIB-S0_F2,13->LCC2_SIB-L0_F1,03 | |
| UP | | | |
| LCC1_SIB-L0_F0,08->SIB-S0_F2,14 | UP | SIB-S0_F2,14->LCC1_SIB-L0_F1,03 | UP |
| LCC0_SIB-L0_F0,08->SIB-S0_F2,15 | UP | SIB-S0_F2,15->LCC0_SIB-L0_F1,11 | UP |
| SIB0_F3 (F2): | | | |
| LCC3_SIB-L0_F0,05->SIB-S0_F3,00 | RESET | SIB-S0_F3,00->LCC3_SIB-L0_F1,06 | |
| UP | | | |
| LCC2_SIB-L0_F0,05->SIB-S0_F3,01 | RESET | SIB-S0_F3,01->LCC2_SIB-L0_F1,14 | |
| UP | | | |
| LCC1_SIB-L0_F0,05->SIB-S0_F3,02 | UP | SIB-S0_F3,02->LCC1_SIB-L0_F1,14 | UP |

```

LCC0_SIB-L0_F0,05->SIB-S0_F3,03 UP
LCC3_SIB-L0_F0,04->SIB-S0_F3,04 RESET
UP
LCC2_SIB-L0_F0,04->SIB-S0_F3,05 RESET
UP
LCC1_SIB-L0_F0,04->SIB-S0_F3,06 UP
LCC0_SIB-L0_F0,04->SIB-S0_F3,07 UP
LCC3_SIB-L0_F0,01->SIB-S0_F3,08 RESET
UP
LCC2_SIB-L0_F0,01->SIB-S0_F3,09 RESET
UP
LCC1_SIB-L0_F0,01->SIB-S0_F3,10 UP
LCC0_SIB-L0_F0,01->SIB-S0_F3,11 UP
LCC3_SIB-L0_F0,00->SIB-S0_F3,12 RESET
UP
LCC2_SIB-L0_F0,00->SIB-S0_F3,13 RESET
UP
LCC1_SIB-L0_F0,00->SIB-S0_F3,14 UP
LCC0_SIB-L0_F0,00->SIB-S0_F3,15 UP
Sib #1 :
-----
SIB1_F0 (F2 ):
LCC0_SIB-L1_F0,03->SIB-S1_F0,00 RESET
LCC1_SIB-L1_F0,03->SIB-S1_F0,01 RESET
LCC2_SIB-L1_F0,03->SIB-S1_F0,02 RESET
LCC3_SIB-L1_F0,03->SIB-S1_F0,03 RESET
LCC0_SIB-L1_F0,02->SIB-S1_F0,04 RESET
LCC1_SIB-L1_F0,02->SIB-S1_F0,05 RESET
LCC2_SIB-L1_F0,02->SIB-S1_F0,06 RESET
LCC3_SIB-L1_F0,02->SIB-S1_F0,07 RESET
LCC0_SIB-L1_F0,07->SIB-S1_F0,08 RESET
LCC1_SIB-L1_F0,07->SIB-S1_F0,09 RESET
LCC2_SIB-L1_F0,07->SIB-S1_F0,10 RESET
LCC3_SIB-L1_F0,07->SIB-S1_F0,11 RESET
LCC0_SIB-L1_F0,06->SIB-S1_F0,12 RESET
LCC1_SIB-L1_F0,06->SIB-S1_F0,13 RESET
LCC2_SIB-L1_F0,06->SIB-S1_F0,14 RESET
LCC3_SIB-L1_F0,06->SIB-S1_F0,15 RESET
SIB1_F1 (F2 ):
LCC0_SIB-L1_F0,11->SIB-S1_F1,00 RESET
LCC1_SIB-L1_F0,11->SIB-S1_F1,01 RESET
LCC2_SIB-L1_F0,11->SIB-S1_F1,02 RESET
LCC3_SIB-L1_F0,11->SIB-S1_F1,03 RESET
LCC0_SIB-L1_F0,10->SIB-S1_F1,04 RESET
LCC1_SIB-L1_F0,10->SIB-S1_F1,05 RESET
LCC2_SIB-L1_F0,10->SIB-S1_F1,06 RESET
LCC3_SIB-L1_F0,10->SIB-S1_F1,07 RESET
LCC0_SIB-L1_F0,15->SIB-S1_F1,08 RESET
LCC1_SIB-L1_F0,15->SIB-S1_F1,09 RESET
LCC2_SIB-L1_F0,15->SIB-S1_F1,10 RESET
LCC3_SIB-L1_F0,15->SIB-S1_F1,11 RESET
LCC0_SIB-L1_F0,14->SIB-S1_F1,12 RESET
LCC1_SIB-L1_F0,14->SIB-S1_F1,13 RESET
LCC2_SIB-L1_F0,14->SIB-S1_F1,14 RESET
SIB-S0_F3,03->LCC0_SIB-L0_F1,06 UP
SIB-S0_F3,04->LCC3_SIB-L0_F1,07
SIB-S0_F3,05->LCC2_SIB-L0_F1,15
SIB-S0_F3,06->LCC1_SIB-L0_F1,15 UP
SIB-S0_F3,07->LCC0_SIB-L0_F1,07 UP
SIB-S0_F3,08->LCC3_SIB-L0_F1,02
SIB-S0_F3,09->LCC2_SIB-L0_F1,10
SIB-S0_F3,10->LCC1_SIB-L0_F1,10 UP
SIB-S0_F3,11->LCC0_SIB-L0_F1,02 UP
SIB-S0_F3,12->LCC3_SIB-L0_F1,03
SIB-S0_F3,13->LCC2_SIB-L0_F1,11
SIB-S0_F3,14->LCC1_SIB-L0_F1,11 UP
SIB-S0_F3,15->LCC0_SIB-L0_F1,03 UP
SIB-S1_F0,00->LCC0_SIB-L1_F1,00 UP
SIB-S1_F0,01->LCC1_SIB-L1_F1,08 UP
SIB-S1_F0,02->LCC2_SIB-L1_F1,08 UP
SIB-S1_F0,03->LCC3_SIB-L1_F1,00 UP
SIB-S1_F0,04->LCC0_SIB-L1_F1,01 UP
SIB-S1_F0,05->LCC1_SIB-L1_F1,09 UP
SIB-S1_F0,06->LCC2_SIB-L1_F1,09 UP
SIB-S1_F0,07->LCC3_SIB-L1_F1,01 UP
SIB-S1_F0,08->LCC0_SIB-L1_F1,04 UP
SIB-S1_F0,09->LCC1_SIB-L1_F1,12 UP
SIB-S1_F0,10->LCC2_SIB-L1_F1,12 UP
SIB-S1_F0,11->LCC3_SIB-L1_F1,04 UP
SIB-S1_F0,12->LCC0_SIB-L1_F1,05 UP
SIB-S1_F0,13->LCC1_SIB-L1_F1,13 UP
SIB-S1_F0,14->LCC2_SIB-L1_F1,13 UP
SIB-S1_F0,15->LCC3_SIB-L1_F1,05 UP
SIB-S1_F1,00->LCC0_SIB-L1_F1,08 UP
SIB-S1_F1,01->LCC1_SIB-L1_F1,00 UP
SIB-S1_F1,02->LCC2_SIB-L1_F1,00 UP
SIB-S1_F1,03->LCC3_SIB-L1_F1,08 UP
SIB-S1_F1,04->LCC0_SIB-L1_F1,09 UP
SIB-S1_F1,05->LCC1_SIB-L1_F1,01 UP
SIB-S1_F1,06->LCC2_SIB-L1_F1,01 UP
SIB-S1_F1,07->LCC3_SIB-L1_F1,09 UP
SIB-S1_F1,08->LCC0_SIB-L1_F1,12 UP
SIB-S1_F1,09->LCC1_SIB-L1_F1,04 UP
SIB-S1_F1,10->LCC2_SIB-L1_F1,04 UP
-S1_F1,11->LCC3_SIB-L1_F1,12,05 UP
SIB-S1_F1,12->LCC0_SIB-L1_F1,13 UP
SIB-S1_F1,13->LCC1_SIB-L1_F1,05 UP
SIB-S1_F1,14->LCC2_SIB-L1_F1,05 UP

```

show chassis fabric topology lcc

```
user@host> show chassis fabric topology lcc 0
```



```
lcc0-re0:
```

```
-----
      fchip (mode)
in-links          state      out-links          state
-----
```

```
Sib #2 :
```

```
-----
SIB2_F0 (F1 ):
```

| | | | |
|----------------------|------|----------------------------|------|
| FPC0_T->SIB-L2_F0,00 | DOWN | SIB-L2_F0,00->SIB-S2_F3,15 | DOWN |
| FPC0_B->SIB-L2_F0,01 | UP | SIB-L2_F0,01->SIB-S2_F3,11 | DOWN |
| FPC1_T->SIB-L2_F0,02 | DOWN | SIB-L2_F0,02->SIB-S2_F0,04 | DOWN |
| FPC1_B->SIB-L2_F0,03 | DOWN | SIB-L2_F0,03->SIB-S2_F0,00 | DOWN |
| FPC2_T->SIB-L2_F0,04 | DOWN | SIB-L2_F0,04->SIB-S2_F3,07 | DOWN |
| FPC2_B->SIB-L2_F0,05 | DOWN | SIB-L2_F0,05->SIB-S2_F3,03 | DOWN |
| FPC3_T->SIB-L2_F0,06 | DOWN | SIB-L2_F0,06->SIB-S2_F0,12 | DOWN |
| FPC3_B->SIB-L2_F0,07 | DOWN | SIB-L2_F0,07->SIB-S2_F0,08 | DOWN |
| FPC4_T->SIB-L2_F0,08 | DOWN | SIB-L2_F0,08->SIB-S2_F2,15 | DOWN |
| FPC4_B->SIB-L2_F0,09 | DOWN | SIB-L2_F0,09->SIB-S2_F2,11 | DOWN |
| FPC5_T->SIB-L2_F0,10 | DOWN | SIB-L2_F0,10->SIB-S2_F1,04 | DOWN |
| FPC5_B->SIB-L2_F0,11 | DOWN | SIB-L2_F0,11->SIB-S2_F1,00 | DOWN |
| FPC6_T->SIB-L2_F0,12 | DOWN | SIB-L2_F0,12->SIB-S2_F2,07 | DOWN |
| FPC6_B->SIB-L2_F0,13 | UP | SIB-L2_F0,13->SIB-S2_F2,03 | DOWN |
| FPC7_T->SIB-L2_F0,14 | DOWN | SIB-L2_F0,14->SIB-S2_F1,12 | DOWN |
| FPC7_B->SIB-L2_F0,15 | DOWN | SIB-L2_F0,15->SIB-S2_F1,08 | DOWN |

```
SIB2_F1 (F3 ):
```

| | | | |
|----------------------------|----|----------------------|------|
| SIB-S2_F0,00->SIB-L2_F1,00 | UP | SIB-L2_F1,00->FPC7_B | DOWN |
| SIB-S2_F0,04->SIB-L2_F1,01 | UP | SIB-L2_F1,01->FPC7_T | DOWN |
| SIB-S2_F3,11->SIB-L2_F1,02 | UP | SIB-L2_F1,02->FPC6_B | DOWN |
| SIB-S2_F3,15->SIB-L2_F1,03 | UP | SIB-L2_F1,03->FPC6_T | DOWN |
| SIB-S2_F0,08->SIB-L2_F1,04 | UP | SIB-L2_F1,04->FPC5_B | DOWN |
| SIB-S2_F0,12->SIB-L2_F1,05 | UP | SIB-L2_F1,05->FPC5_T | DOWN |
| SIB-S2_F3,03->SIB-L2_F1,06 | UP | SIB-L2_F1,06->FPC4_B | DOWN |
| SIB-S2_F3,07->SIB-L2_F1,07 | UP | SIB-L2_F1,07->FPC4_T | DOWN |
| SIB-S2_F1,00->SIB-L2_F1,08 | UP | SIB-L2_F1,08->FPC3_B | DOWN |
| SIB-S2_F1,04->SIB-L2_F1,09 | UP | SIB-L2_F1,09->FPC3_T | DOWN |
| SIB-S2_F2,11->SIB-L2_F1,10 | UP | SIB-L2_F1,10->FPC2_B | DOWN |
| SIB-S2_F2,15->SIB-L2_F1,11 | UP | SIB-L2_F1,11->FPC2_T | DOWN |
| SIB-S2_F1,08->SIB-L2_F1,12 | UP | SIB-L2_F1,12->FPC1_B | DOWN |
| SIB-S2_F1,12->SIB-L2_F1,13 | UP | SIB-L2_F1,13->FPC1_T | DOWN |
| SIB-S2_F2,03->SIB-L2_F1,14 | UP | SIB-L2_F1,14->FPC0_B | DOWN |
| SIB-S2_F2,07->SIB-L2_F1,15 | UP | SIB-L2_F1,15->FPC0_T | DOWN |

```
Sib #4 :
```

```
-----
SIB4_F0 (F1 ):
```

| | | | |
|----------------------|-------|----------------------------|----|
| FPC0_T->SIB-L4_F0,00 | RESET | SIB-L4_F0,00->SIB-S4_F3,15 | UP |
| FPC0_B->SIB-L4_F0,01 | UP | SIB-L4_F0,01->SIB-S4_F3,11 | UP |
| FPC1_T->SIB-L4_F0,02 | RESET | SIB-L4_F0,02->SIB-S4_F0,04 | UP |
| FPC1_B->SIB-L4_F0,03 | RESET | SIB-L4_F0,03->SIB-S4_F0,00 | UP |
| FPC2_T->SIB-L4_F0,04 | RESET | SIB-L4_F0,04->SIB-S4_F3,07 | UP |
| FPC2_B->SIB-L4_F0,05 | RESET | SIB-L4_F0,05->SIB-S4_F3,03 | UP |
| FPC3_T->SIB-L4_F0,06 | RESET | SIB-L4_F0,06->SIB-S4_F0,12 | UP |
| FPC3_B->SIB-L4_F0,07 | RESET | SIB-L4_F0,07->SIB-S4_F0,08 | UP |
| FPC4_T->SIB-L4_F0,08 | RESET | SIB-L4_F0,08->SIB-S4_F2,15 | UP |
| FPC4_B->SIB-L4_F0,09 | RESET | SIB-L4_F0,09->SIB-S4_F2,11 | UP |
| FPC5_T->SIB-L4_F0,10 | RESET | SIB-L4_F0,10->SIB-S4_F1,04 | UP |
| FPC5_B->SIB-L4_F0,11 | RESET | SIB-L4_F0,11->SIB-S4_F1,00 | UP |
| FPC6_T->SIB-L4_F0,12 | RESET | SIB-L4_F0,12->SIB-S4_F2,07 | UP |
| FPC6_B->SIB-L4_F0,13 | UP | SIB-L4_F0,13->SIB-S4_F2,03 | UP |
| FPC7_T->SIB-L4_F0,14 | RESET | SIB-L4_F0,14->SIB-S4_F1,12 | UP |
| FPC7_B->SIB-L4_F0,15 | RESET | SIB-L4_F0,15->SIB-S4_F1,08 | UP |

SIB4_F1 (F3):

| | |
|-------------------------------|-------------------------|
| SIB-S4_F0,00->SIB-L4_F1,00 UP | SIB-L4_F1,00->FPC7_B UP |
| SIB-S4_F0,04->SIB-L4_F1,01 UP | SIB-L4_F1,01->FPC7_T UP |
| SIB-S4_F3,11->SIB-L4_F1,02 UP | SIB-L4_F1,02->FPC6_B UP |
| SIB-S4_F3,15->SIB-L4_F1,03 UP | SIB-L4_F1,03->FPC6_T UP |
| SIB-S4_F0,08->SIB-L4_F1,04 UP | SIB-L4_F1,04->FPC5_B UP |
| SIB-S4_F0,12->SIB-L4_F1,05 UP | SIB-L4_F1,05->FPC5_T UP |
| SIB-S4_F3,03->SIB-L4_F1,06 UP | SIB-L4_F1,06->FPC4_B UP |
| SIB-S4_F3,07->SIB-L4_F1,07 UP | SIB-L4_F1,07->FPC4_T UP |
| SIB-S4_F1,00->SIB-L4_F1,08 UP | SIB-L4_F1,08->FPC3_B UP |
| SIB-S4_F1,04->SIB-L4_F1,09 UP | SIB-L4_F1,09->FPC3_T UP |
| SIB-S4_F2,11->SIB-L4_F1,10 UP | SIB-L4_F1,10->FPC2_B UP |
| SIB-S4_F2,15->SIB-L4_F1,11 UP | SIB-L4_F1,11->FPC2_T UP |
| SIB-S4_F1,08->SIB-L4_F1,12 UP | SIB-L4_F1,12->FPC1_B UP |
| SIB-S4_F1,12->SIB-L4_F1,13 UP | SIB-L4_F1,13->FPC1_T UP |
| SIB-S4_F2,03->SIB-L4_F1,14 UP | SIB-L4_F1,14->FPC0_B UP |
| SIB-S4_F2,07->SIB-L4_F1,15 UP | SIB-L4_F1,15->FPC0_T UP |

show chassis fabric topology (TX Matrix Plus Router)

user@host> show chassis fabric topology

sfc0-re0:

F13_SIB0

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Out-Links:

=====

| SFC0_F13_SIB_00 | -> LCC00_ST_SIB_L00 | VCSEL Status | HSL2 Channel | HSL2 Status |
|----------------------|---------------------------------|-----------------|-----------------|----------------|
| ===== | | | | |
| SF_30_00_FB_D(04,11) | -> FPC0_T_SG(0,0,0)_FB_D(01,11) | OK | 112 | Up |
| SF_30_00_FB_D(04,10) | -> FPC0_T_SG(0,0,1)_FB_D(01,10) | OK | 112 | Up |
| SF_30_00_FB_D(04,09) | -> FPC0_T_SG(0,0,2)_FB_D(01,09) | OK | 112 | Up |
| SF_30_00_FB_D(04,08) | -> FPC0_T_SG(0,0,3)_FB_D(01,08) | OK | 112 | Up |
| SF_30_00_FB_D(04,07) | -> FPC0_T_SG(0,0,4)_FB_D(01,07) | OK | 112 | Up |
| SF_30_00_FB_D(04,06) | -> FPC0_T_SG(0,0,5)_FB_D(01,06) | OK | 112 | Up |
| SF_30_00_FB_D(04,05) | -> FPC0_T_SG(0,0,6)_FB_D(01,05) | OK | 112 | Up |
| SF_30_00_FB_D(04,04) | -> FPC0_T_SG(0,0,7)_FB_D(01,04) | OK | 112 | Up |
| SF_30_01_FB_B(16,11) | -> FPC4_T_SG(2,0,0)_FB_B(13,11) | OK | 119 | Up |
| SF_30_01_FB_B(16,10) | -> FPC4_T_SG(2,0,1)_FB_B(13,10) | OK | 119 | Up |
| SF_30_01_FB_B(16,09) | -> FPC4_T_SG(2,0,2)_FB_B(13,09) | OK | 119 | Up |
| SF_30_01_FB_B(16,08) | -> FPC4_T_SG(2,0,3)_FB_B(13,08) | OK | 119 | Up |
| SF_30_01_FB_B(16,07) | -> FPC4_T_SG(2,0,4)_FB_B(13,07) | OK | 119 | Up |
| SF_30_01_FB_B(16,06) | -> FPC4_T_SG(2,0,5)_FB_B(13,06) | OK | 119 | Up |
| SF_30_01_FB_B(16,05) | -> FPC4_T_SG(2,0,6)_FB_B(13,05) | OK | 119 | Up |
| SF_30_01_FB_B(16,04) | -> FPC4_T_SG(2,0,7)_FB_B(13,04) | OK | 119 | Up |
| SF_30_02_FB_D(05,08) | -> FPC1_T_SG(0,2,0)_FB_D(02,08) | OK | 126 | Up |
| SF_30_02_FB_D(05,07) | -> FPC1_T_SG(0,2,1)_FB_D(02,07) | OK | 126 | Up |
| SF_30_02_FB_D(05,06) | -> FPC1_T_SG(0,2,2)_FB_D(02,06) | OK | 126 | Up |
| SF_30_02_FB_D(05,05) | -> FPC1_T_SG(0,2,3)_FB_D(02,05) | OK | 126 | Up |
| SF_30_02_FB_D(05,03) | -> FPC1_T_SG(0,2,4)_FB_D(02,03) | OK | 126 | Up |
| SF_30_02_FB_D(05,02) | -> FPC1_T_SG(0,2,5)_FB_D(02,02) | OK | 126 | Up |
| SF_30_02_FB_D(05,01) | -> FPC1_T_SG(0,2,6)_FB_D(02,01) | OK | 126 | Up |
| SF_30_02_FB_D(05,00) | -> FPC1_T_SG(0,2,7)_FB_D(02,00) | OK | 126 | Up |
| SF_30_03_FB_B(17,08) | -> FPC5_T_SG(2,2,0)_FB_B(14,08) | OK | 133 | Up |
| SF_30_03_FB_B(17,07) | -> FPC5_T_SG(2,2,1)_FB_B(14,07) | OK | 133 | Up |
| SF_30_03_FB_B(17,06) | -> FPC5_T_SG(2,2,2)_FB_B(14,06) | OK | 133 | Up |

```

SF_30_03_FB_B(17,05) -> FPC5_T_SG(2,2,3)_FB_B(14,05)    OK      133    Up
SF_30_03_FB_B(17,03) -> FPC5_T_SG(2,2,4)_FB_B(14,03)    OK      133    Up
SF_30_03_FB_B(17,02) -> FPC5_T_SG(2,2,5)_FB_B(14,02)    OK      133    Up
SF_30_03_FB_B(17,01) -> FPC5_T_SG(2,2,6)_FB_B(14,01)    OK      133    Up
SF_30_03_FB_B(17,00) -> FPC5_T_SG(2,2,7)_FB_B(14,00)    OK      133    Up
SF_30_04_FB_C(10,11) -> FPC2_T_SG(1,0,0)_FB_C(07,11)    OK      140    Up
SF_30_04_FB_C(10,10) -> FPC2_T_SG(1,0,1)_FB_C(07,10)    OK      140    Up
SF_30_04_FB_C(10,09) -> FPC2_T_SG(1,0,2)_FB_C(07,09)    OK      140    Up
SF_30_04_FB_C(10,08) -> FPC2_T_SG(1,0,3)_FB_C(07,08)    OK      140    Up
SF_30_04_FB_C(10,07) -> FPC2_T_SG(1,0,4)_FB_C(07,07)    OK      140    Up
SF_30_04_FB_C(10,06) -> FPC2_T_SG(1,0,5)_FB_C(07,06)    OK      140    Up
SF_30_04_FB_C(10,05) -> FPC2_T_SG(1,0,6)_FB_C(07,05)    OK      140    Up
SF_30_04_FB_C(10,04) -> FPC2_T_SG(1,0,7)_FB_C(07,04)    OK      140    Up
SF_30_05_FB_A(22,11) -> FPC6_T_SG(3,0,0)_FB_A(19,11)    OK      147    Up
SF_30_05_FB_A(22,10) -> FPC6_T_SG(3,0,1)_FB_A(19,10)    OK      147    Up
SF_30_05_FB_A(22,09) -> FPC6_T_SG(3,0,2)_FB_A(19,09)    OK      147    Up
SF_30_05_FB_A(22,08) -> FPC6_T_SG(3,0,3)_FB_A(19,08)    OK      147    Up
SF_30_05_FB_A(22,07) -> FPC6_T_SG(3,0,4)_FB_A(19,07)    OK      147    Up
SF_30_05_FB_A(22,06) -> FPC6_T_SG(3,0,5)_FB_A(19,06)    OK      147    Up
SF_30_05_FB_A(22,05) -> FPC6_T_SG(3,0,6)_FB_A(19,05)    OK      147    Up
SF_30_05_FB_A(22,04) -> FPC6_T_SG(3,0,7)_FB_A(19,04)    OK      147    Up
SF_30_06_FB_C(11,08) -> FPC3_T_SG(1,2,0)_FB_C(08,08)    OK      154    Up
SF_30_06_FB_C(11,07) -> FPC3_T_SG(1,2,1)_FB_C(08,07)    OK      154    Up
SF_30_06_FB_C(11,06) -> FPC3_T_SG(1,2,2)_FB_C(08,06)    OK      154    Up
SF_30_06_FB_C(11,05) -> FPC3_T_SG(1,2,3)_FB_C(08,05)    OK      154    Up
SF_30_06_FB_C(11,03) -> FPC3_T_SG(1,2,4)_FB_C(08,03)    OK      154    Up
SF_30_06_FB_C(11,02) -> FPC3_T_SG(1,2,5)_FB_C(08,02)    OK      154    Up
SF_30_06_FB_C(11,01) -> FPC3_T_SG(1,2,6)_FB_C(08,01)    OK      154    Up
SF_30_06_FB_C(11,00) -> FPC3_T_SG(1,2,7)_FB_C(08,00)    OK      154    Up
...

```

show chassis fabric topology sfc (TX Matrix Plus Router)

```
user@host> show chassis fabric topology sfc 0
```

```
sfc0-re0:
```

```
F13_SIB0
```

```
=====
```

```
Out-Links:
```

```
=====
```

| SFC0_F13_SIB_00 | -> LCC00_ST_SIB_L00 | VCSEL Status | HSL2 Channel | HSL2 Status |
|----------------------|---------------------------------|-----------------|-----------------|----------------|
| ===== | | | | |
| SF_30_00_FB_D(04,11) | -> FPC0_T_SG(0,0,0)_FB_D(01,11) | OK | 112 | Up |
| SF_30_00_FB_D(04,10) | -> FPC0_T_SG(0,0,1)_FB_D(01,10) | OK | 112 | Up |
| SF_30_00_FB_D(04,09) | -> FPC0_T_SG(0,0,2)_FB_D(01,09) | OK | 112 | Up |
| SF_30_00_FB_D(04,08) | -> FPC0_T_SG(0,0,3)_FB_D(01,08) | OK | 112 | Up |
| SF_30_00_FB_D(04,07) | -> FPC0_T_SG(0,0,4)_FB_D(01,07) | OK | 112 | Up |
| SF_30_00_FB_D(04,06) | -> FPC0_T_SG(0,0,5)_FB_D(01,06) | OK | 112 | Up |
| SF_30_00_FB_D(04,05) | -> FPC0_T_SG(0,0,6)_FB_D(01,05) | OK | 112 | Up |
| SF_30_00_FB_D(04,04) | -> FPC0_T_SG(0,0,7)_FB_D(01,04) | OK | 112 | Up |
| SF_30_01_FB_B(16,11) | -> FPC4_T_SG(2,0,0)_FB_B(13,11) | OK | 119 | Up |
| SF_30_01_FB_B(16,10) | -> FPC4_T_SG(2,0,1)_FB_B(13,10) | OK | 119 | Up |
| SF_30_01_FB_B(16,09) | -> FPC4_T_SG(2,0,2)_FB_B(13,09) | OK | 119 | Up |
| SF_30_01_FB_B(16,08) | -> FPC4_T_SG(2,0,3)_FB_B(13,08) | OK | 119 | Up |
| SF_30_01_FB_B(16,07) | -> FPC4_T_SG(2,0,4)_FB_B(13,07) | OK | 119 | Up |
| SF_30_01_FB_B(16,06) | -> FPC4_T_SG(2,0,5)_FB_B(13,06) | OK | 119 | Up |

```

SF_30_01_FB_B(16,05) -> FPC4_T_SG(2,0,6)_FB_B(13,05)    OK      119    Up
SF_30_01_FB_B(16,04) -> FPC4_T_SG(2,0,7)_FB_B(13,04)    OK      119    Up
SF_30_02_FB_D(05,08) -> FPC1_T_SG(0,2,0)_FB_D(02,08)    OK      126    Up
SF_30_02_FB_D(05,07) -> FPC1_T_SG(0,2,1)_FB_D(02,07)    OK      126    Up
SF_30_02_FB_D(05,06) -> FPC1_T_SG(0,2,2)_FB_D(02,06)    OK      126    Up
SF_30_02_FB_D(05,05) -> FPC1_T_SG(0,2,3)_FB_D(02,05)    OK      126    Up
SF_30_02_FB_D(05,03) -> FPC1_T_SG(0,2,4)_FB_D(02,03)    OK      126    Up
SF_30_02_FB_D(05,02) -> FPC1_T_SG(0,2,5)_FB_D(02,02)    OK      126    Up
SF_30_02_FB_D(05,01) -> FPC1_T_SG(0,2,6)_FB_D(02,01)    OK      126    Up
SF_30_02_FB_D(05,00) -> FPC1_T_SG(0,2,7)_FB_D(02,00)    OK      126    Up
SF_30_03_FB_B(17,08) -> FPC5_T_SG(2,2,0)_FB_B(14,08)    OK      133    Up
SF_30_03_FB_B(17,07) -> FPC5_T_SG(2,2,1)_FB_B(14,07)    OK      133    Up
SF_30_03_FB_B(17,06) -> FPC5_T_SG(2,2,2)_FB_B(14,06)    OK      133    Up
SF_30_03_FB_B(17,05) -> FPC5_T_SG(2,2,3)_FB_B(14,05)    OK      133    Up
SF_30_03_FB_B(17,03) -> FPC5_T_SG(2,2,4)_FB_B(14,03)    OK      133    Up
SF_30_03_FB_B(17,02) -> FPC5_T_SG(2,2,5)_FB_B(14,02)    OK      133    Up
SF_30_03_FB_B(17,01) -> FPC5_T_SG(2,2,6)_FB_B(14,01)    OK      133    Up
SF_30_03_FB_B(17,00) -> FPC5_T_SG(2,2,7)_FB_B(14,00)    OK      133    Up
SF_30_04_FB_C(10,11) -> FPC2_T_SG(1,0,0)_FB_C(07,11)    OK      140    Up
SF_30_04_FB_C(10,10) -> FPC2_T_SG(1,0,1)_FB_C(07,10)    OK      140    Up
SF_30_04_FB_C(10,09) -> FPC2_T_SG(1,0,2)_FB_C(07,09)    OK      140    Up
SF_30_04_FB_C(10,08) -> FPC2_T_SG(1,0,3)_FB_C(07,08)    OK      140    Up
SF_30_04_FB_C(10,07) -> FPC2_T_SG(1,0,4)_FB_C(07,07)    OK      140    Up
SF_30_04_FB_C(10,06) -> FPC2_T_SG(1,0,5)_FB_C(07,06)    OK      140    Up
SF_30_04_FB_C(10,05) -> FPC2_T_SG(1,0,6)_FB_C(07,05)    OK      140    Up
SF_30_04_FB_C(10,04) -> FPC2_T_SG(1,0,7)_FB_C(07,04)    OK      140    Up
SF_30_05_FB_A(22,11) -> FPC6_T_SG(3,0,0)_FB_A(19,11)    OK      147    Up
SF_30_05_FB_A(22,10) -> FPC6_T_SG(3,0,1)_FB_A(19,10)    OK      147    Up
SF_30_05_FB_A(22,09) -> FPC6_T_SG(3,0,2)_FB_A(19,09)    OK      147    Up
SF_30_05_FB_A(22,08) -> FPC6_T_SG(3,0,3)_FB_A(19,08)    OK      147    Up
SF_30_05_FB_A(22,07) -> FPC6_T_SG(3,0,4)_FB_A(19,07)    OK      147    Up
SF_30_05_FB_A(22,06) -> FPC6_T_SG(3,0,5)_FB_A(19,06)    OK      147    Up
SF_30_05_FB_A(22,05) -> FPC6_T_SG(3,0,6)_FB_A(19,05)    OK      147    Up
SF_30_05_FB_A(22,04) -> FPC6_T_SG(3,0,7)_FB_A(19,04)    OK      147    Up
SF_30_06_FB_C(11,08) -> FPC3_T_SG(1,2,0)_FB_C(08,08)    OK      154    Up
SF_30_06_FB_C(11,07) -> FPC3_T_SG(1,2,1)_FB_C(08,07)    OK      154    Up
SF_30_06_FB_C(11,06) -> FPC3_T_SG(1,2,2)_FB_C(08,06)    OK      154    Up
SF_30_06_FB_C(11,05) -> FPC3_T_SG(1,2,3)_FB_C(08,05)    OK      154    Up
SF_30_06_FB_C(11,03) -> FPC3_T_SG(1,2,4)_FB_C(08,03)    OK      154    Up
SF_30_06_FB_C(11,02) -> FPC3_T_SG(1,2,5)_FB_C(08,02)    OK      154    Up
SF_30_06_FB_C(11,01) -> FPC3_T_SG(1,2,6)_FB_C(08,01)    OK      154    Up
SF_30_06_FB_C(11,00) -> FPC3_T_SG(1,2,7)_FB_C(08,00)    OK      154    Up
...

```

show chassis fabric topology lcc (TX Matrix Plus Router)

```
user@host> show chassis fabric topology lcc 0
```

```
lcc0-re0:
```

```
SIB0
```

```
=====
```

```
Out-Links:
```

```
=====
```

| LCC00_ST_SIB_L00 | -> SFC0_F13_SIB_00 | VCSEL Status | HSL2 Channel | HSL2 Status |
|------------------------------|-------------------------|-----------------|-----------------|----------------|
| ===== | | | | |
| FPC0_T_SG(0,0,0)_FB_D(04,11) | -> SF_10_00_FB_D(01,11) | OK | 12 | Up |

```

FPC0_T_SG(0,0,1)_FB_D(04,10) -> SF_10_00_FB_D(01,10)    OK    12    Up
FPC0_T_SG(0,0,2)_FB_D(04,09) -> SF_10_00_FB_D(01,09)    OK    12    Up
FPC0_T_SG(0,0,3)_FB_D(04,08) -> SF_10_00_FB_D(01,08)    OK    12    Up
FPC0_T_SG(0,0,4)_FB_D(04,07) -> SF_10_00_FB_D(01,07)    OK    12    Up
FPC0_T_SG(0,0,5)_FB_D(04,06) -> SF_10_00_FB_D(01,06)    OK    12    Up
FPC0_T_SG(0,0,6)_FB_D(04,05) -> SF_10_00_FB_D(01,05)    OK    12    Up
FPC0_T_SG(0,0,7)_FB_D(04,04) -> SF_10_00_FB_D(01,04)    OK    12    Up
FPC0_B_SG(0,1,0)_FB_D(03,07) -> SF_10_10_FB_D(00,07)    OK    15    Up
FPC0_B_SG(0,1,1)_FB_D(03,06) -> SF_10_10_FB_D(00,06)    OK    15    Up
FPC0_B_SG(0,1,2)_FB_D(03,05) -> SF_10_10_FB_D(00,05)    OK    15    Up
FPC0_B_SG(0,1,3)_FB_D(03,04) -> SF_10_10_FB_D(00,04)    OK    15    Up
FPC0_B_SG(0,1,4)_FB_D(03,03) -> SF_10_10_FB_D(00,03)    OK    15    Up
FPC0_B_SG(0,1,5)_FB_D(03,02) -> SF_10_10_FB_D(00,02)    OK    15    Up
FPC0_B_SG(0,1,6)_FB_D(03,01) -> SF_10_10_FB_D(00,01)    OK    15    Up
FPC0_B_SG(0,1,7)_FB_D(03,00) -> SF_10_10_FB_D(00,00)    OK    15    Up
FPC1_T_SG(0,2,0)_FB_D(05,08) -> SF_10_02_FB_D(02,08)    OK    18    Up
FPC1_T_SG(0,2,1)_FB_D(05,07) -> SF_10_02_FB_D(02,07)    OK    18    Up
FPC1_T_SG(0,2,2)_FB_D(05,06) -> SF_10_02_FB_D(02,06)    OK    18    Up
FPC1_T_SG(0,2,3)_FB_D(05,05) -> SF_10_02_FB_D(02,05)    OK    18    Up
FPC1_T_SG(0,2,4)_FB_D(05,03) -> SF_10_02_FB_D(02,03)    OK    18    Up
FPC1_T_SG(0,2,5)_FB_D(05,02) -> SF_10_02_FB_D(02,02)    OK    18    Up
FPC1_T_SG(0,2,6)_FB_D(05,01) -> SF_10_02_FB_D(02,01)    OK    18    Up
FPC1_T_SG(0,2,7)_FB_D(05,00) -> SF_10_02_FB_D(02,00)    OK    18    Up
FPC1_B_SG(0,3,0)_FB_D(04,03) -> SF_10_11_FB_D(01,03)    OK    21    Up
FPC1_B_SG(0,3,1)_FB_D(04,02) -> SF_10_11_FB_D(01,02)    OK    21    Up
FPC1_B_SG(0,3,2)_FB_D(04,01) -> SF_10_11_FB_D(01,01)    OK    21    Up
FPC1_B_SG(0,3,3)_FB_D(04,00) -> SF_10_11_FB_D(01,00)    OK    21    Up
FPC1_B_SG(0,3,4)_FB_D(03,11) -> SF_10_11_FB_D(00,11)    OK    21    Up
FPC1_B_SG(0,3,5)_FB_D(03,10) -> SF_10_11_FB_D(00,10)    OK    21    Up
FPC1_B_SG(0,3,6)_FB_D(03,09) -> SF_10_11_FB_D(00,09)    OK    21    Up
FPC1_B_SG(0,3,7)_FB_D(03,08) -> SF_10_11_FB_D(00,08)    OK    21    Up
FPC2_T_SG(1,0,0)_FB_C(10,11) -> SF_10_04_FB_C(07,11)    OK    12    Up
FPC2_T_SG(1,0,1)_FB_C(10,10) -> SF_10_04_FB_C(07,10)    OK    12    Up
FPC2_T_SG(1,0,2)_FB_C(10,09) -> SF_10_04_FB_C(07,09)    OK    12    Up
FPC2_T_SG(1,0,3)_FB_C(10,08) -> SF_10_04_FB_C(07,08)    OK    12    Up
FPC2_T_SG(1,0,4)_FB_C(10,07) -> SF_10_04_FB_C(07,07)    OK    12    Up
FPC2_T_SG(1,0,5)_FB_C(10,06) -> SF_10_04_FB_C(07,06)    OK    12    Up
FPC2_T_SG(1,0,6)_FB_C(10,05) -> SF_10_04_FB_C(07,05)    OK    12    Up
FPC2_T_SG(1,0,7)_FB_C(10,04) -> SF_10_04_FB_C(07,04)    OK    12    Up
FPC2_B_SG(1,1,0)_FB_C(09,07) -> SF_10_14_FB_C(06,07)    OK    15    Up
FPC2_B_SG(1,1,1)_FB_C(09,06) -> SF_10_14_FB_C(06,06)    OK    15    Up
FPC2_B_SG(1,1,2)_FB_C(09,05) -> SF_10_14_FB_C(06,05)    OK    15    Up
FPC2_B_SG(1,1,3)_FB_C(09,04) -> SF_10_14_FB_C(06,04)    OK    15    Up
FPC2_B_SG(1,1,4)_FB_C(09,03) -> SF_10_14_FB_C(06,03)    OK    15    Up
FPC2_B_SG(1,1,5)_FB_C(09,02) -> SF_10_14_FB_C(06,02)    OK    15    Up
FPC2_B_SG(1,1,6)_FB_C(09,01) -> SF_10_14_FB_C(06,01)    OK    15    Up
FPC2_B_SG(1,1,7)_FB_C(09,00) -> SF_10_14_FB_C(06,00)    OK    15    Up
FPC3_T_SG(1,2,0)_FB_C(11,08) -> SF_10_06_FB_C(08,08)    OK    18    Up
FPC3_T_SG(1,2,1)_FB_C(11,07) -> SF_10_06_FB_C(08,07)    OK    18    Up
FPC3_T_SG(1,2,2)_FB_C(11,06) -> SF_10_06_FB_C(08,06)    OK    18    Up
FPC3_T_SG(1,2,3)_FB_C(11,05) -> SF_10_06_FB_C(08,05)    OK    18    Up
FPC3_T_SG(1,2,4)_FB_C(11,03) -> SF_10_06_FB_C(08,03)    OK    18    Up
FPC3_T_SG(1,2,5)_FB_C(11,02) -> SF_10_06_FB_C(08,02)    OK    18    Up
FPC3_T_SG(1,2,6)_FB_C(11,01) -> SF_10_06_FB_C(08,01)    OK    18    Up
...

```

show chassis fabric topology (T4000 Core Router)

```
user@host> show chassis fabric topology 0
```

| fchip (mode) | In-links | State | Out-links | State |
|-----------------------------|----------|-------|-----------------------------|-------|
| ----- | | | | |
| SIB0 : | | | | |
| ----- | | | | |
| Onboard Links | | | | |
| ----- | | | | |
| SIB0_XF1,14_0->SIB0_XF,00_0 | | Up | SIB0_XF,00_0->SIB0_XF1,14_0 | Up |
| SIB0_XF,00_0->SIB0_XF1,14_0 | | Up | SIB0_XF1,14_0->SIB0_XF,00_0 | Up |
| SIB0_XF1,13_0->SIB0_XF,01_0 | | Up | SIB0_XF,01_0->SIB0_XF1,13_0 | Up |
| SIB0_XF,01_0->SIB0_XF1,13_0 | | Up | SIB0_XF1,13_0->SIB0_XF,01_0 | Up |
| SIB0_XF1,12_0->SIB0_XF,02_0 | | Up | SIB0_XF,02_0->SIB0_XF1,12_0 | Up |
| SIB0_XF,02_0->SIB0_XF1,12_0 | | Up | SIB0_XF1,12_0->SIB0_XF,02_0 | Up |
| SIB0_XF1,11_0->SIB0_XF,03_0 | | Up | SIB0_XF,03_0->SIB0_XF1,11_0 | Up |
| SIB0_XF,03_0->SIB0_XF1,11_0 | | Up | SIB0_XF1,11_0->SIB0_XF,03_0 | Up |
| SIB0_XF1,10_0->SIB0_XF,04_0 | | Up | SIB0_XF,04_0->SIB0_XF1,10_0 | Up |
| SIB0_XF,04_0->SIB0_XF1,10_0 | | Up | SIB0_XF1,10_0->SIB0_XF,04_0 | Up |
| SIB0_XF1,09_0->SIB0_XF,05_0 | | Up | SIB0_XF,05_0->SIB0_XF1,09_0 | Up |
| SIB0_XF,05_0->SIB0_XF1,09_0 | | Up | SIB0_XF1,09_0->SIB0_XF,05_0 | Up |
| SIB0_XF2,14_0->SIB0_XF,06_0 | | Up | SIB0_XF,06_0->SIB0_XF2,14_0 | Up |
| SIB0_XF,06_0->SIB0_XF2,14_0 | | Up | SIB0_XF2,14_0->SIB0_XF,06_0 | Up |
| SIB0_XF2,13_0->SIB0_XF,07_0 | | Up | SIB0_XF,07_0->SIB0_XF2,13_0 | Up |
| SIB0_XF,07_0->SIB0_XF2,13_0 | | Up | SIB0_XF2,13_0->SIB0_XF,07_0 | Up |
| SIB0_XF2,12_0->SIB0_XF,08_0 | | Up | SIB0_XF,08_0->SIB0_XF2,12_0 | Up |
| SIB0_XF,08_0->SIB0_XF2,12_0 | | Up | SIB0_XF2,12_0->SIB0_XF,08_0 | Up |
| SIB0_XF2,11_0->SIB0_XF,09_0 | | Up | SIB0_XF,09_0->SIB0_XF2,11_0 | Up |
| SIB0_XF,09_0->SIB0_XF2,11_0 | | Up | SIB0_XF2,11_0->SIB0_XF,09_0 | Up |
| SIB0_XF2,10_0->SIB0_XF,10_0 | | Up | SIB0_XF,10_0->SIB0_XF2,10_0 | Up |
| SIB0_XF,10_0->SIB0_XF2,10_0 | | Up | SIB0_XF2,10_0->SIB0_XF,10_0 | Up |
| SIB0_XF2,09_0->SIB0_XF,11_0 | | Up | SIB0_XF,11_0->SIB0_XF2,09_0 | Up |
| SIB0_XF,11_0->SIB0_XF2,09_0 | | Up | SIB0_XF2,09_0->SIB0_XF,11_0 | Up |
| SIB0_XF3,13_0->SIB0_XF,12_0 | | Up | SIB0_XF,12_0->SIB0_XF3,13_0 | Up |
| SIB0_XF,12_0->SIB0_XF3,13_0 | | Up | SIB0_XF3,13_0->SIB0_XF,12_0 | Up |
| SIB0_XF3,12_0->SIB0_XF,13_0 | | Up | SIB0_XF,13_0->SIB0_XF3,12_0 | Up |
| SIB0_XF,13_0->SIB0_XF3,12_0 | | Up | SIB0_XF3,12_0->SIB0_XF,13_0 | Up |
| SIB0_XF3,11_0->SIB0_XF,14_0 | | Up | SIB0_XF,14_0->SIB0_XF3,11_0 | Up |
| SIB0_XF,14_0->SIB0_XF3,11_0 | | Up | SIB0_XF3,11_0->SIB0_XF,14_0 | Up |
| SIB0_XF3,10_0->SIB0_XF,15_0 | | Up | SIB0_XF,15_0->SIB0_XF3,10_0 | Up |
| SIB0_XF,15_0->SIB0_XF3,10_0 | | Up | SIB0_XF3,10_0->SIB0_XF,15_0 | Up |
| PFE Links | | | | |
| ----- | | | | |
| FPC2PFE0->SIB0_XF1,05_0 | | Up | SIB0_XF1,05_0->FPC2PFE0 | Up |
| FPC3PFE0->SIB0_XF2,15_0 | | Up | SIB0_XF2,15_0->FPC3PFE0 | Up |
| FPC5PFE0->SIB0_XF2,05_0 | | Up | SIB0_XF2,05_0->FPC5PFE0 | Up |
| FPC5PFE1->SIB0_XF2,07_0 | | Up | SIB0_XF2,07_0->FPC5PFE1 | Up |
| FPC6PFE0->SIB0_XF3,01_0 | | Up | SIB0_XF3,01_0->FPC6PFE0 | Up |
| FPC6PFE0->SIB0_XF3,01_1 | | Up | SIB0_XF3,01_1->FPC6PFE0 | Up |
| FPC6PFE0->SIB0_XF3,02_0 | | Up | SIB0_XF3,02_0->FPC6PFE0 | Up |
| FPC6PFE1->SIB0_XF3,03_0 | | Up | SIB0_XF3,03_0->FPC6PFE1 | Up |
| FPC6PFE1->SIB0_XF3,03_1 | | Up | SIB0_XF3,03_1->FPC6PFE1 | Up |
| FPC6PFE1->SIB0_XF3,02_1 | | Up | SIB0_XF3,02_1->FPC6PFE1 | Up |

show chassis fabric topology lcc (TX Matrix Plus Router with 3D SIBs)

user@host> show chassis fabric topology lcc 6

lcc6-re0:

| fchip (mode) | In-links | State | Out-links | State |
|--------------|-------------------|-------|-----------------------------|-------|
| SIB0 : | | | | |
| ----- | | | | |
| CXP0_Evn-> | LCC_SIB0_XF3,10_0 | Up | LCC_SIB0_XF3,10_0->CXP0_Evn | Up |
| CXP0_Odd-> | LCC_SIB0_XF3,11_0 | Up | LCC_SIB0_XF3,11_0->CXP0_Odd | Up |
| CXP1_Evn-> | LCC_SIB0_XF3,12_0 | Up | LCC_SIB0_XF3,12_0->CXP1_Evn | Up |
| CXP1_Odd-> | LCC_SIB0_XF3,13_0 | Up | LCC_SIB0_XF3,13_0->CXP1_Odd | Up |
| CXP2_Evn-> | LCC_SIB0_XF2,09_0 | Up | LCC_SIB0_XF2,09_0->CXP2_Evn | Up |
| CXP2_Odd-> | LCC_SIB0_XF2,10_0 | Up | LCC_SIB0_XF2,10_0->CXP2_Odd | Up |
| CXP3_Evn-> | LCC_SIB0_XF2,11_0 | Up | LCC_SIB0_XF2,11_0->CXP3_Evn | Up |
| CXP3_Odd-> | LCC_SIB0_XF2,12_0 | Up | LCC_SIB0_XF2,12_0->CXP3_Odd | Up |
| CXP4_Evn-> | LCC_SIB0_XF2,13_0 | Up | LCC_SIB0_XF2,13_0->CXP4_Evn | Up |
| CXP4_Odd-> | LCC_SIB0_XF1,09_0 | Up | LCC_SIB0_XF1,09_0->CXP4_Odd | Up |
| CXP5_Evn-> | LCC_SIB0_XF2,14_0 | Up | LCC_SIB0_XF2,14_0->CXP5_Evn | Up |
| CXP5_Odd-> | LCC_SIB0_XF1,10_0 | Up | LCC_SIB0_XF1,10_0->CXP5_Odd | Up |
| CXP6_Evn-> | LCC_SIB0_XF1,11_0 | Up | LCC_SIB0_XF1,11_0->CXP6_Evn | Up |
| CXP6_Odd-> | LCC_SIB0_XF1,12_0 | Up | LCC_SIB0_XF1,12_0->CXP6_Odd | Up |
| CXP7_Evn-> | LCC_SIB0_XF1,13_0 | Up | LCC_SIB0_XF1,13_0->CXP7_Evn | Up |
| CXP7_Odd-> | LCC_SIB0_XF1,14_0 | Up | LCC_SIB0_XF1,14_0->CXP7_Odd | Up |
| SIB1 : | | | | |
| ----- | | | | |
| SIB2 : | | | | |
| ----- | | | | |
| CXP0_Evn-> | LCC_SIB2_XF3,10_0 | Up | LCC_SIB2_XF3,10_0->CXP0_Evn | Up |
| CXP0_Odd-> | LCC_SIB2_XF3,11_0 | Up | LCC_SIB2_XF3,11_0->CXP0_Odd | Up |
| CXP1_Evn-> | LCC_SIB2_XF3,12_0 | Up | LCC_SIB2_XF3,12_0->CXP1_Evn | Up |
| CXP1_Odd-> | LCC_SIB2_XF3,13_0 | Up | LCC_SIB2_XF3,13_0->CXP1_Odd | Up |
| CXP2_Evn-> | LCC_SIB2_XF2,09_0 | Up | LCC_SIB2_XF2,09_0->CXP2_Evn | Up |
| CXP2_Odd-> | LCC_SIB2_XF2,10_0 | Up | LCC_SIB2_XF2,10_0->CXP2_Odd | Up |
| CXP3_Evn-> | LCC_SIB2_XF2,11_0 | Up | LCC_SIB2_XF2,11_0->CXP3_Evn | Up |
| CXP3_Odd-> | LCC_SIB2_XF2,12_0 | Up | LCC_SIB2_XF2,12_0->CXP3_Odd | Up |
| CXP4_Evn-> | LCC_SIB2_XF2,13_0 | Up | LCC_SIB2_XF2,13_0->CXP4_Evn | Up |
| CXP4_Odd-> | LCC_SIB2_XF1,09_0 | Up | LCC_SIB2_XF1,09_0->CXP4_Odd | Up |
| CXP5_Evn-> | LCC_SIB2_XF2,14_0 | Up | LCC_SIB2_XF2,14_0->CXP5_Evn | Up |
| CXP5_Odd-> | LCC_SIB2_XF1,10_0 | Up | LCC_SIB2_XF1,10_0->CXP5_Odd | Up |
| CXP6_Evn-> | LCC_SIB2_XF1,11_0 | Up | LCC_SIB2_XF1,11_0->CXP6_Evn | Up |
| CXP6_Odd-> | LCC_SIB2_XF1,12_0 | Up | LCC_SIB2_XF1,12_0->CXP6_Odd | Up |
| CXP7_Evn-> | LCC_SIB2_XF1,13_0 | Up | LCC_SIB2_XF1,13_0->CXP7_Evn | Up |
| CXP7_Odd-> | LCC_SIB2_XF1,14_0 | Up | LCC_SIB2_XF1,14_0->CXP7_Odd | Up |
| SIB3 : | | | | |
| ----- | | | | |
| CXP0_Evn-> | LCC_SIB3_XF3,10_0 | Up | LCC_SIB3_XF3,10_0->CXP0_Evn | Up |
| CXP0_Odd-> | LCC_SIB3_XF3,11_0 | Up | LCC_SIB3_XF3,11_0->CXP0_Odd | Up |
| CXP1_Evn-> | LCC_SIB3_XF3,12_0 | Up | LCC_SIB3_XF3,12_0->CXP1_Evn | Up |
| CXP1_Odd-> | LCC_SIB3_XF3,13_0 | Up | LCC_SIB3_XF3,13_0->CXP1_Odd | Up |
| CXP2_Evn-> | LCC_SIB3_XF2,09_0 | Up | LCC_SIB3_XF2,09_0->CXP2_Evn | Up |
| CXP2_Odd-> | LCC_SIB3_XF2,10_0 | Up | LCC_SIB3_XF2,10_0->CXP2_Odd | Up |
| CXP3_Evn-> | LCC_SIB3_XF2,11_0 | Up | LCC_SIB3_XF2,11_0->CXP3_Evn | Up |
| CXP3_Odd-> | LCC_SIB3_XF2,12_0 | Up | LCC_SIB3_XF2,12_0->CXP3_Odd | Up |
| CXP4_Evn-> | LCC_SIB3_XF2,13_0 | Up | LCC_SIB3_XF2,13_0->CXP4_Evn | Up |
| CXP4_Odd-> | LCC_SIB3_XF1,09_0 | Up | LCC_SIB3_XF1,09_0->CXP4_Odd | Up |
| CXP5_Evn-> | LCC_SIB3_XF2,14_0 | Up | LCC_SIB3_XF2,14_0->CXP5_Evn | Up |
| CXP5_Odd-> | LCC_SIB3_XF1,10_0 | Up | LCC_SIB3_XF1,10_0->CXP5_Odd | Up |
| CXP6_Evn-> | LCC_SIB3_XF1,11_0 | Up | LCC_SIB3_XF1,11_0->CXP6_Evn | Up |
| CXP6_Odd-> | LCC_SIB3_XF1,12_0 | Up | LCC_SIB3_XF1,12_0->CXP6_Odd | Up |
| CXP7_Evn-> | LCC_SIB3_XF1,13_0 | Up | LCC_SIB3_XF1,13_0->CXP7_Evn | Up |

| | | | |
|-----------------------------|----|-----------------------------|----|
| CXP7_Odd->LCC_SIB3_XF1,14_0 | Up | LCC_SIB3_XF1,14_0->CXP7_Odd | Up |
| SIB4 : | | | |
| ----- | | | |
| CXP0_Evn->LCC_SIB4_XF3,10_0 | Up | LCC_SIB4_XF3,10_0->CXP0_Evn | Up |
| CXP0_Odd->LCC_SIB4_XF3,11_0 | Up | LCC_SIB4_XF3,11_0->CXP0_Odd | Up |
| CXP1_Evn->LCC_SIB4_XF3,12_0 | Up | LCC_SIB4_XF3,12_0->CXP1_Evn | Up |
| CXP1_Odd->LCC_SIB4_XF3,13_0 | Up | LCC_SIB4_XF3,13_0->CXP1_Odd | Up |
| CXP2_Evn->LCC_SIB4_XF2,09_0 | Up | LCC_SIB4_XF2,09_0->CXP2_Evn | Up |
| CXP2_Odd->LCC_SIB4_XF2,10_0 | Up | LCC_SIB4_XF2,10_0->CXP2_Odd | Up |
| CXP3_Evn->LCC_SIB4_XF2,11_0 | Up | LCC_SIB4_XF2,11_0->CXP3_Evn | Up |
| CXP3_Odd->LCC_SIB4_XF2,12_0 | Up | LCC_SIB4_XF2,12_0->CXP3_Odd | Up |
| CXP4_Evn->LCC_SIB4_XF2,13_0 | Up | LCC_SIB4_XF2,13_0->CXP4_Evn | Up |
| CXP4_Odd->LCC_SIB4_XF1,09_0 | Up | LCC_SIB4_XF1,09_0->CXP4_Odd | Up |
| CXP5_Evn->LCC_SIB4_XF2,14_0 | Up | LCC_SIB4_XF2,14_0->CXP5_Evn | Up |
| CXP5_Odd->LCC_SIB4_XF1,10_0 | Up | LCC_SIB4_XF1,10_0->CXP5_Odd | Up |
| CXP6_Evn->LCC_SIB4_XF1,11_0 | Up | LCC_SIB4_XF1,11_0->CXP6_Evn | Up |
| CXP6_Odd->LCC_SIB4_XF1,12_0 | Up | LCC_SIB4_XF1,12_0->CXP6_Odd | Up |
| CXP7_Evn->LCC_SIB4_XF1,13_0 | Up | LCC_SIB4_XF1,13_0->CXP7_Evn | Up |
| CXP7_Odd->LCC_SIB4_XF1,14_0 | Up | LCC_SIB4_XF1,14_0->CXP7_Odd | Up |

show chassis fabric topology sfc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric topology sfc 0
```

```
sfc0-re0:
```

| fchip (mode) | | | |
|------------------------------|-------|------------------------------|-------|
| In-links | State | Out-links | State |
| ----- | | | |
| F13_SIB0 : | | | |
| ----- | | | |
| CXP0_Evn->F13_SIB0_XF2,04_0 | Up | F13_SIB0_XF2,04_0->CXP0_Evn | Up |
| CXP0_Odd->F13_SIB0_XF2,03_0 | Up | F13_SIB0_XF2,03_0->CXP0_Odd | Up |
| CXP1_Evn->F13_SIB0_XF2,06_0 | Up | F13_SIB0_XF2,06_0->CXP1_Evn | Up |
| CXP1_Odd->F13_SIB0_XF2,05_0 | Up | F13_SIB0_XF2,05_0->CXP1_Odd | Up |
| CXP2_Evn->F13_SIB0_XF2,08_0 | Up | F13_SIB0_XF2,08_0->CXP2_Evn | Up |
| CXP2_Odd->F13_SIB0_XF2,07_0 | Up | F13_SIB0_XF2,07_0->CXP2_Odd | Up |
| CXP3_Evn->F13_SIB0_XF2,10_0 | Up | F13_SIB0_XF2,10_0->CXP3_Evn | Up |
| CXP3_Odd->F13_SIB0_XF2,09_0 | Up | F13_SIB0_XF2,09_0->CXP3_Odd | Up |
| CXP4_Evn->F13_SIB0_XF0,04_0 | Up | F13_SIB0_XF0,04_0->CXP4_Evn | Up |
| CXP4_Odd->F13_SIB0_XF0,03_0 | Up | F13_SIB0_XF0,03_0->CXP4_Odd | Up |
| CXP5_Evn->F13_SIB0_XF0,06_0 | Up | F13_SIB0_XF0,06_0->CXP5_Evn | Up |
| CXP5_Odd->F13_SIB0_XF0,05_0 | Up | F13_SIB0_XF0,05_0->CXP5_Odd | Up |
| CXP6_Evn->F13_SIB0_XF0,08_0 | Up | F13_SIB0_XF0,08_0->CXP6_Evn | Up |
| CXP6_Odd->F13_SIB0_XF0,07_0 | Up | F13_SIB0_XF0,07_0->CXP6_Odd | Up |
| CXP7_Evn->F13_SIB0_XF0,10_0 | Up | F13_SIB0_XF0,10_0->CXP7_Evn | Up |
| CXP7_Odd->F13_SIB0_XF0,09_0 | Up | F13_SIB0_XF0,09_0->CXP7_Odd | Up |
| CXP8_Evn->F13_SIB0_XF3,04_0 | Up | F13_SIB0_XF3,04_0->CXP8_Evn | Up |
| CXP8_Odd->F13_SIB0_XF3,03_0 | Up | F13_SIB0_XF3,03_0->CXP8_Odd | Up |
| CXP9_Evn->F13_SIB0_XF3,06_0 | Up | F13_SIB0_XF3,06_0->CXP9_Evn | Up |
| CXP9_Odd->F13_SIB0_XF3,05_0 | Up | F13_SIB0_XF3,05_0->CXP9_Odd | Up |
| CXP10_Evn->F13_SIB0_XF3,08_0 | Up | F13_SIB0_XF3,08_0->CXP10_Evn | Up |
| CXP10_Odd->F13_SIB0_XF3,07_0 | Up | F13_SIB0_XF3,07_0->CXP10_Odd | Up |
| CXP11_Evn->F13_SIB0_XF3,10_0 | Up | F13_SIB0_XF3,10_0->CXP11_Evn | Up |
| CXP11_Odd->F13_SIB0_XF3,09_0 | Up | F13_SIB0_XF3,09_0->CXP11_Odd | Up |
| CXP12_Evn->F13_SIB0_XF1,04_0 | Up | F13_SIB0_XF1,04_0->CXP12_Evn | Up |
| CXP12_Odd->F13_SIB0_XF1,03_0 | Up | F13_SIB0_XF1,03_0->CXP12_Odd | Up |
| CXP13_Evn->F13_SIB0_XF1,06_0 | Up | F13_SIB0_XF1,06_0->CXP13_Evn | Up |
| CXP13_Odd->F13_SIB0_XF1,05_0 | Up | F13_SIB0_XF1,05_0->CXP13_Odd | Up |
| CXP14_Evn->F13_SIB0_XF1,08_0 | Up | F13_SIB0_XF1,08_0->CXP14_Evn | Up |

| | | | |
|--------------------------------------|----|--------------------------------------|----|
| CXP14_Odd->F13_SIB0_XF1,07_0 | Up | F13_SIB0_XF1,07_0->CXP14_Odd | Up |
| CXP15_Evn->F13_SIB0_XF1,10_0 | Up | F13_SIB0_XF1,10_0->CXP15_Evn | Up |
| CXP15_Odd->F13_SIB0_XF1,09_0 | Up | F13_SIB0_XF1,09_0->CXP15_Odd | Up |
| F13_SIB0_XF4,00_0->F13_SIB0_XF2,02_0 | Up | F13_SIB0_XF2,02_0->F13_SIB0_XF4,00_0 | Up |
| F13_SIB0_XF4,01_0->F13_SIB0_XF2,01_0 | Up | F13_SIB0_XF2,01_0->F13_SIB0_XF4,01_0 | Up |
| F13_SIB0_XF4,02_0->F13_SIB0_XF2,00_0 | Up | F13_SIB0_XF2,00_0->F13_SIB0_XF4,02_0 | Up |
| F13_SIB0_XF4,03_0->F13_SIB0_XF2,15_0 | Up | F13_SIB0_XF2,15_0->F13_SIB0_XF4,03_0 | Up |
| F13_SIB0_XF4,04_0->F13_SIB0_XF2,14_0 | Up | F13_SIB0_XF2,14_0->F13_SIB0_XF4,04_0 | Up |
| F13_SIB0_XF4,05_0->F13_SIB0_XF2,13_0 | Up | F13_SIB0_XF2,13_0->F13_SIB0_XF4,05_0 | Up |
| F13_SIB0_XF4,06_0->F13_SIB0_XF2,12_0 | Up | F13_SIB0_XF2,12_0->F13_SIB0_XF4,06_0 | Up |
| F13_SIB0_XF4,07_0->F13_SIB0_XF2,11_0 | Up | F13_SIB0_XF2,11_0->F13_SIB0_XF4,07_0 | Up |
| F13_SIB0_XF4,08_0->F13_SIB0_XF0,02_0 | Up | F13_SIB0_XF0,02_0->F13_SIB0_XF4,08_0 | Up |
| F13_SIB0_XF4,09_0->F13_SIB0_XF0,01_0 | Up | F13_SIB0_XF0,01_0->F13_SIB0_XF4,09_0 | Up |
| F13_SIB0_XF4,10_0->F13_SIB0_XF0,00_0 | Up | F13_SIB0_XF0,00_0->F13_SIB0_XF4,10_0 | Up |
| F13_SIB0_XF4,11_0->F13_SIB0_XF0,15_0 | Up | F13_SIB0_XF0,15_0->F13_SIB0_XF4,11_0 | Up |
| F13_SIB0_XF4,12_0->F13_SIB0_XF0,14_0 | Up | F13_SIB0_XF0,14_0->F13_SIB0_XF4,12_0 | Up |
| F13_SIB0_XF4,13_0->F13_SIB0_XF0,13_0 | Up | F13_SIB0_XF0,13_0->F13_SIB0_XF4,13_0 | Up |
| F13_SIB0_XF4,14_0->F13_SIB0_XF0,12_0 | Up | F13_SIB0_XF0,12_0->F13_SIB0_XF4,14_0 | Up |
| F13_SIB0_XF4,15_0->F13_SIB0_XF0,11_0 | Up | F13_SIB0_XF0,11_0->F13_SIB0_XF4,15_0 | Up |
| F13_SIB0_XF6,08_0->F13_SIB0_XF3,02_0 | Up | F13_SIB0_XF3,02_0->F13_SIB0_XF6,08_0 | Up |
| F13_SIB0_XF6,09_0->F13_SIB0_XF3,01_0 | Up | F13_SIB0_XF3,01_0->F13_SIB0_XF6,09_0 | Up |
| F13_SIB0_XF6,10_0->F13_SIB0_XF3,00_0 | Up | F13_SIB0_XF3,00_0->F13_SIB0_XF6,10_0 | Up |
| F13_SIB0_XF6,11_0->F13_SIB0_XF3,15_0 | Up | F13_SIB0_XF3,15_0->F13_SIB0_XF6,11_0 | Up |
| F13_SIB0_XF6,12_0->F13_SIB0_XF3,14_0 | Up | F13_SIB0_XF3,14_0->F13_SIB0_XF6,12_0 | Up |
| F13_SIB0_XF6,13_0->F13_SIB0_XF3,13_0 | Up | F13_SIB0_XF3,13_0->F13_SIB0_XF6,13_0 | Up |
| F13_SIB0_XF6,14_0->F13_SIB0_XF3,12_0 | Up | F13_SIB0_XF3,12_0->F13_SIB0_XF6,14_0 | Up |
| F13_SIB0_XF6,15_0->F13_SIB0_XF3,11_0 | Up | F13_SIB0_XF3,11_0->F13_SIB0_XF6,15_0 | Up |
| F13_SIB0_XF6,00_0->F13_SIB0_XF1,02_0 | Up | F13_SIB0_XF1,02_0->F13_SIB0_XF6,00_0 | Up |
| F13_SIB0_XF6,01_0->F13_SIB0_XF1,01_0 | Up | F13_SIB0_XF1,01_0->F13_SIB0_XF6,01_0 | Up |
| F13_SIB0_XF6,02_0->F13_SIB0_XF1,00_0 | Up | F13_SIB0_XF1,00_0->F13_SIB0_XF6,02_0 | Up |
| F13_SIB0_XF6,03_0->F13_SIB0_XF1,15_0 | Up | F13_SIB0_XF1,15_0->F13_SIB0_XF6,03_0 | Up |
| F13_SIB0_XF6,04_0->F13_SIB0_XF1,14_0 | Up | F13_SIB0_XF1,14_0->F13_SIB0_XF6,04_0 | Up |

| | |
|---|---|
| F13_SIB0_XF6,05_0->F13_SIB0_XF1,13_0 Up | F13_SIB0_XF1,13_0->F13_SIB0_XF6,05_0 Up |
| F13_SIB0_XF6,06_0->F13_SIB0_XF1,12_0 Up | F13_SIB0_XF1,12_0->F13_SIB0_XF6,06_0 Up |
| F13_SIB0_XF6,07_0->F13_SIB0_XF1,11_0 Up | F13_SIB0_XF1,11_0->F13_SIB0_XF6,07_0 Up |
| F13_SIB0_XF2,02_0->F13_SIB0_XF5,00_0 Up | F13_SIB0_XF5,00_0->F13_SIB0_XF2,02_0 Up |
| F13_SIB0_XF2,01_0->F13_SIB0_XF5,01_0 Up | F13_SIB0_XF5,01_0->F13_SIB0_XF2,01_0 Up |
| F13_SIB0_XF2,00_0->F13_SIB0_XF5,02_0 Up | F13_SIB0_XF5,02_0->F13_SIB0_XF2,00_0 Up |
| F13_SIB0_XF2,15_0->F13_SIB0_XF5,03_0 Up | F13_SIB0_XF5,03_0->F13_SIB0_XF2,15_0 Up |
| F13_SIB0_XF2,14_0->F13_SIB0_XF5,04_0 Up | F13_SIB0_XF5,04_0->F13_SIB0_XF2,14_0 Up |
| F13_SIB0_XF2,13_0->F13_SIB0_XF5,05_0 Up | F13_SIB0_XF5,05_0->F13_SIB0_XF2,13_0 Up |
| F13_SIB0_XF2,12_0->F13_SIB0_XF5,06_0 Up | F13_SIB0_XF5,06_0->F13_SIB0_XF2,12_0 Up |
| F13_SIB0_XF2,11_0->F13_SIB0_XF5,07_0 Up | F13_SIB0_XF5,07_0->F13_SIB0_XF2,11_0 Up |
| F13_SIB0_XF0,02_0->F13_SIB0_XF5,08_0 Up | F13_SIB0_XF5,08_0->F13_SIB0_XF0,02_0 Up |
| F13_SIB0_XF0,01_0->F13_SIB0_XF5,09_0 Up | F13_SIB0_XF5,09_0->F13_SIB0_XF0,01_0 Up |
| F13_SIB0_XF0,00_0->F13_SIB0_XF5,10_0 Up | F13_SIB0_XF5,10_0->F13_SIB0_XF0,00_0 Up |
| F13_SIB0_XF0,15_0->F13_SIB0_XF5,11_0 Up | F13_SIB0_XF5,11_0->F13_SIB0_XF0,15_0 Up |
| F13_SIB0_XF0,14_0->F13_SIB0_XF5,12_0 Up | F13_SIB0_XF5,12_0->F13_SIB0_XF0,14_0 Up |
| F13_SIB0_XF0,13_0->F13_SIB0_XF5,13_0 Up | F13_SIB0_XF5,13_0->F13_SIB0_XF0,13_0 Up |
| F13_SIB0_XF0,12_0->F13_SIB0_XF5,14_0 Up | F13_SIB0_XF5,14_0->F13_SIB0_XF0,12_0 Up |
| F13_SIB0_XF0,11_0->F13_SIB0_XF5,15_0 Up | F13_SIB0_XF5,15_0->F13_SIB0_XF0,11_0 Up |
| F13_SIB0_XF3,02_0->F13_SIB0_XF7,08_0 Up | F13_SIB0_XF7,08_0->F13_SIB0_XF3,02_0 Up |
| F13_SIB0_XF3,01_0->F13_SIB0_XF7,09_0 Up | F13_SIB0_XF7,09_0->F13_SIB0_XF3,01_0 Up |
| F13_SIB0_XF3,00_0->F13_SIB0_XF7,10_0 Up | F13_SIB0_XF7,10_0->F13_SIB0_XF3,00_0 Up |
| F13_SIB0_XF3,15_0->F13_SIB0_XF7,11_0 Up | F13_SIB0_XF7,11_0->F13_SIB0_XF3,15_0 Up |
| F13_SIB0_XF3,14_0->F13_SIB0_XF7,12_0 Up | F13_SIB0_XF7,12_0->F13_SIB0_XF3,14_0 Up |
| F13_SIB0_XF3,13_0->F13_SIB0_XF7,13_0 Up | F13_SIB0_XF7,13_0->F13_SIB0_XF3,13_0 Up |
| F13_SIB0_XF3,12_0->F13_SIB0_XF7,14_0 Up | F13_SIB0_XF7,14_0->F13_SIB0_XF3,12_0 Up |
| F13_SIB0_XF3,11_0->F13_SIB0_XF7,15_0 Up | F13_SIB0_XF7,15_0->F13_SIB0_XF3,11_0 Up |
| F13_SIB0_XF1,02_0->F13_SIB0_XF7,00_0 Up | F13_SIB0_XF7,00_0->F13_SIB0_XF1,02_0 Up |
| F13_SIB0_XF1,01_0->F13_SIB0_XF7,01_0 Up | F13_SIB0_XF7,01_0->F13_SIB0_XF1,01_0 Up |
| F13_SIB0_XF1,00_0->F13_SIB0_XF7,02_0 Up | F13_SIB0_XF7,02_0->F13_SIB0_XF1,00_0 Up |

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F13_SIB0_XF1,15_0->F13_SIB0_XF7,03_0 Up  F13_SIB0_XF7,03_0->F13_SIB0_XF1,15_0 Up
F13_SIB0_XF1,14_0->F13_SIB0_XF7,04_0 Up  F13_SIB0_XF7,04_0->F13_SIB0_XF1,14_0 Up
F13_SIB0_XF1,13_0->F13_SIB0_XF7,05_0 Up  F13_SIB0_XF7,05_0->F13_SIB0_XF1,13_0 Up
F13_SIB0_XF1,12_0->F13_SIB0_XF7,06_0 Up  F13_SIB0_XF7,06_0->F13_SIB0_XF1,12_0 Up
F13_SIB0_XF1,11_0->F13_SIB0_XF7,07_0 Up  F13_SIB0_XF7,07_0->F13_SIB0_XF1,11_0 Up
F2S_SIB2_XF,12_0->F13_SIB0_XF4,00_0 Up  F13_SIB0_XF4,00_0->F2S_SIB2_XF,12_0 Up
F2S_SIB2_XF,08_0->F13_SIB0_XF4,01_0 Up  F13_SIB0_XF4,01_0->F2S_SIB2_XF,08_0 Up
F2S_SIB2_XF,14_0->F13_SIB0_XF4,02_0 Up  F13_SIB0_XF4,02_0->F2S_SIB2_XF,14_0 Up
F2S_SIB2_XF,10_0->F13_SIB0_XF4,03_0 Up  F13_SIB0_XF4,03_0->F2S_SIB2_XF,10_0 Up
F2S_SIB3_XF,12_0->F13_SIB0_XF4,04_0 Up  F13_SIB0_XF4,04_0->F2S_SIB3_XF,12_0 Up
F2S_SIB3_XF,08_0->F13_SIB0_XF4,05_0 Up  F13_SIB0_XF4,05_0->F2S_SIB3_XF,08_0 Up
F2S_SIB3_XF,14_0->F13_SIB0_XF4,06_0 Up  F13_SIB0_XF4,06_0->F2S_SIB3_XF,14_0 Up
F2S_SIB3_XF,10_0->F13_SIB0_XF4,07_0 Up  F13_SIB0_XF4,07_0->F2S_SIB3_XF,10_0 Up
F2S_SIB0_XF,12_0->F13_SIB0_XF4,08_0 Up  F13_SIB0_XF4,08_0->F2S_SIB0_XF,12_0 Up
F2S_SIB0_XF,08_0->F13_SIB0_XF4,09_0 Up  F13_SIB0_XF4,09_0->F2S_SIB0_XF,08_0 Up
F2S_SIB0_XF,14_0->F13_SIB0_XF4,10_0 Up  F13_SIB0_XF4,10_0->F2S_SIB0_XF,14_0 Up
F2S_SIB0_XF,10_0->F13_SIB0_XF4,11_0 Up  F13_SIB0_XF4,11_0->F2S_SIB0_XF,10_0 Up
F2S_SIB1_XF,12_0->F13_SIB0_XF4,12_0 Up  F13_SIB0_XF4,12_0->F2S_SIB1_XF,12_0 Up
F2S_SIB1_XF,08_0->F13_SIB0_XF4,13_0 Up  F13_SIB0_XF4,13_0->F2S_SIB1_XF,08_0 Up
F2S_SIB1_XF,14_0->F13_SIB0_XF4,14_0 Up  F13_SIB0_XF4,14_0->F2S_SIB1_XF,14_0 Up
F2S_SIB1_XF,10_0->F13_SIB0_XF4,15_0 Up  F13_SIB0_XF4,15_0->F2S_SIB1_XF,10_0 Up
F2S_SIB2_XF,13_0->F13_SIB0_XF6,00_0 Up  F13_SIB0_XF6,00_0->F2S_SIB2_XF,13_0 Up
F2S_SIB2_XF,09_0->F13_SIB0_XF6,01_0 Up  F13_SIB0_XF6,01_0->F2S_SIB2_XF,09_0 Up
F2S_SIB2_XF,15_0->F13_SIB0_XF6,02_0 Up  F13_SIB0_XF6,02_0->F2S_SIB2_XF,15_0 Up
F2S_SIB2_XF,11_0->F13_SIB0_XF6,03_0 Up  F13_SIB0_XF6,03_0->F2S_SIB2_XF,11_0 Up
F2S_SIB3_XF,13_0->F13_SIB0_XF6,04_0 Up  F13_SIB0_XF6,04_0->F2S_SIB3_XF,13_0 Up
F2S_SIB3_XF,09_0->F13_SIB0_XF6,05_0 Up  F13_SIB0_XF6,05_0->F2S_SIB3_XF,09_0 Up
F2S_SIB3_XF,15_0->F13_SIB0_XF6,06_0 Up  F13_SIB0_XF6,06_0->F2S_SIB3_XF,15_0 Up
F2S_SIB3_XF,11_0->F13_SIB0_XF6,07_0 Up  F13_SIB0_XF6,07_0->F2S_SIB3_XF,11_0 Up
F2S_SIB0_XF,13_0->F13_SIB0_XF6,08_0 Up  F13_SIB0_XF6,08_0->F2S_SIB0_XF,13_0 Up

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| | |
|--|--|
| F2S_SIB0_XF,09_0->F13_SIB0_XF6,09_0 Up | F13_SIB0_XF6,09_0->F2S_SIB0_XF,09_0 Up |
| F2S_SIB0_XF,15_0->F13_SIB0_XF6,10_0 Up | F13_SIB0_XF6,10_0->F2S_SIB0_XF,15_0 Up |
| F2S_SIB0_XF,11_0->F13_SIB0_XF6,11_0 Up | F13_SIB0_XF6,11_0->F2S_SIB0_XF,11_0 Up |
| F2S_SIB1_XF,13_0->F13_SIB0_XF6,12_0 Up | F13_SIB0_XF6,12_0->F2S_SIB1_XF,13_0 Up |
| F2S_SIB1_XF,09_0->F13_SIB0_XF6,13_0 Up | F13_SIB0_XF6,13_0->F2S_SIB1_XF,09_0 Up |
| F2S_SIB1_XF,15_0->F13_SIB0_XF6,14_0 Up | F13_SIB0_XF6,14_0->F2S_SIB1_XF,15_0 Up |
| F2S_SIB1_XF,11_0->F13_SIB0_XF6,15_0 Up | F13_SIB0_XF6,15_0->F2S_SIB1_XF,11_0 Up |
| F13_SIB0_XF5,00_0->F2S_SIB2_XF,12_0 Up | F2S_SIB2_XF,12_0->F13_SIB0_XF5,00_0 Up |
| F13_SIB0_XF5,01_0->F2S_SIB2_XF,08_0 Up | F2S_SIB2_XF,08_0->F13_SIB0_XF5,01_0 Up |
| F13_SIB0_XF5,02_0->F2S_SIB2_XF,14_0 Up | F2S_SIB2_XF,14_0->F13_SIB0_XF5,02_0 Up |
| F13_SIB0_XF5,03_0->F2S_SIB2_XF,10_0 Up | F2S_SIB2_XF,10_0->F13_SIB0_XF5,03_0 Up |
| F13_SIB0_XF5,04_0->F2S_SIB3_XF,12_0 Up | F2S_SIB3_XF,12_0->F13_SIB0_XF5,04_0 Up |
| F13_SIB0_XF5,05_0->F2S_SIB3_XF,08_0 Up | F2S_SIB3_XF,08_0->F13_SIB0_XF5,05_0 Up |
| F13_SIB0_XF5,06_0->F2S_SIB3_XF,14_0 Up | F2S_SIB3_XF,14_0->F13_SIB0_XF5,06_0 Up |
| F13_SIB0_XF5,07_0->F2S_SIB3_XF,10_0 Up | F2S_SIB3_XF,10_0->F13_SIB0_XF5,07_0 Up |
| F13_SIB0_XF5,08_0->F2S_SIB0_XF,12_0 Up | F2S_SIB0_XF,12_0->F13_SIB0_XF5,08_0 Up |
| F13_SIB0_XF5,09_0->F2S_SIB0_XF,08_0 Up | F2S_SIB0_XF,08_0->F13_SIB0_XF5,09_0 Up |
| F13_SIB0_XF5,10_0->F2S_SIB0_XF,14_0 Up | F2S_SIB0_XF,14_0->F13_SIB0_XF5,10_0 Up |
| F13_SIB0_XF5,11_0->F2S_SIB0_XF,10_0 Up | F2S_SIB0_XF,10_0->F13_SIB0_XF5,11_0 Up |
| F13_SIB0_XF5,12_0->F2S_SIB1_XF,12_0 Up | F2S_SIB1_XF,12_0->F13_SIB0_XF5,12_0 Up |
| F13_SIB0_XF5,13_0->F2S_SIB1_XF,08_0 Up | F2S_SIB1_XF,08_0->F13_SIB0_XF5,13_0 Up |
| F13_SIB0_XF5,14_0->F2S_SIB1_XF,14_0 Up | F2S_SIB1_XF,14_0->F13_SIB0_XF5,14_0 Up |
| F13_SIB0_XF5,15_0->F2S_SIB1_XF,10_0 Up | F2S_SIB1_XF,10_0->F13_SIB0_XF5,15_0 Up |
| F13_SIB0_XF7,00_0->F2S_SIB2_XF,13_0 Up | F2S_SIB2_XF,13_0->F13_SIB0_XF7,00_0 Up |
| F13_SIB0_XF7,01_0->F2S_SIB2_XF,09_0 Up | F2S_SIB2_XF,09_0->F13_SIB0_XF7,01_0 Up |
| F13_SIB0_XF7,02_0->F2S_SIB2_XF,15_0 Up | F2S_SIB2_XF,15_0->F13_SIB0_XF7,02_0 Up |
| F13_SIB0_XF7,03_0->F2S_SIB2_XF,11_0 Up | F2S_SIB2_XF,11_0->F13_SIB0_XF7,03_0 Up |
| F13_SIB0_XF7,04_0->F2S_SIB3_XF,13_0 Up | F2S_SIB3_XF,13_0->F13_SIB0_XF7,04_0 Up |
| F13_SIB0_XF7,05_0->F2S_SIB3_XF,09_0 Up | F2S_SIB3_XF,09_0->F13_SIB0_XF7,05_0 Up |
| F13_SIB0_XF7,06_0->F2S_SIB3_XF,15_0 Up | F2S_SIB3_XF,15_0->F13_SIB0_XF7,06_0 Up |

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F13_SIB0_XF7,07_0->F2S_SIB3_XF,11_0 Up    F2S_SIB3_XF,11_0->F13_SIB0_XF7,07_0 Up
F13_SIB0_XF7,08_0->F2S_SIB0_XF,13_0 Up    F2S_SIB0_XF,13_0->F13_SIB0_XF7,08_0 Up
F13_SIB0_XF7,09_0->F2S_SIB0_XF,09_0 Up    F2S_SIB0_XF,09_0->F13_SIB0_XF7,09_0 Up
F13_SIB0_XF7,10_0->F2S_SIB0_XF,15_0 Up    F2S_SIB0_XF,15_0->F13_SIB0_XF7,10_0 Up
F13_SIB0_XF7,11_0->F2S_SIB0_XF,11_0 Up    F2S_SIB0_XF,11_0->F13_SIB0_XF7,11_0 Up
F13_SIB0_XF7,12_0->F2S_SIB1_XF,13_0 Up    F2S_SIB1_XF,13_0->F13_SIB0_XF7,12_0 Up
F13_SIB0_XF7,13_0->F2S_SIB1_XF,09_0 Up    F2S_SIB1_XF,09_0->F13_SIB0_XF7,13_0 Up
F13_SIB0_XF7,14_0->F2S_SIB1_XF,15_0 Up    F2S_SIB1_XF,15_0->F13_SIB0_XF7,14_0 Up
F13_SIB0_XF7,15_0->F2S_SIB1_XF,11_0 Up    F2S_SIB1_XF,11_0->F13_SIB0_XF7,15_0 Up

...

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show chassis fabric topology (PTX5000 Router)

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user@host> show chassis fabric topology
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In-link  : FPC# FE# TQ# (TQ-TX sub-chnl #) ->
           SIB# TF#_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)

Out-link  : SIB# TF#_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->
           FPC# FE# TQ# (TQ-RX sub-chnl #)
(6, 4, 06) in FPC02FE0TQ0(02)->S01F0_0(6,4,06) will be TF Rx Port 6, TF CCL Rx
Sub-Channel 4, TF CCL Rx Instance 6.
(2, 7, 10) in S01F0_0(2,7,10)->FPC02FE0TQ0(02) will be TF-Tx Port 2, TF CCL Tx
Sub-channel 7, TF CCL Tx Instance 10.
SIB 0 FCHIP 0 FCORE 0 :

```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(00)->S00F0_0(7,4,07) | OK | S00F0_0(3,7,11)->FPC00FE0TQ0(00) | OK |
| FPC00FE1TQ1(00)->S00F0_0(7,6,07) | OK | S00F0_0(3,5,11)->FPC00FE1TQ1(00) | OK |
| FPC00FE2TQ2(00)->S00F0_0(7,5,07) | OK | S00F0_0(3,6,11)->FPC00FE2TQ2(00) | OK |
| FPC00FE3TQ3(00)->S00F0_0(7,7,07) | OK | S00F0_0(3,4,11)->FPC00FE3TQ3(00) | OK |
| FPC01FE0TQ0(00)->S00F0_0(7,0,07) | OK | S00F0_0(3,3,11)->FPC01FE0TQ0(00) | OK |
| FPC01FE1TQ1(00)->S00F0_0(7,1,07) | OK | S00F0_0(3,1,11)->FPC01FE1TQ1(00) | OK |
| FPC01FE2TQ2(00)->S00F0_0(7,2,07) | OK | S00F0_0(3,2,11)->FPC01FE2TQ2(00) | Error |
| FPC01FE3TQ3(00)->S00F0_0(7,3,07) | OK | S00F0_0(3,0,11)->FPC01FE3TQ3(00) | OK |
| FPC02FE0TQ0(00)->S00F0_0(6,4,06) | OK | S00F0_0(2,7,10)->FPC02FE0TQ0(00) | OK |
| FPC02FE1TQ1(00)->S00F0_0(6,5,06) | OK | S00F0_0(2,5,10)->FPC02FE1TQ1(00) | OK |
| FPC02FE2TQ2(00)->S00F0_0(6,6,06) | OK | S00F0_0(2,6,10)->FPC02FE2TQ2(00) | OK |
| FPC02FE3TQ3(00)->S00F0_0(6,7,06) | OK | S00F0_0(2,4,10)->FPC02FE3TQ3(00) | OK |
| FPC03FE0TQ0(00)->S00F0_0(6,0,06) | Down | S00F0_0(2,3,10)->FPC03FE0TQ0(00) | Down |
| FPC03FE1TQ1(00)->S00F0_0(6,1,06) | Down | S00F0_0(2,0,10)->FPC03FE1TQ1(00) | Down |
| FPC03FE2TQ2(00)->S00F0_0(6,2,06) | Down | S00F0_0(2,2,10)->FPC03FE2TQ2(00) | Down |
| FPC03FE3TQ3(00)->S00F0_0(6,3,06) | Down | S00F0_0(2,1,10)->FPC03FE3TQ3(00) | Down |
| FPC04FE0TQ0(00)->S00F0_0(5,4,05) | OK | S00F0_0(1,7,09)->FPC04FE0TQ0(00) | OK |
| FPC04FE1TQ1(00)->S00F0_0(5,5,05) | OK | S00F0_0(1,6,09)->FPC04FE1TQ1(00) | OK |
| FPC04FE2TQ2(00)->S00F0_0(5,6,05) | OK | S00F0_0(1,4,09)->FPC04FE2TQ2(00) | OK |
| FPC04FE3TQ3(00)->S00F0_0(5,7,05) | OK | S00F0_0(1,5,09)->FPC04FE3TQ3(00) | OK |
| FPC05FE0TQ0(00)->S00F0_0(5,0,05) | OK | S00F0_0(1,3,09)->FPC05FE0TQ0(00) | OK |

| | | | |
|----------------------------------|------|----------------------------------|------|
| FPC05FE1TQ1(00)->S00F0_0(5,1,05) | OK | S00F0_0(1,0,09)->FPC05FE1TQ1(00) | OK |
| FPC05FE2TQ2(00)->S00F0_0(5,2,05) | OK | S00F0_0(1,2,09)->FPC05FE2TQ2(00) | OK |
| FPC05FE3TQ3(00)->S00F0_0(5,3,05) | OK | S00F0_0(1,1,09)->FPC05FE3TQ3(00) | OK |
| FPC06FE0TQ0(00)->S00F0_0(4,4,04) | Down | S00F0_0(0,7,08)->FPC06FE0TQ0(00) | Down |
| FPC06FE1TQ1(00)->S00F0_0(4,5,04) | Down | S00F0_0(0,5,08)->FPC06FE1TQ1(00) | Down |
| FPC06FE2TQ2(00)->S00F0_0(4,6,04) | Down | S00F0_0(0,6,08)->FPC06FE2TQ2(00) | Down |
| FPC06FE3TQ3(00)->S00F0_0(4,7,04) | Down | S00F0_0(0,4,08)->FPC06FE3TQ3(00) | Down |
| FPC07FE0TQ0(00)->S00F0_0(4,2,04) | Down | S00F0_0(0,3,08)->FPC07FE0TQ0(00) | Down |
| FPC07FE1TQ1(00)->S00F0_0(4,0,04) | Down | S00F0_0(0,0,08)->FPC07FE1TQ1(00) | Down |
| FPC07FE2TQ2(00)->S00F0_0(4,1,04) | Down | S00F0_0(0,1,08)->FPC07FE2TQ2(00) | Down |
| FPC07FE3TQ3(00)->S00F0_0(4,3,04) | Down | S00F0_0(0,2,08)->FPC07FE3TQ3(00) | Down |

SIB 0 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(01)->S00F0_1(3,4,11) | OK | S00F0_1(7,6,07)->FPC00FE0TQ0(01) | OK |
| FPC00FE1TQ1(01)->S00F0_1(3,5,11) | OK | S00F0_1(7,4,07)->FPC00FE1TQ1(01) | OK |
| FPC00FE2TQ2(01)->S00F0_1(3,6,11) | OK | S00F0_1(7,7,07)->FPC00FE2TQ2(01) | OK |
| FPC00FE3TQ3(01)->S00F0_1(3,7,11) | OK | S00F0_1(7,5,07)->FPC00FE3TQ3(01) | OK |
| FPC01FE0TQ0(01)->S00F0_1(3,0,11) | OK | S00F0_1(7,2,07)->FPC01FE0TQ0(01) | OK |
| FPC01FE1TQ1(01)->S00F0_1(3,1,11) | OK | S00F0_1(7,0,07)->FPC01FE1TQ1(01) | OK |
| FPC01FE2TQ2(01)->S00F0_1(3,2,11) | OK | S00F0_1(7,3,07)->FPC01FE2TQ2(01) | OK |
| FPC01FE3TQ3(01)->S00F0_1(3,3,11) | OK | S00F0_1(7,1,07)->FPC01FE3TQ3(01) | OK |
| FPC02FE0TQ0(01)->S00F0_1(2,4,10) | OK | S00F0_1(6,5,06)->FPC02FE0TQ0(01) | OK |
| FPC02FE1TQ1(01)->S00F0_1(2,5,10) | OK | S00F0_1(6,4,06)->FPC02FE1TQ1(01) | OK |
| FPC02FE2TQ2(01)->S00F0_1(2,6,10) | OK | S00F0_1(6,7,06)->FPC02FE2TQ2(01) | OK |
| FPC02FE3TQ3(01)->S00F0_1(2,7,10) | OK | S00F0_1(6,6,06)->FPC02FE3TQ3(01) | OK |
| FPC03FE0TQ0(01)->S00F0_1(2,0,10) | Down | S00F0_1(6,1,06)->FPC03FE0TQ0(01) | Down |
| FPC03FE1TQ1(01)->S00F0_1(2,1,10) | Down | S00F0_1(6,0,06)->FPC03FE1TQ1(01) | Down |
| FPC03FE2TQ2(01)->S00F0_1(2,2,10) | Down | S00F0_1(6,3,06)->FPC03FE2TQ2(01) | Down |
| FPC03FE3TQ3(01)->S00F0_1(2,3,10) | Down | S00F0_1(6,2,06)->FPC03FE3TQ3(01) | Down |
| FPC04FE0TQ0(01)->S00F0_1(1,4,09) | OK | S00F0_1(5,5,05)->FPC04FE0TQ0(01) | OK |
| FPC04FE1TQ1(01)->S00F0_1(1,5,09) | OK | S00F0_1(5,4,05)->FPC04FE1TQ1(01) | OK |
| FPC04FE2TQ2(01)->S00F0_1(1,6,09) | OK | S00F0_1(5,7,05)->FPC04FE2TQ2(01) | OK |
| FPC04FE3TQ3(01)->S00F0_1(1,7,09) | OK | S00F0_1(5,6,05)->FPC04FE3TQ3(01) | OK |
| FPC05FE0TQ0(01)->S00F0_1(1,0,09) | OK | S00F0_1(5,1,05)->FPC05FE0TQ0(01) | OK |
| FPC05FE1TQ1(01)->S00F0_1(1,1,09) | OK | S00F0_1(5,0,05)->FPC05FE1TQ1(01) | OK |
| FPC05FE2TQ2(01)->S00F0_1(1,2,09) | OK | S00F0_1(5,3,05)->FPC05FE2TQ2(01) | OK |
| FPC05FE3TQ3(01)->S00F0_1(1,3,09) | OK | S00F0_1(5,2,05)->FPC05FE3TQ3(01) | OK |
| FPC06FE0TQ0(01)->S00F0_1(0,4,08) | Down | S00F0_1(4,7,04)->FPC06FE0TQ0(01) | Down |
| FPC06FE1TQ1(01)->S00F0_1(0,5,08) | Down | S00F0_1(4,0,04)->FPC06FE1TQ1(01) | Down |
| FPC06FE2TQ2(01)->S00F0_1(0,6,08) | Down | S00F0_1(4,6,04)->FPC06FE2TQ2(01) | Down |
| FPC06FE3TQ3(01)->S00F0_1(0,7,08) | Down | S00F0_1(4,1,04)->FPC06FE3TQ3(01) | Down |
| FPC07FE0TQ0(01)->S00F0_1(0,0,08) | Down | S00F0_1(4,3,04)->FPC07FE0TQ0(01) | Down |
| FPC07FE1TQ1(01)->S00F0_1(0,1,08) | Down | S00F0_1(4,4,04)->FPC07FE1TQ1(01) | Down |
| FPC07FE2TQ2(01)->S00F0_1(0,2,08) | Down | S00F0_1(4,2,04)->FPC07FE2TQ2(01) | Down |
| FPC07FE3TQ3(01)->S00F0_1(0,3,08) | Down | S00F0_1(4,5,04)->FPC07FE3TQ3(01) | Down |

SIB 1 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(02)->S01F0_0(7,4,07) | Error | S01F0_0(3,7,11)->FPC00FE0TQ0(02) | Down |
| FPC00FE1TQ1(02)->S01F0_0(7,6,07) | OK | S01F0_0(3,5,11)->FPC00FE1TQ1(02) | OK |
| FPC00FE2TQ2(02)->S01F0_0(7,5,07) | OK | S01F0_0(3,6,11)->FPC00FE2TQ2(02) | OK |
| FPC00FE3TQ3(02)->S01F0_0(7,7,07) | OK | S01F0_0(3,4,11)->FPC00FE3TQ3(02) | OK |
| FPC01FE0TQ0(02)->S01F0_0(7,0,07) | OK | S01F0_0(3,3,11)->FPC01FE0TQ0(02) | OK |
| FPC01FE1TQ1(02)->S01F0_0(7,1,07) | OK | S01F0_0(3,1,11)->FPC01FE1TQ1(02) | OK |
| FPC01FE2TQ2(02)->S01F0_0(7,2,07) | OK | S01F0_0(3,2,11)->FPC01FE2TQ2(02) | OK |

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FPC01FE3TQ3(02)->S01F0_0(7,3,07) OK      S01F0_0(3,0,11)->FPC01FE3TQ3(02) OK
FPC02FE0TQ0(02)->S01F0_0(6,4,06) OK      S01F0_0(2,7,10)->FPC02FE0TQ0(02) OK
FPC02FE1TQ1(02)->S01F0_0(6,5,06) OK      S01F0_0(2,5,10)->FPC02FE1TQ1(02) OK
FPC02FE2TQ2(02)->S01F0_0(6,6,06) OK      S01F0_0(2,6,10)->FPC02FE2TQ2(02) OK
FPC02FE3TQ3(02)->S01F0_0(6,7,06) OK      S01F0_0(2,4,10)->FPC02FE3TQ3(02) OK
FPC03FE0TQ0(02)->S01F0_0(6,0,06) Down    S01F0_0(2,3,10)->FPC03FE0TQ0(02) Down
FPC03FE1TQ1(02)->S01F0_0(6,1,06) Down    S01F0_0(2,0,10)->FPC03FE1TQ1(02) Down
FPC03FE2TQ2(02)->S01F0_0(6,2,06) Down    S01F0_0(2,2,10)->FPC03FE2TQ2(02) Down
FPC03FE3TQ3(02)->S01F0_0(6,3,06) Down    S01F0_0(2,1,10)->FPC03FE3TQ3(02) Down
FPC04FE0TQ0(02)->S01F0_0(5,4,05) OK      S01F0_0(1,7,09)->FPC04FE0TQ0(02) OK
FPC04FE1TQ1(02)->S01F0_0(5,5,05) OK      S01F0_0(1,6,09)->FPC04FE1TQ1(02) OK
FPC04FE2TQ2(02)->S01F0_0(5,6,05) OK      S01F0_0(1,4,09)->FPC04FE2TQ2(02) OK
FPC04FE3TQ3(02)->S01F0_0(5,7,05) OK      S01F0_0(1,5,09)->FPC04FE3TQ3(02) OK
FPC05FE0TQ0(02)->S01F0_0(5,0,05) OK      S01F0_0(1,3,09)->FPC05FE0TQ0(02) OK
FPC05FE1TQ1(02)->S01F0_0(5,1,05) OK      S01F0_0(1,0,09)->FPC05FE1TQ1(02) OK
FPC05FE2TQ2(02)->S01F0_0(5,2,05) OK      S01F0_0(1,2,09)->FPC05FE2TQ2(02) OK
FPC05FE3TQ3(02)->S01F0_0(5,3,05) OK      S01F0_0(1,1,09)->FPC05FE3TQ3(02) OK
FPC06FE0TQ0(02)->S01F0_0(4,4,04) Down    S01F0_0(0,7,08)->FPC06FE0TQ0(02) Down
FPC06FE1TQ1(02)->S01F0_0(4,5,04) Down    S01F0_0(0,5,08)->FPC06FE1TQ1(02) Down
FPC06FE2TQ2(02)->S01F0_0(4,6,04) Down    S01F0_0(0,6,08)->FPC06FE2TQ2(02) Down
FPC06FE3TQ3(02)->S01F0_0(4,7,04) Down    S01F0_0(0,4,08)->FPC06FE3TQ3(02) Down
FPC07FE0TQ0(02)->S01F0_0(4,2,04) Down    S01F0_0(0,3,08)->FPC07FE0TQ0(02) Down
FPC07FE1TQ1(02)->S01F0_0(4,0,04) Down    S01F0_0(0,0,08)->FPC07FE1TQ1(02) Down
FPC07FE2TQ2(02)->S01F0_0(4,1,04) Down    S01F0_0(0,1,08)->FPC07FE2TQ2(02) Down
FPC07FE3TQ3(02)->S01F0_0(4,3,04) Down    S01F0_0(0,2,08)->FPC07FE3TQ3(02) Down

```

SIB 1 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(03)->S01F0_1(3,4,11) | OK | S01F0_1(7,6,07)->FPC00FE0TQ0(03) | OK |
| FPC00FE1TQ1(03)->S01F0_1(3,5,11) | OK | S01F0_1(7,4,07)->FPC00FE1TQ1(03) | OK |
| FPC00FE2TQ2(03)->S01F0_1(3,6,11) | OK | S01F0_1(7,7,07)->FPC00FE2TQ2(03) | OK |
| FPC00FE3TQ3(03)->S01F0_1(3,7,11) | OK | S01F0_1(7,5,07)->FPC00FE3TQ3(03) | OK |
| FPC01FE0TQ0(03)->S01F0_1(3,0,11) | OK | S01F0_1(7,2,07)->FPC01FE0TQ0(03) | OK |
| FPC01FE1TQ1(03)->S01F0_1(3,1,11) | OK | S01F0_1(7,0,07)->FPC01FE1TQ1(03) | OK |
| FPC01FE2TQ2(03)->S01F0_1(3,2,11) | OK | S01F0_1(7,3,07)->FPC01FE2TQ2(03) | OK |
| FPC01FE3TQ3(03)->S01F0_1(3,3,11) | OK | S01F0_1(7,1,07)->FPC01FE3TQ3(03) | OK |
| FPC02FE0TQ0(03)->S01F0_1(2,4,10) | OK | S01F0_1(6,5,06)->FPC02FE0TQ0(03) | OK |
| FPC02FE1TQ1(03)->S01F0_1(2,5,10) | OK | S01F0_1(6,4,06)->FPC02FE1TQ1(03) | OK |
| FPC02FE2TQ2(03)->S01F0_1(2,6,10) | OK | S01F0_1(6,7,06)->FPC02FE2TQ2(03) | OK |
| FPC02FE3TQ3(03)->S01F0_1(2,7,10) | OK | S01F0_1(6,6,06)->FPC02FE3TQ3(03) | OK |
| FPC03FE0TQ0(03)->S01F0_1(2,0,10) | Down | S01F0_1(6,1,06)->FPC03FE0TQ0(03) | Down |
| FPC03FE1TQ1(03)->S01F0_1(2,1,10) | Down | S01F0_1(6,0,06)->FPC03FE1TQ1(03) | Down |
| FPC03FE2TQ2(03)->S01F0_1(2,2,10) | Down | S01F0_1(6,3,06)->FPC03FE2TQ2(03) | Down |
| FPC03FE3TQ3(03)->S01F0_1(2,3,10) | Down | S01F0_1(6,2,06)->FPC03FE3TQ3(03) | Down |
| FPC04FE0TQ0(03)->S01F0_1(1,4,09) | OK | S01F0_1(5,5,05)->FPC04FE0TQ0(03) | OK |
| FPC04FE1TQ1(03)->S01F0_1(1,5,09) | OK | S01F0_1(5,4,05)->FPC04FE1TQ1(03) | OK |
| FPC04FE2TQ2(03)->S01F0_1(1,6,09) | OK | S01F0_1(5,7,05)->FPC04FE2TQ2(03) | OK |
| FPC04FE3TQ3(03)->S01F0_1(1,7,09) | OK | S01F0_1(5,6,05)->FPC04FE3TQ3(03) | OK |
| FPC05FE0TQ0(03)->S01F0_1(1,0,09) | OK | S01F0_1(5,1,05)->FPC05FE0TQ0(03) | OK |
| FPC05FE1TQ1(03)->S01F0_1(1,1,09) | OK | S01F0_1(5,0,05)->FPC05FE1TQ1(03) | OK |
| FPC05FE2TQ2(03)->S01F0_1(1,2,09) | OK | S01F0_1(5,3,05)->FPC05FE2TQ2(03) | OK |
| FPC05FE3TQ3(03)->S01F0_1(1,3,09) | OK | S01F0_1(5,2,05)->FPC05FE3TQ3(03) | OK |
| FPC06FE0TQ0(03)->S01F0_1(0,4,08) | Down | S01F0_1(4,7,04)->FPC06FE0TQ0(03) | Down |
| FPC06FE1TQ1(03)->S01F0_1(0,5,08) | Down | S01F0_1(4,0,04)->FPC06FE1TQ1(03) | Down |
| FPC06FE2TQ2(03)->S01F0_1(0,6,08) | Down | S01F0_1(4,6,04)->FPC06FE2TQ2(03) | Down |
| FPC06FE3TQ3(03)->S01F0_1(0,7,08) | Down | S01F0_1(4,1,04)->FPC06FE3TQ3(03) | Down |
| FPC07FE0TQ0(03)->S01F0_1(0,0,08) | Down | S01F0_1(4,3,04)->FPC07FE0TQ0(03) | Down |
| FPC07FE1TQ1(03)->S01F0_1(0,1,08) | Down | S01F0_1(4,4,04)->FPC07FE1TQ1(03) | Down |

```

FPC07FE2TQ2(03)->S01F0_1(0,2,08) Down    S01F0_1(4,2,04)->FPC07FE2TQ2(03) Down
FPC07FE3TQ3(03)->S01F0_1(0,3,08) Down    S01F0_1(4,5,04)->FPC07FE3TQ3(03) Down

```

show chassis fabric topology (PTX3000 Router)

```
user@host> show chassis fabric topology
```

```

In-link  : FPC# FE# TQ# (TQ-TX sub-chnl #) ->
           SIB# TF#_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)

```

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Out-link : SIB# TF#_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->
           FPC# FE# TQ# (TQ-RX sub-chnl #)

```

```
SIB 0 FCHIP 0 FCORE 0 :
```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(00)->S00F0_0(7,0,07) | Down | S00F0_0(3,0,11)->FPC00FE0TQ0(00) | Down |
| FPC00FE1TQ1(00)->S00F0_0(7,1,07) | Down | S00F0_0(3,1,11)->FPC00FE1TQ1(00) | Down |
| FPC02FE0TQ0(00)->S00F0_0(6,0,06) | Down | S00F0_0(2,0,10)->FPC02FE0TQ0(00) | Down |
| FPC02FE1TQ1(00)->S00F0_0(6,1,06) | Down | S00F0_0(2,1,10)->FPC02FE1TQ1(00) | Down |
| FPC04FE0TQ0(00)->S00F0_0(5,0,05) | Down | S00F0_0(1,0,09)->FPC04FE0TQ0(00) | Down |
| FPC04FE1TQ1(00)->S00F0_0(5,1,05) | Down | S00F0_0(1,1,09)->FPC04FE1TQ1(00) | Down |
| FPC06FE0TQ0(00)->S00F0_0(4,0,04) | Down | S00F0_0(0,0,08)->FPC06FE0TQ0(00) | Down |
| FPC06FE1TQ1(00)->S00F0_0(4,1,04) | Down | S00F0_0(0,1,08)->FPC06FE1TQ1(00) | Down |
| FPC08FE0TQ0(00)->S00F0_0(4,2,04) | OK | S00F0_0(0,2,08)->FPC08FE0TQ0(00) | OK |
| FPC08FE1TQ1(00)->S00F0_0(4,3,04) | OK | S00F0_0(0,3,08)->FPC08FE1TQ1(00) | OK |
| FPC10FE0TQ0(00)->S00F0_0(5,2,05) | Down | S00F0_0(1,2,09)->FPC10FE0TQ0(00) | Down |
| FPC10FE1TQ1(00)->S00F0_0(5,3,05) | Down | S00F0_0(1,3,09)->FPC10FE1TQ1(00) | Down |
| FPC12FE0TQ0(00)->S00F0_0(7,2,07) | OK | S00F0_0(3,2,11)->FPC12FE0TQ0(00) | OK |
| FPC12FE1TQ1(00)->S00F0_0(7,3,07) | OK | S00F0_0(3,3,11)->FPC12FE1TQ1(00) | OK |
| FPC14FE0TQ0(00)->S00F0_0(7,4,07) | Down | S00F0_0(3,4,11)->FPC14FE0TQ0(00) | Down |
| FPC14FE1TQ1(00)->S00F0_0(7,5,07) | Down | S00F0_0(3,5,11)->FPC14FE1TQ1(00) | Down |

```
SIB 0 FCHIP 0 FCORE 1 :
```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(01)->S00F0_1(3,0,11) | Down | S00F0_1(7,0,07)->FPC00FE0TQ0(01) | Down |
| FPC00FE1TQ1(01)->S00F0_1(3,1,11) | Down | S00F0_1(7,1,07)->FPC00FE1TQ1(01) | Down |
| FPC02FE0TQ0(01)->S00F0_1(2,0,10) | Down | S00F0_1(6,0,06)->FPC02FE0TQ0(01) | Down |
| FPC02FE1TQ1(01)->S00F0_1(2,1,10) | Down | S00F0_1(6,1,06)->FPC02FE1TQ1(01) | Down |
| FPC04FE0TQ0(01)->S00F0_1(1,0,09) | Down | S00F0_1(4,0,04)->FPC04FE0TQ0(01) | Down |
| FPC04FE1TQ1(01)->S00F0_1(1,1,09) | Down | S00F0_1(4,1,04)->FPC04FE1TQ1(01) | Down |
| FPC06FE0TQ0(01)->S00F0_1(0,0,08) | Down | S00F0_1(4,2,04)->FPC06FE0TQ0(01) | Down |
| FPC06FE1TQ1(01)->S00F0_1(0,1,08) | Down | S00F0_1(4,3,04)->FPC06FE1TQ1(01) | Down |
| FPC08FE0TQ0(01)->S00F0_1(0,2,08) | OK | S00F0_1(4,4,04)->FPC08FE0TQ0(01) | OK |
| FPC08FE1TQ1(01)->S00F0_1(0,3,08) | OK | S00F0_1(4,5,04)->FPC08FE1TQ1(01) | OK |
| FPC10FE0TQ0(01)->S00F0_1(1,2,09) | Down | S00F0_1(5,0,05)->FPC10FE0TQ0(01) | Down |
| FPC10FE1TQ1(01)->S00F0_1(1,3,09) | Down | S00F0_1(5,1,05)->FPC10FE1TQ1(01) | Down |
| FPC12FE0TQ0(01)->S00F0_1(2,2,10) | OK | S00F0_1(6,2,06)->FPC12FE0TQ0(01) | OK |
| FPC12FE1TQ1(01)->S00F0_1(2,3,10) | OK | S00F0_1(6,3,06)->FPC12FE1TQ1(01) | OK |
| FPC14FE0TQ0(01)->S00F0_1(3,2,11) | Down | S00F0_1(7,2,07)->FPC14FE0TQ0(01) | Down |
| FPC14FE1TQ1(01)->S00F0_1(3,3,11) | Down | S00F0_1(7,3,07)->FPC14FE1TQ1(01) | Down |

```
SIB 1 FCHIP 0 FCORE 0 :
```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(02)->S01F0_0(7,0,07) | Down | S01F0_0(3,0,11)->FPC00FE0TQ0(02) | Down |
| FPC00FE1TQ1(02)->S01F0_0(7,1,07) | Down | S01F0_0(3,1,11)->FPC00FE1TQ1(02) | Down |


```
FPC02FE0TQ0(02)->S01F0_0(6,0,06) Down    S01F0_0(2,0,10)->FPC02FE0TQ0(02) Down
FPC02FE1TQ1(02)->S01F0_0(6,1,06) Down    S01F0_0(2,1,10)->FPC02FE1TQ1(02) Down
---(more)---[abort]
```

```
user@host> show chassis fabric topology | no-more
```

```
In-link  : FPC# FE# TQ# (TQ-TX sub-chnl #) ->
           SIB# TF#_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)

Out-link  : SIB# TF#_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->
           FPC# FE# TQ# (TQ-RX sub-chnl #)
```

```
SIB 0 FCHIP 0 FCORE 0 :
```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(00)->S00F0_0(7,0,07) | Down | S00F0_0(3,0,11)->FPC00FE0TQ0(00) | Down |
| FPC00FE1TQ1(00)->S00F0_0(7,1,07) | Down | S00F0_0(3,1,11)->FPC00FE1TQ1(00) | Down |
| FPC02FE0TQ0(00)->S00F0_0(6,0,06) | Down | S00F0_0(2,0,10)->FPC02FE0TQ0(00) | Down |
| FPC02FE1TQ1(00)->S00F0_0(6,1,06) | Down | S00F0_0(2,1,10)->FPC02FE1TQ1(00) | Down |
| FPC04FE0TQ0(00)->S00F0_0(5,0,05) | Down | S00F0_0(1,0,09)->FPC04FE0TQ0(00) | Down |
| FPC04FE1TQ1(00)->S00F0_0(5,1,05) | Down | S00F0_0(1,1,09)->FPC04FE1TQ1(00) | Down |
| FPC06FE0TQ0(00)->S00F0_0(4,0,04) | Down | S00F0_0(0,0,08)->FPC06FE0TQ0(00) | Down |
| FPC06FE1TQ1(00)->S00F0_0(4,1,04) | Down | S00F0_0(0,1,08)->FPC06FE1TQ1(00) | Down |
| FPC08FE0TQ0(00)->S00F0_0(4,2,04) | OK | S00F0_0(0,2,08)->FPC08FE0TQ0(00) | OK |
| FPC08FE1TQ1(00)->S00F0_0(4,3,04) | OK | S00F0_0(0,3,08)->FPC08FE1TQ1(00) | OK |
| FPC10FE0TQ0(00)->S00F0_0(5,2,05) | Down | S00F0_0(1,2,09)->FPC10FE0TQ0(00) | Down |
| FPC10FE1TQ1(00)->S00F0_0(5,3,05) | Down | S00F0_0(1,3,09)->FPC10FE1TQ1(00) | Down |
| FPC12FE0TQ0(00)->S00F0_0(7,2,07) | OK | S00F0_0(3,2,11)->FPC12FE0TQ0(00) | OK |
| FPC12FE1TQ1(00)->S00F0_0(7,3,07) | OK | S00F0_0(3,3,11)->FPC12FE1TQ1(00) | OK |
| FPC14FE0TQ0(00)->S00F0_0(7,4,07) | Down | S00F0_0(3,4,11)->FPC14FE0TQ0(00) | Down |
| FPC14FE1TQ1(00)->S00F0_0(7,5,07) | Down | S00F0_0(3,5,11)->FPC14FE1TQ1(00) | Down |

```
SIB 0 FCHIP 0 FCORE 1 :
```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(01)->S00F0_1(3,0,11) | Down | S00F0_1(7,0,07)->FPC00FE0TQ0(01) | Down |
| FPC00FE1TQ1(01)->S00F0_1(3,1,11) | Down | S00F0_1(7,1,07)->FPC00FE1TQ1(01) | Down |
| FPC02FE0TQ0(01)->S00F0_1(2,0,10) | Down | S00F0_1(6,0,06)->FPC02FE0TQ0(01) | Down |
| FPC02FE1TQ1(01)->S00F0_1(2,1,10) | Down | S00F0_1(6,1,06)->FPC02FE1TQ1(01) | Down |
| FPC04FE0TQ0(01)->S00F0_1(1,0,09) | Down | S00F0_1(4,0,04)->FPC04FE0TQ0(01) | Down |
| FPC04FE1TQ1(01)->S00F0_1(1,1,09) | Down | S00F0_1(4,1,04)->FPC04FE1TQ1(01) | Down |
| FPC06FE0TQ0(01)->S00F0_1(0,0,08) | Down | S00F0_1(4,2,04)->FPC06FE0TQ0(01) | Down |
| FPC06FE1TQ1(01)->S00F0_1(0,1,08) | Down | S00F0_1(4,3,04)->FPC06FE1TQ1(01) | Down |
| FPC08FE0TQ0(01)->S00F0_1(0,2,08) | OK | S00F0_1(4,4,04)->FPC08FE0TQ0(01) | OK |
| FPC08FE1TQ1(01)->S00F0_1(0,3,08) | OK | S00F0_1(4,5,04)->FPC08FE1TQ1(01) | OK |
| FPC10FE0TQ0(01)->S00F0_1(1,2,09) | Down | S00F0_1(5,0,05)->FPC10FE0TQ0(01) | Down |
| FPC10FE1TQ1(01)->S00F0_1(1,3,09) | Down | S00F0_1(5,1,05)->FPC10FE1TQ1(01) | Down |
| FPC12FE0TQ0(01)->S00F0_1(2,2,10) | OK | S00F0_1(6,2,06)->FPC12FE0TQ0(01) | OK |
| FPC12FE1TQ1(01)->S00F0_1(2,3,10) | OK | S00F0_1(6,3,06)->FPC12FE1TQ1(01) | OK |
| FPC14FE0TQ0(01)->S00F0_1(3,2,11) | Down | S00F0_1(7,2,07)->FPC14FE0TQ0(01) | Down |
| FPC14FE1TQ1(01)->S00F0_1(3,3,11) | Down | S00F0_1(7,3,07)->FPC14FE1TQ1(01) | Down |

```
SIB 1 FCHIP 0 FCORE 0 :
```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(02)->S01F0_0(7,0,07) | Down | S01F0_0(3,0,11)->FPC00FE0TQ0(02) | Down |
| FPC00FE1TQ1(02)->S01F0_0(7,1,07) | Down | S01F0_0(3,1,11)->FPC00FE1TQ1(02) | Down |
| FPC02FE0TQ0(02)->S01F0_0(6,0,06) | Down | S01F0_0(2,0,10)->FPC02FE0TQ0(02) | Down |

| | | | |
|----------------------------------|------|----------------------------------|------|
| FPC02FE1TQ1(02)->S01F0_0(6,1,06) | Down | S01F0_0(2,1,10)->FPC02FE1TQ1(02) | Down |
| FPC04FE0TQ0(02)->S01F0_0(5,0,05) | Down | S01F0_0(1,0,09)->FPC04FE0TQ0(02) | Down |
| FPC04FE1TQ1(02)->S01F0_0(5,1,05) | Down | S01F0_0(1,1,09)->FPC04FE1TQ1(02) | Down |
| FPC06FE0TQ0(02)->S01F0_0(4,0,04) | Down | S01F0_0(0,0,08)->FPC06FE0TQ0(02) | Down |
| FPC06FE1TQ1(02)->S01F0_0(4,1,04) | Down | S01F0_0(0,1,08)->FPC06FE1TQ1(02) | Down |
| FPC08FE0TQ0(02)->S01F0_0(4,2,04) | OK | S01F0_0(0,2,08)->FPC08FE0TQ0(02) | OK |
| FPC08FE1TQ1(02)->S01F0_0(4,3,04) | OK | S01F0_0(0,3,08)->FPC08FE1TQ1(02) | OK |
| FPC10FE0TQ0(02)->S01F0_0(5,2,05) | Down | S01F0_0(1,2,09)->FPC10FE0TQ0(02) | Down |
| FPC10FE1TQ1(02)->S01F0_0(5,3,05) | Down | S01F0_0(1,3,09)->FPC10FE1TQ1(02) | Down |
| FPC12FE0TQ0(02)->S01F0_0(7,2,07) | OK | S01F0_0(3,2,11)->FPC12FE0TQ0(02) | OK |
| FPC12FE1TQ1(02)->S01F0_0(7,3,07) | OK | S01F0_0(3,3,11)->FPC12FE1TQ1(02) | OK |
| FPC14FE0TQ0(02)->S01F0_0(7,4,07) | Down | S01F0_0(3,4,11)->FPC14FE0TQ0(02) | Down |
| FPC14FE1TQ1(02)->S01F0_0(7,5,07) | Down | S01F0_0(3,5,11)->FPC14FE1TQ1(02) | Down |

SIB 1 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(03)->S01F0_1(3,0,11) | Down | S01F0_1(7,0,07)->FPC00FE0TQ0(03) | Down |
| FPC00FE1TQ1(03)->S01F0_1(3,1,11) | Down | S01F0_1(7,1,07)->FPC00FE1TQ1(03) | Down |
| FPC02FE0TQ0(03)->S01F0_1(2,0,10) | Down | S01F0_1(6,0,06)->FPC02FE0TQ0(03) | Down |
| FPC02FE1TQ1(03)->S01F0_1(2,1,10) | Down | S01F0_1(6,1,06)->FPC02FE1TQ1(03) | Down |
| FPC04FE0TQ0(03)->S01F0_1(1,0,09) | Down | S01F0_1(4,0,04)->FPC04FE0TQ0(03) | Down |
| FPC04FE1TQ1(03)->S01F0_1(1,1,09) | Down | S01F0_1(4,1,04)->FPC04FE1TQ1(03) | Down |
| FPC06FE0TQ0(03)->S01F0_1(0,0,08) | Down | S01F0_1(4,2,04)->FPC06FE0TQ0(03) | Down |
| FPC06FE1TQ1(03)->S01F0_1(0,1,08) | Down | S01F0_1(4,3,04)->FPC06FE1TQ1(03) | Down |
| FPC08FE0TQ0(03)->S01F0_1(0,2,08) | OK | S01F0_1(4,4,04)->FPC08FE0TQ0(03) | OK |
| FPC08FE1TQ1(03)->S01F0_1(0,3,08) | OK | S01F0_1(4,5,04)->FPC08FE1TQ1(03) | OK |
| FPC10FE0TQ0(03)->S01F0_1(1,2,09) | Down | S01F0_1(5,0,05)->FPC10FE0TQ0(03) | Down |
| FPC10FE1TQ1(03)->S01F0_1(1,3,09) | Down | S01F0_1(5,1,05)->FPC10FE1TQ1(03) | Down |
| FPC12FE0TQ0(03)->S01F0_1(2,2,10) | OK | S01F0_1(6,2,06)->FPC12FE0TQ0(03) | OK |
| FPC12FE1TQ1(03)->S01F0_1(2,3,10) | OK | S01F0_1(6,3,06)->FPC12FE1TQ1(03) | OK |
| FPC14FE0TQ0(03)->S01F0_1(3,2,11) | Down | S01F0_1(7,2,07)->FPC14FE0TQ0(03) | Down |
| FPC14FE1TQ1(03)->S01F0_1(3,3,11) | Down | S01F0_1(7,3,07)->FPC14FE1TQ1(03) | Down |

SIB 2 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(04)->S02F0_0(7,0,07) | Down | S02F0_0(3,0,11)->FPC00FE0TQ0(04) | Down |
| FPC00FE1TQ1(04)->S02F0_0(7,1,07) | Down | S02F0_0(3,1,11)->FPC00FE1TQ1(04) | Down |
| FPC02FE0TQ0(04)->S02F0_0(6,0,06) | Down | S02F0_0(2,0,10)->FPC02FE0TQ0(04) | Down |
| FPC02FE1TQ1(04)->S02F0_0(6,1,06) | Down | S02F0_0(2,1,10)->FPC02FE1TQ1(04) | Down |
| FPC04FE0TQ0(04)->S02F0_0(5,0,05) | Down | S02F0_0(1,0,09)->FPC04FE0TQ0(04) | Down |
| FPC04FE1TQ1(04)->S02F0_0(5,1,05) | Down | S02F0_0(1,1,09)->FPC04FE1TQ1(04) | Down |
| FPC06FE0TQ0(04)->S02F0_0(4,0,04) | Down | S02F0_0(0,0,08)->FPC06FE0TQ0(04) | Down |
| FPC06FE1TQ1(04)->S02F0_0(4,1,04) | Down | S02F0_0(0,1,08)->FPC06FE1TQ1(04) | Down |
| FPC08FE0TQ0(04)->S02F0_0(4,2,04) | OK | S02F0_0(0,2,08)->FPC08FE0TQ0(04) | OK |
| FPC08FE1TQ1(04)->S02F0_0(4,3,04) | OK | S02F0_0(0,3,08)->FPC08FE1TQ1(04) | OK |
| FPC10FE0TQ0(04)->S02F0_0(5,2,05) | Down | S02F0_0(1,2,09)->FPC10FE0TQ0(04) | Down |
| FPC10FE1TQ1(04)->S02F0_0(5,3,05) | Down | S02F0_0(1,3,09)->FPC10FE1TQ1(04) | Down |
| FPC12FE0TQ0(04)->S02F0_0(7,2,07) | OK | S02F0_0(3,2,11)->FPC12FE0TQ0(04) | OK |
| FPC12FE1TQ1(04)->S02F0_0(7,3,07) | OK | S02F0_0(3,3,11)->FPC12FE1TQ1(04) | OK |
| FPC14FE0TQ0(04)->S02F0_0(7,4,07) | Down | S02F0_0(3,4,11)->FPC14FE0TQ0(04) | Down |
| FPC14FE1TQ1(04)->S02F0_0(7,5,07) | Down | S02F0_0(3,5,11)->FPC14FE1TQ1(04) | Down |

SIB 2 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------|-------|-----------|-------|
|----------|-------|-----------|-------|

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FPC00FE0TQ0(05)->S02F0_1(3,0,11) Down    S02F0_1(7,0,07)->FPC00FE0TQ0(05) Down
FPC00FE1TQ1(05)->S02F0_1(3,1,11) Down    S02F0_1(7,1,07)->FPC00FE1TQ1(05) Down
FPC02FE0TQ0(05)->S02F0_1(2,0,10) Down    S02F0_1(6,0,06)->FPC02FE0TQ0(05) Down
FPC02FE1TQ1(05)->S02F0_1(2,1,10) Down    S02F0_1(6,1,06)->FPC02FE1TQ1(05) Down
FPC04FE0TQ0(05)->S02F0_1(1,0,09) Down    S02F0_1(4,0,04)->FPC04FE0TQ0(05) Down
FPC04FE1TQ1(05)->S02F0_1(1,1,09) Down    S02F0_1(4,1,04)->FPC04FE1TQ1(05) Down
FPC06FE0TQ0(05)->S02F0_1(0,0,08) Down    S02F0_1(4,2,04)->FPC06FE0TQ0(05) Down
FPC06FE1TQ1(05)->S02F0_1(0,1,08) Down    S02F0_1(4,3,04)->FPC06FE1TQ1(05) Down
FPC08FE0TQ0(05)->S02F0_1(0,2,08) OK      S02F0_1(4,4,04)->FPC08FE0TQ0(05) OK
FPC08FE1TQ1(05)->S02F0_1(0,3,08) OK      S02F0_1(4,5,04)->FPC08FE1TQ1(05) OK
FPC10FE0TQ0(05)->S02F0_1(1,2,09) Down    S02F0_1(5,0,05)->FPC10FE0TQ0(05) Down
FPC10FE1TQ1(05)->S02F0_1(1,3,09) Down    S02F0_1(5,1,05)->FPC10FE1TQ1(05) Down
FPC12FE0TQ0(05)->S02F0_1(2,2,10) OK      S02F0_1(6,2,06)->FPC12FE0TQ0(05) OK
FPC12FE1TQ1(05)->S02F0_1(2,3,10) OK      S02F0_1(6,3,06)->FPC12FE1TQ1(05) OK
FPC14FE0TQ0(05)->S02F0_1(3,2,11) Down    S02F0_1(7,2,07)->FPC14FE0TQ0(05) Down
FPC14FE1TQ1(05)->S02F0_1(3,3,11) Down    S02F0_1(7,3,07)->FPC14FE1TQ1(05) Down

```

SIB 3 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(06)->S03F0_0(7,0,07) | Down | S03F0_0(3,0,11)->FPC00FE0TQ0(06) | Down |
| FPC00FE1TQ1(06)->S03F0_0(7,1,07) | Down | S03F0_0(3,1,11)->FPC00FE1TQ1(06) | Down |
| FPC02FE0TQ0(06)->S03F0_0(6,0,06) | Down | S03F0_0(2,0,10)->FPC02FE0TQ0(06) | Down |
| FPC02FE1TQ1(06)->S03F0_0(6,1,06) | Down | S03F0_0(2,1,10)->FPC02FE1TQ1(06) | Down |
| FPC04FE0TQ0(06)->S03F0_0(5,0,05) | Down | S03F0_0(1,0,09)->FPC04FE0TQ0(06) | Down |
| FPC04FE1TQ1(06)->S03F0_0(5,1,05) | Down | S03F0_0(1,1,09)->FPC04FE1TQ1(06) | Down |
| FPC06FE0TQ0(06)->S03F0_0(4,0,04) | Down | S03F0_0(0,0,08)->FPC06FE0TQ0(06) | Down |
| FPC06FE1TQ1(06)->S03F0_0(4,1,04) | Down | S03F0_0(0,1,08)->FPC06FE1TQ1(06) | Down |
| FPC08FE0TQ0(06)->S03F0_0(4,2,04) | OK | S03F0_0(0,2,08)->FPC08FE0TQ0(06) | OK |
| FPC08FE1TQ1(06)->S03F0_0(4,3,04) | OK | S03F0_0(0,3,08)->FPC08FE1TQ1(06) | OK |
| FPC10FE0TQ0(06)->S03F0_0(5,2,05) | Down | S03F0_0(1,2,09)->FPC10FE0TQ0(06) | Down |
| FPC10FE1TQ1(06)->S03F0_0(5,3,05) | Down | S03F0_0(1,3,09)->FPC10FE1TQ1(06) | Down |
| FPC12FE0TQ0(06)->S03F0_0(7,2,07) | OK | S03F0_0(3,2,11)->FPC12FE0TQ0(06) | OK |
| FPC12FE1TQ1(06)->S03F0_0(7,3,07) | OK | S03F0_0(3,3,11)->FPC12FE1TQ1(06) | OK |
| FPC14FE0TQ0(06)->S03F0_0(7,4,07) | Down | S03F0_0(3,4,11)->FPC14FE0TQ0(06) | Down |
| FPC14FE1TQ1(06)->S03F0_0(7,5,07) | Down | S03F0_0(3,5,11)->FPC14FE1TQ1(06) | Down |

SIB 3 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(07)->S03F0_1(3,0,11) | Down | S03F0_1(7,0,07)->FPC00FE0TQ0(07) | Down |
| FPC00FE1TQ1(07)->S03F0_1(3,1,11) | Down | S03F0_1(7,1,07)->FPC00FE1TQ1(07) | Down |
| FPC02FE0TQ0(07)->S03F0_1(2,0,10) | Down | S03F0_1(6,0,06)->FPC02FE0TQ0(07) | Down |
| FPC02FE1TQ1(07)->S03F0_1(2,1,10) | Down | S03F0_1(6,1,06)->FPC02FE1TQ1(07) | Down |
| FPC04FE0TQ0(07)->S03F0_1(1,0,09) | Down | S03F0_1(4,0,04)->FPC04FE0TQ0(07) | Down |
| FPC04FE1TQ1(07)->S03F0_1(1,1,09) | Down | S03F0_1(4,1,04)->FPC04FE1TQ1(07) | Down |
| FPC06FE0TQ0(07)->S03F0_1(0,0,08) | Down | S03F0_1(4,2,04)->FPC06FE0TQ0(07) | Down |
| FPC06FE1TQ1(07)->S03F0_1(0,1,08) | Down | S03F0_1(4,3,04)->FPC06FE1TQ1(07) | Down |
| FPC08FE0TQ0(07)->S03F0_1(0,2,08) | OK | S03F0_1(4,4,04)->FPC08FE0TQ0(07) | OK |
| FPC08FE1TQ1(07)->S03F0_1(0,3,08) | OK | S03F0_1(4,5,04)->FPC08FE1TQ1(07) | OK |
| FPC10FE0TQ0(07)->S03F0_1(1,2,09) | Down | S03F0_1(5,0,05)->FPC10FE0TQ0(07) | Down |
| FPC10FE1TQ1(07)->S03F0_1(1,3,09) | Down | S03F0_1(5,1,05)->FPC10FE1TQ1(07) | Down |
| FPC12FE0TQ0(07)->S03F0_1(2,2,10) | OK | S03F0_1(6,2,06)->FPC12FE0TQ0(07) | OK |
| FPC12FE1TQ1(07)->S03F0_1(2,3,10) | OK | S03F0_1(6,3,06)->FPC12FE1TQ1(07) | OK |
| FPC14FE0TQ0(07)->S03F0_1(3,2,11) | Down | S03F0_1(7,2,07)->FPC14FE0TQ0(07) | Down |
| FPC14FE1TQ1(07)->S03F0_1(3,3,11) | Down | S03F0_1(7,3,07)->FPC14FE1TQ1(07) | Down |

SIB 4 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(08)->S04F0_0(7,0,07) | Down | S04F0_0(3,0,11)->FPC00FE0TQ0(08) | Down |
| FPC00FE1TQ1(08)->S04F0_0(7,1,07) | Down | S04F0_0(3,1,11)->FPC00FE1TQ1(08) | Down |
| FPC02FE0TQ0(08)->S04F0_0(6,0,06) | Down | S04F0_0(2,0,10)->FPC02FE0TQ0(08) | Down |
| FPC02FE1TQ1(08)->S04F0_0(6,1,06) | Down | S04F0_0(2,1,10)->FPC02FE1TQ1(08) | Down |
| FPC04FE0TQ0(08)->S04F0_0(5,0,05) | Down | S04F0_0(1,0,09)->FPC04FE0TQ0(08) | Down |
| FPC04FE1TQ1(08)->S04F0_0(5,1,05) | Down | S04F0_0(1,1,09)->FPC04FE1TQ1(08) | Down |
| FPC06FE0TQ0(08)->S04F0_0(4,0,04) | Down | S04F0_0(0,0,08)->FPC06FE0TQ0(08) | Down |
| FPC06FE1TQ1(08)->S04F0_0(4,1,04) | Down | S04F0_0(0,1,08)->FPC06FE1TQ1(08) | Down |
| FPC08FE0TQ0(08)->S04F0_0(4,2,04) | OK | S04F0_0(0,2,08)->FPC08FE0TQ0(08) | OK |
| FPC08FE1TQ1(08)->S04F0_0(4,3,04) | OK | S04F0_0(0,3,08)->FPC08FE1TQ1(08) | OK |
| FPC10FE0TQ0(08)->S04F0_0(5,2,05) | Down | S04F0_0(1,2,09)->FPC10FE0TQ0(08) | Down |
| FPC10FE1TQ1(08)->S04F0_0(5,3,05) | Down | S04F0_0(1,3,09)->FPC10FE1TQ1(08) | Down |
| FPC12FE0TQ0(08)->S04F0_0(7,2,07) | OK | S04F0_0(3,2,11)->FPC12FE0TQ0(08) | OK |
| FPC12FE1TQ1(08)->S04F0_0(7,3,07) | OK | S04F0_0(3,3,11)->FPC12FE1TQ1(08) | OK |
| FPC14FE0TQ0(08)->S04F0_0(7,4,07) | Down | S04F0_0(3,4,11)->FPC14FE0TQ0(08) | Down |
| FPC14FE1TQ1(08)->S04F0_0(7,5,07) | Down | S04F0_0(3,5,11)->FPC14FE1TQ1(08) | Down |

SIB 4 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(09)->S04F0_1(3,0,11) | Down | S04F0_1(7,0,07)->FPC00FE0TQ0(09) | Down |
| FPC00FE1TQ1(09)->S04F0_1(3,1,11) | Down | S04F0_1(7,1,07)->FPC00FE1TQ1(09) | Down |
| FPC02FE0TQ0(09)->S04F0_1(2,0,10) | Down | S04F0_1(6,0,06)->FPC02FE0TQ0(09) | Down |
| FPC02FE1TQ1(09)->S04F0_1(2,1,10) | Down | S04F0_1(6,1,06)->FPC02FE1TQ1(09) | Down |
| FPC04FE0TQ0(09)->S04F0_1(1,0,09) | Down | S04F0_1(4,0,04)->FPC04FE0TQ0(09) | Down |
| FPC04FE1TQ1(09)->S04F0_1(1,1,09) | Down | S04F0_1(4,1,04)->FPC04FE1TQ1(09) | Down |
| FPC06FE0TQ0(09)->S04F0_1(0,0,08) | Down | S04F0_1(4,2,04)->FPC06FE0TQ0(09) | Down |
| FPC06FE1TQ1(09)->S04F0_1(0,1,08) | Down | S04F0_1(4,3,04)->FPC06FE1TQ1(09) | Down |
| FPC08FE0TQ0(09)->S04F0_1(0,2,08) | OK | S04F0_1(4,4,04)->FPC08FE0TQ0(09) | OK |
| FPC08FE1TQ1(09)->S04F0_1(0,3,08) | OK | S04F0_1(4,5,04)->FPC08FE1TQ1(09) | OK |
| FPC10FE0TQ0(09)->S04F0_1(1,2,09) | Down | S04F0_1(5,0,05)->FPC10FE0TQ0(09) | Down |
| FPC10FE1TQ1(09)->S04F0_1(1,3,09) | Down | S04F0_1(5,1,05)->FPC10FE1TQ1(09) | Down |
| FPC12FE0TQ0(09)->S04F0_1(2,2,10) | OK | S04F0_1(6,2,06)->FPC12FE0TQ0(09) | OK |
| FPC12FE1TQ1(09)->S04F0_1(2,3,10) | OK | S04F0_1(6,3,06)->FPC12FE1TQ1(09) | OK |
| FPC14FE0TQ0(09)->S04F0_1(3,2,11) | Down | S04F0_1(7,2,07)->FPC14FE0TQ0(09) | Down |
| FPC14FE1TQ1(09)->S04F0_1(3,3,11) | Down | S04F0_1(7,3,07)->FPC14FE1TQ1(09) | Down |

SIB 5 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(10)->S05F0_0(7,0,07) | Down | S05F0_0(3,0,11)->FPC00FE0TQ0(10) | Down |
| FPC00FE1TQ1(10)->S05F0_0(7,1,07) | Down | S05F0_0(3,1,11)->FPC00FE1TQ1(10) | Down |
| FPC02FE0TQ0(10)->S05F0_0(6,0,06) | Down | S05F0_0(2,0,10)->FPC02FE0TQ0(10) | Down |
| FPC02FE1TQ1(10)->S05F0_0(6,1,06) | Down | S05F0_0(2,1,10)->FPC02FE1TQ1(10) | Down |
| FPC04FE0TQ0(10)->S05F0_0(5,0,05) | Down | S05F0_0(1,0,09)->FPC04FE0TQ0(10) | Down |
| FPC04FE1TQ1(10)->S05F0_0(5,1,05) | Down | S05F0_0(1,1,09)->FPC04FE1TQ1(10) | Down |
| FPC06FE0TQ0(10)->S05F0_0(4,0,04) | Down | S05F0_0(0,0,08)->FPC06FE0TQ0(10) | Down |
| FPC06FE1TQ1(10)->S05F0_0(4,1,04) | Down | S05F0_0(0,1,08)->FPC06FE1TQ1(10) | Down |
| FPC08FE0TQ0(10)->S05F0_0(4,2,04) | OK | S05F0_0(0,2,08)->FPC08FE0TQ0(10) | OK |
| FPC08FE1TQ1(10)->S05F0_0(4,3,04) | OK | S05F0_0(0,3,08)->FPC08FE1TQ1(10) | OK |
| FPC10FE0TQ0(10)->S05F0_0(5,2,05) | Down | S05F0_0(1,2,09)->FPC10FE0TQ0(10) | Down |
| FPC10FE1TQ1(10)->S05F0_0(5,3,05) | Down | S05F0_0(1,3,09)->FPC10FE1TQ1(10) | Down |
| FPC12FE0TQ0(10)->S05F0_0(7,2,07) | OK | S05F0_0(3,2,11)->FPC12FE0TQ0(10) | OK |
| FPC12FE1TQ1(10)->S05F0_0(7,3,07) | OK | S05F0_0(3,3,11)->FPC12FE1TQ1(10) | OK |
| FPC14FE0TQ0(10)->S05F0_0(7,4,07) | Down | S05F0_0(3,4,11)->FPC14FE0TQ0(10) | Down |

FPC14FE1TQ1(10)->S05F0_0(7,5,07) Down S05F0_0(3,5,11)->FPC14FE1TQ1(10) Down

SIB 5 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(11)->S05F0_1(3,0,11) | Down | S05F0_1(7,0,07)->FPC00FE0TQ0(11) | Down |
| FPC00FE1TQ1(11)->S05F0_1(3,1,11) | Down | S05F0_1(7,1,07)->FPC00FE1TQ1(11) | Down |
| FPC02FE0TQ0(11)->S05F0_1(2,0,10) | Down | S05F0_1(6,0,06)->FPC02FE0TQ0(11) | Down |
| FPC02FE1TQ1(11)->S05F0_1(2,1,10) | Down | S05F0_1(6,1,06)->FPC02FE1TQ1(11) | Down |
| FPC04FE0TQ0(11)->S05F0_1(1,0,09) | Down | S05F0_1(4,0,04)->FPC04FE0TQ0(11) | Down |
| FPC04FE1TQ1(11)->S05F0_1(1,1,09) | Down | S05F0_1(4,1,04)->FPC04FE1TQ1(11) | Down |
| FPC06FE0TQ0(11)->S05F0_1(0,0,08) | Down | S05F0_1(4,2,04)->FPC06FE0TQ0(11) | Down |
| FPC06FE1TQ1(11)->S05F0_1(0,1,08) | Down | S05F0_1(4,3,04)->FPC06FE1TQ1(11) | Down |
| FPC08FE0TQ0(11)->S05F0_1(0,2,08) | OK | S05F0_1(4,4,04)->FPC08FE0TQ0(11) | OK |
| FPC08FE1TQ1(11)->S05F0_1(0,3,08) | OK | S05F0_1(4,5,04)->FPC08FE1TQ1(11) | OK |
| FPC10FE0TQ0(11)->S05F0_1(1,2,09) | Down | S05F0_1(5,0,05)->FPC10FE0TQ0(11) | Down |
| FPC10FE1TQ1(11)->S05F0_1(1,3,09) | Down | S05F0_1(5,1,05)->FPC10FE1TQ1(11) | Down |
| FPC12FE0TQ0(11)->S05F0_1(2,2,10) | OK | S05F0_1(6,2,06)->FPC12FE0TQ0(11) | OK |
| FPC12FE1TQ1(11)->S05F0_1(2,3,10) | OK | S05F0_1(6,3,06)->FPC12FE1TQ1(11) | OK |
| FPC14FE0TQ0(11)->S05F0_1(3,2,11) | Down | S05F0_1(7,2,07)->FPC14FE0TQ0(11) | Down |
| FPC14FE1TQ1(11)->S05F0_1(3,3,11) | Down | S05F0_1(7,3,07)->FPC14FE1TQ1(11) | Down |

SIB 6 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(12)->S06F0_0(7,0,07) | Down | S06F0_0(3,0,11)->FPC00FE0TQ0(12) | Down |
| FPC00FE1TQ1(12)->S06F0_0(7,1,07) | Down | S06F0_0(3,1,11)->FPC00FE1TQ1(12) | Down |
| FPC02FE0TQ0(12)->S06F0_0(6,0,06) | Down | S06F0_0(2,0,10)->FPC02FE0TQ0(12) | Down |
| FPC02FE1TQ1(12)->S06F0_0(6,1,06) | Down | S06F0_0(2,1,10)->FPC02FE1TQ1(12) | Down |
| FPC04FE0TQ0(12)->S06F0_0(5,0,05) | Down | S06F0_0(1,0,09)->FPC04FE0TQ0(12) | Down |
| FPC04FE1TQ1(12)->S06F0_0(5,1,05) | Down | S06F0_0(1,1,09)->FPC04FE1TQ1(12) | Down |
| FPC06FE0TQ0(12)->S06F0_0(4,0,04) | Down | S06F0_0(0,0,08)->FPC06FE0TQ0(12) | Down |
| FPC06FE1TQ1(12)->S06F0_0(4,1,04) | Down | S06F0_0(0,1,08)->FPC06FE1TQ1(12) | Down |
| FPC08FE0TQ0(12)->S06F0_0(4,2,04) | OK | S06F0_0(0,2,08)->FPC08FE0TQ0(12) | OK |
| FPC08FE1TQ1(12)->S06F0_0(4,3,04) | OK | S06F0_0(0,3,08)->FPC08FE1TQ1(12) | OK |
| FPC10FE0TQ0(12)->S06F0_0(5,2,05) | Down | S06F0_0(1,2,09)->FPC10FE0TQ0(12) | Down |
| FPC10FE1TQ1(12)->S06F0_0(5,3,05) | Down | S06F0_0(1,3,09)->FPC10FE1TQ1(12) | Down |
| FPC12FE0TQ0(12)->S06F0_0(7,2,07) | OK | S06F0_0(3,2,11)->FPC12FE0TQ0(12) | OK |
| FPC12FE1TQ1(12)->S06F0_0(7,3,07) | OK | S06F0_0(3,3,11)->FPC12FE1TQ1(12) | OK |
| FPC14FE0TQ0(12)->S06F0_0(7,4,07) | Down | S06F0_0(3,4,11)->FPC14FE0TQ0(12) | Down |
| FPC14FE1TQ1(12)->S06F0_0(7,5,07) | Down | S06F0_0(3,5,11)->FPC14FE1TQ1(12) | Down |

SIB 6 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(13)->S06F0_1(3,0,11) | Down | S06F0_1(7,0,07)->FPC00FE0TQ0(13) | Down |
| FPC00FE1TQ1(13)->S06F0_1(3,1,11) | Down | S06F0_1(7,1,07)->FPC00FE1TQ1(13) | Down |
| FPC02FE0TQ0(13)->S06F0_1(2,0,10) | Down | S06F0_1(6,0,06)->FPC02FE0TQ0(13) | Down |
| FPC02FE1TQ1(13)->S06F0_1(2,1,10) | Down | S06F0_1(6,1,06)->FPC02FE1TQ1(13) | Down |
| FPC04FE0TQ0(13)->S06F0_1(1,0,09) | Down | S06F0_1(4,0,04)->FPC04FE0TQ0(13) | Down |
| FPC04FE1TQ1(13)->S06F0_1(1,1,09) | Down | S06F0_1(4,1,04)->FPC04FE1TQ1(13) | Down |
| FPC06FE0TQ0(13)->S06F0_1(0,0,08) | Down | S06F0_1(4,2,04)->FPC06FE0TQ0(13) | Down |
| FPC06FE1TQ1(13)->S06F0_1(0,1,08) | Down | S06F0_1(4,3,04)->FPC06FE1TQ1(13) | Down |
| FPC08FE0TQ0(13)->S06F0_1(0,2,08) | OK | S06F0_1(4,4,04)->FPC08FE0TQ0(13) | OK |
| FPC08FE1TQ1(13)->S06F0_1(0,3,08) | OK | S06F0_1(4,5,04)->FPC08FE1TQ1(13) | OK |
| FPC10FE0TQ0(13)->S06F0_1(1,2,09) | Down | S06F0_1(5,0,05)->FPC10FE0TQ0(13) | Down |
| FPC10FE1TQ1(13)->S06F0_1(1,3,09) | Down | S06F0_1(5,1,05)->FPC10FE1TQ1(13) | Down |

| | | | |
|----------------------------------|------|----------------------------------|------|
| FPC12FE0TQ0(13)->S06F0_1(2,2,10) | OK | S06F0_1(6,2,06)->FPC12FE0TQ0(13) | OK |
| FPC12FE1TQ1(13)->S06F0_1(2,3,10) | OK | S06F0_1(6,3,06)->FPC12FE1TQ1(13) | OK |
| FPC14FE0TQ0(13)->S06F0_1(3,2,11) | Down | S06F0_1(7,2,07)->FPC14FE0TQ0(13) | Down |
| FPC14FE1TQ1(13)->S06F0_1(3,3,11) | Down | S06F0_1(7,3,07)->FPC14FE1TQ1(13) | Down |

SIB 7 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(14)->S07F0_0(7,0,07) | Down | S07F0_0(3,0,11)->FPC00FE0TQ0(14) | Down |
| FPC00FE1TQ1(14)->S07F0_0(7,1,07) | Down | S07F0_0(3,1,11)->FPC00FE1TQ1(14) | Down |
| FPC02FE0TQ0(14)->S07F0_0(6,0,06) | Down | S07F0_0(2,0,10)->FPC02FE0TQ0(14) | Down |
| FPC02FE1TQ1(14)->S07F0_0(6,1,06) | Down | S07F0_0(2,1,10)->FPC02FE1TQ1(14) | Down |
| FPC04FE0TQ0(14)->S07F0_0(5,0,05) | Down | S07F0_0(1,0,09)->FPC04FE0TQ0(14) | Down |
| FPC04FE1TQ1(14)->S07F0_0(5,1,05) | Down | S07F0_0(1,1,09)->FPC04FE1TQ1(14) | Down |
| FPC06FE0TQ0(14)->S07F0_0(4,0,04) | Down | S07F0_0(0,0,08)->FPC06FE0TQ0(14) | Down |
| FPC06FE1TQ1(14)->S07F0_0(4,1,04) | Down | S07F0_0(0,1,08)->FPC06FE1TQ1(14) | Down |
| FPC08FE0TQ0(14)->S07F0_0(4,2,04) | OK | S07F0_0(0,2,08)->FPC08FE0TQ0(14) | OK |
| FPC08FE1TQ1(14)->S07F0_0(4,3,04) | OK | S07F0_0(0,3,08)->FPC08FE1TQ1(14) | OK |
| FPC10FE0TQ0(14)->S07F0_0(5,2,05) | Down | S07F0_0(1,2,09)->FPC10FE0TQ0(14) | Down |
| FPC10FE1TQ1(14)->S07F0_0(5,3,05) | Down | S07F0_0(1,3,09)->FPC10FE1TQ1(14) | Down |
| FPC12FE0TQ0(14)->S07F0_0(7,2,07) | OK | S07F0_0(3,2,11)->FPC12FE0TQ0(14) | OK |
| FPC12FE1TQ1(14)->S07F0_0(7,3,07) | OK | S07F0_0(3,3,11)->FPC12FE1TQ1(14) | OK |
| FPC14FE0TQ0(14)->S07F0_0(7,4,07) | Down | S07F0_0(3,4,11)->FPC14FE0TQ0(14) | Down |
| FPC14FE1TQ1(14)->S07F0_0(7,5,07) | Down | S07F0_0(3,5,11)->FPC14FE1TQ1(14) | Down |

SIB 7 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(15)->S07F0_1(3,0,11) | Down | S07F0_1(7,0,07)->FPC00FE0TQ0(15) | Down |
| FPC00FE1TQ1(15)->S07F0_1(3,1,11) | Down | S07F0_1(7,1,07)->FPC00FE1TQ1(15) | Down |
| FPC02FE0TQ0(15)->S07F0_1(2,0,10) | Down | S07F0_1(6,0,06)->FPC02FE0TQ0(15) | Down |
| FPC02FE1TQ1(15)->S07F0_1(2,1,10) | Down | S07F0_1(6,1,06)->FPC02FE1TQ1(15) | Down |
| FPC04FE0TQ0(15)->S07F0_1(1,0,09) | Down | S07F0_1(4,0,04)->FPC04FE0TQ0(15) | Down |
| FPC04FE1TQ1(15)->S07F0_1(1,1,09) | Down | S07F0_1(4,1,04)->FPC04FE1TQ1(15) | Down |
| FPC06FE0TQ0(15)->S07F0_1(0,0,08) | Down | S07F0_1(4,2,04)->FPC06FE0TQ0(15) | Down |
| FPC06FE1TQ1(15)->S07F0_1(0,1,08) | Down | S07F0_1(4,3,04)->FPC06FE1TQ1(15) | Down |
| FPC08FE0TQ0(15)->S07F0_1(0,2,08) | OK | S07F0_1(4,4,04)->FPC08FE0TQ0(15) | OK |
| FPC08FE1TQ1(15)->S07F0_1(0,3,08) | OK | S07F0_1(4,5,04)->FPC08FE1TQ1(15) | OK |
| FPC10FE0TQ0(15)->S07F0_1(1,2,09) | Down | S07F0_1(5,0,05)->FPC10FE0TQ0(15) | Down |
| FPC10FE1TQ1(15)->S07F0_1(1,3,09) | Down | S07F0_1(5,1,05)->FPC10FE1TQ1(15) | Down |
| FPC12FE0TQ0(15)->S07F0_1(2,2,10) | OK | S07F0_1(6,2,06)->FPC12FE0TQ0(15) | OK |
| FPC12FE1TQ1(15)->S07F0_1(2,3,10) | OK | S07F0_1(6,3,06)->FPC12FE1TQ1(15) | OK |
| FPC14FE0TQ0(15)->S07F0_1(3,2,11) | Down | S07F0_1(7,2,07)->FPC14FE0TQ0(15) | Down |
| FPC14FE1TQ1(15)->S07F0_1(3,3,11) | Down | S07F0_1(7,3,07)->FPC14FE1TQ1(15) | Down |

SIB 8 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(16)->S08F0_0(7,0,07) | Down | S08F0_0(3,0,11)->FPC00FE0TQ0(16) | Down |
| FPC00FE1TQ1(16)->S08F0_0(7,1,07) | Down | S08F0_0(3,1,11)->FPC00FE1TQ1(16) | Down |
| FPC02FE0TQ0(16)->S08F0_0(6,0,06) | Down | S08F0_0(2,0,10)->FPC02FE0TQ0(16) | Down |
| FPC02FE1TQ1(16)->S08F0_0(6,1,06) | Down | S08F0_0(2,1,10)->FPC02FE1TQ1(16) | Down |
| FPC04FE0TQ0(16)->S08F0_0(5,0,05) | Down | S08F0_0(1,0,09)->FPC04FE0TQ0(16) | Down |
| FPC04FE1TQ1(16)->S08F0_0(5,1,05) | Down | S08F0_0(1,1,09)->FPC04FE1TQ1(16) | Down |
| FPC06FE0TQ0(16)->S08F0_0(4,0,04) | Down | S08F0_0(0,0,08)->FPC06FE0TQ0(16) | Down |
| FPC06FE1TQ1(16)->S08F0_0(4,1,04) | Down | S08F0_0(0,1,08)->FPC06FE1TQ1(16) | Down |
| FPC08FE0TQ0(16)->S08F0_0(4,2,04) | OK | S08F0_0(0,2,08)->FPC08FE0TQ0(16) | OK |

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FPC08FE1TQ1(16)->S08F0_0(4,3,04) OK      S08F0_0(0,3,08)->FPC08FE1TQ1(16) OK
FPC10FE0TQ0(16)->S08F0_0(5,2,05) Down    S08F0_0(1,2,09)->FPC10FE0TQ0(16) Down
FPC10FE1TQ1(16)->S08F0_0(5,3,05) Down    S08F0_0(1,3,09)->FPC10FE1TQ1(16) Down
FPC12FE0TQ0(16)->S08F0_0(7,2,07) OK      S08F0_0(3,2,11)->FPC12FE0TQ0(16) OK
FPC12FE1TQ1(16)->S08F0_0(7,3,07) OK      S08F0_0(3,3,11)->FPC12FE1TQ1(16) OK
FPC14FE0TQ0(16)->S08F0_0(7,4,07) Down    S08F0_0(3,4,11)->FPC14FE0TQ0(16) Down
FPC14FE1TQ1(16)->S08F0_0(7,5,07) Down    S08F0_0(3,5,11)->FPC14FE1TQ1(16) Down

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SIB 8 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(17)->S08F0_1(3,0,11) | Down | S08F0_1(7,0,07)->FPC00FE0TQ0(17) | Down |
| FPC00FE1TQ1(17)->S08F0_1(3,1,11) | Down | S08F0_1(7,1,07)->FPC00FE1TQ1(17) | Down |
| FPC02FE0TQ0(17)->S08F0_1(2,0,10) | Down | S08F0_1(6,0,06)->FPC02FE0TQ0(17) | Down |
| FPC02FE1TQ1(17)->S08F0_1(2,1,10) | Down | S08F0_1(6,1,06)->FPC02FE1TQ1(17) | Down |
| FPC04FE0TQ0(17)->S08F0_1(1,0,09) | Down | S08F0_1(4,0,04)->FPC04FE0TQ0(17) | Down |
| FPC04FE1TQ1(17)->S08F0_1(1,1,09) | Down | S08F0_1(4,1,04)->FPC04FE1TQ1(17) | Down |
| FPC06FE0TQ0(17)->S08F0_1(0,0,08) | Down | S08F0_1(4,2,04)->FPC06FE0TQ0(17) | Down |
| FPC06FE1TQ1(17)->S08F0_1(0,1,08) | Down | S08F0_1(4,3,04)->FPC06FE1TQ1(17) | Down |
| FPC08FE0TQ0(17)->S08F0_1(0,2,08) | OK | S08F0_1(4,4,04)->FPC08FE0TQ0(17) | OK |
| FPC08FE1TQ1(17)->S08F0_1(0,3,08) | OK | S08F0_1(4,5,04)->FPC08FE1TQ1(17) | OK |
| FPC10FE0TQ0(17)->S08F0_1(1,2,09) | Down | S08F0_1(5,0,05)->FPC10FE0TQ0(17) | Down |
| FPC10FE1TQ1(17)->S08F0_1(1,3,09) | Down | S08F0_1(5,1,05)->FPC10FE1TQ1(17) | Down |
| FPC12FE0TQ0(17)->S08F0_1(2,2,10) | OK | S08F0_1(6,2,06)->FPC12FE0TQ0(17) | OK |
| FPC12FE1TQ1(17)->S08F0_1(2,3,10) | OK | S08F0_1(6,3,06)->FPC12FE1TQ1(17) | OK |
| FPC14FE0TQ0(17)->S08F0_1(3,2,11) | Down | S08F0_1(7,2,07)->FPC14FE0TQ0(17) | Down |
| FPC14FE1TQ1(17)->S08F0_1(3,3,11) | Down | S08F0_1(7,3,07)->FPC14FE1TQ1(17) | Down |

show chassis fabric topology (PTX10008 Router)

user@host> show chassis fabric topology

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In-link  : FPC# FE# ASIC# (TX inst#, TX sub-chnl #) ->
           SIB# ASIC#_FCORE# (RX port#, RX sub-chnl #, RX inst#)

Out-link  : SIB# ASIC#_FCORE# (TX port#, TX sub-chnl #, TX inst#) ->
           FPC# FE# ASIC# (RX inst#, RX sub-chnl #)

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SIB 0 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0(1,17)->S00F0_0(01,0,01) | OK | S00F0_0(00,0,00)->FPC00FE0(1,09) | OK |
| FPC00FE0(1,09)->S00F0_0(02,0,02) | OK | S00F0_0(00,1,00)->FPC00FE0(1,17) | OK |
| FPC00FE0(1,07)->S00F0_0(02,2,02) | OK | S00F0_0(00,2,00)->FPC00FE0(1,07) | OK |
| FPC00FE1(1,12)->S00F0_0(01,1,01) | OK | S00F0_0(00,3,00)->FPC00FE1(1,06) | OK |
| FPC00FE1(1,06)->S00F0_0(01,2,01) | OK | S00F0_0(01,1,01)->FPC00FE1(1,12) | OK |
| FPC00FE1(1,10)->S00F0_0(01,3,01) | OK | S00F0_0(01,3,01)->FPC00FE1(1,10) | OK |
| FPC00FE2(1,16)->S00F0_0(00,4,00) | OK | S00F0_0(00,4,00)->FPC00FE2(1,08) | OK |
| FPC00FE2(1,08)->S00F0_0(01,6,01) | OK | S00F0_0(00,5,00)->FPC00FE2(1,16) | OK |
| FPC00FE2(1,06)->S00F0_0(01,7,01) | OK | S00F0_0(00,6,00)->FPC00FE2(1,06) | OK |
| FPC05FE0(1,07)->S00F0_0(05,5,05) | OK | S00F0_0(05,2,05)->FPC05FE0(1,17) | OK |
| FPC05FE0(1,09)->S00F0_0(05,7,05) | OK | S00F0_0(06,4,06)->FPC05FE0(1,07) | OK |
| FPC05FE0(1,17)->S00F0_0(09,3,09) | OK | S00F0_0(06,7,06)->FPC05FE0(1,09) | OK |
| FPC05FE1(1,06)->S00F0_0(06,1,06) | OK | S00F0_0(06,0,06)->FPC05FE1(1,06) | OK |
| FPC05FE1(1,08)->S00F0_0(06,3,06) | OK | S00F0_0(06,2,06)->FPC05FE1(1,08) | OK |
| FPC05FE1(1,16)->S00F0_0(09,7,09) | OK | S00F0_0(09,6,09)->FPC05FE1(1,16) | OK |
| FPC05FE2(1,10)->S00F0_0(09,0,09) | OK | S00F0_0(05,0,05)->FPC05FE2(1,06) | OK |
| FPC05FE2(1,06)->S00F0_0(09,1,09) | OK | S00F0_0(05,1,05)->FPC05FE2(1,10) | OK |
| FPC05FE2(1,12)->S00F0_0(09,2,09) | OK | S00F0_0(05,3,05)->FPC05FE2(1,12) | OK |

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FPC05FE3(1,11)->S00F0_0(09,4,09) OK      S00F0_0(09,4,09)->FPC05FE3(1,07) OK
FPC05FE3(1,07)->S00F0_0(09,5,09) OK      S00F0_0(09,5,09)->FPC05FE3(1,11) OK
FPC05FE3(1,13)->S00F0_0(09,6,09) OK      S00F0_0(09,7,09)->FPC05FE3(1,13) OK
FPC05FE4(1,16)->S00F0_0(05,3,05) OK      S00F0_0(05,4,05)->FPC05FE4(1,06) OK
FPC05FE4(1,06)->S00F0_0(06,5,06) OK      S00F0_0(05,6,05)->FPC05FE4(1,08) OK
FPC05FE4(1,08)->S00F0_0(06,7,06) OK      S00F0_0(09,2,09)->FPC05FE4(1,16) OK
FPC05FE5(1,10)->S00F0_0(05,0,05) OK      S00F0_0(09,0,09)->FPC05FE5(1,06) OK
FPC05FE5(1,06)->S00F0_0(05,1,05) OK      S00F0_0(09,1,09)->FPC05FE5(1,10) OK
FPC05FE5(1,12)->S00F0_0(05,2,05) OK      S00F0_0(09,3,09)->FPC05FE5(1,12) OK
FPC06FE0(1,17)->S00F0_0(05,6,05) OK      S00F0_0(06,6,06)->FPC06FE0(1,17) OK
FPC06FE0(1,07)->S00F0_0(07,0,07) OK      S00F0_0(08,0,08)->FPC06FE0(1,07) OK
FPC06FE0(1,09)->S00F0_0(07,2,07) OK      S00F0_0(08,2,08)->FPC06FE0(1,09) OK
FPC06FE1(1,16)->S00F0_0(06,2,06) OK      S00F0_0(06,3,06)->FPC06FE1(1,16) OK
FPC06FE1(1,06)->S00F0_0(07,4,07) OK      S00F0_0(07,4,07)->FPC06FE1(1,06) OK
FPC06FE1(1,08)->S00F0_0(07,6,07) OK      S00F0_0(07,6,07)->FPC06FE1(1,08) OK
FPC06FE2(1,06)->S00F0_0(05,4,05) OK      S00F0_0(06,5,06)->FPC06FE2(1,06) OK
FPC06FE2(1,10)->S00F0_0(07,1,07) OK      S00F0_0(08,1,08)->FPC06FE2(1,10) OK
FPC06FE2(1,12)->S00F0_0(07,3,07) OK      S00F0_0(08,3,08)->FPC06FE2(1,12) OK
FPC06FE3(1,07)->S00F0_0(06,0,06) OK      S00F0_0(06,1,06)->FPC06FE3(1,07) OK
FPC06FE3(1,11)->S00F0_0(07,5,07) OK      S00F0_0(07,5,07)->FPC06FE3(1,11) OK
FPC06FE3(1,13)->S00F0_0(07,7,07) OK      S00F0_0(07,7,07)->FPC06FE3(1,13) OK
FPC06FE4(1,16)->S00F0_0(06,6,06) OK      S00F0_0(05,7,05)->FPC06FE4(1,16) OK
FPC06FE4(1,06)->S00F0_0(08,0,08) OK      S00F0_0(07,0,07)->FPC06FE4(1,06) OK
FPC06FE4(1,08)->S00F0_0(08,2,08) OK      S00F0_0(07,2,07)->FPC06FE4(1,08) OK
FPC06FE5(1,06)->S00F0_0(06,4,06) OK      S00F0_0(05,5,05)->FPC06FE5(1,06) OK
FPC06FE5(1,10)->S00F0_0(08,1,08) OK      S00F0_0(07,1,07)->FPC06FE5(1,10) OK
FPC06FE5(1,12)->S00F0_0(08,3,08) OK      S00F0_0(07,3,07)->FPC06FE5(1,12) OK

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SIB 0 FCHIP 1 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0(1,15)->S00F1_0(15,4,15) | OK | S00F1_0(16,4,16)->FPC00FE0(1,15) | OK |
| FPC00FE0(1,11)->S00F1_0(17,4,17) | OK | S00F1_0(18,4,18)->FPC00FE0(1,11) | OK |
| FPC00FE0(1,13)->S00F1_0(17,6,17) | OK | S00F1_0(18,6,18)->FPC00FE0(1,13) | OK |
| FPC00FE1(1,08)->S00F1_0(15,6,15) | OK | S00F1_0(16,6,16)->FPC00FE1(1,08) | OK |
| FPC00FE1(1,14)->S00F1_0(17,5,17) | OK | S00F1_0(18,5,18)->FPC00FE1(1,14) | OK |
| FPC00FE1(1,16)->S00F1_0(17,7,17) | OK | S00F1_0(18,7,18)->FPC00FE1(1,16) | OK |
| FPC00FE2(1,14)->S00F1_0(16,0,16) | OK | S00F1_0(16,0,16)->FPC00FE2(1,14) | OK |
| FPC00FE2(1,10)->S00F1_0(18,0,18) | OK | S00F1_0(18,0,18)->FPC00FE2(1,10) | OK |
| FPC00FE2(1,12)->S00F1_0(18,2,18) | OK | S00F1_0(18,2,18)->FPC00FE2(1,12) | OK |
| FPC05FE0(1,11)->S00F1_0(02,0,02) | OK | S00F1_0(02,1,02)->FPC05FE0(1,11) | OK |
| FPC05FE0(1,13)->S00F1_0(02,2,02) | OK | S00F1_0(02,3,02)->FPC05FE0(1,13) | OK |
| FPC05FE0(1,15)->S00F1_0(04,7,04) | OK | S00F1_0(03,6,03)->FPC05FE0(1,15) | OK |
| FPC05FE1(1,10)->S00F1_0(02,4,02) | OK | S00F1_0(02,5,02)->FPC05FE1(1,10) | OK |
| FPC05FE1(1,12)->S00F1_0(02,6,02) | OK | S00F1_0(02,7,02)->FPC05FE1(1,12) | OK |
| FPC05FE1(1,14)->S00F1_0(04,3,04) | OK | S00F1_0(04,2,04)->FPC05FE1(1,14) | OK |
| FPC05FE2(1,16)->S00F1_0(04,4,04) | OK | S00F1_0(03,4,03)->FPC05FE2(1,16) | OK |
| FPC05FE2(1,08)->S00F1_0(04,5,04) | OK | S00F1_0(03,5,03)->FPC05FE2(1,08) | OK |
| FPC05FE2(1,14)->S00F1_0(04,6,04) | OK | S00F1_0(03,7,03)->FPC05FE2(1,14) | OK |
| FPC05FE3(1,17)->S00F1_0(04,0,04) | OK | S00F1_0(04,0,04)->FPC05FE3(1,17) | OK |
| FPC05FE3(1,09)->S00F1_0(04,1,04) | OK | S00F1_0(04,1,04)->FPC05FE3(1,09) | OK |
| FPC05FE3(1,15)->S00F1_0(04,2,04) | OK | S00F1_0(04,3,04)->FPC05FE3(1,15) | OK |
| FPC05FE4(1,10)->S00F1_0(03,0,03) | OK | S00F1_0(03,1,03)->FPC05FE4(1,10) | OK |
| FPC05FE4(1,12)->S00F1_0(03,2,03) | OK | S00F1_0(03,3,03)->FPC05FE4(1,12) | OK |
| FPC05FE4(1,14)->S00F1_0(03,7,03) | OK | S00F1_0(04,6,04)->FPC05FE4(1,14) | OK |
| FPC05FE5(1,16)->S00F1_0(03,4,03) | OK | S00F1_0(04,4,04)->FPC05FE5(1,16) | OK |
| FPC05FE5(1,08)->S00F1_0(03,5,03) | OK | S00F1_0(04,5,04)->FPC05FE5(1,08) | OK |
| FPC05FE5(1,14)->S00F1_0(03,6,03) | OK | S00F1_0(04,7,04)->FPC05FE5(1,14) | OK |
| FPC06FE0(1,15)->S00F1_0(01,0,01) | OK | S00F1_0(00,3,00)->FPC06FE0(1,15) | OK |


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FPC06FE0(1,11)->S00F1_0(02,1,02) OK      S00F1_0(01,0,01)->FPC06FE0(1,13) OK
FPC06FE0(1,13)->S00F1_0(02,3,02) OK      S00F1_0(01,2,01)->FPC06FE0(1,11) OK
FPC06FE1(1,14)->S00F1_0(01,4,01) OK      S00F1_0(00,7,00)->FPC06FE1(1,14) OK
FPC06FE1(1,10)->S00F1_0(02,5,02) OK      S00F1_0(01,4,01)->FPC06FE1(1,12) OK
FPC06FE1(1,12)->S00F1_0(02,7,02) OK      S00F1_0(01,6,01)->FPC06FE1(1,10) OK
FPC06FE2(1,08)->S00F1_0(01,2,01) OK      S00F1_0(00,1,00)->FPC06FE2(1,08) OK
FPC06FE2(1,16)->S00F1_0(15,0,15) OK      S00F1_0(01,5,01)->FPC06FE2(1,16) OK
FPC06FE2(1,14)->S00F1_0(15,2,15) OK      S00F1_0(01,7,01)->FPC06FE2(1,14) OK
FPC06FE3(1,09)->S00F1_0(01,6,01) OK      S00F1_0(00,5,00)->FPC06FE3(1,09) OK
FPC06FE3(1,17)->S00F1_0(19,4,19) OK      S00F1_0(02,4,02)->FPC06FE3(1,17) OK
FPC06FE3(1,15)->S00F1_0(19,6,19) OK      S00F1_0(02,6,02)->FPC06FE3(1,15) OK
FPC06FE4(1,14)->S00F1_0(01,7,01) OK      S00F1_0(01,3,01)->FPC06FE4(1,14) OK
FPC06FE4(1,10)->S00F1_0(03,1,03) OK      S00F1_0(02,0,02)->FPC06FE4(1,12) OK
FPC06FE4(1,12)->S00F1_0(03,3,03) OK      S00F1_0(02,2,02)->FPC06FE4(1,10) OK
FPC06FE5(1,08)->S00F1_0(01,5,01) OK      S00F1_0(01,1,01)->FPC06FE5(1,08) OK
FPC06FE5(1,16)->S00F1_0(19,0,19) OK      S00F1_0(03,0,03)->FPC06FE5(1,16) OK
FPC06FE5(1,14)->S00F1_0(19,2,19) OK      S00F1_0(03,2,03)->FPC06FE5(1,14) OK

```

SIB 1 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0(1,05)->S01F0_0(01,0,01) | OK | S01F0_0(00,0,00)->FPC00FE0(0,01) | OK |
| FPC00FE0(0,01)->S01F0_0(02,0,02) | OK | S01F0_0(00,1,00)->FPC00FE0(1,05) | OK |
| FPC00FE0(0,07)->S01F0_0(02,2,02) | OK | S01F0_0(00,2,00)->FPC00FE0(0,07) | OK |
| FPC00FE1(1,04)->S01F0_0(00,4,00) | OK | S01F0_0(00,4,00)->FPC00FE1(0,00) | OK |
| FPC00FE1(0,00)->S01F0_0(01,6,01) | OK | S01F0_0(00,5,00)->FPC00FE1(1,04) | OK |
| FPC00FE1(0,06)->S01F0_0(01,7,01) | OK | S01F0_0(00,6,00)->FPC00FE1(0,06) | OK |
| FPC00FE2(1,01)->S01F0_0(01,1,01) | OK | S01F0_0(00,3,00)->FPC00FE2(0,06) | OK |
| FPC00FE2(0,06)->S01F0_0(01,2,01) | OK | S01F0_0(01,1,01)->FPC00FE2(1,01) | OK |
| FPC00FE2(1,00)->S01F0_0(01,3,01) | OK | S01F0_0(01,3,01)->FPC00FE2(1,00) | OK |
| FPC05FE0(0,07)->S01F0_0(05,5,05) | OK | S01F0_0(05,2,05)->FPC05FE0(1,05) | OK |
| FPC05FE0(0,01)->S01F0_0(05,7,05) | OK | S01F0_0(06,4,06)->FPC05FE0(0,07) | OK |
| FPC05FE0(1,05)->S01F0_0(09,3,09) | OK | S01F0_0(06,7,06)->FPC05FE0(0,01) | OK |
| FPC05FE1(1,00)->S01F0_0(09,0,09) | OK | S01F0_0(05,0,05)->FPC05FE1(0,06) | OK |
| FPC05FE1(0,06)->S01F0_0(09,1,09) | OK | S01F0_0(05,1,05)->FPC05FE1(1,00) | OK |
| FPC05FE1(1,01)->S01F0_0(09,2,09) | OK | S01F0_0(05,3,05)->FPC05FE1(1,01) | OK |
| FPC05FE2(0,06)->S01F0_0(06,1,06) | OK | S01F0_0(06,0,06)->FPC05FE2(0,06) | OK |
| FPC05FE2(0,00)->S01F0_0(06,3,06) | OK | S01F0_0(06,2,06)->FPC05FE2(0,00) | OK |
| FPC05FE2(1,04)->S01F0_0(09,7,09) | OK | S01F0_0(09,6,09)->FPC05FE2(1,04) | OK |
| FPC05FE3(1,00)->S01F0_0(09,4,09) | OK | S01F0_0(09,4,09)->FPC05FE3(0,06) | OK |
| FPC05FE3(0,06)->S01F0_0(09,5,09) | OK | S01F0_0(09,5,09)->FPC05FE3(1,00) | OK |
| FPC05FE3(1,01)->S01F0_0(09,6,09) | OK | S01F0_0(09,7,09)->FPC05FE3(1,01) | OK |
| FPC05FE4(0,04)->S01F0_0(05,3,05) | OK | S01F0_0(05,4,05)->FPC05FE4(0,14) | OK |
| FPC05FE4(0,14)->S01F0_0(06,5,06) | OK | S01F0_0(05,6,05)->FPC05FE4(0,16) | OK |
| FPC05FE4(0,16)->S01F0_0(06,7,06) | OK | S01F0_0(09,2,09)->FPC05FE4(0,04) | OK |
| FPC05FE5(1,00)->S01F0_0(05,0,05) | OK | S01F0_0(09,0,09)->FPC05FE5(0,06) | OK |
| FPC05FE5(0,06)->S01F0_0(05,1,05) | OK | S01F0_0(09,1,09)->FPC05FE5(1,00) | OK |
| FPC05FE5(1,01)->S01F0_0(05,2,05) | OK | S01F0_0(09,3,09)->FPC05FE5(1,01) | OK |
| FPC06FE0(1,05)->S01F0_0(05,6,05) | OK | S01F0_0(06,6,06)->FPC06FE0(1,05) | OK |
| FPC06FE0(0,07)->S01F0_0(07,0,07) | OK | S01F0_0(08,0,08)->FPC06FE0(0,07) | OK |
| FPC06FE0(0,01)->S01F0_0(07,2,07) | OK | S01F0_0(08,2,08)->FPC06FE0(0,01) | OK |
| FPC06FE1(0,06)->S01F0_0(05,4,05) | OK | S01F0_0(06,5,06)->FPC06FE1(0,06) | OK |
| FPC06FE1(1,00)->S01F0_0(07,1,07) | OK | S01F0_0(08,1,08)->FPC06FE1(1,00) | OK |
| FPC06FE1(1,01)->S01F0_0(07,3,07) | OK | S01F0_0(08,3,08)->FPC06FE1(1,01) | OK |
| FPC06FE2(1,04)->S01F0_0(06,2,06) | OK | S01F0_0(06,3,06)->FPC06FE2(1,04) | OK |
| FPC06FE2(0,06)->S01F0_0(07,4,07) | OK | S01F0_0(07,4,07)->FPC06FE2(0,06) | OK |
| FPC06FE2(0,00)->S01F0_0(07,6,07) | OK | S01F0_0(07,6,07)->FPC06FE2(0,00) | OK |
| FPC06FE3(0,06)->S01F0_0(06,0,06) | OK | S01F0_0(06,1,06)->FPC06FE3(0,06) | OK |
| FPC06FE3(1,00)->S01F0_0(07,5,07) | OK | S01F0_0(07,5,07)->FPC06FE3(1,00) | OK |

```

FPC06FE3(1,01)->S01F0_0(07,7,07) OK      S01F0_0(07,7,07)->FPC06FE3(1,01) OK
FPC06FE4(0,04)->S01F0_0(06,6,06) OK      S01F0_0(05,7,05)->FPC06FE4(0,04) OK
FPC06FE4(0,14)->S01F0_0(08,0,08) OK      S01F0_0(07,0,07)->FPC06FE4(0,14) OK
FPC06FE4(0,16)->S01F0_0(08,2,08) OK      S01F0_0(07,2,07)->FPC06FE4(0,16) OK
FPC06FE5(0,06)->S01F0_0(06,4,06) OK      S01F0_0(05,5,05)->FPC06FE5(0,06) OK
FPC06FE5(1,00)->S01F0_0(08,1,08) OK      S01F0_0(07,1,07)->FPC06FE5(1,00) OK
FPC06FE5(1,01)->S01F0_0(08,3,08) OK      S01F0_0(07,3,07)->FPC06FE5(1,01) OK

```

SIB 1 FCHIP 1 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0(1,03)->S01F1_0(15,4,15) | OK | S01F1_0(16,4,16)->FPC00FE0(1,03) | OK |
| FPC00FE0(0,02)->S01F1_0(17,4,17) | OK | S01F1_0(18,4,18)->FPC00FE0(0,02) | OK |
| FPC00FE0(0,03)->S01F1_0(17,6,17) | OK | S01F1_0(18,6,18)->FPC00FE0(0,03) | OK |
| FPC00FE1(1,02)->S01F1_0(16,0,16) | OK | S01F1_0(16,0,16)->FPC00FE1(1,02) | OK |
| FPC00FE1(1,00)->S01F1_0(18,0,18) | OK | S01F1_0(18,0,18)->FPC00FE1(1,00) | OK |
| FPC00FE1(1,01)->S01F1_0(18,2,18) | OK | S01F1_0(18,2,18)->FPC00FE1(1,01) | OK |
| FPC00FE2(0,00)->S01F1_0(15,6,15) | OK | S01F1_0(16,6,16)->FPC00FE2(0,00) | OK |
| FPC00FE2(1,02)->S01F1_0(17,5,17) | OK | S01F1_0(18,5,18)->FPC00FE2(1,02) | OK |
| FPC00FE2(1,04)->S01F1_0(17,7,17) | OK | S01F1_0(18,7,18)->FPC00FE2(1,04) | OK |
| FPC05FE0(0,02)->S01F1_0(02,0,02) | OK | S01F1_0(02,1,02)->FPC05FE0(0,03) | OK |
| FPC05FE0(0,03)->S01F1_0(02,2,02) | OK | S01F1_0(02,3,02)->FPC05FE0(0,02) | OK |
| FPC05FE0(1,03)->S01F1_0(04,7,04) | OK | S01F1_0(03,6,03)->FPC05FE0(1,03) | OK |
| FPC05FE1(1,04)->S01F1_0(04,4,04) | OK | S01F1_0(03,4,03)->FPC05FE1(0,00) | OK |
| FPC05FE1(0,00)->S01F1_0(04,5,04) | OK | S01F1_0(03,5,03)->FPC05FE1(1,04) | OK |
| FPC05FE1(1,02)->S01F1_0(04,6,04) | OK | S01F1_0(03,7,03)->FPC05FE1(1,02) | OK |
| FPC05FE2(1,00)->S01F1_0(02,4,02) | OK | S01F1_0(02,5,02)->FPC05FE2(1,01) | OK |
| FPC05FE2(1,01)->S01F1_0(02,6,02) | OK | S01F1_0(02,7,02)->FPC05FE2(1,00) | OK |
| FPC05FE2(1,02)->S01F1_0(04,3,04) | OK | S01F1_0(04,2,04)->FPC05FE2(1,02) | OK |
| FPC05FE3(1,04)->S01F1_0(04,0,04) | OK | S01F1_0(04,0,04)->FPC05FE3(0,00) | OK |
| FPC05FE3(0,00)->S01F1_0(04,1,04) | OK | S01F1_0(04,1,04)->FPC05FE3(1,04) | OK |
| FPC05FE3(1,02)->S01F1_0(04,2,04) | OK | S01F1_0(04,3,04)->FPC05FE3(1,02) | OK |
| FPC05FE4(0,10)->S01F1_0(03,0,03) | OK | S01F1_0(03,1,03)->FPC05FE4(0,12) | OK |
| FPC05FE4(0,12)->S01F1_0(03,2,03) | OK | S01F1_0(03,3,03)->FPC05FE4(0,10) | OK |
| FPC05FE4(0,08)->S01F1_0(03,7,03) | OK | S01F1_0(04,6,04)->FPC05FE4(0,08) | OK |
| FPC05FE5(1,04)->S01F1_0(03,4,03) | OK | S01F1_0(04,4,04)->FPC05FE5(0,00) | OK |
| FPC05FE5(0,00)->S01F1_0(03,5,03) | OK | S01F1_0(04,5,04)->FPC05FE5(1,04) | OK |
| FPC05FE5(1,02)->S01F1_0(03,6,03) | OK | S01F1_0(04,7,04)->FPC05FE5(1,02) | OK |
| FPC06FE0(1,03)->S01F1_0(01,0,01) | OK | S01F1_0(00,3,00)->FPC06FE0(1,03) | OK |
| FPC06FE0(0,02)->S01F1_0(02,1,02) | OK | S01F1_0(01,0,01)->FPC06FE0(0,03) | OK |
| FPC06FE0(0,03)->S01F1_0(02,3,02) | OK | S01F1_0(01,2,01)->FPC06FE0(0,02) | OK |
| FPC06FE1(0,00)->S01F1_0(01,2,01) | OK | S01F1_0(00,1,00)->FPC06FE1(0,00) | OK |
| FPC06FE1(1,04)->S01F1_0(15,0,15) | OK | S01F1_0(01,5,01)->FPC06FE1(1,04) | OK |
| FPC06FE1(1,02)->S01F1_0(15,2,15) | OK | S01F1_0(01,7,01)->FPC06FE1(1,02) | OK |
| FPC06FE2(1,02)->S01F1_0(01,4,01) | OK | S01F1_0(00,7,00)->FPC06FE2(1,02) | OK |
| FPC06FE2(1,00)->S01F1_0(02,5,02) | OK | S01F1_0(01,4,01)->FPC06FE2(1,01) | OK |
| FPC06FE2(1,01)->S01F1_0(02,7,02) | OK | S01F1_0(01,6,01)->FPC06FE2(1,00) | OK |
| FPC06FE3(0,00)->S01F1_0(01,6,01) | OK | S01F1_0(00,5,00)->FPC06FE3(0,00) | OK |
| FPC06FE3(1,04)->S01F1_0(19,4,19) | OK | S01F1_0(02,4,02)->FPC06FE3(1,04) | OK |
| FPC06FE3(1,02)->S01F1_0(19,6,19) | OK | S01F1_0(02,6,02)->FPC06FE3(1,02) | OK |
| FPC06FE4(0,08)->S01F1_0(01,7,01) | OK | S01F1_0(01,3,01)->FPC06FE4(0,08) | OK |
| FPC06FE4(0,10)->S01F1_0(03,1,03) | OK | S01F1_0(02,0,02)->FPC06FE4(0,12) | OK |
| FPC06FE4(0,12)->S01F1_0(03,3,03) | OK | S01F1_0(02,2,02)->FPC06FE4(0,10) | OK |
| FPC06FE5(0,00)->S01F1_0(01,5,01) | OK | S01F1_0(01,1,01)->FPC06FE5(0,00) | OK |
| FPC06FE5(1,04)->S01F1_0(19,0,19) | OK | S01F1_0(03,0,03)->FPC06FE5(1,04) | OK |
| FPC06FE5(1,02)->S01F1_0(19,2,19) | OK | S01F1_0(03,2,03)->FPC06FE5(1,02) | OK |

SIB 2

Not Online

SIB 3
Not Online

SIB 4
Not Online

SIB 5
Not Online

show chassis fabric topology (QFX10008 Switch)

user@host> show chassis fabric topology

In-link : FPC# FE# ASIC# (TX inst#, TX sub-chnl #) ->
SIB# ASIC#_FCORE# (RX port#, RX sub-chnl #, RX inst#)

Out-link : SIB# ASIC#_FCORE# (TX port#, TX sub-chnl #, TX inst#) ->
FPC# FE# ASIC# (RX inst#, RX sub-chnl #)

SIB 0 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0(1,17)->S00F0_0(01,0,01) | OK | S00F0_0(00,0,00)->FPC00FE0(1,09) | OK |
| FPC00FE0(1,09)->S00F0_0(02,0,02) | OK | S00F0_0(00,1,00)->FPC00FE0(1,17) | OK |
| FPC00FE0(1,07)->S00F0_0(02,2,02) | OK | S00F0_0(00,2,00)->FPC00FE0(1,07) | OK |
| FPC00FE1(1,12)->S00F0_0(01,1,01) | OK | S00F0_0(00,3,00)->FPC00FE1(1,06) | OK |
| FPC00FE1(1,06)->S00F0_0(01,2,01) | OK | S00F0_0(01,1,01)->FPC00FE1(1,12) | OK |
| FPC00FE1(1,10)->S00F0_0(01,3,01) | OK | S00F0_0(01,3,01)->FPC00FE1(1,10) | OK |
| FPC00FE2(1,16)->S00F0_0(00,4,00) | OK | S00F0_0(00,4,00)->FPC00FE2(1,08) | OK |
| FPC00FE2(1,08)->S00F0_0(01,6,01) | OK | S00F0_0(00,5,00)->FPC00FE2(1,16) | OK |
| FPC00FE2(1,06)->S00F0_0(01,7,01) | OK | S00F0_0(00,6,00)->FPC00FE2(1,06) | OK |

SIB 0 FCHIP 1 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0(1,15)->S00F1_0(15,4,15) | OK | S00F1_0(16,4,16)->FPC00FE0(1,15) | OK |
| FPC00FE0(1,11)->S00F1_0(17,4,17) | OK | S00F1_0(18,4,18)->FPC00FE0(1,11) | OK |
| FPC00FE0(1,13)->S00F1_0(17,6,17) | OK | S00F1_0(18,6,18)->FPC00FE0(1,13) | OK |
| FPC00FE1(1,08)->S00F1_0(15,6,15) | OK | S00F1_0(16,6,16)->FPC00FE1(1,08) | OK |
| FPC00FE1(1,14)->S00F1_0(17,5,17) | OK | S00F1_0(18,5,18)->FPC00FE1(1,14) | OK |
| FPC00FE1(1,16)->S00F1_0(17,7,17) | OK | S00F1_0(18,7,18)->FPC00FE1(1,16) | OK |
| FPC00FE2(1,14)->S00F1_0(16,0,16) | OK | S00F1_0(16,0,16)->FPC00FE2(1,14) | OK |
| FPC00FE2(1,10)->S00F1_0(18,0,18) | OK | S00F1_0(18,0,18)->FPC00FE2(1,10) | OK |
| FPC00FE2(1,12)->S00F1_0(18,2,18) | OK | S00F1_0(18,2,18)->FPC00FE2(1,12) | OK |

SIB 1
Not Online

SIB 2
Not Online

SIB 3
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SIB 4
Not Online

SIB 5
Not Online

show chassis fabric unreachable-destinations

| | |
|---------------------------------|---|
| Syntax | show chassis fabric unreachable-destinations |
| Release Information | <p>Command introduced before Junos OS Release 11.4.</p> <p>Command introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Switches.</p> <p>Command introduced in Junos OS Release 13.1R3 for TX Matrix routers.</p> |
| Description | (M320 and T Series routers only) Display the list of destinations that have transitioned from a reachable state to an unreachable state. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> show chassis fabric reachability on page 1197 |
| List of Sample Output | show chassis fabric unreachable-destinations(T640 and T1600 routers) on page 1265 show chassis fabric unreachable-destinations(TX Matrix routers) on page 1266 |
| Output Fields | The table lists the output fields for the show chassis fabric unreachable-destinations command. Output fields are listed in the approximate order in which they appear. |

Table 75: show chassis fabric unreachable-destinations Output Fields

| Field Name | Field Description |
|---|---|
| Flexible PIC Concentrator (FPC) number | Source FPC number where unreachable destinations are present. |
| Packet Forwarding Engine number | Source Packet Forwarding Engine number where unreachable destinations are present. |
| Destination error on Packet Forwarding Engine | List of destination FPCs <i>FPC number</i> /Packet Forwarding Engines <i>Packet Forwarding Engine number</i> that are not reachable from the source FPCs <i>FPC number</i> /Packet Forwarding Engines <i>Packet Forwarding Engine number</i> over the fabric. |

Sample Output

show chassis fabric unreachable-destinations(T640 and T1600 routers)

```

user@host> show chassis fabric unreachable-destinations

Fabric management unreachable destinations:
FPC 2
  PFE 0
    Destination error on PFEs      2/0 3/0 3/1 7/0
FPC 3
  PFE 0

```

```

        Destination error on PFEs      2/0 3/0 3/1 7/0
FPC 3
  PFE 1
    Destination error on PFEs      2/0 3/0 3/1 7/0
FPC 7
  PFE 0
    Destination error on PFEs      2/0 3/0 3/1 7/0

```

show chassis fabric unreachable-destinations(TX Matrix routers)

```
user@host> show chassis fabric unreachable-destinations
```

```
Fabric management unreachable destinations:
```

```

FPC 10
  PFE 0
    Destination error on PFEs      10/0 16/0 16/1 17/0 17/1 19/0 20/1 21/1 22/1
24/0
    26/0 27/0 27/1 28/1 29/1 31/1
FPC 12
  PFE 0
    Destination error on PFEs      12/0 16/0 16/1 17/0 17/1 19/0 20/1 21/1 22/1
24/0
    26/0 27/0 27/1 28/1 29/1 31/1
FPC 16
  PFE 0
    Destination error on PFEs      10/0 12/0
FPC 16
  PFE 1
    Destination error on PFEs      10/0 12/0
FPC 17
  PFE 0
    Destination error on PFEs      10/0 12/0
FPC 17
  PFE 1
    Destination error on PFEs      10/0 12/0
FPC 19
  PFE 0
    Destination error on PFEs      10/0 12/0
FPC 20
  PFE 1
    Destination error on PFEs      10/0 12/0
FPC 21
  PFE 1
    Destination error on PFEs      10/0 12/0
FPC 22
  PFE 1
    Destination error on PFEs      10/0 12/0
FPC 24
  PFE 0
    Destination error on PFEs      10/0 12/0
FPC 26
  PFE 0
    Destination error on PFEs      10/0 12/0
FPC 27
  PFE 0
    Destination error on PFEs      10/0 12/0
FPC 27
  PFE 1
    Destination error on PFEs      10/0

```

```
FPC 28
  PFE 1
    Destination error on PFES    10/0 12/0
FPC 29
  PFE 1
    Destination error on PFES    10/0 12/0
FPC 31
  PFE 1
    Destination error on PFES    10/0 12/0
```

show chassis fan

List of Syntax [Syntax on page 1268](#)
[Syntax \(ACX4000 Series Router\) on page 1268](#)
[Syntax \(ACX5048 and ACX5096 Routers\) on page 1268](#)
[Syntax \(MX Series Routers\) on page 1268](#)
[Syntax \(T Series Routers\) on page 1268](#)
[Syntax \(MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform\) on page 1268](#)
[Syntax \(MX10003 Universal Routing Platform\) on page 1268](#)
[Syntax \(PTX Series\) on page 1268](#)
[Syntax \(QFX Series\) on page 1269](#)
[Syntax \(OCX Series\) on page 1269](#)
[Syntax \(TX Matrix Router\) on page 1269](#)
[Syntax \(TX Matrix Plus Router\) on page 1269](#)
[Syntax \(EX9251, EX9253 Switches\) on page 1269](#)

| | |
|---------------|------------------|
| 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 <i>member-id</i> > |
|-----------------------------------|--|

| | |
|----------------------------------|------------------|
| Syntax (T Series Routers) | show chassis fan |
|----------------------------------|------------------|

| | |
|--|--|
| Syntax (MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform) | show chassis fan <satellite [slot-id <i>slot-id</i> [device-alias <i>alias-name</i>]]> |
|--|--|

| | |
|--|------------------|
| Syntax (MX10003 Universal Routing Platform) | show chassis fan |
|--|------------------|

| | |
|----------------------------|------------------|
| Syntax (PTX Series) | show chassis fan |
|----------------------------|------------------|

| | |
|---|---|
| Syntax (QFX Series) | show chassis fan <interconnect-device <i>name</i> > |
| Syntax (OCX Series) | show chassis fan |
| Syntax (TX Matrix Router) | show chassis fan <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | show chassis fan <lcc <i>number</i> sfc <i>number</i> > |
| Syntax (EX9251, EX9253 Switches) | show chassis fan |
| 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> <p>Command output introduced for Junos OS Evolved Release 19.1R1.</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 | all-members —(MX Series routers only) (Optional) Display information about the fan tray and fans for all members of the Virtual Chassis configuration. |

local—(MX Series routers only) (Optional) Display information about the fan tray and fans for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display information about the fan tray and fans for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* variable with a value 0 or 1.

interconnect-device *name*—(QFX3000-G QFabric systems only) (Optional) Display information about the fan tray and fans for the specified QFX3008-I Interconnect device.

lcc *number*—(TX Matrix 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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Output Fields [Table 59 on page 1003](#) lists the output fields for the **show chassis fan** command. Output fields are listed in the approximate order in which they appear.

Table 76: 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 | (PTX10003, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series Packet Transport Routers only) Percentage of the fan speed being used. |

Table 76: show chassis fan Output Fields (continued)

| Field Name | Field Description |
|-------------|---|
| Measurement | <p>(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:</p> <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) <p>(PTX10003, 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.</p> |

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

```

```
lcc0-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 |

1cc2-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 fan (Junos OS Evolved)

user@device> show chassis fan

| Item | Status | % RPM | Measurement |
|------------------|--------|-------|-------------|
| Fan Tray 1 Fan 1 | Ok | 48% | 6597 RPM |
| Fan Tray 1 Fan 2 | Ok | 49% | 5649 RPM |
| Fan Tray 2 Fan 1 | Ok | 49% | 6687 RPM |
| Fan Tray 2 Fan 2 | Ok | 49% | 5649 RPM |
| Fan Tray 3 Fan 1 | Ok | 49% | 6642 RPM |
| Fan Tray 3 Fan 2 | Ok | 49% | 5649 RPM |

show chassis feb

| | |
|---------------------------------|---|
| Syntax | show chassis feb |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 12.2 for the ACX Series Universal Metro Routers. |
| Description | (ACX Series routers, and M5, M10, and M120 routers only) Display Forwarding Engine Board (FEB) status information. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis feb on page 492 • show chassis fabric feb on page 1053 • show chassis fpc-feb-connectivity on page 1366 • <i>feb</i> • <i>Understanding Switching Control Board Redundancy</i> |
| List of Sample Output | show chassis feb (M10 Router) on page 1287 show chassis feb (M120 Router) on page 1287 show chassis feb detail (M120 Router) on page 1288 show chassis feb detail (ACX2000 Universal Metro Router) on page 1289 show chassis feb detail (ACX1000 Universal Metro Router) on page 1289 |
| Output Fields | Table 77 on page 1286 lists the output fields for the show chassis feb command. Output fields are listed in the approximate order in which they appear. |

Table 77: show chassis feb

| Field Name | Field Description |
|--------------------------------|--|
| State | State of the FEB: <ul style="list-style-type: none"> • Offline—FEB is powered down. • Online—FEB is operational and running. • Check—FEB is in alarmed state where the Switch Interface Board (SIB) plane is partially operational for the following reasons: <ul style="list-style-type: none"> • FEB is not inserted properly. • Two or more links between the FEB and Packet Forwarding Engine fail. |
| Temp (C) or Intake temperature | Temperature of the air passing by the FEB, in degrees Celsius or in both degrees Celsius and degrees Fahrenheit. |

Table 77: show chassis feb (continued)

| Field Name | Field Description |
|---------------------------------|---|
| CPU Utilization (%) | Percentage of CPU being used: <ul style="list-style-type: none"> • Total—Total percentage of CPU being used by the FEB processor. • Interrupt—Of the total CPU being used by the FEB processor, the percentage being used for interrupts. |
| Memory DRAM (MB) | Total DRAM, in megabytes, available to the FEB processor. |
| Utilization (%) | Percentage of memory utilization: <ul style="list-style-type: none"> • Heap—Percentage of heap space (dynamic memory) being used by the FEB processor. If this number exceeds 80 percent, you might experience a software problem (memory leak). • Buffer—Percentage of buffer space being used by the FPC processor for buffering internal messages. |
| Exhaust A temperature | Temperature of the air flowing past Exhaust A. |
| Exhaust B temperature | Temperature of the air flowing past Exhaust B. |
| Total DDR DRAM | Amount of double data rate dynamic random access memory (DDR DRAM) available to the FEB CPU. |
| Total RDRAM | Amount of reduced latency dynamic random access memory (RDRAM) available to the FEB CPU. |
| Start time (Detail output only) | Time when the Routing Engine detected that the FEB was running. |
| Uptime (Detail output only) | How long the Routing Engine has been connected to the FEB, and therefore, how long the Flexible PIC Concentrator (PIC) has been up and running. |

Sample Output

show chassis feb (M10 Router)

```

user@host> show chassis feb

FEB status:
  Temperature           27 degrees C / 80 degrees F
  CPU utilization        3 percent
  Interrupt utilization   0 percent
  Heap utilization       26 percent
  Buffer utilization      50 percent
  Total CPU DRAM         64 MB
  Internet Processor II  Version 1, Foundry IBM, Part number 9
  Start time:            2010-05-23 13:59:51 PDT
  Uptime:                6 hours, 33 minutes, 11 seconds

```

show chassis feb (M120 Router)

```

user@host> show chassis feb

Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
              (C)   Total  Interrupt  DRAM (MB) Heap    Buffer
0 Online        47     4        0      512       7     60

```

| | | | | | | | |
|---|--------|----|---|---|-----|---|----|
| 1 | Online | 54 | 3 | 0 | 512 | 7 | 59 |
| 2 | Online | 50 | 4 | 0 | 512 | 7 | 59 |
| 3 | Online | 49 | 4 | 0 | 512 | 7 | 59 |
| 4 | Online | 46 | 3 | 0 | 512 | 7 | 59 |
| 5 | Online | 35 | 3 | 0 | 512 | 7 | 59 |

show chassis feb detail (M120 Router)

```
user@host> show chassis feb detail
```

Slot 0 information:

```
State Online
Intake temperature 48 degrees C / 118 degrees F
Exhaust A temperature 51 degrees C / 123 degrees F
Exhaust B temperature 52 degrees C / 125 degrees F
Total DDR DRAM 512 MB
Total RLD RAM 32 MB
Start time: 2006-06-28 15:00:40 PDT
Uptime: 10 minutes, 21 seconds
```

Slot 1 information:

```
State Online
Intake temperature 55 degrees C / 131 degrees F
Exhaust A temperature 46 degrees C / 114 degrees F
Exhaust B temperature 45 degrees C / 113 degrees F
Total DDR DRAM 512 MB
Total RLD RAM 32 MB
Start time: 2006-06-28 15:00:33 PDT
Uptime: 10 minutes, 28 seconds
```

Slot 2 information:

```
State Online
Intake temperature 50 degrees C / 122 degrees F
Exhaust A temperature 47 degrees C / 116 degrees F
Exhaust B temperature 47 degrees C / 116 degrees F
Total DDR DRAM 512 MB
Total RLD RAM 32 MB
Start time: 2006-06-28 15:00:35 PDT
Uptime: 10 minutes, 26 seconds
```

Slot 3 information:

```
State Online
Intake temperature 49 degrees C / 120 degrees F
Exhaust A temperature 47 degrees C / 116 degrees F
Exhaust B temperature 49 degrees C / 120 degrees F
Total DDR DRAM 512 MB
Total RLD RAM 32 MB
Start time: 2006-06-28 15:00:43 PDT
Uptime: 10 minutes, 18 seconds
```

Slot 4 information:

```
State Online
Intake temperature 45 degrees C / 113 degrees F
Exhaust A temperature 42 degrees C / 107 degrees F
Exhaust B temperature 42 degrees C / 107 degrees F
Total DDR DRAM 512 MB
Total RLD RAM 32 MB
Start time: 2006-06-28 15:00:29 PDT
Uptime: 10 minutes, 32 seconds
```

Slot 5 information:

```
State Online
Intake temperature 35 degrees C / 95 degrees F
Exhaust A temperature 33 degrees C / 91 degrees F
Exhaust B temperature 40 degrees C / 104 degrees F
```

```

Total DDR DRAM          512 MB
Total RLDRAM            32 MB
Start time:             2006-06-28 15:00:27 PDT
Uptime:                 10 minutes, 34 seconds

```

show chassis feb detail (ACX2000 Universal Metro Router)

```
user@host> show chassis feb
```

```

FEB status:
Slot 0 information:
  State                Online
  Temperature          72 degrees C / 161 degrees F
  CPU utilization      17 percent
  Interrupt utilization 7 percent
  Heap utilization     20 percent
  Buffer utilization    37 percent
  Total CPU DRAM       512 MB
  Start time:          2012-05-09 00:58:51 PDT
  Uptime:              5 days, 21 hours, 6 minutes, 34 seconds

```

show chassis feb detail (ACX1000 Universal Metro Router)

```
user@host> show chassis feb
```

```

FEB status:
Slot 0 information:
  State                Online
  Temperature          46 degrees C / 114 degrees F
  CPU utilization      15 percent
  Interrupt utilization 5 percent
  Heap utilization     45 percent
  Buffer utilization    37 percent
  Total CPU DRAM       256 MB
  Start time:          2012-06-05 19:51:53 PDT
  Uptime:              19 minutes, 6 seconds

```

show chassis firmware

- List of Syntax**
- Syntax on page 1290
 - Syntax (TX Matrix Routers) on page 1290
 - Syntax (TX Matrix Plus Routers) on page 1290
 - Syntax (MX Series Routers) on page 1290
 - Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms) on page 1290
 - Syntax (MX10008 Universal Routing Platforms) on page 1290
 - Syntax (PTX Series) on page 1290
 - Syntax (QFX Series) on page 1291
 - Syntax (OCX Series) on page 1291
 - Syntax (ACX Series Universal Metro Routers) on page 1291
 - Syntax (ACX5048 and ACX5096 Routers) on page 1291
 - Syntax (ACX500 Routers) on page 1291
 - Syntax (EX Series Switches) on page 1291

| | |
|---------------|-----------------------|
| 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) | show chassis firmware |
| Syntax (ACX5048 and ACX5096 Routers) | show chassis firmware interconnect-device <i>name</i> node-device <i>name</i> |
| Syntax (ACX500 Routers) | show chassis firmware |
| Syntax (EX Series Switches) | show chassis firmware <detail> <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]> |
| 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 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).

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 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 1295](#)
- [show chassis firmware \(M20 Router\) on page 1295](#)
- [show chassis firmware \(M40 Router\) on page 1295](#)
- [show chassis firmware \(M120 Router\) on page 1295](#)
- [show chassis firmware \(M160 Router\) on page 1295](#)
- [show chassis firmware \(MX150\) on page 1296](#)
- [show chassis firmware \(MX104 Router\) on page 1296](#)
- [show chassis firmware \(MX240 Router\) on page 1296](#)
- [show chassis firmware \(MX480 Router\) on page 1296](#)
- [show chassis firmware \(MX960 Router\) on page 1296](#)
- [show chassis firmware \(MX2010 Router\) on page 1296](#)
- [show chassis firmware \(MX2020 Router\) on page 1297](#)
- [show chassis firmware \(MX2008 Router\) on page 1298](#)
- [show chassis firmware \(MX10003\) on page 1298](#)
- [show chassis firmware \(MX204 Router\) on page 1298](#)
- [show chassis firmware \(MX10008 Router\) on page 1299](#)
- [show chassis firmware \(MX240, MX480, MX960 Router with Application Services Modular Line Card\) on page 1300](#)
- [show chassis firmware \(EX4200 Switch\) on page 1300](#)
- [show chassis firmware \(EX8200 Switch\) on page 1300](#)
- [show chassis firmware \(EX9200 Switch\) on page 1300](#)
- [show chassis firmware \(EX9251 Switch\) on page 1300](#)
- [show chassis firmware \(EX9253 Switch\) on page 1301](#)
- [show chassis firmware lcc \(TX Matrix Router\) on page 1301](#)
- [show chassis firmware scc \(TX Matrix Router\) on page 1301](#)
- [show chassis firmware \(TX Matrix Plus Router\) on page 1301](#)

[show chassis firmware lcc \(TX Matrix Plus Router\) on page 1303](#)
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[show chassis firmware \(QFX Series and OCX Series\) on page 1304](#)
[show chassis firmware \(PTX1000 Packet Transport Routers\) on page 1304](#)
[show chassis firmware \(PTX10008 Routers\) on page 1304](#)
[show chassis firmware interconnect-device \(QFabric System\) on page 1305](#)
[show chassis firmware \(ACX2000 Universal Metro Router\) on page 1305](#)
[show chassis firmware detail \(EX3300 Switch\) on page 1305](#)
[show chassis firmware \(MX Routers with Media Services Blade \[MSB\]\) on page 1305](#)
[show chassis firmware \(ACX5048 Router\) on page 1305](#)
[show chassis firmware \(ACX5096 Router\) on page 1306](#)
[show chassis firmware \(ACX500 Router\) on page 1306](#)

Output Fields [Table 78 on page 1294](#) lists the output fields for the show chassis firmware command. Output fields are listed in the approximate order in which they appear.

Table 78: 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 |

| | | |
|-------|-----|--|
| FPC 2 | O/S | Version 4.0I1 by usera on 2000-02-29 11:56 |
| | 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 |

| | | |
|--------|-----|---|
| FPC 15 | O/S | Version 12.3-20130415.0 by userb on 2013- |
| | ROM | Juniper ROM Monitor Version 10.0b39 |
| FPC 16 | O/S | Version 12.3-20130415.0 by userb on 2013- |
| | ROM | Juniper ROM Monitor Version 10.0b39 |
| FPC 17 | O/S | Version 12.3-20130415.0 by userb on 2013- |
| | ROM | Juniper ROM Monitor Version 10.0b39 |
| FPC 18 | O/S | Version 12.3-20130415.0 by userb on 2013- |
| | ROM | Juniper ROM Monitor Version 10.0b39 |
| FPC 19 | O/S | Version 12.3-20130415.0 by userb on 2013- |
| | ROM | Juniper ROM Monitor Version 10.0b39 |
| SPMB 0 | O/S | Version 12.3-20130415.0 by userb on 2013- |
| | ROM | Juniper ROM Monitor Version 12.1b1 |
| SPMB 1 | O/S | Version 12.3-20130415.0 by userb on 2013- |
| | 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 |
| | BOOT CPLD | 0.4.0 |
| FPC 2 | 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 O/S | Juniper ROM Monitor Version 12.1b1 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 loader | U-Boot 1.1.6 (Feb 6 2008 - 11:27:42) FreeBSD/PowerPC U-Boot bootstrap loader 2.1 |
| FPC 1 | uboot loader | U-Boot 1.1.6 (Feb 6 2008 - 11:27:42) FreeBSD/PowerPC U-Boot bootstrap loader 2.1 |
| FPC 2 | uboot loader | U-Boot 1.1.6 (Feb 6 2008 - 11:27:42) 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 loader | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| FPC 3 | U-Boot loader | U-Boot 1.1.6 (Dec 4 2009 - 13:17:34) 3.1.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| FPC 5 | U-Boot loader | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| FPC 7 | U-Boot loader | U-Boot 1.1.6 (Feb 6 2009 - 05:31:46) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| Routing Engine 0 | U-Boot loader | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| Routing Engine 1 | U-Boot loader | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |

show chassis firmware (EX9200 Switch)

```
user@switch> show chassis firmware
```

| Part | Type | Version |
|-------|------------|---|
| FPC 2 | ROM O/S | Juniper ROM Monitor Version 11.4b2 Version 14.1I20140312_0741 by userd o |
| FPC 3 | ROM O/S | Juniper ROM Monitor Version 10.4b1 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 |


```

FPC                                RE-FPGA  301
                                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 loader | U-Boot 1.1.6 (Sep 15 2010 - 02:11:11) 1.0.5 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 - 22:56:52) | U-Boot | Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016) |
| | CTRL FPGA | 4.1 |
| | PORT FPGA | 2.0 |
| FPC 5 - 22:56:52) | U-Boot | Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016) |
| | CTRL FPGA | 3.1 |
| | PORT FPGA | 2.0 |
| FPC 6 - 22:56:52) | U-Boot | Bank B: U-Boot 2011.12-gfbea47a (Feb 26 2016) |
| | 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 loader | U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1 FreeBSD/MIPS U-Boot bootstrap loader 0.1 |
| Routing Engine 1 | U-Boot loader | U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1 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 loader | U-Boot 1.1.6 (Aug 21 2011 - 01:45:26) | 1.0.0 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 |
| | PIC0 CPLD0 | 7.b |
| | PIC0 CPLD1 | 7.b |
| | PIC0 CPLD2 | 7.b |
| | PIC0 CPLD3 | 7.b |
| | PIC0 CPLD4 | 7.b |
| | PIC0 CPLD5 | 7.b |
| | PIC0 CPLD6 | c6.a |
| | PIC0 CPLD7 | -NA- |
| | PIC0 CPLD8 | 7.b |
| | PIC0 CPLD9 | 7.b |
| | PIC0 CPLD10 | 7.b |
| | PIC0 CPLD11 | 7.b |
| | PIC0 CPLD12 | 7.b |
| | PIC0 CPLD13 | 7.b |
| | PIC0 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 forwarding

| | |
|---------------------------------|---|
| Syntax | show chassis forwarding |
| Release Information | Current—Command introduced before Junos OS Release 7.4. Now—Command introduced in Junos OS Release 7.4. Support for Branch SRX Series added in Junos OS Release 10.1 |
| Description | Display status of the forwarding process (fwdd). This command is supported on Branch SRX Series Services Gateways. |
| Options | This command has no options. |
| Required Privilege Level | view |
| List of Sample Output | show chassis forwarding on page 1307 |
| Output Fields | Table 79 on page 1307 lists the output fields for the show chassis forwarding command. Output fields are listed in the approximate order in which they appear. |

Table 79: show chassis forwarding Output Fields

| Field Name | Field Description |
|--------------------|---|
| FWWD status | <p>Forwarding status:</p> <ul style="list-style-type: none"> • State: <ul style="list-style-type: none"> • Online—FWDD is operational and running. • Offline—FWDD is not running. • Microkernel CPU utilization—Percentage of microkernel CPU being used by the forwarding process. • Real-time threads CPU utilization—Percentage of CPU being used by the forwarding process. • Heap utilization—Percentage of heap space (dynamic memory) being used by the forwarding process. If this number exceeds 80 percent, there may be a software problem (memory leak). • Buffer utilization—Percentage of buffer space being used by the forwarding process for buffering internal messages. • Uptime—How long the forwarding process has been up and running. |

Sample Output

show chassis forwarding

```
user@host> show chassis forwarding

FWDD status:
  State                Online
  Microkernel CPU utilization  10 percent
  Real-time threads CPU utilization  4 percent
```

| | |
|--------------------|---------------------------------------|
| Heap utilization | 26 percent |
| Buffer utilization | 0 percent |
| Uptime: | 1 day, 1 hour, 30 minutes, 11 seconds |

show chassis fpc

| | |
|---|---|
| List of Syntax | Syntax on page 1309 Syntax (EX Series Switches) on page 1309 Syntax (T4000 Routers) on page 1309 Syntax (TX Matrix and TX Matrix Plus Routers) on page 1309 Syntax (MX Series Routers and EX Series switches) on page 1309 Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms) on page 1309 Syntax (MX10008 Universal Routing Platforms) on page 1310 Syntax (QFX Series) on page 1310 Syntax (OCX Series) on page 1310 Syntax (PTX Series Packet Transport Routers) on page 1310 Syntax (ACX Series Universal Metro Routers) on page 1310 Syntax (ACX500 Routers) on page 1310 Syntax (Junos OS Evolved) on page 1310 |
| Syntax | <pre>show chassis fpc <detail <slot>> <pic-status <slot>></pre> |
| Syntax (EX Series Switches) | <pre>show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <fpc-slot></pre> |
| Syntax (T4000 Routers) | <pre>show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>></pre> |
| Syntax (TX Matrix and TX Matrix Plus Routers) | <pre>show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <slot></pre> |
| Syntax (MX Series Routers and EX Series switches) | <pre>show chassis fpc <detail <slot>> <pic-status <slot>> <all-members> <local> <member member-id></pre> |
| Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms) | <pre>show chassis fpc <slot> detail <detail <slot>> <pic-status <slot>> <fpc-slot></pre> |

| | |
|--|---|
| Syntax (MX10008 Universal Routing Platforms) | <pre>show chassis fpc <detail> <errors> <fpc-slot> pic-status <fpc-slot></pre> |
| Syntax (QFX Series) | <pre>show chassis fpc <detail> <interconnect-device name <fpc-slot fpc-slot>> <node-device name></pre> |
| Syntax (OCX Series) | <pre>show chassis fpc <detail></pre> |
| Syntax (PTX Series Packet Transport Routers) | <pre>show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <fpc-slot></pre> |
| Syntax (ACX Series Universal Metro Routers) | <pre>show chassis fpc <detail <fpc-slot>> <pic-status <fpc-slot>> <fpc-slot></pre> |
| Syntax (ACX500 Routers) | <pre>show chassis fpc <fpc-slot> detail <fpc-slot> pic-status <fpc-slot></pre> |
| Syntax (Junos OS Evolved) | <pre>show chassis fpc <detail pic-status errors> <fpc-slot></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>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 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>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> |

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 switch.
Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Description Display status information about the installed Flexible PIC Concentrators (FPCs) and PICs.

Options **none**—Display status information for all FPCs. On a TX Matrix router, display status information for all FPCs on the attached T640 routers in the routing matrix. On a TX Matrix Plus router, display status information for all FPCs on the attached routers in the routing matrix.



NOTE: In EX8200 switches, line cards initialize Packet Forwarding Engine during startup. If an error occurs during hardware initialization, the FPCs with bad hardware parts power down after transferring the debug information to the Routing Engine. The Routing Engine marks the FPC offline, logs the error in system log messages (/var/log/messages), and generates an alarm to inform the user.

See the following sample output:

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

| Utilization (%) | | Temp | CPU Utilization (%) | | Memory | |
|-----------------|---------|------|----------------------|-----------|-----------|------|
| Slot | State | (C) | Total | Interrupt | DRAM (MB) | Heap |
| Buffer | | | | | | |
| 0 | Empty | | | | | |
| 1 | Empty | | | | | |
| 2 | Empty | | | | | |
| | | | | | | |
| 3 | Empty | | | | | |
| 4 | Empty | | | | | |
| 5 | Offline | | ---Hard FPC error--- | | | |
| 6 | Empty | | | | | |
| 7 | Online | 26 | 4 | 0 | 1024 | 0 |
| 32 | | | | | | |

The following sample output shows the alarm raised for the failed FPCs:

```
user@host> show chassis alarms
```

4 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|--------------------------------------|
| 2011-03-24 00:52:51 UTC | Major | FPC 5 Hard errors |
| 2011-03-24 00:52:31 UTC | Major | Fan Tray Failure |
| 2011-03-24 00:52:31 UTC | Major | Fan Tray Failure |
| 2011-03-24 00:51:26 UTC | Minor | Loss of communication with Backup RE |



NOTE: On T4000 routers, when you include the enhanced-mode statement at the [edit chassis network-services] hierarchy level and reboot the system, only the T4000 Type 5 FPCs present on the router become online while the remaining FPCs are offline, and FPC misconfiguration alarms are generated. The show chassis alarm command output displays FPC misconfiguration (FPC *fpc-slot* misconfig) as the reason for the generation the alarms.

The following sample output shows the FPC status after the enhanced-mode statement is configured on the T4000 router. The T4000 Type 5 FPC present in slot 5 becomes online while the remaining FPCs are offline.

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

| Utilization (%) | Temp | CPU Utilization (%) | Memory |
|-----------------|------|-------------------------|----------------|
| Slot State | (C) | Total | Interrupt |
| Buffer | | | DRAM (MB) Heap |
| 0 offline | --- | FPC misconfiguration--- | |
| 1 offline | --- | FPC misconfiguration--- | |
| 2 offline | --- | FPC misconfiguration--- | |
| 3 Empty | | | |
| 4 Empty | | | |
| 5 Online | 66 | 50 | 0 |
| 27 | | | 2816 29 |

The following sample output shows FPC misconfiguration alarms:

```
user@host> show chassis alarms
3 alarms currently active
```

| Alarm time | Class | Description |
|-------------------------|-------|-----------------|
| 2011-03-24 00:52:51 PST | Major | FPC 1 misconfig |
| 2011-03-24 00:52:31 PST | Major | FPC 2 misconfig |
| 2011-03-24 00:52:31 PST | Major | FPC 3 misconfig |

detail—(Optional) Display detailed status information for all FPCs or for the FPC in the specified slot (see *fpc-slot* or *slot*).

all-members—(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on all members of the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems only) (Optional) Display status information for all FPCs on the Interconnect device.

fpc-slot—(Optional) FPC slot number:

- (TX Matrix and TX Matrix Plus routers only)—On a TX Matrix router, if you specify the number of the T640 router (line-card chassis) by using the *lcc number* option

(the recommended method), replace *fpc-slot* with a value from 0 through 7. Otherwise, replace *fpc-slot* with a value from 0 through 31. Likewise, on a TX Matrix Plus router, if you specify the number of the specified router (line-card chassis) by using the *lcc number* option (the recommended method), replace *fpc-slot* with a value from 0 through 7. Otherwise, replace *fpc-slot* with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis fpc detail 1 lcc 1
user@host> show chassis fpc detail 9
```

- M120 router—Replace *fpc-slot* with a value from 0 through 5.
- MX80 router—Replace *fpc-slot* with a value from 0 through 1.
- MX104 and MX104-40G routers—Replace *fpc-slot* with a value from 0 through 2.
- MX240 router—Replace *fpc-slot* with a value from 0 through 2.
- MX480 router—Replace *fpc-slot* with a value from 0 through 5.
- MX-960 router—Replace *fpc-slot* with a value from 0 through 11.
- MX2010 router—Replace *fpc-slot-number* with a value from 0 through 9.
- MX2008 router—Replace *fpc-slot-number* with a value from 0 through 9.
- MX2020 router—Replace *fpc-slot-number* with a value from 0 through 19.
- Other routers—Replace *fpc-slot* with a value from 0 through 7.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—Replace *fpc-slot* with 0.
 - EX4200 switches in a Virtual Chassis configuration—Replace *fpc-slot* with a value from 0 through 9.
 - EX6210 switches—Replace *fpc-slot* with a value from 0 through 9.
 - EX8208 switches—Replace *fpc-slot* with a value from 0 through 7.
 - EX8216 switches—Replace *fpc-slot* with a value from 0 through 15.
 - EX9204 switches—Replace *fpc-slot* with a value from 0 through 2.
 - EX9208 switches—Replace *fpc-slot* with a value from 0 through 5.
 - EX9214 switches—Replace *fpc-slot* with a value from 0 through 11.
- QFX Series:
 - QFXSeries and OCX Series switches—Replace *fpc-slot* with 0.
 - QFabric systems—Replace *fpc-slot* with 0 through 31 on the Interconnect device.
- PTX Series Packet Transport Routers:

- PTX5000 Packet Transport Router—Replace **fpc-slot** with a value from 0 through 7.
- ACX Series Universal Metro Routers:
 - ACX1000 and ACX2000 Universal Metro Routers—Replace **fpc-slot** with 0.

interconnect-device name—(QFabric systems only) (Optional) Display status information for all FPCs on the Interconnect device.

lcc number—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

local—(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on the local Virtual Chassis member.

member member-id—(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on the specified member of the Virtual Chassis configuration. Replace **member-id** with a value of 0 or 1.

node-device name—(QFabric systems only) (Optional) Display status information for each Node device. Each Node device is equivalent to an FPC.

pic-status—(Optional) Display status information for all PICs or for the PIC in the specified slot (see **fpc-slot**).



NOTE: On T1600 routers, Type 4 FPCs with ASICs based on the SL2.0 chipset do not support the 10-Gigabit Ethernet LAN/WAN PIC with SFP+ (10x10GE [LAN/WAN] SFPP). If you issue the `show chassis fpc` command with the `pic-status` option, the CLI displays the string “Not Supported” for 10x10GE (LAN/WAN) SFPP PICs installed on such FPCs. The following is a sample output:

```
user@host> show chassis fpc pic-status
Slot 0   Online      E2-FPC Type 1
  PIC 0   Online      1x G/E SFP, 1000 BASE
  PIC 1   Online      Adaptive Services-II
  PIC 2   Online      1x G/E IQ, 1000 BASE
  PIC 3   Online      1x G/E IQ, 1000 BASE
Slot 1   Online      FPC Type 3-ES
  PIC 0   Present     UNUSED- Not Supported
Slot 2   Online      FPC Type 4-ES
  PIC 0   Offline     4x OC-192 SONET XFP
  PIC 1   Present     10x10GE (LAN/WAN) SFPP- Not Supported
<<<<<<
Slot 4   Offline     FPC Type 1-ES
Slot 5   Offline     FPC Type 2-ES
Slot 6   Online      E2-FPC Type 3
  PIC 0   Online      1x OC-192 SONET XFP
  PIC 1   Online      4x OC-48 SONET
  PIC 2   Online      4x OC-48 SONET
  PIC 3   Online      MultiServices 500
Slot 7   Online      FPC Type 4-ES
  PIC 0   Online      4x 10GE (LAN/WAN) XFP
  PIC 1   Online      4x 10GE (LAN/WAN) XFP
```

In addition, an entry is logged in the system log messages (/var/log/messages) that the PIC is not supported. The following is a sample message logged in the system log:

```
Apr  5 08:47:36  router1 chassisd[2770]: CHASSISD_UNSUPPORTED_PIC:
PIC 1 in FPC 2 (type 763, version 257) is not supported
```

If you see this issue, contact Juniper Networks Technical Assistance Center (JTAC) for a possible fix. For more information about this issue and a possible solution, see [PSN-2010-03-696](#).



NOTE: When there is a double-bit ECC error in a network processor's memory, the Channelized OC3/STM1 (Multi-Rate) Circuit Emulation MIC with SFP or Channelized E1/T1 Circuit Emulation MIC is switched to the offline state.

```
user@host> show chassis fpc pic-status
```

```
Slot 1   Online      MPC Type 2 3D Q
PIC 0   Offline      1xC0C12/4xC0C3 CH-CE- ECC error detected
```

lcc *number*—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

Required Privilege Level view

Related Documentation

- [request chassis fpc on page 494](#)
- [show chassis fpc-feb-connectivity on page 1366](#)
- [show chassis fabric fpcs on page 1060](#)
- [Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online on page 166](#)
- [MX960 Flexible PIC Concentrator Description](#)
- [ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping](#)
- [enhanced-mode on page 286](#)

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Output Fields Table 80 on page 1320 lists the output fields for the **show chassis fpc** command. Output fields are listed in the approximate order in which they appear.

Table 80: show chassis fpc Output Fields

| Field Name | Field Description | Level of Output |
|--------------------------------|--|--------------------------|
| Slot or Slot State | <p>Slot number and state. The state can be one of the following conditions:</p> <ul style="list-style-type: none"> • Dead—Held in reset because of errors. • Diag—Slot is being ignored while the FPC is running diagnostics. • Dormant—Held in reset. • Empty—No FPC is present. • Offline—(PTX Series Packet Transport Routers only) One of the following two states is displayed: <ul style="list-style-type: none"> • FPC offlined due to unreachable destinations • FPC Offlined due to degraded FPC action • Online—FPC is online and running. • Present—FPC is detected by the chassis daemon but either is not supported by the current version of Junos OS or is inserted in the wrong slot. The output also states either Hardware Not Supported or Hardware Not In Right Slot. The FPC is coming up but not yet online. • Probed—Probe is complete; awaiting restart of the Packet Forwarding Engine. • Probe-wait—Waiting to be probed. • Unknown—FPC is present but the state is unknown. • Present—FPC is plugged in. The FPC is not powered on or operational. • Onlining—FPC is in the process of going online. ASIC and rest of the hardware is initializing. • Offlining—FPC is in the process of going offline. ASIC and rest of the hardware is being shutdown down to take the offline gracefully. • Fault—FPC is in an alarmed state in which none of the PICs are operational. • Fault-off—FPC is powered off due to a fault. • Spare—FPC is redundant and will move to active state if one of the working FPCs fails to pass traffic. | all levels |
| Logical slot | Slot number. | all levels |
| Temp (C) or Temperature | Temperature of the air passing by the FPC, in degrees Celsius or in both Celsius and Fahrenheit. | all levels all levels |

Table 80: show chassis fpc Output Fields (continued)

| Field Name | Field Description | Level of Output |
|--------------------------------------|---|-----------------|
| Temperature (PTX Series) | On PTX Series Packet Transport Routers, temperature details are provided in degrees Celsius and Fahrenheit. Output includes: <ul style="list-style-type: none"> • Temperature (PMB)—Temperature of the air passing by the Processor Mezzanine Board (PMB) at the bottom of the FPC. • Temperature (Intake)—Temperature of the air flowing into the chassis. • Temperature (Exhaust)—Exhaust temperatures for multiple zones (Exhaust A and Exhaust B). • Temperature (TLn)—Temperature of the specified Lookup ASIC (TL) of the packet forwarding engine on the FPC. • Temperature (TQn)—Temperature of the specified Queuing and Memory Interface ASIC (TQ) of the packet forwarding engine on the FPC. | detail |
| Total CPU Utilization (%) | Total percentage of CPU being used by the FPC's processor. | all levels |
| Interrupt CPU Utilization (%) | Of the total CPU being used by the FPC's processor, the percentage being used for interrupts. | none specified |
| 1 min CPU utilization (%) | Information about the Routing Engine's CPU utilization in the past 1 minute. NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008. | none specified |
| 5 min CPU utilization (%) | Information about the Routing Engine's CPU utilization in the past 5 minutes. NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008. | none specified |
| 15 min CPU utilization (%) | Information about the Routing Engine's CPU utilization in the past 15 minutes. NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008. | none specified |
| Memory DRAM (MB) | Total DRAM, in megabytes, available to the FPC's processor. | none specified |

Table 80: show chassis fpc Output Fields (continued)

| Field Name | Field Description | Level of Output |
|--------------------------------------|--|-----------------|
| Heap Utilization (%) | Percentage of heap space (dynamic memory) being used by the FPC's processor. If this number exceeds 80 percent, there may be a software problem (memory leak). NOTE: On MX Series routers and EX Series switches in a broadband edge environment, heap utilization levels higher than 70 percent can affect unified ISSU, router stability, or scaling capability. | none specified |
| Buffer Utilization (%) | Percentage of buffer space being used by the FPC's processor for buffering internal messages. | none specified |
| Total CPU DRAM | Amount of DRAM available to the FPC's CPU. | detail |
| Total RLDRAM | Amount of reduced latency dynamic random access memory (RLDRAM) available to the FPC CPU. | detail |
| Total DDR DRAM | Amount of double data rate dynamic random access memory (DDR DRAM) available to the FPC CPU. | detail |
| Total SRAM | Amount of static RAM (SRAM) used by the FPC's CPU. | detail |
| Total SDRAM | Total amount of memory used for storing packets and notifications. | detail |
| I/O Manager ASICs information | I/O Manager version number, manufacturer, and part number. | detail |
| Start time | Time when the Routing Engine detected that the FPC was running. | detail |
| Uptime | How long the Routing Engine has been connected to the FPC and, therefore, how long the FPC has been up and running. | detail |
| PIC type | (pic-status output only) Type of PIC. | none specified |
| GNF (Node slicing) | GNF identifier associated with each line card. (pic-status output only) GNF identifier associated with each PIC. | all levels |

Sample Output

show chassis fpc (EX6210 Switch)

```
user@switch> show chassis fpc
```

| Slot | State | Temp (C) | CPU Utilization (%) | Memory DRAM (MB) | Utilization (%) |
|------|--------|----------|---------------------|------------------|-----------------|
| | | | Total Interrupt | | Heap Buffer |
| 0 | Empty | | | | |
| 1 | Online | 7 | 5 | 0 | 1024 0 32 |
| 2 | Empty | | | | |
| 3 | Empty | | | | |
| 4 | Online | 25 | 17 | 2 | 2048 0 30 |

| | | | | | | | |
|---|--------|----|---|---|------|---|----|
| 5 | Online | 25 | 3 | 0 | 2048 | 0 | 24 |
| 6 | Online | 6 | 5 | 0 | 1024 | 0 | 32 |
| 7 | Empty | | | | | | |
| 8 | Empty | | | | | | |
| 9 | Online | 8 | 7 | 0 | 1024 | 0 | 32 |

show chassis fpc (M10 Router)

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

FPC status:

| Slot | State | Temp (C) |
|------|--------|----------|
| 0 | Online | 27 |
| 1 | Online | 28 |

show chassis fpc (M20 Router)

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

FPC status:

| | | Temp | CPU Utilization (%) | | Memory | Utilization (%) | |
|------|--------|------|---------------------|-----------|-----------|-----------------|--------|
| Slot | State | (C) | Total | Interrupt | DRAM (MB) | Heap | Buffer |
| 0 | Empty | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | Online | 38 | 0 | 0 | 8 | 0 | 4 |
| 2 | Online | 35 | 0 | 0 | 8 | 0 | 3 |
| 3 | Empty | 0 | 0 | 0 | 0 | 0 | 0 |

show chassis fpc detail (M Series Routers)

```
user@host> show chassis fpc detail 1
```

Slot 1 information:

| | |
|-------------------------------|---|
| State | Online |
| Temperature | 48 degrees C |
| Total CPU DRAM | 32 MB |
| Total SRAM | 4 MB |
| Total SDRAM | 256 MB |
| I/O Manager ASICs information | Version 2.0, Foundry IBM, Part number 0 |
| I/O Manager ASICs information | Version 2.0, Foundry IBM, Part number 0 |
| Start time | 2000-02-08 02:18:49 UTC |
| Uptime | 14 hours, 41 minutes, 41 seconds |

show chassis fpc detail (MX150)

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

Slot 0 information:

| | |
|----------------|--|
| State | Online |
| Temperature | 42 degrees C / 107 degrees F |
| Total CPU DRAM | 2048 MB |
| Total RLDRAM | 10 MB |
| Total DDR DRAM | 0 MB |
| Start time | 2017-04-04 04:44:04 PDT |
| Uptime | 7 days, 19 hours, 45 minutes, 50 seconds |

show chassis fpc detail (MX80 Router)

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

Slot 0 information:

```
State Online
Temperature 47 degrees C / 116 degrees F
Total CPU DRAM 1024 MB
Total SRAM 331 MB
Total SDRAM 1280 MB
Start time 2010-02-08 12:25:33 PST
Uptime 2 hours, 13 minutes, 19 seconds
```

Slot 1 information:

```
State Online
Temperature 47 degrees C / 116 degrees F
Total CPU DRAM 1024 MB
Total SRAM 331 MB
Total SDRAM 1280 MB
Start time 2010-02-08 12:25:33 PST
Uptime 2 hours, 13 minutes, 19 seconds
```

show chassis fpc (MX104 Router)

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

| Temp | CPU State | Utilization (%) | Memory (C) | Utilization (%) | DRAM (MB) | Heap | Buffer |
|------|-----------|-----------------|------------|-----------------|-----------|------|--------|
| 0 | Online | 32 | 15 | 5 | 2048 | 22 | 13 |
| 1 | Online | 32 | 15 | 5 | 2048 | 22 | 13 |
| 2 | Online | 32 | 15 | 5 | 2048 | 22 | 13 |

show chassis fpc detail (MX104 Router)

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

Slot 0 information:

```
State Online
Temperature 32 (C)
Total CPU DRAM 2048 MB
Total SRAM 403 MB
Total SDRAM 1316 MB
Start time 2013-05-23 14:39:18 IST
Uptime 1 hour, 20 minutes, 22 seconds
```

Slot 1 information:

```
State Online
Temperature 32 (C)
Total CPU DRAM 2048 MB
Total SRAM 403 MB
Total SDRAM 1316 MB
Start time 2013-05-23 14:39:18 IST
Uptime 1 hour, 20 minutes, 22 seconds
```

Slot 2 information:

```
State Online
Temperature 32 (C)
Total CPU DRAM 2048 MB
Total SRAM 403 MB
Total SDRAM 1316 MB
Start time 2013-05-23 14:39:18 IST
Uptime 1 hour, 20 minutes, 22 seconds
```


show chassis fpc pic-status (MX104 Router)

```

user@host> show chassis fpc pic-status

Slot 0   Online
Slot 1   Online
  PIC 0   Online      10x 1GE(LAN) -E SFP
  PIC 1   Online      10x 1GE(LAN) -E SFP
Slot 2   Online
  PIC 0   Online      4x 10GE(LAN) SFP+

```

show chassis fpc (MX240 Router)

```

user@host> show chassis fpc

```

| Slot | State | Temp (C) | CPU Utilization (%) | Memory (MB) | Utilization (%) |
|------|--------|----------|---------------------|-------------|-----------------|
| | | | Total | DRAM | Heap |
| 0 | Empty | | | | |
| 1 | Online | 34 | 6 | 1024 | 18 |
| 2 | Online | 33 | 9 | 1024 | 24 |

If you have installed a Switch Control Board (SCB1) instead of a line card (DPC0) in the multifunction slot on the MX240, the **show chassis fpc** output shows the slot **0** as empty.

show chassis fpc (MX480 Router)

```

user@host> show chassis fpc

```

| Slot | State | Temp (C) | CPU Utilization (%) | Memory (MB) | Utilization (%) |
|------|--------|----------|---------------------|-------------|-----------------|
| | | | Total | DRAM | Heap |
| 0 | Empty | | | | |
| 1 | Online | 36 | 9 | 1024 | 17 |
| 2 | Empty | | | | |
| 3 | Empty | | | | |
| 4 | Empty | | | | |
| 5 | Empty | | | | |

show chassis fpc detail (EX9200 Switch)

```

user@switch> show chassis fpc detail

```

Slot 2 information:

| | |
|-----------------------|-------------------------------|
| State | Online |
| Temperature | 37 |
| Total CPU DRAM | 2048 MB |
| Total RLD RAM | 331 MB |
| Total DDR DRAM | 1536 MB |
| Start time: | 2014-03-12 15:35:28 UTC |
| Uptime: | 1 hour, 4 minutes, 29 seconds |
| Max Power Consumption | 239 Watts |

Slot 3 information:

| | |
|-----------------------|--------------------------------|
| State | Online |
| Temperature | 39 |
| Total CPU DRAM | 2048 MB |
| Total RLD RAM | 1036 MB |
| Total DDR DRAM | 6656 MB |
| Start time: | 2014-03-12 15:00:18 UTC |
| Uptime: | 1 hour, 39 minutes, 39 seconds |
| Max Power Consumption | 520 Watts |

show chassis fpc (MX480 Router)

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

| | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | Memory | |
|-----------------|--------|------|---------------------|-----------|---------------------|------|--------|-----------|
| Utilization (%) | | | | | | | | |
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap | Buffer | | | | | | | |
| 0 | Online | | 1 | 0 | 1 | 2 | 3 | 1024 |
| 4 | | 56 | | | | | | |
| 1 | Online | | 1 | 0 | 2 | 2 | 3 | 1024 |
| 4 | | 56 | | | | | | |

show chassis fpc (MX480 Router with 100-Gigabit Ethernet CFP)

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

| | | Temp | CPU Utilization (%) | | Memory | Utilization (%) | |
|------|--------|------|---------------------|-----------|-----------|-----------------|--------|
| Slot | State | (C) | Total | Interrupt | DRAM (MB) | Heap | Buffer |
| 0 | Online | 33 | 4 | 0 | 2048 | 10 | 13 |
| 1 | Online | 36 | 7 | 0 | 2048 | 16 | 13 |
| 2 | Online | 29 | 6 | 0 | 1024 | 27 | 29 |
| 3 | Online | 33 | 0 | 0 | 0 | 0 | 0 |
| 4 | Online | 36 | 7 | 0 | 2048 | 19 | 13 |
| 5 | Online | 34 | 31 | 11 | 2048 | 14 | 13 |

show chassis fpc pic-status (MX480 Router with 100-Gigabit Ethernet CFP)

```
user@host> show chassis fpc pic-status
```

| | | |
|--------|--------|-------------------|
| Slot 1 | Online | MPC Type 3 |
| PIC 2 | Online | 1X100GE CFP |
| Slot 2 | Online | DPCE 40x 1GE R EQ |
| PIC 0 | Online | 10x 1GE(LAN) EQ |
| PIC 1 | Online | 10x 1GE(LAN) EQ |
| PIC 2 | Online | 10x 1GE(LAN) EQ |
| PIC 3 | Online | 10x 1GE(LAN) EQ |
| Slot 3 | Online | MPC Type 3 |
| PIC 0 | Online | 1X100GE CFP |
| PIC 2 | Online | 1X100GE CFP |
| Slot 4 | Online | MPC Type 3 |
| PIC 0 | Online | 1X100GE CFP |
| PIC 2 | Online | 1X100GE CFP |
| Slot 5 | Online | MPC Type 2 3D EQ |
| PIC 0 | Online | 2x 10GE XFP |
| PIC 1 | Online | 2x 10GE XFP |
| PIC 2 | Online | 10x 1GE(LAN) SFP |
| PIC 3 | Online | 10x 1GE(LAN) SFP |

show chassis fpc pic-status (EX Series Switch)

```
user@host> show chassis fpc pic-status
```

| | | |
|--------|--------|-------------------|
| Slot 1 | Online | EX9200 32x10G SFP |
| PIC 0 | Online | 8X10GE SFPP |
| PIC 1 | Online | 8X10GE SFPP |
| PIC 2 | Online | 8X10GE SFPP |
| PIC 3 | Online | 8X10GE SFPP |
| Slot 2 | Online | EX9200 32x10G SFP |

```
PIC 0 Online      8X10GE SFPP
PIC 1 Online      8X10GE SFPP
PIC 2 Online      8X10GE SFPP
PIC 3 Online      8X10GE SFPP
```

show chassis fpc (MX480 Router with MPC4E)

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

| Slot | Temp State | CPU Utilization (%) (C) Total | Memory Interrupt | Utilization (%) DRAM (MB) Heap | Buffer |
|------|---------------|----------------------------------|---------------------|-----------------------------------|--------|
| 0 | Empty | | | | |
| 1 | Empty | | | | |
| 2 | Online | 38 7 | 0 | 2048 19 | 14 |
| 3 | Online | 39 8 | 0 | 2048 18 | 14 |
| 4 | Online | 39 7 | 0 | 2048 17 | 14 |
| 5 | Empty | | | | |

show chassis fpc detail (MX480 Router with MPC4E)

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

```
Slot 2 information:
  State Online
  Temperature 38
  Total CPU DRAM 2048 MB
  Total RLDRAM 1036 MB
  Total DDR DRAM 11264 MB
  Start time: 2013-02-18 05:06:57 PST
  Uptime: 17 hours, 41 minutes, 9 seconds
  Max Power Consumption 610 Watts
Slot 3 information:
  State Online
  Temperature 38
  Total CPU DRAM 2048 MB
  Total RLDRAM 1036 MB
  Total DDR DRAM 11264 MB
  Start time: 2013-02-18 05:07:00 PST
  Uptime: 17 hours, 41 minutes, 6 seconds
  Max Power Consumption 610 Watts
Slot 4 information:
  State Diagnostics
  Temperature 37
  Total CPU DRAM 0 MB
  Total RLDRAM 0 MB
  Total DDR DRAM 0 MB
  Max Power Consumption 520 Watts
```

show chassis fpc (MX480 Router with MPC4E)

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

| Slot | Temp State | CPU Utilization (%) (C) Total | Memory Interrupt | Utilization (%) DRAM (MB) Heap | Buffer |
|------|---------------|----------------------------------|---------------------|-----------------------------------|--------|
| 0 | Empty | | | | |
| 1 | Empty | | | | |
| 2 | Online | 38 7 | 0 | 2048 19 | 14 |
| 3 | Online | 39 8 | 0 | 2048 18 | 14 |

| | | | | | | | |
|---|--------|----|---|---|------|----|----|
| 4 | Online | 39 | 7 | 0 | 2048 | 17 | 14 |
| 5 | Empty | | | | | | |

show chassis fpc detail (MX480 Router with MPC4E)

user@host> show chassis fpc detail

```

Slot 2 information:
  State                Online
  Temperature          38
  Total CPU DRAM       2048 MB
  Total RLDRAM         1036 MB
  Total DDR DRAM       11264 MB
  Start time:          2013-02-18 05:06:57 PST
  Uptime:              17 hours, 41 minutes, 9 seconds
  Max Power Consumption 610 Watts

Slot 3 information:
  State                Online
  Temperature          38
  Total CPU DRAM       2048 MB
  Total RLDRAM         1036 MB
  Total DDR DRAM       11264 MB
  Start time:          2013-02-18 05:07:00 PST
  Uptime:              17 hours, 41 minutes, 6 seconds
  Max Power Consumption 610 Watts

Slot 4 information:
  State                Diagnostics
  Temperature          37
  Total CPU DRAM       0 MB
  Total RLDRAM         0 MB
  Total DDR DRAM       0 MB
  Max Power Consumption 520 Watts

```

show chassis fpc (MX960 Router)

user@host> show chassis fpc

| Slot | State | Temp (C) | Temp Total | CPU Utilization (%) Interrupt | Memory DRAM (MB) | Memory Heap | Utilization (%) Buffer |
|------|--------|-------------|---------------|----------------------------------|---------------------|----------------|---------------------------|
| 0 | Empty | | | | | | |
| 1 | Empty | | | | | | |
| 2 | Empty | | | | | | |
| 3 | Online | 25 | 19 | 0 | 1024 | 15 | 57 |
| 4 | Empty | | | | | | |
| 5 | Online | 26 | 27 | 0 | 1024 | 15 | 57 |
| 6 | Empty | | | | | | |
| 7 | Empty | | | | | | |
| 8 | Empty | | | | | | |
| 9 | Empty | | | | | | |
| 10 | Empty | | | | | | |
| 11 | Empty | | | | | | |

show chassis fpc (MX960 Router with MPC5EQ)

user@host> show chassis fpc

| Slot | State | Temp (C) | Temp Total | CPU Utilization (%) Interrupt | Memory DRAM (MB) | Memory Heap | Utilization (%) Buffer |
|------|--------|-------------|---------------|----------------------------------|---------------------|----------------|---------------------------|
| 0 | Online | 38 | 16 | 0 | 3584 | 7 | 13 |

| | | | | | | | |
|----|--------|----|----|---|------|----|----|
| 1 | Online | 31 | 15 | 0 | 2048 | 17 | 13 |
| 2 | Empty | | | | | | |
| 3 | Online | 31 | 14 | 0 | 2048 | 20 | 13 |
| 4 | Online | 34 | 16 | 0 | 3584 | 7 | 13 |
| 5 | Online | 34 | 16 | 0 | 3584 | 7 | 13 |
| 6 | Empty | | | | | | |
| 7 | Online | 32 | 9 | 0 | 2048 | 18 | 14 |
| 8 | Online | 36 | 19 | 0 | 3584 | 7 | 13 |
| 9 | Online | 31 | 9 | 0 | 2048 | 13 | 13 |
| 10 | Online | 35 | 14 | 0 | 3584 | 7 | 13 |
| 11 | Online | 33 | 11 | 0 | 2048 | 18 | 14 |

show chassis fpc detail (MX960 Router with MPC5EQ)

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

Slot 0 information:

```
State                Online
Temperature          38
Total CPU DRAM       3584 MB
Total XR2            291 MB
Total DDR DRAM       24960 MB
Start time:          2014-04-22 10:01:46 PDT
Uptime:              1 hour, 23 minutes, 40 seconds
Max Power Consumption 607 Watts
```

Slot 1 information:

```
State                Online
Temperature          31
Total CPU DRAM       2048 MB
Total RLDRAM         1036 MB
Total DDR DRAM       6656 MB
Start time:          2014-04-22 10:01:50 PDT
Uptime:              1 hour, 23 minutes, 36 seconds
Max Power Consumption 520 Watts
```

Slot 3 information:

```
State                Online
Temperature          31
Total CPU DRAM       2048 MB
Total RLDRAM         1324 MB
Total DDR DRAM       5120 MB
Start time:          2014-04-22 10:01:50 PDT
Uptime:              1 hour, 23 minutes, 36 seconds
Max Power Consumption 440 Watts
```

Slot 4 information:

```
State                Online
Temperature          34
Total CPU DRAM       3584 MB
Total XR2            291 MB
Total DDR DRAM       24960 MB
Start time:          2014-04-22 10:01:54 PDT
Uptime:              1 hour, 23 minutes, 32 seconds
Max Power Consumption 607 Watts
```

Slot 5 information:

```
State                Online
Temperature          34
Total CPU DRAM       3584 MB
Total XR2            291 MB
Total DDR DRAM       24960 MB
Start time:          2014-04-22 10:01:56 PDT
Uptime:              1 hour, 23 minutes, 30 seconds
```

```

Max Power Consumption          607 Watts
Slot 7 information:
  State                         Online
  Temperature                   32
  Total CPU DRAM                2048 MB
  Total RLDRAM                  1036 MB
  Total DDR DRAM                11264 MB
  Start time:                   2014-04-22 10:02:02 PDT
  Uptime:                       1 hour, 23 minutes, 24 seconds
  Max Power Consumption         608 Watts
Slot 8 information:
  State                         Online
  Temperature                   36
  Total CPU DRAM                3584 MB
  Total XR2                     291 MB
  Total DDR DRAM                24960 MB
  Start time:                   2014-04-22 10:02:07 PDT
  Uptime:                       1 hour, 23 minutes, 19 seconds
  Max Power Consumption         607 Watts
Slot 9 information:
  State                         Online
  Temperature                   31
  Total CPU DRAM                2048 MB
  Total RLDRAM                  734 MB
  Total DDR DRAM                3108 MB
  Start time:                   2014-04-22 10:02:05 PDT
  Uptime:                       1 hour, 23 minutes, 21 seconds
  Max Power Consumption         368 Watts
Slot 10 information:
  State                         Online
  Temperature                   35
  Total CPU DRAM                3584 MB
  Total XR2                     291 MB
  Total DDR DRAM                24960 MB
  Start time:                   2014-04-22 10:02:11 PDT
  Uptime:                       1 hour, 23 minutes, 15 seconds
  Max Power Consumption         607 Watts
Slot 11 information:
  State                         Online
  Temperature                   33
  Total CPU DRAM                2048 MB
  Total RLDRAM                  1036 MB
  Total DDR DRAM                11264 MB
  Start time:                   2014-04-22 10:02:16 PDT
  Uptime:                       1 hour, 23 minutes, 10 seconds
  Max Power Consumption         608 Watts

```

show chassis fpc pic-status(MX960 Router with MPC5EQ)

```
user@host> show chassis fpc pic-status
```

```

Slot 0  Online      MPC5E 3D Q 2CGE+4XGE
  PIC 0  Online      2X10GE SFPP OTN
  PIC 1  Online      1X100GE CFP2 OTN
  PIC 2  Online      2X10GE SFPP OTN
  PIC 3  Online      1X100GE CFP2 OTN
Slot 1  Online      MPCE Type 3 3D
  PIC 0  Online      10X10GE SFPP
  PIC 2  Online      1X100GE CXP

```

```

Slot 3  Online      MPC 3D 16x 10GE
PIC 0   Online      4x 10GE(LAN) SFP+
PIC 1   Online      4x 10GE(LAN) SFP+
PIC 2   Online      4x 10GE(LAN) SFP+
PIC 3   Online      4x 10GE(LAN) SFP+
Slot 4  Online      MPC5E 3D Q 2CGE+4XGE
PIC 0   Online      2X10GE SFPP OTN
PIC 1   Online      1X100GE CFP2 OTN
PIC 2   Online      2X10GE SFPP OTN
PIC 3   Online      1X100GE CFP2 OTN
Slot 5  Online      MPC5E 3D Q 2CGE+4XGE
PIC 0   Online      2X10GE SFPP OTN
PIC 1   Online      1X100GE CFP2 OTN
PIC 2   Online      2X10GE SFPP OTN
PIC 3   Online      1X100GE CFP2 OTN
Slot 7  Online      MPC4E 3D 2CGE+8XGE
PIC 0   Online      4x10GE SFPP
PIC 1   Online      1X100GE CFP
PIC 2   Online      4x10GE SFPP
PIC 3   Online      1X100GE CFP
Slot 8  Online      MPC5E 3D Q 24XGE+6XLGE
PIC 0   Offline     12X10GE SFPP OTN
PIC 1   Offline     12X10GE SFPP OTN
PIC 2   Online      3X40GE QSFPP
PIC 3   Online      3X40GE QSFPP
Slot 9  Online      MPCE Type 2 3D P
PIC 0   Online      2x 10GE XFP
PIC 1   Online      2x 10GE XFP
Slot 10 Online      MPC5E 3D Q 24XGE+6XLGE
PIC 0   Online      12X10GE SFPP
PIC 1   Online      12X10GE SFPP
PIC 2   Offline     3X40GE QSFPP
PIC 3   Offline     3X40GE QSFPP
Slot 11 Online      MPC4E 3D 2CGE+8XGE
PIC 0   Online      4x10GE SFPP
PIC 1   Online      1X100GE CFP
PIC 2   Online      4x10GE SFPP
PIC 3   Online      1X100GE CFP

```

show chassis fpc (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```
user@host> show chassis fpc 1
```

| Slot | Temp | CPU Utilization (%) | Memory | Utilization (%) | DRAM (MB) | Heap | Buffer |
|------|--------|---------------------|--------|-----------------|-----------|------|--------|
| | State | (C) | Total | Interrupt | | | |
| 1 | Online | 34 | 5 | 0 | 3072 | 5 | 13 |

show chassis fpc (MX240, MX480, MX960 with Application Services Modular Line Card)

```
user@host> show chassis fpc 1 detail
```

```

Slot 1 information:
State                               Online
Temperature                         34
Total CPU DRAM                     3072 MB
Total RLDRAM                       259 MB
Total DDR DRAM                     4864 MB
Start time:                        2012-06-19 10:51:43 PDT

```

```

Uptime: 16 minutes, 48 seconds
Max Power Consumption 550 Watts

```

show chassis fpc (MX240, MX480, MX960, MX2010, MX2020, and MX2008 Universal Routing Platforms with Dynamic Power Management)

```
user@host> show chassis fpc 2 detail
```

```

Slot 2 information:
State Online
Temperature 37
Total CPU DRAM 3584 MB
Total XR2 275 MB
Total DDR DRAM 20352 MB
Start time: 2014-07-18 02:51:23 PDT
Uptime: 5 minutes, 19 seconds
Max MPC Base Power Consumption 485 Watts
Max MICO Power Consumption 50 Watts
Max MIC1 Power Consumption 50 Watts
Max MPC Total Power Consumption 585 Watts

```

show chassis fpc (MX2010 Routers)

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

| Slot | Temp | CPU Utilization (%) | Memory | Utilization (%) | DRAM (MB) | Heap | Buffer |
|----------|------|---------------------|-----------|-----------------|-----------|------|--------|
| State | (C) | Total | Interrupt | | | | |
| 0 Online | 34 | 9 | 0 | 2048 | 18 | 13 | |
| 1 Online | 32 | 9 | 0 | 2048 | 15 | 13 | |
| 2 Empty | | | | | | | |
| 3 Empty | | | | | | | |
| 4 Empty | | | | | | | |
| 5 Empty | | | | | | | |
| 6 Empty | | | | | | | |
| 7 Empty | | | | | | | |
| 8 Online | 31 | 13 | 0 | 2048 | 11 | 13 | |
| 9 Online | 33 | 10 | 0 | 2048 | 18 | 13 | |

show chassis fpc (MX2010 Router with Fabric Grant Bypass Enabled)

Following is the output of the **show chassis fpc** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass is enabled by default. All MPCs power on.

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

| Slot | Temp | CPU Utilization (%) | Memory | Utilization (%) | DRAM (MB) | Heap | Buffer |
|-----------|------|---------------------|-----------|-----------------|-----------|------|--------|
| State | (C) | Total | Interrupt | | | | |
| 0 Online | 34 | 20 | 0 | 2048 | 9 | 14 | |
| 1 Offline | 33 | 22 | 0 | 2048 | 9 | 14 | |
| 2 Online | 33 | 17 | 0 | 2048 | 9 | 14 | |
| 3 Offline | 34 | 25 | 0 | 2048 | 9 | 14 | |
| 4 Online | 32 | 27 | 0 | 2048 | 9 | 14 | |
| 5 Offline | 32 | 26 | 0 | 2048 | 9 | 14 | |
| 6 Empty | | | | | | | |
| 7 Empty | | | | | | | |


```

8 Empty
9 Empty

```

show chassis fpc (MX2010 Router with Fabric Grant Bypass Disabled)

Following is the output of the **show chassis fpc** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass and reboot the router. Also, FPC misconfiguration alarms are generated.

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

| Slot | Temp | CPU Utilization (%) | Memory (C) | Utilization (%) | DRAM (MB) | Heap | Buffer |
|------|---------|----------------------------|------------|-----------------|-----------|------|--------|
| 0 | Online | 34 | 20 | 0 | 2048 | 9 | 14 |
| 1 | Offline | ---FPC misconfiguration--- | | | | | |
| 2 | Online | 33 | 17 | 0 | 2048 | 9 | 14 |
| 3 | Offline | ---FPC misconfiguration--- | | | | | |
| 4 | Online | 32 | 27 | 0 | 2048 | 9 | 14 |
| 5 | Offline | ---FPC misconfiguration--- | | | | | |
| 6 | Empty | | | | | | |
| 7 | Empty | | | | | | |
| 8 | Empty | | | | | | |
| 9 | Empty | | | | | | |

show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Enabled)

Following is the output of the **show chassis fpc pic-status** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been enabled by default. All MPCs power on.

```
user@host> show chassis fpc pic-status
```

| | | |
|--------|---------|------------------|
| Slot 0 | Present | MPCE Type 3 3D |
| Slot 1 | Present | MPC Type 2 3D EQ |
| Slot 2 | Present | MPCE Type 3 3D |
| Slot 3 | Present | MPC 3D 16x 10GE |
| Slot 4 | Present | MPCE Type 3 3D |
| Slot 5 | Present | MPCE Type 1 3D Q |

show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Disabled)

Following is the output of the **show chassis fpc pic-status** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass mode and reboot the router.

```
user@host> show chassis fpc pic-status
```

| | | |
|--------|---------|------------------|
| Slot 0 | Present | MPCE Type 3 3D |
| Slot 1 | Offline | MPC Type 2 3D EQ |
| Slot 2 | Present | MPCE Type 3 3D |
| Slot 3 | Offline | MPC 3D 16x 10GE |

```
Slot 4   Present      MPCE Type 3 3D
Slot 5   Offline      MPCE Type 1 3D Q
```

show chassis fpc (MX2020 Routers)

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

| Slot | State | Temp (C) | CPU Utilization (%) Total | Interrupt | Memory DRAM (MB) | Utilization (%) Heap | Buffer |
|------|--------|-------------|------------------------------|-----------|---------------------|-------------------------|--------|
| 0 | Online | 10 | 12 | 0 | 2048 | 18 | 13 |
| 1 | Online | 8 | 9 | 0 | 2048 | 18 | 13 |
| 2 | Online | 7 | 9 | 0 | 2048 | 18 | 13 |
| 3 | Online | 8 | 10 | 0 | 2048 | 18 | 13 |
| 4 | Online | 9 | 10 | 0 | 2048 | 18 | 13 |
| 5 | Online | 8 | 9 | 0 | 2048 | 18 | 13 |
| 6 | Online | 8 | 10 | 0 | 2048 | 18 | 13 |
| 7 | Online | 9 | 9 | 0 | 2048 | 18 | 13 |
| 8 | Online | 9 | 10 | 0 | 2048 | 18 | 13 |
| 9 | Online | 10 | 9 | 0 | 2048 | 18 | 13 |
| 10 | Online | 16 | 8 | 0 | 2048 | 18 | 13 |
| 11 | Online | 11 | 10 | 0 | 2048 | 18 | 13 |
| 12 | Online | 10 | 10 | 0 | 2048 | 18 | 13 |
| 13 | Online | 11 | 9 | 0 | 2048 | 18 | 13 |
| 14 | Online | 12 | 10 | 0 | 2048 | 18 | 13 |
| 15 | Online | 13 | 9 | 0 | 2048 | 18 | 13 |
| 16 | Online | 13 | 9 | 0 | 2048 | 18 | 13 |
| 17 | Online | 12 | 9 | 0 | 2048 | 18 | 13 |
| 18 | Online | 12 | 8 | 0 | 2048 | 18 | 13 |
| 19 | Online | 14 | 10 | 0 | 2048 | 18 | 13 |

show chassis fpc (MX2020 Router with MPC4E)

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

| Slot | State | Temp (C) | CPU Utilization (%) Total | Interrupt | Memory DRAM (MB) | Utilization (%) Heap | Buffer |
|------|--------|-------------|------------------------------|-----------|---------------------|-------------------------|--------|
| 0 | Online | 33 | 12 | 2 | 2048 | 11 | 13 |
| 1 | Empty | | | | | | |
| 2 | Empty | | | | | | |
| 3 | Empty | | | | | | |
| 4 | Empty | | | | | | |
| 5 | Empty | | | | | | |
| 6 | Empty | | | | | | |
| 7 | Empty | | | | | | |
| 8 | Empty | | | | | | |
| 9 | Online | 31 | 10 | 0 | 2048 | 11 | 13 |
| 10 | Online | 32 | 7 | 0 | 2048 | 14 | 13 |
| 11 | Empty | | | | | | |
| 12 | Empty | | | | | | |
| 13 | Empty | | | | | | |
| 14 | Online | 28 | 12 | 0 | 2048 | 15 | 14 |
| 15 | Empty | | | | | | |
| 16 | Empty | | | | | | |
| 17 | Empty | | | | | | |
| 18 | Empty | | | | | | |
| 19 | Online | 38 | 8 | 0 | 2048 | 18 | 13 |

show chassis fpc (MX10003 Router)

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

| Utilization (%) | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|--------|------|---------------------|-----------|---------------------|------|-------|-----------|
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap | Buffer | | | | | | | |
| 0 | Online | 59 | 25 | 0 | 25 | 24 | 23 | 3136 |
| 12 | | | | | | | | |
| 1 | Online | 62 | 29 | 0 | 26 | 24 | 23 | 3136 |
| 12 | | | | | | | | |

show chassis fpc detail (MX10003 Router)

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

Slot 0 information:

```
State Online
Total CPU DRAM 3136 MB
Total RLDRAM 771 MB
Total DDR DRAM 18432 MB
Temperature 60 degrees C / 140 degrees F
Start time 2017-07-19 20:49:58 PDT
Uptime 2 hours, 29 minutes, 22 seconds
Max MPC base power consumption 910 Watts
Max MIC1 power consumption 95 Watts
Max MPC total power consumption 1005 Watts
```

Slot 1 information:

```
State Online
Total CPU DRAM 3136 MB
Total RLDRAM 771 MB
Total DDR DRAM 18432 MB
Temperature 63 degrees C / 145 degrees F
Start time 2017-07-19 20:48:01 PDT
Uptime 2 hours, 31 minutes, 19 seconds
Max MPC base power consumption 910 Watts
Max MIC1 power consumption 155 Watts
Max MPC total power consumption 1065 Watts
```

show chassis fpc <fpc-slot> (MX10003 Router)

```
user@host> show chassis fpc 0
```

| Utilization (%) | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|--------|------|---------------------|-----------|---------------------|------|-------|-----------|
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap | Buffer | | | | | | | |
| 0 | Online | 49 | 26 | 0 | 22 | 22 | 23 | 3136 |
| 12 | | | | | | | | |

show chassis fpc (MX204 Router)

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

| Temp | CPU Utilization (%) | CPU Utilization (%) | Memory |
|------|---------------------|---------------------|--------|
|------|---------------------|---------------------|--------|

| Utilization (%) | | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
|-----------------|--------|--------|-------|-----------|------|------|-------|-----------|
| Slot | State | | | | | | | |
| Heap | Buffer | | | | | | | |
| 0 | Online | Absent | 8 | 0 | 8 | 8 | 8 | 3136 |
| 8 | 8 | | | | | | | |

show chassis fpc detail (MX204 Router)

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

```
Slot 0 information:
State                               Online
Total CPU DRAM                     3136 MB
Total RLDRAM                       257 MB
Total DDR DRAM                     4096 MB
Temperature                         Absent
Start time                         2017-11-05 22:14:01 PST
Uptime                             2 days, 8 hours, 5 minutes, 55 seconds
```

show chassis fpc <fpc-slot> (MX204 Router)

```
user@host> show chassis fpc 0
```

| Utilization (%) | | Temp (C) | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|--------|----------|---------------------|-----------|---------------------|------|-------|--------|
| Slot | State | | Total | Interrupt | 1min | 5min | 15min | |
| Heap | Buffer | | | | | | | |
| 0 | Online | Absent | 8 | 0 | 8 | 8 | 8 | 3136 |
| 8 | 8 | | | | | | | |

show chassis fpc (MX10008 Router)

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

| Utilization (%) | | Temp (C) | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|--------|----------|---------------------|-----------|---------------------|------|-------|--------|
| Slot | State | | Total | Interrupt | 1min | 5min | 15min | |
| Heap | Buffer | | | | | | | |
| 0 | Online | 42 | 34 | 0 | 35 | 43 | 39 | 3136 |
| 19 | 26 | | | | | | | |
| 1 | Empty | | | | | | | |
| 2 | Online | 52 | 32 | 0 | 29 | 30 | 30 | 3136 |
| 19 | 26 | | | | | | | |
| 3 | Online | 48 | 20 | 0 | 19 | 18 | 18 | 3136 |
| 18 | 26 | | | | | | | |
| 4 | Empty | | | | | | | |
| 5 | Empty | | | | | | | |
| 6 | Empty | | | | | | | |
| 7 | Empty | | | | | | | |

show chassis fpc detail (MX10008 Router)

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

```
Slot 0 information:
State                               Online
Total CPU DRAM                     3136 MB
Total RLDRAM                       1542 MB
```

```

Total DDR DRAM          36864 MB
Temperature              42 degrees C / 107 degrees F
Start time              2018-07-18 02:12:50 PDT
Uptime                  10 minutes, 28 seconds
Max power consumption    1535 Watts
Configured Bandwidth     2400 G
Operating Bandwidth      2400 G
Slot 2 information:
State                   Online
Total CPU DRAM          3136 MB
Total RLDRAM             1542 MB
Total DDR DRAM          36864 MB
Temperature              52 degrees C / 125 degrees F
Start time              2018-07-17 05:51:15 PDT
Uptime                  20 hours, 32 minutes, 3 seconds
Max power consumption    1535 Watts
Configured Bandwidth     2400 G
Operating Bandwidth      2400 G
Slot 3 information:
State                   Online
Total CPU DRAM          3136 MB
Total RLDRAM             1542 MB
Total DDR DRAM          36864 MB
Temperature              48 degrees C / 118 degrees F
Start time              2018-07-17 05:50:40 PDT
Uptime                  20 hours, 32 minutes, 38 seconds
Max power consumption    1475 Watts
Configured Bandwidth     2400 G
Operating Bandwidth      2400 G

```

show chassis fpc <fpc-slot> (MX10008 Router)

```
user@host> show chassis fpc 0
```

| Utilization (%) | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|------------------|------|---------------------|-----------|---------------------|------|-------|-----------|
| Slot State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap Buffer | | | | | | | |
| 0 Online | 43 | 33 | 0 | 33 | 40 | 38 | 3136 |
| 19 26 | | | | | | | |

show chassis fpc detail (MX2020 Router with MPC4E)

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

```

Slot 0 information:
State                   Online
Temperature              34
Total CPU DRAM          2048 MB
Total RLDRAM             806 MB
Total DDR DRAM          2632 MB
Start time:             2013-02-17 08:17:35 PST
Uptime:                 1 day, 14 hours, 50 minutes, 39 seconds
Max Power Consumption    368 Watts
Slot 9 information:
State                   Online
Temperature              32
Total CPU DRAM          2048 MB
Total RLDRAM             806 MB

```

```

Total DDR DRAM                2632 MB
Start time:                    2013-02-17 08:17:43 PST
Uptime:                        1 day, 14 hours, 50 minutes, 31 seconds
Max Power Consumption          368 Watts
Slot 10 information:
State                          Online
Temperature                     37
Total CPU DRAM                 2048 MB
Total RLD RAM                  1036 MB
Total DDR DRAM                 6656 MB
Start time:                    2013-02-17 08:17:54 PST
Uptime:                        1 day, 14 hours, 50 minutes, 20 seconds
Max Power Consumption          520 Watts
Slot 14 information:
State                          Online
Temperature                     32
Total CPU DRAM                 2048 MB
Total RLD RAM                  1036 MB
Total DDR DRAM                 11264 MB
Start time:                    2013-02-17 08:18:01 PST
Uptime:                        1 day, 14 hours, 50 minutes, 13 seconds
Max Power Consumption          610 Watts
Slot 19 information:
State                          Online
Temperature                     38
Total CPU DRAM                 2048 MB
Total RLD RAM                  1324 MB
Total DDR DRAM                 5120 MB
Start time:                    2013-02-17 08:18:08 PST
Uptime:                        1 day, 14 hours, 50 minutes, 6 seconds
Max Power Consumption          440 Watts

```

show chassis fpc (MX2020 Router with MPC5EQ and MPC6E)

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

| Slot | State | Temp (C) | CPU Utilization (%) | Memory Utilization (%) |
|------|--------|----------|---------------------|------------------------|
| | | | Total Interrupt | DRAM (MB) Heap Buffer |
| 0 | Online | 31 | 20 0 | 3584 7 13 |
| 1 | Online | 28 | 19 0 | 2048 17 13 |
| 2 | Online | 27 | 10 0 | 2048 18 14 |
| 3 | Online | 26 | 10 0 | 2048 13 13 |
| 4 | Online | 29 | 19 0 | 3584 7 13 |
| 5 | Online | 28 | 68 0 | 2048 20 13 |
| 6 | Empty | | | |
| 7 | Empty | | | |
| 8 | Empty | | | |
| 9 | Online | 36 | 19 0 | 3584 10 13 |
| 10 | Online | 37 | 26 0 | 3584 10 13 |
| 11 | Empty | | | |
| 12 | Empty | | | |
| 13 | Empty | | | |
| 14 | Empty | | | |
| 15 | Empty | | | |
| 16 | Empty | | | |
| 17 | Online | 28 | 43 0 | 3584 10 13 |
| 18 | Online | 29 | 19 0 | 3584 7 13 |
| 19 | Online | 31 | 19 0 | 3584 7 13 |

show chassis fpc detail (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc detail

Slot 0 information:
  State                Online
  Temperature          31
  Total CPU DRAM       3584 MB
  Total XR2            291 MB
  Total DDR DRAM       24960 MB
  Start time:          2014-04-22 23:33:19 PDT
  Uptime:              6 minutes, 24 seconds
  Max Power Consumption 607 Watts

Slot 1 information:
  State                Online
  Temperature          28
  Total CPU DRAM       2048 MB
  Total RLDRAM         1036 MB
  Total DDR DRAM       6656 MB
  Start time:          2014-04-22 23:33:24 PDT
  Uptime:              6 minutes, 19 seconds
  Max Power Consumption 520 Watts

Slot 2 information:
  State                Online
  Temperature          27
  Total CPU DRAM       2048 MB
  Total RLDRAM         1036 MB
  Total DDR DRAM       11264 MB
  Start time:          2014-04-22 23:33:34 PDT
  Uptime:              6 minutes, 9 seconds
  Max Power Consumption 608 Watts

Slot 3 information:
  State                Online
  Temperature          26
  Total CPU DRAM       2048 MB
  Total RLDRAM         734 MB
  Total DDR DRAM       3108 MB
  Start time:          2014-04-22 23:33:39 PDT
  Uptime:              6 minutes, 4 seconds
  Max Power Consumption 368 Watts

Slot 4 information:
  State                Online
  Temperature          29
  Total CPU DRAM       3584 MB
  Total XR2            291 MB
  Total DDR DRAM       24960 MB
  Start time:          2014-04-22 23:33:51 PDT
  Uptime:              5 minutes, 52 seconds
  Max Power Consumption 607 Watts

Slot 5 information:
  State                Online
  Temperature          28
  Total CPU DRAM       2048 MB
  Total RLDRAM         1324 MB
  Total DDR DRAM       5120 MB
  Start time:          2014-04-22 23:33:57 PDT
  Uptime:              5 minutes, 46 seconds
  Max Power Consumption 440 Watts

Slot 9 information:
  State                Online

```

```

Temperature                25
Total CPU DRAM              3584 MB
Total XR2                   518 MB
Total DDR DRAM              49920 MB
Start time:                 2014-04-22 23:31:20 PDT
Uptime:                     8 minutes, 23 seconds
Max Power Consumption       1130 Watts
Slot 10 information:
State                       Online
Temperature                 32
Total CPU DRAM              3584 MB
Total XR2                   518 MB
Total DDR DRAM              49920 MB
Start time:                 2014-04-22 23:31:25 PDT
Uptime:                     8 minutes, 18 seconds
Max Power Consumption       1130 Watts
Slot 17 information:
State                       Online
Temperature                 25
Total CPU DRAM              3584 MB
Total XR2                   518 MB
Total DDR DRAM              49920 MB
Start time:                 2014-04-22 23:31:29 PDT
Uptime:                     8 minutes, 14 seconds
Max Power Consumption       1130 Watts
Slot 18 information:
State                       Online
Temperature                 29
Total CPU DRAM              3584 MB
Total XR2                   291 MB
Total DDR DRAM              24960 MB
Start time:                 2014-04-22 23:34:11 PDT
Uptime:                     5 minutes, 32 seconds
Max Power Consumption       607 Watts
Slot 19 information:
State                       Online
Temperature                 32
Total CPU DRAM              3584 MB
Total XR2                   291 MB
Total DDR DRAM              24960 MB
Start time:                 2014-04-22 23:34:20 PDT
Uptime:                     5 minutes, 23 seconds
Max Power Consumption       607 Watts

```

show chassis fpc detail (MX2008 Router)

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

```

Slot 0 information:
State                       Online
Temperature                 33 degrees C / 91 degrees F
Total CPU DRAM              2048 MB
Total RLD RAM               734 MB
Total DDR DRAM              2596 MB
Start time                  2017-04-14 07:14:26 PDT
Uptime                      15 hours, 29 minutes, 20 seconds
Max power consumption       347 Watts
Slot 3 information:
State                       Online
Temperature                 31 degrees C / 87 degrees F

```



```

Total CPU DRAM          3584 MB
Total RLDRAM            259 MB
Total DDR DRAM          20352 MB
Start time              2017-04-14 07:14:38 PDT
Uptime                  15 hours, 29 minutes, 8 seconds
Max MPC base power consumption  376 Watts
Max MICO power consumption    0 Watts
Max MIC1 power consumption    0 Watts
Max MPC total power consumption 376 Watts
Slot 5 information:
State                   Online
Temperature             32 degrees C / 89 degrees F
Total CPU DRAM          3584 MB
Total RLDRAM            275 MB
Total DDR DRAM          20352 MB
Start time              2017-04-14 07:14:46 PDT
Uptime                  15 hours, 29 minutes
Max MPC base power consumption  422 Watts
Max MICO power consumption    18 Watts
Max MIC1 power consumption    0 Watts
Max MPC total power consumption 440 Watts
Slot 7 information:
State                   Online
Temperature             28 degrees C / 82 degrees F
Total CPU DRAM          2048 MB
Total RLDRAM            403 MB
Total DDR DRAM          1572 MB
Start time              2017-04-14 07:14:50 PDT
Uptime                  15 hours, 28 minutes, 56 seconds
Max power consumption    347 Watts
Slot 9 information:
State                   Online
Temperature             29
Total CPU DRAM          3584 MB
Total XR2               518 MB
Total DDR DRAM          49920 MB
Start time              2017-04-14 07:13:16 PDT
Uptime                  15 hours, 30 minutes, 30 seconds
Max MPC base power consumption  834 Watts
Max MICO power consumption    56 Watts
Max MIC1 power consumption    0 Watts
Max MPC total power consumption 890 Watts

```

show chassis fpc pic-status (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc pic-status

Slot 0  Online      MPC5E 3D Q 24XGE+6XLGE
PIC 0   Online      12X10GE SFPP OTN
PIC 1   Online      12X10GE SFPP OTN
PIC 2   Offline     3X40GE QSFPP
PIC 3   Offline     3X40GE QSFPP
Slot 1  Online      MPCE Type 3 3D
PIC 0   Online      10X10GE SFPP
PIC 2   Online      1X100GE CXP
Slot 2  Online      MPC4E 3D 2CGE+8XGE
PIC 0   Online      4x10GE SFPP
PIC 1   Online      1X100GE CFP
PIC 2   Online      4x10GE SFPP
PIC 3   Online      1X100GE CFP

```

```

Slot 3  Online      MPCE Type 2 3D P
        PIC 0 Online  2x 10GE XFP
        PIC 1 Online  2x 10GE XFP
Slot 4  Online      MPC5E 3D Q 2CGE+4XGE
        PIC 0 Online  2X10GE SFPP OTN
        PIC 1 Online  1X100GE CFP2 OTN
        PIC 2 Online  2X10GE SFPP OTN
        PIC 3 Online  1X100GE CFP2 OTN
Slot 5  Online      MPC 3D 16x 10GE
        PIC 0 Online  4x 10GE(LAN) SFP+
        PIC 1 Online  4x 10GE(LAN) SFP+
        PIC 2 Online  4x 10GE(LAN) SFP+
        PIC 3 Online  4x 10GE(LAN) SFP+
Slot 9  Online      MPC6E 3D
        PIC 0 Online  2X100GE CFP2 OTN
        PIC 1 Online  2X100GE CFP2 OTN
Slot 10 Online      MPC6E 3D
        PIC 0 Online  24X10GE SFPP OTN
        PIC 1 Online  4X100GE CXP
Slot 17 Online      MPC6E 3D
        PIC 0 Online  24X10GE SFPP
        PIC 1 Online  4X100GE CXP
Slot 18 Online      MPC5E 3D Q 24XGE+6XLGE
        PIC 0 Offline 12X10GE SFPP OTN
        PIC 1 Offline 12X10GE SFPP OTN
        PIC 2 Online  3X40GE QSFPP
        PIC 3 Online  3X40GE QSFPP
Slot 19 Online      MPC5E 3D Q 24XGE+6XLGE
        PIC 0 Online  12X10GE SFPP OTN
        PIC 1 Offline 12X10GE SFPP OTN
        PIC 2 Offline 3X40GE QSFPP
        PIC 3 Online  3X40GE QSFPP

```

show chassis fpc detail (MX Series Routers)

```
user@host> show chassis fpc detail 2
```

```

Slot 0 information:
  State                               Online
  Temperature                         36 degrees C / 96 degrees F
  Total CPU DRAM                      1024 MB
  Total RLDRAM                        256 MB
  Total DDR DRAM                      4096 MB
  Start time:                        2009-08-11 21:20:30 PDT
  Uptime:                            2 hours, 8 minutes, 50 seconds
  Max Power Consumption               335 Watts

```

show chassis fpc detail (EX Series Switches)

```
user@host> show chassis fpc detail 2
```

```

Slot 1 information:
  State                               Online
  Temperature                         41
  Total CPU DRAM                      2048 MB
  Total RLDRAM                        1036 MB
  Total DDR DRAM                      11264 MB
  Start time:                        2013-04-02 00:04:52 PDT
  Uptime:                            7 days, 9 hours, 47 minutes, 46 seconds

```

```

Max Power Consumption      610 Watts
Slot 2 information:
State                      Online
Temperature                41
Total CPU DRAM             2048 MB
Total RLD RAM              1036 MB
Total DDR DRAM             11264 MB
Start time:                2013-04-02 00:04:56 PDT
Uptime:                    7 days, 9 hours, 47 minutes, 42 seconds
Max Power Consumption      610 Watts

```

show chassis fpc detail (EX9251 Switches)

```
user@switch> show chassis fpc detail 2
```

```

Slot 0 information:
State                      Online
Total CPU DRAM             3136 MB
Total RLD RAM              257 MB
Total DDR DRAM             4096 MB
Temperature                Absent
Start time                 2018-03-12 14:59:49 PDT
Uptime                     1 day, 1 hour, 10 minutes, 48 seconds

```

show chassis fpc detail (EX9253 Switches)

```
user@switch> show chassis fpc detail 1
```

```

Slot 1 information:
State                      Online
Total CPU DRAM             3136 MB
Total RLD RAM              771 MB
Total DDR DRAM             18432 MB
Temperature                59 degrees C / 138 degrees F
Start time                 2018-03-04 14:20:42 PST
Uptime                     3 days, 10 hours, 40 minutes, 57 seconds
Max MPC base power consumption 910 Watts
Max MIC1 power consumption  95 Watts
Max MPC total power consumption 1005 Watts

```

show chassis fpc (Hardware Not Supported)

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

```

show chassis fpc

```

| Slot | State | Temp (C) | CPU Utilization (%) | Interrupt | Memory DRAM (MB) | Utilization (%) | Heap | Buffer |
|------|---------|----------|---------------------|-----------|------------------|-----------------|------|--------|
| 0 | Online | | | | | | | |
| 1 | Present | | | | | | | |
| 2 | Online | | 0 | 0 | 0 | | 0 | 0 |
| 3 | Present | | | | | | | |
| 4 | Empty | | | | | | | |
| 5 | Empty | | | | | | | |
| 6 | Online | | 0 | 0 | 0 | | 0 | 0 |

show chassis fpc detail (Hardware Not Supported)

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

```

Slot 0 information:
  State                               Online
  Total CPU DRAM                      ---- CPU less FPC ----
  Start time                          2006-07-07 03:21:00 UTC
  Uptime                              27 minutes, 51 seconds
Slot 1 information:
  State                               Present
  Reason                              --- Hardware Not In Right Slot ---
Slot 2 information:
  State                               Online
  Total CPU DRAM                      32 MB
  Start time                          2006-07-07 03:20:59 UTC
  Uptime                              27 minutes, 52 seconds
Slot 3 information:
  State                               Present
  Reason                              --- Hardware Not Supported ---
  Total CPU DRAM                      0 MB
Slot 6 information:
  State                               Online
  Total CPU DRAM                      32 MB
  Start time                          2006-07-07 03:21:01 UTC
  Uptime                              27 minutes, 50 seconds

```

show chassis fpc pic-status

```
user@host> show chassis fpc pic-status
```

```

Slot 0 Online
  PIC 1    1x OC-12 ATM, MM
  PIC 2    1x OC-12 ATM, MM
  PIC 3    1x OC-12 ATM, MM
Slot 1 Online
  PIC 0    1x OC-48 SONET, SMIR
Slot 2 Online
  PIC 0    1x OC-192 SONET, SMSR

```

show chassis fpc pic-status (M Series Routers)

```
user@host> show chassis fpc pic-status
```

```

Slot 1  Online      FPC Type 1
  PIC 0  Present    2x OC-3 ATM, MM- Hardware Error
  PIC 1  Online     4x OC-3 SONET, SMIR
Slot 2  Online      E-FPC Type 2
  PIC 0  Online     4x G/E, 1000 BASE-SX
  PIC 1  Online     2x G/E SFP, 1000 BASE
  PIC 3  Online     1x Tunnel
Slot 3  Online      E-FPC Type 1
  PIC 0  Online     1x G/E IQ, 1000 BASE
  PIC 2  Online     1x G/E SFP, 1000 BASE
Slot 4  Online      E-FPC Type 2
  PIC 0  Online     4x G/E SFP, 1000 BASE
  PIC 1  Online     4x G/E SFP, 1000 BASE
  PIC 2  Online     4x G/E SFP, 1000 BASE
  PIC 3  Online     4x G/E SFP, 1000 BASE
Slot 5  Online      FPC Type 2
...

```

show chassis fpc pic-status (M120 Router)

```
user@host> show chassis fpc pic-status
```

```
Slot 1  Online      M120 CFPC 10GE
PIC 0   Online      1x 10GE(LAN/WAN) XFP
Slot 3  Online      M120 FPC Type 2 (proto)
PIC 0   Online      2x G/E IQ, 1000 BASE
PIC 1   Online      4x OC-3 SONET, SMIR
PIC 2   Online      2x G/E IQ, 1000 BASE
PIC 3   Online      8x 1GE(LAN), IQ2
Slot 4  Online      M120 FPC Type 3 (proto)
PIC 0   Online      10x 1GE(LAN), 1000 BASE
Slot 5  Online      M120 FPC Type 1 (proto)
PIC 0   Present     1x G/E, 1000 BASE-LX- Not Supported
PIC 1   Online      1x CHOC3 IQ SONET, SMLR
PIC 2   Online      4x CHDS3 IQ
PIC 3   Online      1x G/E SFP, 1000 BASE
```

show chassis fpc pic-status (MX240, MX480, and MX960 Routers with Application Services Modular Line Card)

In the following output **Slot 1 and Slot 5** are the Application Services Modular Carrier Cards (AS MCC), **PIC 0** is the Application Services Modular Storage Card (AS MSC), and **PIC 2** is the Application Services Modular Processing Card (AS MXC).

```
user@host> show chassis fpc pic-status
```

```
Slot 2  Online      MPC Type 1 3D Q
Slot 1  Online      AS-MCC
PIC 0   Online      AS-MSC
PIC 2   Online      AS-MXC
Slot 4  Offline     MPC 3D 16x 10GE
Slot 5  Offline     AS-MCC
```

show chassis fpc lcc (TX Matrix Router)

```
user@host> show chassis fpc lcc 0
```

```
lcc0-re0:
```

| Slot | State | Temp (C) | CPU Total | Utilization (%) Interrupt | Memory Utilization (%) DRAM (MB) Heap Buffer |
|------|--------|----------|-----------|---------------------------|--|
| 0 | Empty | | | | |
| 1 | Online | 27 | 2 | 0 | 256 8 44 |
| 2 | Online | 27 | 3 | 0 | 256 15 44 |
| 3 | Empty | | | | |
| 4 | Empty | | | | |
| 5 | Empty | | | | |
| 6 | Empty | | | | |
| 7 | Empty | | | | |

show chassis fpc pic-status (TX Matrix Router)

```
user@host> show chassis fpc pic-status
```

```
lcc0-re0:
```

```
Slot 0  Online      FPC Type 3
PIC 0   Online      1x OC-192 SM SR1
```

```

PIC 1 Online      1x OC-192 SM SR2
PIC 2 Online      1x OC-192 SM SR1
PIC 3 Online      1x Tunnel
Slot 1 Online     FPC Type 2
PIC 0 Online      1x OC-48 SONET, SMSR
PIC 1 Online      1x OC-48 SONET, SMSR

```

lcc1-re0:

lcc2-re0:

```

Slot 1 Online     FPC Type 3
PIC 0 Online      1x OC-192 SM SR1
Slot 5 Online     FPC Type 2
PIC 0 Online      1x OC-48 SONET, SMSR
PIC 1 Online      2x G/E, 1000 BASE-LX
PIC 2 Online      2x G/E, 1000 BASE-LX
PIC 3 Online      1x OC-48 SONET, SMSR

```

lcc3-re0:

show chassis fpc pic-status lcc (TX Matrix Router)

```
user@host> show chassis fpc pic-status lcc 0
```

lcc0-re0:

```

Slot 0 Online     FPC Type 3
PIC 0 Online      1x OC-192 SM SR2
Slot 1 Online     FPC Type 2
PIC 0 Online      2x OC-12 ATM2 IQ, MM
PIC 1 Online      1x OC-48 SONET, SMSR
PIC 2 Online      1x OC-48 SONET, SMSR
PIC 3 Online      4x G/E, 1000 BASE-SX

```

show chassis fpc (TX Matrix Plus Router)

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

lcc0-re0:

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 0 | Empty | | | | |
| 1 | Online | 38 | 4 0 | 2048 | 3 24 |
| 2 | Online | 43 | 8 0 | 2048 | 6 24 |
| 3 | Empty | | | | |
| 4 | Online | 43 | 6 0 | 2048 | 6 24 |
| 5 | Empty | | | | |
| 6 | Online | 42 | 13 0 | 2048 | 6 24 |
| 7 | Online | 45 | 7 0 | 2048 | 3 24 |

lcc2-re0:

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 0 | Online | 42 | 10 0 | 2048 | 6 24 |

| | | | | | | | |
|---|--------|----|----|---|------|---|----|
| 1 | Empty | | | | | | |
| 2 | Online | 42 | 11 | 0 | 2048 | 6 | 24 |
| 3 | Online | 40 | 5 | 0 | 2048 | 3 | 24 |
| 4 | Online | 33 | 26 | 0 | 1024 | 8 | 49 |
| 5 | Empty | | | | | | |
| 6 | Online | 43 | 8 | 0 | 2048 | 6 | 24 |
| 7 | Online | 46 | 6 | 0 | 2048 | 3 | 24 |

lcc3-re0:

| Slot | State | Temp (C) | CPU Utilization (%) | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | | Total | Interrupt | | Heap | Buffer |
| 0 | Empty | | | | | | |
| 1 | Empty | | | | | | |
| 2 | Online | 39 | 30 | 0 | 2048 | 7 | 24 |
| 3 | Empty | | | | | | |
| 4 | Online | 41 | 8 | 0 | 2048 | 6 | 24 |
| 5 | Online | 41 | 12 | 0 | 2048 | 6 | 24 |
| 6 | Online | 40 | 8 | 0 | 2048 | 6 | 24 |
| 7 | Online | 42 | 4 | 0 | 2048 | 3 | 24 |

show chassis fpc lcc (TX Matrix Plus Router)

user@host> show chassis fpc lcc 0

lcc0-re0:

| Slot | State | Temp (C) | CPU Utilization (%) | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | | Total | Interrupt | | Heap | Buffer |
| 0 | Empty | | | | | | |
| 1 | Online | 38 | 4 | 0 | 2048 | 3 | 24 |
| 2 | Online | 43 | 8 | 0 | 2048 | 6 | 24 |
| 3 | Empty | | | | | | |
| 4 | Online | 43 | 6 | 0 | 2048 | 6 | 24 |
| 5 | Empty | | | | | | |
| 6 | Online | 42 | 14 | 0 | 2048 | 6 | 24 |
| 7 | Online | 45 | 6 | 0 | 2048 | 3 | 24 |

show chassis fpc detail (TX Matrix Plus Router)

user@host> show chassis fpc details

lcc0-re0:

Slot 1 information:

```

State                Online
Temperature           38 degrees C / 100 degrees F
Total CPU DRAM        2048 MB
Total SRAM             64 MB
Total SDRAM           1280 MB
Start time            2010-10-04 20:06:22 PDT
Uptime                1 hour, 32 minutes, 51 seconds

```

Slot 2 information:

```

State                Online
Temperature           43 degrees C / 109 degrees F
Total CPU DRAM        2048 MB
Total SRAM            128 MB
Total SDRAM           2560 MB

```

```

Start time                2010-10-04 20:06:37 PDT
Uptime                    1 hour, 32 minutes, 36 seconds
Slot 4 information:
State                     Online
Temperature               43 degrees C / 109 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:40 PDT
Uptime                    1 hour, 32 minutes, 33 seconds
Slot 6 information:
State                     Online
Temperature               42 degrees C / 107 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:42 PDT
Uptime                    1 hour, 32 minutes, 31 seconds
Slot 7 information:
State                     Online
Temperature               45 degrees C / 113 degrees F
Total CPU DRAM            2048 MB
Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 20:06:43 PDT
Uptime                    1 hour, 32 minutes, 30 seconds

```

1cc2-re0:

```

-----
Slot 0 information:
State                     Online
Temperature               42 degrees C / 107 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:35 PDT
Uptime                    1 hour, 32 minutes, 38 seconds
Slot 2 information:
State                     Online
Temperature               42 degrees C / 107 degrees F
Total CPU DRAM            2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 20:06:37 PDT
Uptime                    1 hour, 32 minutes, 36 seconds
Slot 3 information:
State                     Online
Temperature               40 degrees C / 104 degrees F
Total CPU DRAM            2048 MB
Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 20:06:28 PDT
Uptime                    1 hour, 32 minutes, 45 seconds
Slot 4 information:
State                     Online
Temperature               33 degrees C / 91 degrees F
Total CPU DRAM            1024 MB
Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 20:08:03 PDT

```



```

Uptime                               1 hour, 31 minutes, 10 seconds
Slot 6 information:
State                                Online
Temperature                          43 degrees C / 109 degrees F
Total CPU DRAM                       2048 MB
Total SRAM                           128 MB
Total SDRAM                           2560 MB
Start time                           2010-10-04 20:06:44 PDT
Uptime                               1 hour, 32 minutes, 29 seconds
Slot 7 information:
State                                Online
Temperature                          46 degrees C / 114 degrees F
Total CPU DRAM                       2048 MB
Total SRAM                           64 MB
Total SDRAM                           1280 MB
Start time                           2010-10-04 20:06:46 PDT
Uptime                               1 hour, 32 minutes, 27 seconds

```

```
lcc3-re0:
```

```

-----
Slot 2 information:
State                                Online
Temperature                          38 degrees C / 100 degrees F
Total CPU DRAM                       2048 MB
Total SRAM                           128 MB
Total SDRAM                           2560 MB
Start time                           2010-10-04 20:17:31 PDT
Uptime                               1 hour, 21 minutes, 42 seconds
Slot 4 information:
State                                Online
Temperature                          41 degrees C / 105 degrees F
Total CPU DRAM                       2048 MB
Total SRAM                           128 MB
Total SDRAM                           2560 MB
Start time                           2010-10-04 20:17:34 PDT
Uptime                               1 hour, 21 minutes, 39 seconds
Slot 5 information:
State                                Online
Temperature                          41 degrees C / 105 degrees F
Total CPU DRAM                       2048 MB
Total SRAM                           128 MB
Total SDRAM                           2560 MB
Start time                           2010-10-04 20:17:36 PDT
Uptime                               1 hour, 21 minutes, 37 seconds
Slot 6 information:
State                                Online
Temperature                          40 degrees C / 104 degrees F
Total CPU DRAM                       2048 MB
Total SRAM                           128 MB
Total SDRAM                           2560 MB
Start time                           2010-10-04 20:17:39 PDT
Uptime                               1 hour, 21 minutes, 34 seconds
Slot 7 information:
State                                Online
Temperature                          42 degrees C / 107 degrees F
Total CPU DRAM                       2048 MB
Total SRAM                           64 MB
Total SDRAM                           1280 MB
Start time                           2010-10-04 20:17:41 PDT
Uptime                               1 hour, 21 minutes, 32 seconds

```

show chassis fpc pic-status (TX Matrix Plus Router)

```
user@host> show chassis fpc pic-status
```

```
1cc0-re0:
```

```
-----
Slot 1  Online      FPC Type 2-ES
  PIC 0  Online      8x 1GE(LAN), IQ2
Slot 2  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 4  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 6  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
  PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 7  Online      FPC Type 3-ES
  PIC 0  Online      10x 1GE(LAN), 1000 BASE
  PIC 2  Online      1x OC-192 SM SR2
  PIC 3  Online      10x 1GE(LAN), 1000 BASE
```

```
1cc2-re0:
```

```
-----
Slot 0  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 2  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
  PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 3  Online      FPC Type 2-ES
  PIC 0  Online      8x 1GE(LAN), IQ2
Slot 4  Online      FPC Type 4
  PIC 0  Online      10x10GE(LAN/WAN) SFPP
Slot 6  Online      FPC Type 4-ES
  PIC 0  Online      4x OC-192 SONET XFP
Slot 7  Online      FPC Type 3-ES
  PIC 0  Online      10x 1GE(LAN), 1000 BASE
  PIC 1  Offline     1x 10GE(LAN/WAN) IQ2E
  PIC 2  Online      1x OC-192 SM SR2
  PIC 3  Online      1x Tunnel
```

```
1cc3-re0:
```

```
-----
Slot 2  Online      FPC Type 4-ES
  PIC 0  Online      10x10GE(LAN/WAN) SFPP
Slot 4  Online      FPC Type 4-ES
  PIC 0  Online      4x OC-192 SONET XFP
Slot 5  Online      FPC Type 4-ES
  PIC 0  Online      4x OC-192 SONET XFP
  PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 6  Online      FPC Type 4-ES
  PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 7  Online      FPC Type 3-ES
  PIC 0  Online      10x 1GE(LAN), 1000 BASE
  PIC 1  Online      8x 1GE(TYPE3), IQ2E
  PIC 2  Online      4x OC-48 SONET
```

show chassis fpc (TI600 Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | | Total | Interrupt | | Heap | Buffer |
| 0 | Empty | | | | | | |
| 1 | Empty | | | | | | |
| 2 | Online | 49 | 3 | 0 | 2048 | 3 | 24 |
| 3 | Online | 46 | 6 | 0 | 2048 | 6 | 24 |
| 4 | Empty | | | | | | |
| 5 | Online | 46 | 5 | 0 | 2048 | 3 | 24 |
| 6 | Empty | | | | | | |
| 7 | Online | 44 | 8 | 0 | 1024 | 7 | 49 |

show chassis fpc detail (T1600 Router)

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

```
show chassis fpc detail
Slot 2 information:
  State                Online
  Temperature          49 degrees C / 120 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           64 MB
  Total SDRAM          1280 MB
  Start time           2010-10-04 21:12:52 PDT
  Uptime               32 minutes, 9 seconds
Slot 3 information:
  State                Online
  Temperature          47 degrees C / 116 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           128 MB
  Total SDRAM          2560 MB
  Start time           2010-10-04 21:13:06 PDT
  Uptime               31 minutes, 55 seconds
Slot 5 information:
  State                Online
  Temperature          46 degrees C / 114 degrees F
  Total CPU DRAM       2048 MB
  Total SRAM           64 MB
  Total SDRAM          1280 MB
  Start time           2010-10-04 21:12:56 PDT
  Uptime               32 minutes, 5 seconds
Slot 7 information:
  State                Online
  Temperature          44 degrees C / 111 degrees F
  Total CPU DRAM       1024 MB
  Total SRAM           64 MB
  Total SDRAM          1280 MB
  Start time           2010-10-04 21:14:34 PDT
  Uptime               30 minutes, 27 seconds
```

show chassis fpc <fpc-slot> (EX Series Switch)

```
user@host> show chassis fpc 2
```

| Slot | State | Temp (C) | CPU Utilization (%) | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | | Total | Interrupt | | Heap | Buffer |
| 2 | Online | 40 | 12 | 0 | 2048 | 19 | 14 |

show chassis fpc slot (T1600 Router)

```
user@host> show chassis fpc slot 2
```

| Slot | State | Temp (C) | CPU Utilization (%) | Memory | Utilization (%) |
|------|--------|----------|---------------------|-----------|-----------------|
| | | | Total Interrupt | DRAM (MB) | Heap Buffer |
| 2 | Online | 49 | 3 0 | 2048 | 3 24 |

show chassis fpc pic-status (T1600 Router)

```
user@host> show chassis fpc pic-status
```

| | | |
|--------|--------|-----------------------|
| Slot 2 | Online | FPC Type 1-ES |
| PIC 0 | Online | Load Type 1 |
| PIC 1 | Online | 4x 1GE(LAN), IQ2E |
| PIC 3 | Online | 1x 0C-12-3 SFP |
| Slot 3 | Online | FPC Type 4-ES |
| PIC 0 | Online | 4x 10GE (LAN/WAN) XFP |
| PIC 1 | Online | 4x 0C-192 SONET XFP |
| Slot 5 | Online | FPC Type 2-ES |
| PIC 0 | Online | Load Type 2 |
| PIC 1 | Online | 8x 1GE(LAN), IQ2E |
| PIC 2 | Online | 8x 1GE(LAN), IQ2E |
| PIC 3 | Online | 1x 0C-48-12-3 SFP |
| Slot 7 | Online | FPC Type 4 |
| PIC 0 | Online | 4x 10GE (LAN/WAN) XFP |

show chassis fpc (T4000 Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) | Memory | Utilization (%) |
|------|--------|----------|---------------------|-----------|-----------------|
| | | | Total Interrupt | DRAM (MB) | Heap Buffer |
| 0 | Online | 48 | 15 0 | 2816 | 21 27 |
| 1 | Empty | | | | |
| 2 | Empty | | | | |
| 3 | Online | 51 | 15 0 | 2816 | 21 27 |
| 4 | Empty | | | | |
| 5 | Online | 39 | 8 0 | 2048 | 6 23 |
| 6 | Online | 49 | 15 0 | 2816 | 21 27 |
| 7 | Empty | | | | |

show chassis fpc detail (T4000 Router)

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

| | |
|---------------------|---------------------------------|
| Slot 0 information: | |
| State | Online |
| Temperature | 48 degrees C / 118 degrees F |
| Total CPU DRAM | 2816 MB |
| Total SRAM | 1554 MB |
| Total SDRAM | 10752 MB |
| Start time | 2012-02-09 22:56:25 PST |
| Uptime | 2 hours, 40 minutes, 52 seconds |
| Slot 3 information: | |
| State | Online |
| Temperature | 51 degrees C / 123 degrees F |

```

Total CPU DRAM          2816 MB
Total SRAM              1554 MB
Total SDRAM             10752 MB
Start time              2012-02-09 22:56:22 PST
Uptime                  2 hours, 40 minutes, 55 seconds
Slot 5 information:
State                   Online
Temperature              39 degrees C / 102 degrees F
Total CPU DRAM          2048 MB
Total SRAM              128 MB
Total SDRAM             2560 MB
Start time              2012-02-09 22:51:27 PST
Uptime                  2 hours, 45 minutes, 50 seconds
Slot 6 information:
State                   Online
Temperature              49 degrees C / 120 degrees F
Total CPU DRAM          2816 MB
Total SRAM              1554 MB
Total SDRAM             10752 MB
Start time              2012-02-09 22:56:29 PST
Uptime                  2 hours, 40 minutes, 48 seconds

```

show chassis fpc pic-status (T4000 Router)

```

user@host> show chassis fpc pic-status

Slot 0  Online      FPC Type 5-3D
PIC 0   Online      12x10GE (LAN/WAN) SFPP
PIC 1   Online      12x10GE (LAN/WAN) SFPP
Slot 3  Online      FPC Type 5-3D
PIC 0   Online      1x100GE
PIC 1   Online      12x10GE (LAN/WAN) SFPP
Slot 5  Online      FPC Type 4-ES
PIC 0   Online      100GE
PIC 1   Online      100GE CFP
Slot 6  Online      FPC Type 5-3D
PIC 0   Online      12x10GE (LAN/WAN) SFPP
PIC 1   Online      12x10GE (LAN/WAN) SFPP

```

show chassis fpc (QFX Series and OCX Series)

```

user@switch> show chassis fpc

Temp CPU Utilization (%)  Memory      Utilization (%)
Slot State                (C)  Total  Interrupt  DRAM (MB)  Heap      Buffer
0  Online                  26    2      0          2820      0         49

```

show chassis fpc detail (QFX3500 Switches)

```

user@switch> show chassis fpc detail

Slot 0 information:
State                   Online
Temperature              28 degrees C / 82 degrees F
Total CPU DRAM          2820 MB
Total SRAM              0 MB
Total SDRAM             0 MB
Start time              2010-09-20 01:34:13 PDT
Uptime                  3 days, 3 hours, 31 minutes, 48 seconds

```

show chassis fpc pic-status (QFX3500 Switches)

```
user@switch> show chassis fpc pic-status
```

| | | |
|--------|--------|-------------------------|
| Slot 0 | Online | QFX 48x10G 4x40G Switch |
| PIC 0 | Online | 48x 10G-SFP+ |
| PIC 1 | Online | 15x 10G-SFP+ |

show chassis fpc interconnect-device (QFabric System)

```
user@switch> show chassis fpc interconnect-device interconnect1
```

```
FPC status:
```

| Slot | State | Temp (C) |
|------|--------|----------|
| 0 | Online | 0 |
| 1 | Online | 0 |
| 2 | Online | 0 |
| 3 | Online | 0 |
| 4 | Online | 0 |
| 5 | Online | 0 |
| 6 | Online | 0 |
| 7 | Online | 0 |
| 8 | Online | 0 |
| 9 | Online | 0 |
| 10 | Online | 0 |
| 11 | Online | 0 |
| 12 | Online | 0 |
| 13 | Online | 0 |
| 14 | Online | 0 |
| 15 | Online | 0 |

show chassis fpc interconnect-device (QFabric System)

```
user@switch> show chassis fpc interconnect-device interconnect1 3
```

```
FPC status:
```

| Slot | State | Temp (C) |
|------|--------|----------|
| 3 | Online | 0 |

show chassis fpc interconnect-device detail (QFabric System)

```
user@switch> show chassis fpc interconnect-device interconnect1 3 detail
```

```
Slot 3 information:
```

| | |
|-------------|----------------------------|
| State | Online |
| Temperature | 0 degrees C / 32 degrees F |
| Start time | 2011-08-18 10:45:04 PDT |
| Uptime | 1 minute, 49 seconds |

show chassis fpc pic-status interconnect-device (QFabric System)

```
user@switch> show chassis fpc pic-status interconnect-device interconnect1
```

| | | |
|--------|--------|------------------------------|
| Slot 0 | Online | QFX 16-port QSFP+ Front Card |
| PIC 0 | Online | 16x 40G-QSFP+ |
| PIC 1 | Online | 16x 40G-GE |
| Slot 1 | Online | QFX 16-port QSFP+ Front Card |

```

PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 2 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 3 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 4 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 5 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 6 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 7 Online     QFX 16-port QSFP+ Front Card
PIC 0 Online      16x 40G-QSFP+
PIC 1 Online      16x 40G-GE
Slot 8 Online     QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 9 Online     QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 10 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 11 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 12 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 13 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 14 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE
Slot 15 Online    QFX Fabric Rear Card
PIC 0 Online      16x 40G-GE

```

show chassis fpc pic-status node-device (QFabric System)

```
user@switch> show chassis fpc pic-status node-device node1
```

```

Slot node1 Online      QFX 48x10G 4x40G Switch
PIC 0 Online          48x 10G-SFP+
PIC 1 Online          4x 40G-QSFP+

```

show chassis fpc (PTX5000 Packet Transport Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 0 | Empty | | | | |
| 1 | Empty | | | | |
| 2 | Online | 50 | 6 0 | 2816 | 5 27 |
| 3 | Empty | | | | |
| 4 | Empty | | | | |
| 5 | Online | 48 | 9 0 | 2816 | 5 27 |

| | | | | | | | |
|---|--------|----|---|---|------|---|----|
| 6 | Empty | | | | | | |
| 7 | Online | 49 | 8 | 0 | 2816 | 5 | 27 |

show chassis fpc detail (PTX5000 Packet Transport Router)

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

Slot 2 information:

| | |
|----------------|--|
| State | Online |
| Temperature | 35 degrees C / 95 degrees F (PMB) |
| Temperature | 35 degrees C / 95 degrees F (Intake) |
| Temperature | 50 degrees C / 122 degrees F (Exhaust A) |
| Temperature | 54 degrees C / 129 degrees F (Exhaust B) |
| Temperature | 54 degrees C / 129 degrees F (TL0) |
| Temperature | 52 degrees C / 125 degrees F (TQ0) |
| Temperature | 61 degrees C / 141 degrees F (TL1) |
| Temperature | 58 degrees C / 136 degrees F (TQ1) |
| Temperature | 57 degrees C / 134 degrees F (TL2) |
| Temperature | 58 degrees C / 136 degrees F (TQ2) |
| Temperature | 62 degrees C / 143 degrees F (TL3) |
| Temperature | 61 degrees C / 141 degrees F (TQ3) |
| Total CPU DRAM | 2816 MB |
| Total SRAM | 0 MB |
| Total SDRAM | 0 MB |
| Start time | 2012-01-12 12:05:42 PST |
| Uptime | 3 hours, 14 minutes, 7 seconds |

Slot 5 information:

| | |
|----------------|--|
| State | Online |
| Temperature | 35 degrees C / 95 degrees F (PMB) |
| Temperature | 34 degrees C / 93 degrees F (Intake) |
| Temperature | 48 degrees C / 118 degrees F (Exhaust A) |
| Temperature | 53 degrees C / 127 degrees F (Exhaust B) |
| Temperature | 54 degrees C / 129 degrees F (TL0) |
| Temperature | 52 degrees C / 125 degrees F (TQ0) |
| Temperature | 69 degrees C / 156 degrees F (TL1) |
| Temperature | 56 degrees C / 132 degrees F (TQ1) |
| Temperature | 54 degrees C / 129 degrees F (TL2) |
| Temperature | 56 degrees C / 132 degrees F (TQ2) |
| Temperature | 59 degrees C / 138 degrees F (TL3) |
| Temperature | 60 degrees C / 140 degrees F (TQ3) |
| Total CPU DRAM | 2816 MB |
| Total SRAM | 0 MB |
| Total SDRAM | 0 MB |
| Start time | 2012-01-12 12:05:43 PST |
| Uptime | 3 hours, 14 minutes, 6 seconds |

Slot 7 information:

| | |
|----------------|--|
| State | Online |
| Temperature | 35 degrees C / 95 degrees F (PMB) |
| Temperature | 33 degrees C / 91 degrees F (Intake) |
| Temperature | 50 degrees C / 122 degrees F (Exhaust A) |
| Temperature | 55 degrees C / 131 degrees F (Exhaust B) |
| Temperature | 56 degrees C / 132 degrees F (TL0) |
| Temperature | 56 degrees C / 132 degrees F (TQ0) |
| Temperature | 61 degrees C / 141 degrees F (TL1) |
| Temperature | 57 degrees C / 134 degrees F (TQ1) |
| Temperature | 55 degrees C / 131 degrees F (TL2) |
| Temperature | 59 degrees C / 138 degrees F (TQ2) |
| Temperature | 62 degrees C / 143 degrees F (TL3) |
| Temperature | 62 degrees C / 143 degrees F (TQ3) |
| Total CPU DRAM | 2816 MB |


```

Total SRAM                0 MB
Total SDRAM                0 MB
Start time                2012-01-12 12:05:44 PST
Uptime                    3 hours, 14 minutes, 5 seconds

```

show chassis fpc pic-status (PTX5000 Packet Transport Router)

```
user@host> show chassis fpc pic-status
```

```

Slot 2  Online      FPC
PIC 0   Online      24x 10GE(LAN) SFP+
PIC 1   Online      24x 10GE(LAN) SFP+
Slot 5  Online      FPC
PIC 0   Online      24x 10GE(LAN) SFP+
PIC 1   Online      2x 40GE CFP
Slot 7  Online      FPC
PIC 0   Online      24x 10GE(LAN) SFP+
PIC 1   Online      2x 40GE CFP

```

show chassis fpc (PTX10008 Router)

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

| Utilization (%) | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|------|---------------------|-----------|---------------------|------|-------|-----------|
| Slot State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap Buffer | | | | | | | |
| 0 Online | 38 | 26 | 2 | 26 | 26 | 26 | 1953 |
| 20 | | | | | | | |
| 1 Empty | | | | | | | |
| 2 Empty | | | | | | | |
| 3 Empty | | | | | | | |
| 4 Empty | | | | | | | |
| 5 Online | 67 | 26 | 2 | 26 | 26 | 26 | 1953 |
| 25 | | | | | | | |
| 6 Online | 52 | 26 | 2 | 26 | 26 | 26 | 1953 |
| 25 | | | | | | | |
| 7 Empty | | | | | | | |

show chassis fpc detail (PTX10008 Router)

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

```

Slot 6 information:
State                Online
Total CPU DRAM       8192 MB
Temperature          42 degrees C / 107 degrees F
Start time           2018-09-17 02:42:16 PDT
Uptime               53 minutes, 40 seconds
Max power consumption 675 Watts
Slot 7 information:
State                Online
Total CPU DRAM       8192 MB
Temperature          51 degrees C / 123 degrees F
Start time           2018-09-17 02:42:26 PDT
Uptime               53 minutes, 30 seconds
Max power consumption 1150 Watts

```

show chassis fpc (PTX10016 Router)

user@host> show chassis fpc

| Utilization (%) | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|--------|------|---------------------|-----------|---------------------|------|-------|-----------|
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap | Buffer | | | | | | | |
| 0 | Empty | | | | | | | |
| 1 | Online | 36 | 27 | 2 | 27 | 27 | 27 | 1953 |
| 22 | | | | | | | | |
| 2 | Empty | | | | | | | |
| 3 | Online | 36 | 27 | 2 | 27 | 27 | 27 | 1953 |
| 22 | | | | | | | | |
| 4 | Empty | | | | | | | |
| 5 | Empty | | | | | | | |
| 6 | Online | 35 | 27 | 2 | 27 | 27 | 27 | 1953 |
| 22 | | | | | | | | |
| 7 | Empty | | | | | | | |
| 8 | Online | 34 | 27 | 2 | 27 | 27 | 27 | 1953 |
| 22 | | | | | | | | |
| 9 | Online | 46 | 24 | 2 | 24 | 24 | 24 | 1953 |
| 26 | | | | | | | | |
| 10 | Empty | | | | | | | |
| 11 | Empty | | | | | | | |
| 12 | Empty | | | | | | | |
| 13 | Empty | | | | | | | |
| 14 | Empty | | | | | | | |
| 15 | Empty | | | | | | | |

show chassis fpc detail (PTX10016 Router)

user@host> show chassis fpc detail

| | |
|-----------------------|--|
| Slot 0 information: | |
| State | Online |
| Total CPU DRAM | 8192 MB |
| Temperature | 44 degrees C / 111 degrees F |
| Start time | 2018-09-10 07:01:09 PDT |
| Uptime | 6 days, 23 hours, 17 minutes, 9 seconds |
| Max power consumption | 1150 Watts |
| Slot 4 information: | |
| State | Online |
| Total CPU DRAM | 8192 MB |
| Temperature | 40 degrees C / 104 degrees F |
| Start time | 2018-09-10 07:01:17 PDT |
| Uptime | 6 days, 23 hours, 17 minutes, 1 second |
| Max power consumption | 1150 Watts |
| Slot 6 information: | |
| State | Online |
| Total CPU DRAM | 8192 MB |
| Temperature | 42 degrees C / 107 degrees F |
| Start time | 2018-09-10 07:01:27 PDT |
| Uptime | 6 days, 23 hours, 16 minutes, 51 seconds |
| Max power consumption | 1150 Watts |
| Slot 7 information: | |
| State | Online |
| Total CPU DRAM | 8192 MB |

```

Temperature          41 degrees C / 105 degrees F
Start time           2018-09-10 07:01:32 PDT
Uptime               6 days, 23 hours, 16 minutes, 46 seconds
Max power consumption 1150 Watts
Slot 9 information:
State                Online
Total CPU DRAM       16384 MB
Temperature          42 degrees C / 107 degrees F
Start time           2018-09-10 07:01:45 PDT
Uptime               6 days, 23 hours, 16 minutes, 33 seconds
Max power consumption 1150 Watts
Slot 10 information:
State                Online
Total CPU DRAM       8192 MB
Temperature          41 degrees C / 105 degrees F
Start time           2018-09-10 07:01:46 PDT
Uptime               6 days, 23 hours, 16 minutes, 32 seconds
Max power consumption 1150 Watts
Slot 11 information:
State                Online
Total CPU DRAM       16384 MB
Temperature          40 degrees C / 104 degrees F
Start time           2018-09-10 07:01:55 PDT
Uptime               6 days, 23 hours, 16 minutes, 23 seconds
Max power consumption 1150 Watts
Slot 14 information:
State                Online
Total CPU DRAM       8192 MB
Temperature          42 degrees C / 107 degrees F
Start time           2018-09-10 07:01:54 PDT
Uptime               6 days, 23 hours, 16 minutes, 24 seconds
Max power consumption 1150 Watts
Slot 15 information:
State                Online
Total CPU DRAM       16384 MB
Temperature          41 degrees C / 105 degrees F
Start time           2018-09-10 07:02:03 PDT
Uptime               6 days, 23 hours, 16 minutes, 15 seconds
Max power consumption 1150 Watts

```

show chassis fpc (ACX2000 Universal Metro Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) | Memory Utilization (%) |
|------|--------|----------|---------------------|------------------------|
| | | | Total Interrupt | DRAM (MB) Heap Buffer |
| 0 | Online | 61 | 17 6 | 512 21 37 |

show chassis fpc 0 (ACX2000 Universal Metro Router)

```
user@host> show chassis fpc 0
```

| Slot | State | Temp (C) | CPU Utilization (%) | Memory Utilization (%) |
|------|--------|----------|---------------------|------------------------|
| | | | Total Interrupt | DRAM (MB) Heap Buffer |
| 0 | Online | 61 | 17 6 | 512 21 37 |

show chassis fpc detail (ACX2000 Universal Metro Router)

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

Slot 0 information:

```

State                               Online
Temperature                         61 degrees C / 141 degrees F
Total CPU DRAM                      512 MB
Start time                          2012-05-29 02:52:06 PDT
Uptime                              27 minutes, 17 seconds

```

show chassis fpc pic-status (ACX2000 Universal Metro Router)

```
user@host> show chassis fpc pic-status
```

```

Slot 0  Online
PIC 0   Online      16x CHE1T1, RJ48
PIC 1   Online      8x 1GE(LAN) RJ45
PIC 2   Online      2x 1GE(LAN) SFP
PIC 3   Online      2x 10GE(LAN) SFP+

```

show chassis FPC 1 (MX Routers with Media Services Blade [MSB])

```
user@switch> show chassis fpc 1
```

| Slot | State | Temp (C) | CPU Utilization (%) | Memory | Utilization (%) |
|------|--------|----------|---------------------|-----------|-----------------|
| | | | Total Interrupt | DRAM (MB) | Heap Buffer |
| 1 | Online | 34 | 5 0 | 3072 | 5 13 |

show chassis FPC 1 detail (MX Routers with Media Services Blade [MSB])

```
user@switch> show chassis fpc 1 detail
```

Slot 1 information:

```

State                               Online
Temperature                         34
Total CPU DRAM                      3072 MB
Total RLDRAM                        259 MB
Total DDR DRAM                      4864 MB
Start time:                         2012-06-19 10:51:43 PDT
Uptime:                             16 minutes, 48 seconds
Max Power Consumption               550 Watts

```

Sample Output**show chassis fpc (Node Slicing)**

```
user@router> show chassis fpc
```

| Utilization (%) | Temp | CPU Utilization (%) | CPU Utilization (%) | Memory |
|-----------------|------|---------------------|---------------------|-----------|
| Slot State | (C) | Total Interrupt | 1min 5min 15min | DRAM (MB) |
| 0 Online | 45 | 12 0 | 12 12 12 | 3584 |
| 6 25 | 3 | | | |
| 1 Online | 57 | 22 0 | 20 20 20 | 3136 |
| 16 22 | 2 | | | |
| 2 Online | 50 | 19 0 | 17 17 16 | 3584 |
| 6 25 | 3 | | | |
| 3 Online | 28 | 10 0 | 11 11 11 | 2048 |

| | | | | | | | | | |
|----|--------|----|----|---|----|----|----|------|--|
| 10 | 20 | 6 | | | | | | | |
| 4 | Online | 42 | 20 | 0 | 20 | 19 | 19 | 3584 | |
| 8 | 25 | 6 | | | | | | | |
| 5 | Online | 58 | 22 | 0 | 21 | 20 | 20 | 3136 | |
| 16 | 22 | 4 | | | | | | | |
| 6 | Online | 49 | 17 | 0 | 15 | 16 | 16 | 3136 | |
| 13 | 20 | 1 | | | | | | | |
| 7 | Online | 44 | 11 | 0 | 10 | 10 | 10 | 3584 | |
| 6 | 25 | 5 | | | | | | | |
| 8 | Online | 40 | 19 | 0 | 18 | 18 | 18 | 3584 | |
| 8 | 25 | 5 | | | | | | | |
| 9 | Online | 44 | 19 | 0 | 20 | 20 | 20 | 3584 | |
| 8 | 25 | 5 | | | | | | | |

Sample Output

show chassis fpc pic-status (Node Slicing)

```

user@router> show chassis fpc pic-status

Slot 0  Online      MPC5E 3D 24XGE+6XLGE      GN1 3
PIC 0   Online      12X10GE SFPP OTN
PIC 1   Offline     12X10GE SFPP OTN
PIC 2   Offline     3X40GE QSFPP
PIC 3   Online      3X40GE QSFPP
Slot 1  Online      MPC9E 3D                  GN1 2
PIC 1   Online      MRATE-12xQSFPP-XGE-XLGE-CGE
Slot 2  Online      MPC5E 3D Q 2CGE+4XGE      GN1 3
PIC 0   Online      2X10GE SFPP OTN
PIC 1   Online      1X100GE CFP2 OTN
PIC 2   Online      2X10GE SFPP OTN
PIC 3   Online      1X100GE CFP2 OTN
Slot 3  Online      MPCE Type 2 3D EQ         GN1 6
Slot 4  Online      MPC6E 3D                  GN1 6
PIC 0   Online      24X10GE SFPP
PIC 1   Online      2X100GE CFP2 OTN
Slot 5  Online      MPC9E 3D                  GN1 4
PIC 0   Online      MRATE-12xQSFPP-XGE-XLGE-CGE
Slot 6  Online      MPC7E 3D MRATE-12xQSFPP-XGE-XLGE-CGE GN1 1
PIC 0   Online      MRATE-6xQSFPP-XGE-XLGE-CGE
PIC 1   Online      MRATE-6xQSFPP-XGE-XLGE-CGE
Slot 7  Online      MPC5E 3D 2CGE+4XGE        GN1 5
PIC 0   Online      2X10GE SFPP OTN
PIC 1   Online      1X100GE CFP2 OTN
PIC 2   Online      2X10GE SFPP OTN
PIC 3   Online      1X100GE CFP2 OTN
Slot 8  Online      MPC6E 3D                  GN1 5
PIC 0   Online      24X10GE SFPP OTN
Slot 9  Online      MPC6E 3D                  GN1 5
PIC 0   Online      24X10GE SFPP
PIC 1   Online      4X100GE CXP

```

show chassis fpc pic-status (PTX5000 Router)

```

user@router> show chassis fpc pic-status

```

```

Slot 0  Online      FPC-P2
      PIC 0  Online  Universal pic 96x10_24x40
      PIC 1  Online  Universal pic 96x10_24x40
Slot 1  Online      FPC-P2
      PIC 1  Online  Universal pic 96x10_24x40

```

show chassis fpc (PTX10003-80C)

```
user@router> show chassis fpc
```

| Utilization (%) | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|--------|------|---------------------|-----------|---------------------|------|-------|-----------|
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap | Buffer | | | | | | | |
| 0 | Online | | | | | | | |
| 1 | Online | | | | | | | |
| 2 | Online | | | | | | | |
| 3 | Online | | | | | | | |

Starting in Junos OS Evolved Release 19.1R1, on PTX10003-80C and PTX10003-160C devices, the **show chassis fpc** command does not display the Temperature, CPU Utilization, and Memory Utilization information, as these are fixed configuration routers and the FPCs in these routers do not have dedicated CPUs.

Starting in Junos OS Evolved Release 19.1R1, on PTX10003-80C and PTX10003-160C devices, if you have configured a field-replaceable unit (FRU) to be powered off and rebooted the device, the **show chassis fpc** output will display the state of the FRU as Present and reason as **Configured power off** (see the following output:

```
user@router> show chassis fpc
```

| Utilization (%) | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|---------|------|----------------------------|-----------|---------------------|------|-------|-----------|
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap | Buffer | | | | | | | |
| 0 | Present | | ---Configured power off--- | | | | | |
| 1 | Online | | | | | | | |

Starting in Junos OS Evolved Release 19.1R1, the **show chassis fpc** output incorrectly displays the FPC offline reason as **Offlined by cli command** when the FPC becomes offline because of an fpc major or fatal error. This behavior is applicable only if you have configured the offline action for major or fatal error severity, by using the command **set chassis error major action offline**. See the output below:

```
user@router> show chassis fpc
```

| Utilization (%) | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory |
|-----------------|---------|------|------------------------------------|-----------|---------------------|------|-------|-----------|
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) |
| Heap | Buffer | | | | | | | |
| 0 | Offline | | ---Offlined due to major errors--- | | | | | |

show chassis fpc errors

Syntax `show chassis fpc errors;`

Release Information Command introduced in Junos OS Release 12.3 for the T Series routers.
Command introduced in Junos OS Release 13.3 for the PTX Series routers.
Command introduced in Junos OS Release 14.2 for the MX240, MX480, MX960, and MX2020 routers.

Description Display chassis error information including FPC number, severity of error, number of error occurred, cleared, threshold, and corresponding action.

| Error Severity Level | Default Threshold | Default Action |
|----------------------|-------------------|--|
| Fatal | 1 | Restart the FPC |
| Major | 1 | Get the current state of the FPC and raise an alarm. |
| Minor | 10 | Write a log for the event. |

Options **detail**—Display the entire list of errors that contribute to a failure for all the FPCs.

fpc-slot—Display the list of errors pertaining to the FPC installed in a particular slot

Required Privilege Level view

Related Documentation

- [fpc error on page 306](#)

List of Sample Output [show chassis fpc errors on page 1364](#)
[show chassis fpc errors \(MX480 Router\) on page 1365](#)

Output Fields [Table 81 on page 1363](#) lists the output fields for the **show chassis fpc errors** command. Output fields are listed in the approximate order in which they appear.

Table 81: show chassis fpc errors Output Fields

| Field Name | Field Description |
|------------|-------------------|
| FPC | The FPC number. |

Table 81: show chassis fpc errors Output Fields (continued)

| Field Name | Field Description |
|------------|---|
| Level | The severity of the error. It can be configured as follows: <ul style="list-style-type: none"> fatal—Fatal error on FPC major—Major error on FPC minor—Minor error on FPC |
| Occurred | Number of error instances occurred. |
| Cleared | Number of error instances cleared. |
| Threshold | Configured threshold value. The associated detection and recovery actions are triggered when this threshold value is crossed. |
| Action | The detection and recovery actions that are triggered when the threshold value is crossed. <ul style="list-style-type: none"> Restart the FPC. Get the current state of the FPC and raise an alarm. Write a log for the event. |

Sample Output

show chassis fpc errors

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

```

FPC  Level  Occurred  Cleared  Threshold  Action-Taken  Action
0    Minor    0         0        10         LOG|
    Major    0         0         1         GET STATE|ALARM|
    Fatal    0         0         1         RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
1    Minor    0         0        10         LOG|
    Major    0         0         1         GET STATE|ALARM|
    Fatal    0         0         1         RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
2    Minor    0         0        10         LOG|
    Major    0         0         1         GET STATE|ALARM|
    Fatal    0         0         1         RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
4    Minor    0         0        10         LOG|
    Major    0         0         1         GET STATE|ALARM|
    Fatal    0         0         1         RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
5    Minor    0         0        10         LOG|
    Major    0         0         1         GET STATE|ALARM|
    Fatal    0         0         1         RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
6    Minor    0         0        10         LOG|

```



```

Major      0      0      1      GET STATE|ALARM|
Fatal      0      0      1      RESET
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
7 Minor    0      0     10      LOG|
Major      0      0      1      GET STATE|ALARM|
Fatal      0      0      1      RESET
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |

```

show chassis fpc errors (MX480 Router)

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

```

FPC  Level Occurred Cleared Threshold Action-Taken Action
1   Minor    0      0     10      0  LOG|
    Major    0      0      1      0  GET STATE|CM ALARM|DISABLE PFE
    Fatal    0      0      1      0  RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
2   Minor    0      0     10      0  LOG|
    Major    0      0      1      0  GET STATE|CM ALARM|DISABLE PFE
    Fatal    0      0      1      0  RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
3   Minor    0      0     10      0  LOG|
    Major    0      0      1      0  GET STATE|CM ALARM|DISABLE PFE
    Fatal    0      0      1      0  RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
5   Minor    0      0     10      0  LOG|
    Major    0      0      1      0  GET STATE|CM ALARM|DISABLE PFE
    Fatal    0      0      1      0  RESET
    Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |

```

show chassis fpc-feb-connectivity

| | |
|---------------------------------|--|
| Syntax | show chassis fpc-feb-connectivity |
| Release Information | Command introduced in Junos OS Release 8.0. |
| Description | (M120 router only) Display the Flexible PIC Concentrator (FPC) and Forwarding Engine Board (FEB) mapping and their respective states. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis fpc on page 494 • show chassis fpc on page 1309 • show chassis fabric fpcs on page 1060 • Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online on page 166 • MX960 Flexible PIC Concentrator Description |
| List of Sample Output | show chassis fpc-feb-connectivity on page 1367 |
| Output Fields | Table 82 on page 1366 lists the output fields for the show chassis fpc-feb-connectivity command. Output fields are listed in the approximate order in which they appear. |

Table 82: show chassis fpc-feb-connectivity Output Fields

| Field Name | Field Description |
|------------|---|
| FPC | Slot number of the Flexible PIC Concentrator (FPC). |
| FPC type | Type of FPC: Type 1 , Type 2 , Type 3 , or cFPC . |

Table 82: show chassis fpc-feb-connectivity Output Fields (continued)

| Field Name | Field Description |
|----------------------|---|
| FPC state | <p>State of the FPC. State can be any of the following:</p> <ul style="list-style-type: none"> • Announce offline—Intermediate state where FPC is going down but is not offline and the Chassis manager acknowledges that the FPC is in the process of going offline. • Announce online—Intermediate state where FPC is coming up but is not online and the Chassis manager acknowledges that the FPC is in the process of coming online. • Empty—No FPC is present. • Offline—FPC is powered down. • Online—FPC is online and running. • Present—The chassis process has detected the FPC, but the FPC is either not supported by the current version of the Junos OS or FPC is coming up but is not online. • Ready—FPC is in transition state. |
| Connected FEB | Slot number of the Forwarding Engine Board (FEB) connected to the FPC or None if the FPC is not connected to a FEB. |
| FEB state | <p>State of the FEB. State can be any of the following:</p> <ul style="list-style-type: none"> • Announce offline—Intermediate state where FEB is going down but is not offline and the Chassis manager acknowledges that the FEB is in the process of going offline. • Announce online—Intermediate state where FEB is coming up but is not online and the Chassis manager acknowledges that the FEB is in the process of coming online. • Empty—No FEB is present. • Offline—FEB is powered down. • Online—FEB is online and running. • Present—The chassis process has detected the FEB, but the FEB is either not supported by the current version of the Junos OS or FEB is coming up but is not online. • Ready—FEB is in transition state. |
| Link status | <p>Status of the link connecting the R-FEB and R-FPC:</p> <ul style="list-style-type: none"> • Error • Misconfiguration—Configuration between the R-FEB and the F-FPC is incorrect. • OK |

Sample Output

show chassis fpc-feb-connectivity

```
user@host> show chassis fpc-feb-connectivity
```

```

FPC  FPC type  FPC state    Connected FEB  FEB state    Link status
0    cFPC      Online       0              Empty
1    cFPC      Online       1              Online       OK
2    Type 3   Online       3              Online       OK
3    Type 2   Online       None
4    Type 1   Online       4              Online       OK
5    Type 3   Online       None
FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
```

Egress queues: 8 supported, 8 in use

| Queue counters: | Queued packets | Transmitted packets | Dropped packets |
|-----------------|----------------|---------------------|-----------------|
| 0 best-effort | 0 | 0 | 0 |
| 1 expedited-fo | 0 | 0 | 0 |
| 2 assured-forw | 0 | 0 | 0 |
| 3 network-cont | 0 | 0 | 0 |

Active alarms : PLL, LOS, LINK

Active defects : PLL, LOF, LOS, SEF, LOP, BERR-SF, PLM-P, LINK

PCS statistics

Seconds

Bit errors

0

Errored blocks

3

MAC statistics:

Receive

Transmit

Total octets

0

0

Total packets

0

0

show chassis hardware

| | |
|---|--|
| List of Syntax | Syntax on page 1369 Syntax (EX Series, MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms) on page 1369 Syntax (TX Matrix Router) on page 1369 Syntax (TX Matrix Plus Router) on page 1369 Syntax (MX Series Routers) on page 1369 Syntax (QFX Series) on page 1369 |
| Syntax | <pre>show chassis hardware <detail extensive> <clei-models> <models></pre> |
| Syntax (EX Series, MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms) | <pre>show chassis hardware <clei-models> <detail extensive> <models> <satellite [slot-id slot-id device-alias alias-name]></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> <all-members> <local> <member member-id></pre> |
| Syntax (QFX Series) | <pre>show chassis hardware <detail extensive> <clei-models></pre> |

```
<interconnect-device name>
<node-device name>
<models>
```

Release Information Command introduced before Junos OS Release 7.4.
models option introduced in Junos OS Release 8.2.
 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 QFX Series.
 Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.
 Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.
 Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 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



NOTE: Routers and routing platforms use the basic syntax, unless otherwise listed. For example, the EX Series has an additional satellite parameter available.

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 83 on page 1372](#).

Table 83: 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 on page 1438](#)

List of Sample Output

[show chassis hardware \(MX10008 Router\) on page 1377](#)
[show chassis hardware clei-models \(PTX10016 Routers\) on page 1377](#)
[show chassis hardware detail \(EX9251 Switch\) on page 1378](#)
[show chassis hardware extensive \(T640 Router\) on page 1379](#)
[show chassis hardware interconnect-device \(QFabric Systems\) on page 1380](#)
[show chassis hardware lcc \(TX Matrix Router\) on page 1380](#)
[show chassis hardware models \(MX2010 Router\) on page 1381](#)
[show chassis hardware node-device \(QFabric Systems\) on page 1381](#)
[show chassis hardware scc \(TX Matrix Router\) on page 1382](#)
[show chassis hardware sfc \(TX Matrix Plus Router\) on page 1382](#)

Output Fields

Table 84 on page 1374 lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.

Table 84: 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 84: 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 84: 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-SFPP and MPC4E-3D-2CGE-8XGE on MX2020, MX960, MX480, and MX240 routers. • LCD description for MX Series routers | |

Sample Output

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 (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 | | | | |
| 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 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 extensive (T640 Router)

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

```
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:          .....        S/N:          .....
Assembly ID:  0x0507          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags: 0x00
Version:      .....
ID: Gibson LCC Chassis
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 05 07 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 04      710-002726  AX5633
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:          710-002726.      S/N:          AX5633.
Assembly ID:  0x0127          Assembly Version: 01.04
Date:         06-27-2001      Assembly Flags: 0x00
Version:      REV 04.....
ID: Gibson Backplane
Board Information Record:
Address 0x00: ad 01 08 00 00 90 69 0e f8 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 01 27 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 30 32 37 32 36 00 00
Address 0x20: 53 2f 4e 20 41 58 35 36 33 33 00 00 00 1b 06 07
Address 0x30: d1 ff ff ff ad 01 08 00 00 90 69 0e f8 00 ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM GBUS      REV 02      710-002901  HE3245
...
FPM Display   REV 02      710-002897  HA4873
...
CIP           REV 05      710-002895  HA4729
...
PEM 1         RevX02     740-002595  MD21815      Power Entry Module
...
SCG 0         REV 04      710-003423  HF6023
...
SCG 1         REV 04      710-003423  HF6061
```

```

...
Routing Engine 0 REV 01 740-005022 210865700292 RE-3.0
...
CB 0 REV 06 710-002728 HE3614
...
FPC 1 REV 01 710-002385 HE3009 FPC Type 1
...
REV 06 710-001726 HC0010

```

show chassis hardware interconnect-device (QFabric Systems)

```
user@switch> show chassis hardware interconnect-device interconnect1
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------|---------|-------------|---------------|--------------|
| Chassis | REV 07 | | | QFX_olive |
| Midplane | REV 07 | 750-021261 | BH0208188289 | QFX Midplane |
| CB 0 | REV 07 | 750-021261 | BH0208188289 | QFXIC08-CB4S |

show chassis hardware lcc (TX Matrix Router)

```
user@host> show chassis hardware lcc 0
```

lcc0-re0:

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------------------|
| Chassis | | | 65751 | T640 |
| Midplane | REV 03 | 710-005608 | RA1408 | T640 Backplane |
| FPM GBUS | REV 09 | 710-002901 | RA2784 | T640 FPM Board |
| FPM Display | REV 05 | 710-002897 | RA2825 | FPM Display |
| CIP | REV 06 | 710-002895 | HT0684 | T Series CIP |
| PEM 0 | Rev 11 | 740-002595 | PM18483 | Power Entry Module |
| PEM 1 | Rev 11 | 740-002595 | qb13984 | Power Entry Module |
| SCG 0 | REV 11 | 710-003423 | HT0022 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 13 | 740-005022 | 210865700363 | RE-3.0 (RE-600) |
| CB 0 | REV 03 | 710-007655 | HW1195 | Control Board (CB-T) |
| FPC 1 | REV 05 | 710-007527 | HM3245 | FPC Type 2 |
| CPU | REV 14 | 710-001726 | HM1084 | FPC CPU |
| PIC 0 | REV 02 | 750-007218 | AZ1112 | 2x OC-12 ATM2 IQ, SMIR |
| PIC 1 | REV 02 | 750-007745 | HG3462 | 4x OC-3 SONET, SMIR |
| PIC 2 | REV 14 | 750-001901 | BA5390 | 4x OC-12 SONET, SMIR |
| PIC 3 | REV 09 | 750-008155 | HS3012 | 2x G/E IQ, 1000 BASE |
| SFP 0 | | NON-JNPR | P1186TY | SFP-S |
| SFP 1 | REV 01 | 740-007326 | P11WLTF | SFP-SX |
| MMB 1 | REV 02 | 710-005555 | HL7514 | MMB-288mbit |
| PPB 0 | REV 04 | 710-003758 | HM4405 | PPB Type 2 |
| PPB 1 | REV 04 | 710-003758 | AV1960 | PPB Type 2 |
| FPC 2 | REV 08 | 710-010154 | HZ3578 | E-FPC Type 3 |
| CPU | REV 05 | 710-010169 | HZ3219 | FPC CPU-Enhanced |
| PIC 0 | REV 02 | 750-009567 | HX2882 | 1x 10GE(LAN), XENPAK |
| SFP 0 | REV 01 | 740-009898 | USC202U709 | XENPAK-LR |
| PIC 1 | REV 03 | 750-003336 | HJ9954 | 4x OC-48 SONET, SMSR |
| PIC 2 | REV 01 | 750-004535 | HC0235 | 1x OC-192 SM SR1 |
| PIC 3 | REV 07 | 750-007141 | HX1699 | 10x 1GE(LAN), 1000 BASE |
| SFP 0 | REV 01 | 740-007326 | 2441042 | SFP-SX |
| SFP 1 | REV 01 | 740-007326 | 2441027 | SFP-SX |
| MMB 0 | REV 03 | 710-010171 | HV2365 | MMB-5M3-288mbit |
| MMB 1 | REV 03 | 710-010171 | HZ3888 | MMB-5M3-288mbit |

| | | | | |
|---------|--------|------------|--------|---------------------|
| SPMB 0 | REV 09 | 710-003229 | HW5245 | T Series Switch CPU |
| SIB 3 | REV 07 | 710-005781 | HR5927 | SIB-L8-F16 |
| B Board | REV 06 | 710-005782 | HR5971 | SIB-L8-F16 (B) |
| SIB 4 | REV 07 | 710-005781 | HR5903 | SIB-L8-F16 |
| B Board | REV 06 | 710-005782 | HZ5275 | SIB-L8-F16 (B) |

show chassis hardware 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 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 | FPC CPU |
| PIC 0 | | BUILTIN | 48x 10G-SFP+ |
| Xcvr 8 | REV 01 | 740-030658 | AD0946A028B |
| | | | SFP+-10G-USR |

show chassis hardware scc (TX Matrix Router)

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

```
scc-re0:
```

```
-----
```

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-----------------------|
| Chassis | | | | TX Matrix |
| Midplane | REV 04 | 710-004396 | RB0014 | SCC Midplane |
| FPM GBUS | REV 04 | 710-004617 | HW9141 | SCC FPM Board |
| FPM Display | REV 04 | 710-004619 | HS5950 | SCC FPM |
| CIP 0 | REV 01 | 710-010218 | HV9151 | SCC CIP |
| CIP 1 | REV 01 | 710-010218 | HV9152 | SCC CIP |
| PEM 1 | Rev 11 | 740-002595 | QB13977 | Power Entry Module |
| Routing Engine 0 | REV 05 | 740-008883 | P11123900153 | RE-4.0 (RE-1600) |
| CB 0 | REV 01 | 710-011709 | HR5964 | Control Board (CB-TX) |
| SPMB 0 | REV 09 | 710-003229 | HW5293 | T Series Switch CPU |
| SIB 3 | | | | |
| SIB 4 | REV 01 | 710-005839 | HW1177 | SIB-S8-F16 |
| B Board | REV 01 | 710-005840 | HW1202 | SIB-S8-F16 (B) |

show chassis hardware sfc (TX Matrix Plus Router)

```
user@host> show chassis hardware sfc 0
```

```
sfc0-re0:
```


```
-----
```

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|--------------------|
| Chassis | | | JN112F007AHB | TXP |
| Midplane | REV 05 | 710-022574 | TS4027 | SFC Midplane |
| FPM Display | REV 03 | 710-024027 | DX0282 | TXP FPM Display |
| CIP 0 | REV 04 | 710-023792 | DW4889 | TXP CIP |
| CIP 1 | REV 04 | 710-023792 | DW4887 | TXP CIP |
| PEM 0 | Rev 07 | 740-027463 | UM26368 | Power Entry Module |
| Routing Engine 0 | REV 01 | 740-026942 | 737A-1064 | SFC RE |
| Routing Engine 1 | REV 01 | 740-026942 | 737A-1082 | SFC RE |
| CB 0 | REV 09 | 710-022606 | DW6099 | SFC Control Board |
| CB 1 | REV 09 | 710-022606 | DW6096 | SFC Control Board |
| SPMB 0 | | BUILTIN | | SFC Switch CPU |
| SPMB 1 | | BUILTIN | | SFC Switch CPU |
| SIB F13 0 | REV 04 | 710-022600 | DX0841 | F13 SIB |
| B Board | REV 03 | 710-023431 | DX0966 | F13 SIB Mezz |
| SIB F13 1 | REV 04 | 750-024564 | DW5776 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9028 | F13 SIB |
| SIB F13 3 | REV 04 | 750-024564 | DW5762 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9059 | F13 SIB |
| SIB F13 4 | REV 04 | 750-024564 | DW5797 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9041 | F13 SIB |
| SIB F13 6 | REV 04 | 750-024564 | DW5770 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9079 | F13 SIB Mezz |
| SIB F13 7 | REV 04 | 750-024564 | DW5758 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9047 | F13 SIB |
| SIB F13 8 | REV 04 | 750-024564 | DW5761 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9043 | F13 SIB Mezz |
| SIB F13 9 | REV 04 | 750-024564 | DW5754 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9078 | F13 SIB Mezz |
| SIB F13 11 | REV 04 | 710-022600 | DX0826 | F13 SIB |
| B Board | REV 03 | 710-023431 | DX0967 | F13 SIB Mezz |

| | | | | |
|-------------|--------|------------|--------|----------------|
| SIB F13 12 | REV 04 | 750-024564 | DW5794 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9044 | F13 SIB Mezz |
| SIB F2S 0/0 | REV 05 | 710-022603 | DW7897 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7657 | NEO PMB |
| SIB F2S 0/2 | REV 05 | 710-022603 | DW7833 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7526 | NEO PMB |
| SIB F2S 0/4 | REV 05 | 710-022603 | DW7875 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7588 | NEO PMB |
| SIB F2S 0/6 | REV 05 | 710-022603 | DW7860 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7589 | NEO PMB |
| SIB F2S 1/0 | REV 04 | 710-022603 | DW4820 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW8510 | NEO PMB |
| SIB F2S 1/2 | REV 05 | 710-022603 | DW7849 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7525 | NEO PMB |
| SIB F2S 1/4 | REV 05 | 710-022603 | DW7927 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7556 | F2S SIB Mezz |
| SIB F2S 1/6 | REV 05 | 710-022603 | DW7866 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7651 | NEO PMB |
| SIB F2S 2/0 | REV 05 | 710-022603 | DW7880 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7523 | NEO PMB |
| SIB F2S 2/2 | REV 05 | 710-022603 | DW7895 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7591 | NEO PMB |
| SIB F2S 2/4 | REV 05 | 710-022603 | DW7907 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7590 | NEO PMB |
| SIB F2S 2/6 | REV 05 | 710-022603 | DW7785 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7524 | NEO PMB |
| SIB F2S 3/0 | REV 05 | 710-022603 | DW7782 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7634 | NEO PMB |
| SIB F2S 3/2 | REV 05 | 710-022603 | DW7793 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7548 | NEO PMB |
| SIB F2S 3/4 | REV 05 | 710-022603 | DW7779 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7587 | NEO PMB |
| SIB F2S 3/6 | REV 05 | 710-022603 | DW7930 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7505 | NEO PMB |
| SIB F2S 4/0 | REV 05 | 710-022603 | DW7867 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7656 | NEO PMB |
| SIB F2S 4/2 | REV 05 | 710-022603 | DW7917 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7640 | NEO PMB |
| SIB F2S 4/4 | REV 05 | 710-022603 | DW7929 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7643 | NEO PMB |
| SIB F2S 4/6 | REV 05 | 710-022603 | DW7870 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7635 | NEO PMB |
| Fan Tray 0 | REV 06 | 760-024497 | DV7831 | Front Fan Tray |
| Fan Tray 1 | REV 06 | 760-024497 | DV9614 | Front Fan Tray |
| Fan Tray 2 | REV 06 | 760-024502 | DV9618 | Rear Fan Tray |
| Fan Tray 3 | REV 06 | 760-024502 | DV9616 | Rear Fan Tray |
| Fan Tray 4 | REV 06 | 760-024502 | DV7807 | Rear Fan Tray |
| Fan Tray 5 | REV 06 | 760-024502 | DV7828 | Rear Fan Tray |

show chassis in-service-upgrade

| | |
|---------------------------------|--|
| Syntax | <code>show chassis in-service-upgrade</code> |
| Syntax (EX9253 Switches) | <code>show chassis in-service-upgrade</code> |
| Release Information | <p>Command introduced in Junos OS Release 9.0.</p> <p>Command introduced in Junos OS Release 12.3R2, 13.1R2, and 13.2R1 for TX Matrix Plus routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 13.2 for PTX5000 routers.</p> <p>Command introduced in Junos OS Release 13.2X51-D15 for the QFX Series.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 18.2 for EX9253 Switches.</p> |
| Description | <p>Display the status of Flexible PIC Concentrators (FPCs) and their corresponding PICs after the most recent unified in-service software upgrade (ISSU). This command must be issued on the master Routing Engine.</p> |
| | <p> NOTE: Only Intelligent Queuing (IQ) PICs are displayed by this command output. Unified ISSU status for other PIC types is controlled internally by the FPC.</p> |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • <i>request system software abort</i> • <i>request system software in-service-upgrade</i> • <i>Getting Started with Unified In-Service Software Upgrade</i> • <i>Example: Performing a Unified ISSU</i> |
| List of Sample Output | <p>show chassis in-service-upgrade on page 1385</p> <p>show chassis in-service-upgrade (MX2010 Router) on page 1385</p> <p>show chassis in-service-upgrade (MX2020 Router) on page 1385</p> <p>show chassis in-service-upgrade (MX2008 Router) on page 1386</p> <p>show chassis in-service-upgrade (TX Matrix Plus Router) on page 1386</p> <p>show chassis in-service-upgrade (QFX5100 Switch) on page 1387</p> |

[show chassis in-service-upgrade \(EX9253 Switch\) on page 1387](#)

Output Fields [Table 85 on page 1385](#) lists the output fields for the **show chassis in-service-upgrade** command. Output fields are listed in the approximate order in which they appear.

Table 85: show chassis in-service-upgrade Output Fields

| Field Name | Field Description |
|---------------|--|
| Item | Flexible PIC Concentrator (FPC) slot number. |
| Status | FPC and corresponding PIC state. State can be either of the following: <ul style="list-style-type: none"> • Online—FPC is online and running. • Offline—FPC is powered down. |
| Reason | Reason for the state (if offline). |

Sample Output

show chassis in-service-upgrade

```
user@host> show chassis in-service-upgrade
```

| Item | Status | Reason |
|-------|---------|-------------------------|
| FPC 0 | Online | |
| FPC 1 | Online | |
| FPC 2 | Online | |
| PIC 0 | Online | |
| PIC 1 | Online | |
| FPC 3 | Offline | Offlined by CLI command |
| FPC 4 | Online | |
| PIC 1 | Online | |
| FPC 5 | Online | |
| PIC 0 | Online | |
| FPC 6 | Online | |
| PIC 3 | Online | |
| FPC 7 | Online | |

show chassis in-service-upgrade (MX2010 Router)

```
user@host> show chassis in-service-upgrade
```

| Item | Status | Reason |
|-------|--------|--------|
| FPC 0 | Online | |
| FPC 1 | Online | |
| FPC 8 | Online | |
| FPC 9 | Online | |

show chassis in-service-upgrade (MX2020 Router)

```
user@host> show chassis in-service-upgrade
```

| Item | Status | Reason |
|-------|--------|--------|
| FPC 0 | Online | |
| FPC 1 | Online | |

```

FPC 2      Online
FPC 3      Online
FPC 4      Online
FPC 5      Online
FPC 6      Online
FPC 7      Online
FPC 8      Online
FPC 9      Online
FPC 10     Online
FPC 11     Online
FPC 12     Online
FPC 13     Online
FPC 14     Online
FPC 15     Online
FPC 16     Online
FPC 17     Online
FPC 18     Online
FPC 19     Online

```

show chassis in-service-upgrade (MX2008 Router)

```
user@host> show chassis in-service-upgrade
```

| Item | Status | Reason |
|-------|--------|--------|
| FPC 0 | Online | |
| FPC 3 | Online | |
| FPC 5 | Online | |
| FPC 7 | Online | |
| FPC 9 | Online | |

show chassis in-service-upgrade (TX Matrix Plus Router)

```
user@host> show chassis in-service-upgrade
```

```
1cc0-re0:
```

| Item | Status | Reason |
|-------|--------|--------|
| FPC 1 | Online | |
| PIC 0 | Online | |
| FPC 2 | Online | |
| FPC 3 | Online | |
| PIC 1 | Online | |
| FPC 4 | Online | |
| FPC 6 | Online | |
| FPC 7 | Online | |

```
1cc1-re0:
```

| Item | Status | Reason |
|-------|--------|--------|
| FPC 0 | Online | |
| PIC 3 | Online | |
| FPC 1 | Online | |
| FPC 2 | Online | |
| FPC 4 | Online | |
| FPC 6 | Online | |
| FPC 7 | Online | |

```
1cc2-re0:
```

| Item | Status | Reason |
|-------|--------|--------|
| FPC 0 | Online | |
| FPC 2 | Online | |
| FPC 3 | Online | |
| PIC 0 | Online | |
| FPC 4 | Online | |
| FPC 6 | Online | |
| FPC 7 | Online | |
| PIC 1 | Online | |

lcc3-re0:

| Item | Status | Reason |
|-------|--------|--------|
| FPC 0 | Online | |
| PIC 0 | Online | |
| FPC 1 | Online | |
| FPC 2 | Online | |
| FPC 3 | Online | |
| PIC 2 | Online | |
| FPC 4 | Online | |
| FPC 5 | Online | |
| FPC 6 | Online | |
| FPC 7 | Online | |
| PIC 1 | Online | |

show chassis in-service-upgrade (QFX5100 Switch)

```
user@switch> show chassis in-service-upgrade
```

| Item | Status | Reason |
|-------|---------------|--------|
| FPC 0 | Online (ISSU) | |

show chassis in-service-upgrade (EX9253 Switch)

```
user@switch> show chassis in-service-upgrade
```

| Item | Status | Reason |
|-------|--------|--------|
| FPC 0 | Online | |
| FPC 1 | Online | |

show chassis lccs

| | |
|---------------------------------|---|
| Syntax | show chassis lccs |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display the status of all T640 LCC connected to the TX Matrix router. On a TX Matrix Plus router, display the status of all LCC connected to the TX Matrix Plus router. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis lcc on page 504 • <i>Configuring Line-Card Upgrade Groups for Nonstop Software Upgrade</i> • <i>fpc</i> |
| List of Sample Output | show chassis lccs on page 1388 show chassis lccs (TX Matrix Plus router with 3D SIBs) on page 1389 |
| Output Fields | Table 86 on page 1388 lists the output fields for the show chassis lccs command. Output fields are listed in the approximate order in which they appear. |

Table 86: show chassis lccs Output Fields

| Field Name | Field Description |
|------------|--|
| Slot | LCC slot number. |
| State | LCC status: <ul style="list-style-type: none"> • Online—LCC is online and running. • Offline—LCC is powered down. • Empty—No LCC is present. |
| Uptime | How long the LCC has been up and running. |

Sample Output

show chassis lccs

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


| Slot | State | Uptime |
|------|--------|-----------------------|
| 0 | Online | 3 minutes, 17 seconds |
| 1 | Empty | |
| 2 | Online | 3 minutes, 23 seconds |
| 3 | Empty | |

show chassis lccs (TX Matrix Plus router with 3D SIBs)

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

| Slot | State | Uptime |
|------|---------|--|
| 0 | Offline | |
| 1 | Empty | |
| 2 | Online | 1 day, 4 hours, 57 minutes, 7 seconds |
| 3 | Empty | |
| 4 | Online | 1 day, 4 hours, 56 minutes, 58 seconds |
| 5 | Empty | |
| 6 | Empty | |
| 7 | Online | 3 hours, 45 minutes, 41 seconds |

show chassis lcc-mode

Syntax `show chassis lcc-mode`

Release Information Command introduced in Junos OS Release 13.1.

Description (TX Matrix Plus routers only) Display the mode in which LCCs are connected to a TX Matrix Plus router.



NOTE: This command is supported only on TX Matrix Plus routers with 3D SIBs.

Options This command has no options.

Required Privilege Level view

Related Documentation

- [lcc-mode on page 333](#)
- *Routing Matrix with a TXP-Mixed-LCC-3D Configuration*

List of Sample Output [show chassis lcc-mode \(TX Matrix Plus Router with 3D SIBs\) on page 1390](#)

Output Fields [Table 87 on page 1390](#) lists the output fields for the **show chassis lcc-mode** command. Output fields are listed in the approximate order in which they appear.

Table 87: show chassis lcc-mode Output Fields

| Field Name | Field Description |
|------------|---|
| Slot | The LCC number. |
| LCC-mode | Displays the mode of the LCC: <ul style="list-style-type: none"> • T1600—LCC functions as a T1600 router. • T4000—LCC functions as a T4000 router. • EMPTY—LCC is not configured as either a T1600 or a T4000 router. |

Sample Output

[show chassis lcc-mode \(TX Matrix Plus Router with 3D SIBs\)](#)

```
user@host> show chassis lcc-mode
```

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

show chassis location

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 1392 Syntax (TX Matrix Router) on page 1392 Syntax (TX Matrix Plus Router) on page 1392 Syntax (MX Series Router) on page 1392 Syntax (QFX Series) on page 1392 Syntax (OCX Series) on page 1392 |
| Syntax | show chassis location |
| Syntax (TX Matrix Router) | show chassis location <fpc interface (by-name <i>name</i> by-slot fpc number lcc number) lcc number scc> |
| Syntax (TX Matrix Plus Router) | show chassis location <fpc interface (by-name <i>name</i> by-slot fpc number lcc number) lcc number sfc number> |
| Syntax (MX Series Router) | show chassis location <all-members> <local> <member <i>member-id</i> > |
| Syntax (QFX Series) | show chassis location <interconnect-device <i>name</i> > <node-device <i>name</i> > |
| Syntax (OCX Series) | show chassis location |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Display the physical location of the chassis. This command can only be used on the master Routing Engine. |
| Options | none —Display all information about the physical location of the chassis. On a TX Matrix router, display all information about the physical location of the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display all information about the physical location of the TX Matrix Plus router and its attached routers. |

all-members—(MX Series routers only) (Optional) Display the physical location of the chassis for all the member routers in the Virtual Chassis configuration.

fpc—(TX Matrix router and TX Matrix Plus router only) (Optional) Display the physical location of all Flexible PIC Concentrators (FPCs).

interconnect-device *name*—(QFabric systems only) (Optional) Display the physical location of the Interconnect device.

interface by-name *name*—(TX Matrix and TX Matrix Plus routers only) (Optional) Display the physical location of a specified interface name. On a TX Matrix router, this option displays the FPC number and T640 router (line-card chassis) number associated with the specified interface. On a TX Matrix Plus router, this option displays the FPC number and router (line-card chassis) number associated with the specified interface.

interface by-slot *fpc number lcc number*—(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix router, display the global FPC number of an interface by specifying its local FPC number and T640 router (line-card chassis) number. On a TX Matrix Plus router, display the global FPC number of an interface by specifying its local FPC number and router (line-card chassis) number.

- The global FPC number is the FPC slot number when all the FPC slots in the routing matrix are considered: **0** through **31**. On TX Matrix Plus router with 3D SIBs, the value is **0** through **63**. The local FPC number is the FPC slot number on a particular T640 router.
- For **fpc**, replace *number* with a value from **0** through **7**.
- For **lcc**, replace *number* with a value from **0** through **7**.

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the physical location of a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display the physical location of a specified router (line-card chassis) that is connected to a TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Display the physical location of the chassis for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the physical location of the chassis for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

node-device *name*—(QFabric systems only) (Optional) Display the physical location of the Node device.

scc—(TX Matrix routers only) (Optional) Display the physical location of the TX Matrix router (switch-card chassis).

sfc—(TX Matrix Plus routers only) (Optional) Display the physical location of the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level view

Related Documentation

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

List of Sample Output [show chassis location on page 1395](#)
[show chassis location fpc \(TX Matrix Router\) on page 1395](#)
[show chassis location interface by-slot \(TX Matrix Router\) on page 1395](#)
[show chassis location fpc \(TX Matrix Plus Router\) on page 1395](#)
[show chassis location interface by-slot \(TX Matrix Plus Router\) on page 1395](#)
[show chassis location \(QFX Series and OCX Series\) on page 1395](#)
[show chassis location \(QFabric Systems\) on page 1396](#)

Output Fields [Table 88 on page 1394](#) lists the output fields for the **show chassis location** command. Output fields are listed in the approximate order in which they appear.

Table 88: show chassis location Output Fields

| Field Name | Field Description |
|--------------|--|
| country-code | Country code information. |
| postal-code | Postal code information. |
| Building | Building information. |
| Floor | Floor information. |
| Global FPC | Global FPC number. The FPC slot number, when all FPC slots in the routing matrix are considered. The range of values is 0 through 31. On TX Matrix Plus router with 3D SIBs the value is 0 through 63. |
| LATA | Local access transport area information. |

Table 88: show chassis location Output Fields (continued)

| Field Name | Field Description |
|------------------|--|
| LCC | Line-card chassis number. On a TX Matrix router, the number of a particular T640 router connected to the TX Matrix router. On a TX Matrix Plus router, the number of a particular router connected to the TX Matrix Plus router. |
| Local FPC | Local FPC number. On a TX Matrix router, the FPC slot number on a particular T640 router. On a TX Matrix Plus router, the FPC slot number on a particular router. |

Sample Output

show chassis location

```
user@host> show chassis location
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```

show chassis location fpc (TX Matrix Router)

```
user@host> show chassis location fpc
Global FPC    LCC    Local FPC
    17         2        1
    21         2        5
```

show chassis location interface by-slot (TX Matrix Router)

```
user@host> show chassis location interface by-slot fpc 1 lcc 1
Global FPC: 9
```

show chassis location fpc (TX Matrix Plus Router)

```
user@host> show chassis location fpc
Global FPC    LCC    Local FPC
    0         0        0
    1         0        1
```

show chassis location interface by-slot (TX Matrix Plus Router)

```
user@host> show chassis location interface by-slot fpc 2 lcc 1
Global FPC: 10
```

show chassis location (QFX Series and OCX Series)

```
user@switch> show chassis location
```

```
country-code: US  
postal-code: 94404  
Building: Building 2, Floor: 2
```

show chassis location (QFabric Systems)

```
user@switch> show chassis location interconnect-device interconnect1  
  
country-code: US  
postal-code: 94404  
Building: Building 2, Floor: 2
```


show chassis mac-addresses

| | |
|-----------------------|--|
| List of Syntax | Syntax on page 1397 |
| | Syntax (TX Matrix Router) on page 1397 |
| | Syntax (TX Matrix Plus Router) on page 1397 |
| | Syntax (MX Series Router) on page 1397 |
| | Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX2008, and MX10008 Universal Routing Platforms) on page 1397 |
| | Syntax (PTX Series) on page 1397 |
| | Syntax (QFX Series) on page 1397 |
| | Syntax (OCX Series) on page 1398 |
| | Syntax (ACX Series Universal Metro Routers) on page 1398 |
| | Syntax (ACX5048 and ACX5096 Routers) on page 1398 |
| | Syntax (ACX500 Routers) on page 1398 |
| | Syntax (EX9251, EX9253 Switches) on page 1398 |

| | |
|---------------|----------------------------|
| Syntax | show chassis mac-addresses |
|---------------|----------------------------|

| | |
|----------------------------------|---|
| Syntax (TX Matrix Router) | show chassis mac-addresses <lcc <i>number</i> scc> |
|----------------------------------|---|

| | |
|---------------------------------------|--|
| Syntax (TX Matrix Plus Router) | show chassis mac-addresses <lcc <i>number</i> sfc <i>number</i> > |
|---------------------------------------|--|

| | |
|----------------------------------|--|
| Syntax (MX Series Router) | show chassis mac-addresses <all-members> <local> <member <i>member-id</i> > |
|----------------------------------|--|

| | |
|--|----------------------------|
| Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX2008, and MX10008 Universal Routing Platforms) | show chassis mac-addresses |
|--|----------------------------|

| | |
|----------------------------|----------------------------|
| Syntax (PTX Series) | show chassis mac-addresses |
|----------------------------|----------------------------|

| | |
|----------------------------|---|
| Syntax (QFX Series) | show chassis mac-addresses <interconnect-device <i>name</i> > <node-group <i>name</i> > |
|----------------------------|---|

| | |
|--|--|
| Syntax (OCX Series) | show chassis mac-addresses |
| Syntax (ACX Series Universal Metro Routers) | show chassis mac-addresses |
| Syntax (ACX5048 and ACX5096 Routers) | show chassis mac-addresses |
| Syntax (ACX500 Routers) | show chassis mac-addresses |
| Syntax (EX9251, EX9253 Switches) | show chassis mac-addresses |
| Release Information | <p>Command introduced before JUNOS Release 7.4.</p> <p>Command introduced in JUNOS Release 9.0 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in JUNOS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 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 MX10003 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 17.4 for MX204 Universal Routing Platforms.</p> <p>Command introduced in JUNOS 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 | Display the media access control (MAC) addresses for the router, switch chassis, or switch. |
| Options | <p>none—(TX Matrix, TX Matrix Plus routers, QFX Series, and OCX Series Switches) Display the MAC addresses for the router chassis or switch. On a TX Matrix router, display MAC addresses on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display MAC addresses on the TX Matrix Plus router and its attached routers.</p> <p>all-members—(MX Series routers only) (Optional) Display the MAC addresses for all the member routers of the Virtual Chassis configuration.</p> <p>interconnect-device <i>name</i>—(QFabric switches only) (Optional) Display the MAC addresses for the Interconnect device.</p> |

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display MAC addresses for a specified T640 router (or line-card chassis) that is connected to the TX Matrix Plus router. On a TX Matrix Plus router, display MAC addresses for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Display the MAC addresses for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the MAC addresses for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

node-group *name*—(QFabric switches only) (Optional) Display the MAC addresses for the specified Node group.

scc—(TX Matrix routers only) (Optional) Display MAC addresses for the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Display MAC addresses for the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level view

Related Documentation

- *ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping*

List of Sample Output

[show chassis mac-addresses on page 1400](#)
[show chassis mac-addresses \(MX150\) on page 1401](#)
[show chassis mac-addresses \(MX104 Router\) on page 1401](#)
[show chassis mac-addresses \(MX2010 Router\) on page 1401](#)
[show chassis mac-addresses \(MX2020 Router\) on page 1401](#)
[show chassis mac-addresses \(MX2008 Router\) on page 1401](#)
[show chassis mac-addresses \(MX10003\) on page 1401](#)
[show chassis mac-addresses \(MX204\) on page 1402](#)
[show chassis mac-addresses \(MX10008\) on page 1402](#)

[show chassis mac-addresses \(PTX10008 Router\) on page 1402](#)
[show chassis mac-addresses \(TX Matrix Router\) on page 1402](#)
[show chassis mac-addresses \(TX Matrix Plus Router\) on page 1403](#)
[show chassis mac-addresses \(QFX Series and OCX Series \) on page 1403](#)
[show chassis mac-addresses interconnect-device \(QFabric Switches\) on page 1404](#)
[show chassis mac-addresses node-group \(QFabric Switches\) on page 1404](#)
[show chassis mac-addresses \(ACX2000 Universal Metro Router\) on page 1404](#)
[show chassis mac-addresses \(ACX5048 and ACX5096 Routers\) on page 1404](#)
[show chassis mac-addresses \(ACX500 Routers\) on page 1404](#)
[show chassis mac-addresses \(EX9251 Switches\) on page 1404](#)
[show chassis mac-addresses \(EX9253 Switches\) on page 1405](#)

Output Fields Table 89 on page 1400 lists the output fields for the **show chassis mac-addresses** command. Output fields are listed in the approximate order in which they appear.

Table 89: show chassis mac-addresses Output Fields

| Field Name | Field Description |
|--------------------------------|---|
| MAC address information | |
| Public base address | Base address of the MAC addresses allocated to this router or switch, for example 00:24:dc:18:09:40. This address is also printed on the box of the device. Public MAC addresses are those addresses your switch/router assigns to Ethernet interfaces. The public base address is the first MAC address your device assigns to an interface. Consecutive public count MAC addresses are reserved for additional interfaces. |
| | Number of allocated public addresses, for example 64. Public addresses are calculated starting with the public base address. If the public base address is 00:24:dc:18:09:40, then The MAC address of ge-0/0/0 on this device is 00:24:dc:18:09:40, and ge-0/0/1 is 00:24:dc:18:09:41, and so on, up to 64 available addresses. |
| Private base address | Base address of the private MAC addresses allocated to this router or switch. The private base address is the first MAC address after the allocated consecutive public count addresses. For example, if 00:24:dc:18:09:40 is the public base and 0x40 is the public count in hex, then 00:24:dc:18:09:80 would be the private base. |
| Private count | Number of allocated private addresses. |

Sample Output

show chassis mac-addresses

```

user@host> show chassis mac-addresses
MAC address information
Public base address  0:90:69:0:4:0
Public count        1008
Private base address 0:90:69:0:7:f0
Private count        16

```

show chassis mac-addresses (MX150)

```
user@host > show chassis mac-addresses

MAC address information:
  Public base address    f4:cc:55:2b:4c:00
  Public count           1984
  Private base address   f4:cc:55:2b:53:c0
  Private count          64
```

The MAC address displayed is the actual MAC address of the first physical port.

show chassis mac-addresses (MX104 Router)

```
user@host > show chassis mac-addresses

MAC address information:
  Public base address    b0:a8:6e:a1:e8:58
  Public count           2032
  Private base address   b0:a8:6e:a1:f0:48
  Private count          16
```

show chassis mac-addresses (MX2010 Router)

```
user@host> show chassis mac-addresses

MAC address information:
  Public base address    64:87:88:04:50:00
  Public count           1984
  Private base address   64:87:88:04:57:c0
  Private count          64
```

show chassis mac-addresses (MX2020 Router)

```
user@host> show chassis mac-addresses

MAC address information:
  Public base address    2c:21:72:70:20:00
  Public count           4032
  Private base address   2c:21:72:70:2f:c0
  Private count          64
```

show chassis mac-addresses (MX2008 Router)

```
user@host> show chassis mac-addresses

MAC address information:
  Public base address    f4:cc:55:3e:35:00
  Public count           1984
  Private base address   f4:cc:55:3e:3c:c0
  Private count          64
```

show chassis mac-addresses (MX10003)

```
user@host> show chassis mac-addresses

MAC address information:
```

```
Public base address    28:8a:1c:6f:78:5c
Public count           3904
Private base address   28:8a:1c:6f:87:9c
Private count          192
```

show chassis mac-addresses (MX204)

```
user@host> show chassis mac-addresses
```

```
MAC address information:
Public base address    38:4f:49:80:18:00
Public count           2032
Private base address   38:4f:49:80:1f:f0
Private count          16
```

show chassis mac-addresses (MX10008)

```
user@host> show chassis mac-addresses
```

```
MAC address information:
Public base address    30:b6:4f:e9:74:c4
Public count           1856
Private base address   30:b6:4f:e9:7c:04
Private count          192
```

show chassis mac-addresses (PTX10008 Router)

```
user@host> show chassis mac-addresses
```

```
MAC address information:
Public base address    30:b6:4f:0a:7a:bb
Public count           1856
Private base address   30:b6:4f:0a:81:fb
Private count          192
```

show chassis mac-addresses (TX Matrix Router)

```
user@host> show chassis mac-addresses
```

```
scc-re0:
```

```
-----
MAC address information:
Public base address    00:05:85:9e:cc:00
Public count           8064
Private base address   00:05:85:9e:eb:80
Private count          128
```

```
lcc0-re0:
```

```
-----
MAC address information:
Public base address    00:05:85:68:98:00
Public count           2032
Private base address   00:05:85:68:9f:f0
Private count          16
```

```
lcc2-re0:
```

```
-----
MAC address information:
Public base address    00:05:85:68:78:00
Public count           2032
```

```
Private base address  00:05:85:68:7f:f0
Private count         16
```

show chassis mac-addresses (TX Matrix Plus Router)

```
user@host> show chassis mac-addresses

sfc0-re0:
-----
MAC address information:
  Public base address  00:1d:b5:14:00:00
  Public count         65023
  Private base address 00:1d:b5:14:fd:ff
  Private count        512

lcc0-re0:
-----
MAC address information:
  Public base address  00:1f:12:7a:84:00
  Public count         2032
  Private base address 00:1f:12:7a:8b:f0
  Private count        16

lcc1-re0:
-----
MAC address information:
  Public base address  00:22:83:42:48:00
  Public count         2032
  Private base address 00:22:83:42:4f:f0
  Private count        16

lcc2-re0:
-----
MAC address information:
  Public base address  00:1f:12:c3:58:00
  Public count         2032
  Private base address 00:1f:12:c3:5f:f0
  Private count        16

lcc3-re0:
-----
MAC address information:
  Public base address  00:21:59:ef:b8:00
  Public count         2032
  Private base address 00:21:59:ef:bf:f0
  Private count        16
```

show chassis mac-addresses (QFX Series and OCX Series)

```
user@switch> show chassis mac-addresses

MAC address information:
Public base address 02:00:08:00:00:00
Public count 512
Private base address 02:00:00:00:00:00
Private count 64
```

show chassis mac-addresses interconnect-device (QFabric Switches)

```
user@switch> show chassis mac-addresses interconnect-device interconnect1
MAC address information:
  Public base address    00:1f:12:30:9c:c0
  Public count           58
  Private base address   00:1f:12:30:9c:fa
  Private count          6
```

show chassis mac-addresses node-group (QFabric Switches)

```
user@switch> show chassis mac-addresses node-group NW-NG-0
MAC address information:
-----
RE:
  FC MAC base    00:11:00:00:00:00
  FC MAC count   2
  VLAN MAC       00:11:00:00:00:09
EC6007
  Base address   00:00:01:76:00:00
  Count          64
EC6008
  Base address   00:22:83:22:52:ae
  Count          260
```

show chassis mac-addresses (ACX2000 Universal Metro Router)

```
user@switch> show chassis mac-addresses
MAC address information:
  Public base address    84:18:88:c0:2b:00
  Public count           112
  Private base address   84:18:88:c0:2b:70
  Private count          16
```

show chassis mac-addresses (ACX5048 and ACX5096 Routers)

```
user@host> show chassis mac-addresses
FPC 0
  Base address   64:64:9b:5e:0a:00
  Count          1280
```

show chassis mac-addresses (ACX500 Routers)

```
user@host> show chassis mac-addresses
MAC address information:
  Public base address    f0:1c:2d:1b:60:80
  Public count           112
  Private base address   f0:1c:2d:1b:60:f0
  Private count          16
```

show chassis mac-addresses (EX9251 Switches)

```
user@switch> show chassis mac-addresses
```



```
MAC address information:
Public base address    4c:16:fc:90:68:00
Public count           2032
Private base address   4c:16:fc:90:6f:f0
Private count          16
```

show chassis mac-addresses (EX9253 Switch)

```
user@switch> show chassis mac-addresses
```

```
MAC address information:
Public base address    38:4f:49:8f:00:b8
Public count           2330
Private base address   38:4f:49:8f:09:d2
Private count          1766
```

show chassis network-services

| | |
|---------------------------------|---|
| Syntax | <code>show chassis network-services</code> |
| Release Information | <p>Command introduced in Junos OS Release 9.4.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for 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.F5 for PTX Series Routers with third-generation FPCs.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 17.3 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 18.2 for MX10008 Universal Routing Platforms.</p> |
| Description | Display the network services mode that the router is configured to run in—IP Network Services mode, Ethernet Network Services mode, Enhanced IP Network Services mode, Enhanced Ethernet Network Services mode, or Enhanced mode. |
| Options | <p>all-ethernet—All Ethernet network services</p> <p>all-ip—All IP network services</p> <p>enhanced-ethernet—Enhanced ethernet network services</p> <p>enhanced-ip—Enhanced IP network services</p> <p>enhanced-mode—Enhanced network services</p> <p>ethernet—Ethernet network services</p> <p>ip—IP network services</p> <p>lan—Ethernet LAN services</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • enhanced-mode on page 286 |
| List of Sample Output | <p>show chassis network services on page 1407</p> <p>show chassis network services (MX104 Router) on page 1407</p> <p>show chassis network services (MX2010 Router) on page 1407</p> <p>show chassis network services (MX2020 Router) on page 1407</p> <p>show chassis network services (MX2008 Router) on page 1407</p> <p>show chassis network-services (MX10003 Router) on page 1407</p> |

[show chassis network-services \(MX204 Router\) on page 1408](#)

[show chassis network-services \(MX10008 Router\) on page 1408](#)

[show chassis network services \(PTX Router with third-generation FPCs\) on page 1408](#)

Output Fields [Table 90 on page 1407](#) lists the output fields for the **show chassis network services** command. Output fields are listed in the approximate order in which they appear.

Table 90: show chassis network services Output Fields

| Field Name | Field Description |
|------------------------------|--|
| Network Services Mode | Network services mode configured for the router: <ul style="list-style-type: none"> • IP—IP Network Services mode. • Ethernet—Ethernet Network Services mode. • enhanced-ip—Enhanced IP Network Services mode • enhanced-ethernet—Enhanced Ethernet Network Services mode • Enhanced-Mode—Enhanced mode for PTX Series routers that have third-generation FPCs installed. See enhanced-mode. |

Sample Output

show chassis network services

```
user@host> show chassis network services
Network Services Mode: IP
```

show chassis network services (MX104 Router)

```
user@host> show chassis network services
Network Services Mode: IP
```

show chassis network services (MX2010 Router)

```
user@host> show chassis network services
Network Services Mode: Enhanced-IP
```

show chassis network services (MX2020 Router)

```
user@host> show chassis network services
Network Services Mode: Enhanced-IP
```

show chassis network services (MX2008 Router)

```
user@host> show chassis network-services
Network Services Mode: Enhanced-IP
```

show chassis network-services (MX10003 Router)

```
user@host> show chassis network-services
```

```
Network Services Mode: Enhanced-IP
```

show chassis network-services (MX204 Router)

```
user@host> show chassis network-services
```

```
Network Services Mode: Enhanced-IP
```

show chassis network-services (MX10008 Router)

```
user@host> show chassis network-services
```

```
Network Services Mode: Enhanced-IP
```

show chassis network services (PTX Router with third-generation FPCs)

```
user@host> show chassis network services
```

```
Network Services Mode: Enhanced-Mode
```

show chassis oss-map

| | |
|---------------------------------|--|
| Syntax | show chassis oss-map |
| Release Information | Command introduced in Junos OS Release 12.3R3, 13.1R2, and 13.2R1 for T4000 routers. |
| Description | (T4000 routers only) Display the operations support systems (OSS) mapping details. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis on page 235 • Example: Configuring a T4000 Chassis to Represent a T640 Chassis on page 237 • oss-map on page 365 |
| Output Fields | Table 91 on page 1409 lists the output fields for the show chassis oss-map command. Output fields are listed in the approximate order in which they appear. |

Table 91: show chassis oss-map Output Fields

| Field Name | Field Description |
|--------------|-------------------------------------|
| Chassis type | Displays the original chassis type. |
| Oss-map | Displays the mapped chassis type. |

Sample Output

```
user@T4000# show chassis oss-map
Chassis type      Oss-map
T4000             T640
```

show chassis pic

| | |
|--|---|
| List of Syntax | <p>Syntax on page 1410</p> <p>Syntax (TX Matrix and TX Matrix Plus Routers) on page 1410</p> <p>Syntax (MX Series Routers and EX Series Switches) on page 1410</p> <p>Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) on page 1410</p> <p>Syntax (PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers) on page 1410</p> <p>Syntax (QFX Series) on page 1410</p> <p>Syntax (OCX Series) on page 1411</p> <p>Syntax (ACX Series Universal Access Routers) on page 1411</p> <p>Syntax (ACX5048 and ACX5096 Routers) on page 1411</p> <p>Syntax (ACX500 Routers) on page 1411</p> |
| Syntax | <code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code> |
| Syntax (TX Matrix and TX Matrix Plus Routers) | <code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> <fcc <i>number</i>></code> |
| Syntax (MX Series Routers and EX Series Switches) | <code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> <all-members> <local> <member <i>member-id</i>></code> |
| Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) | <code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code> |
| Syntax (PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers) | <code>show chassis pic transport fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code> |
| Syntax (QFX Series) | <code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> <interconnect-device <i>name</i> (fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i>)> <node-device <i>name</i> pic-slot <i>slot-number</i>></code> |

| | |
|--|--|
| Syntax (OCX Series) | <code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code> |
| Syntax (ACX Series Universal Access Routers) | <code>show chassis pic fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code> |
| Syntax (ACX5048 and ACX5096 Routers) | <code>show chassis pic (fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i>)</code> |
| Syntax (ACX500 Routers) | <code>show chassis pic (fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i>)</code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.2 for ACX Series Universal Access Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 13.2 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>transport option introduced in Junos OS Release 16.1R1 for MX Series Routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.</p> <p>Command introduced in Junos OS Release 17.4 for MX204 3D Universal Edge Routers.</p> |
| Description | Display status information about the PIC installed in the specified Flexible PIC Concentrator (FPC) and PIC slot. |
| Options | <p>fpc-slot <i>slot-number</i>—Display information about the PIC in this particular FPC slot:</p> <ul style="list-style-type: none"> On a TX Matrix router, if you specify the number of the T640 router by using the lcc <i>number</i> option (the recommended method), replace <i>slot-number</i> with a value from 0 through 7. Otherwise, replace <i>slot-number</i> with a value from 0 through 31. <p>Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 router by using the lcc <i>number</i> option (the recommended method), replace <i>slot-number</i> with a value from 0 through 7. Otherwise, replace <i>slot-number</i> with a value from 0 through 31. For example, the following commands have the same result:</p> <pre> user@host> show chassis pic fpc-slot 1 lcc 1 pic-slot 1 user@host> show chassis pic fpc-slot 9 pic-slot 1 </pre> <ul style="list-style-type: none"> M120 routers only—Replace <i>slot-number</i> with a value from 0 through 5. |

- MX80 routers only—Replace **slot-number** with a value from 0 through 1.
- MX104 routers only—Replace **slot-number** with a value from 0 through 2.
- MX240 routers only—Replace **slot-number** with a value from 0 through 2.
- MX480 routers only—Replace **slot-number** with a value from 0 through 5.
- MX960 routers only—Replace **slot-number** with a value from 0 through 11.
- MX2010 routers only—Replace **slot-number** with a value from 0 through 9.
- MX2020 routers only—Replace **slot-number** with a value from 0 through 19.
- MX2008 routers only—Replace **slot-number** with a value from 0 through 9.
- MX10003 routers only—Replace **slot-number** with a value from 0 through 1.
- Other routers—Replace **slot-number** with a value from 0 through 7.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—Replace **slot-number** with 0.
 - EX4200 switches in a Virtual Chassis configuration—Replace **slot-number** with a value from 0 through 9 (switch's member ID).
 - EX8208 switches—Replace **slot-number** with a value from 0 through 7 (line card).
 - EX8216 switches—Replace **slot-number** with a value from 0 through 15 (line card).
- QFX Series:
 - QFX3500, QFX3600, QFX5100, and OCX Series standalone switches—Replace **slot-number** with 0. In the command output, FPC refers to a line card. The FPC number equals the slot number for the line card.
 - QFabric systems—Replace **slot-number** with any number between 0 and 15. In the command output, FPC refers to a line card. The FPC number equals the slot number for the line card.

all-members—(MX Series routers and EX Series switches only) (Optional) Display PIC information for all member routers in the Virtual Chassis configuration.

interconnect-device name—(QFabric systems only) (Optional) Display PIC information for a specified Interconnect device.

lcc number—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display PIC information for a specified T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display PIC information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

local—(MX Series routers and EX Series switches only) (Optional) Display PIC information for the local Virtual Chassis member.

member *member-id*—(MX Series routers and EX Series switches only) (Optional) Display PIC information for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

node-device *name*—(QFabric systems only) (Optional) Display PIC information for a specified Node device.

pic-slot *slot-number*—Display information about the PIC in this particular PIC slot. For routers, replace *slot-number* with a value from 0 through 3. For EX3200 and EX4200 switches, replace *slot-number* with 0 for built-in network interfaces and 1 for interfaces on uplink modules. For EX8208 and EX8216 switches, replace *slot-number* with 0. For the QFX3500 standalone switch and the QFabric system, replace *slot-number* with 0 or 1.

transport—Display PIC information for optical transport network.

Required Privilege Level view

Related Documentation

- [request chassis pic on page 512](#)
- [show chassis hardware on page 1369](#)
- [100-Gigabit Ethernet Type 4 PIC with CFP Overview](#)

List of Sample Output

- [show chassis pic fpc-slot pic-slot on page 1417](#)
- [show chassis pic fpc-slot pic-slot \(PIC Offline\) on page 1417](#)
- [show chassis pic fpc-slot pic-slot \(FPC Offline\) on page 1418](#)
- [show chassis pic fpc-slot pic-slot \(FPC Not Present\) on page 1418](#)
- [show chassis pic fpc-slot pic-slot \(PIC Not Present\) on page 1418](#)
- [show chassis pic fpc-slot 3 pic-slot 0 \(M120 Router\) on page 1418](#)
- [show chassis pic fpc-slot pic-slot \(MX150\) on page 1418](#)
- [show chassis pic fpc-slot pic-slot \(MX104 Router\) on page 1418](#)

[show chassis pic fpc-slot pic-slot \(MX960 Router with Bidirectional Optics\) on page 1419](#)

[show chassis pic fpc-slot pic-slot \(MX480 Router with 100-Gigabit Ethernet MIC\) on page 1419](#)

[show chassis pic fpc-slot pic-slot \(MX240, MX480, MX960 Routers with Application Services Modular Line Card\) on page 1420](#)

[show chassis pic fpc-slot pic-slot \(MX960 Router with MPC5EQ\) on page 1420](#)

[show chassis pic fpc-slot pic-slot \(MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC\) on page 1420](#)

[show chassis pic fpc-slot pic-slot on page 1420](#)

[show chassis pic fpc-slot pic-slot \(MX10003 Routers\) on page 1421](#)

[show chassis pic fpc-slot pic-slot \(MX204 Routers\) on page 1422](#)

[show chassis pic fpc-slot pic-slot \(PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC\) on page 1422](#)

[show chassis pic fpc-slot pic-slot \(MX480 Router with MPC4E\) on page 1423](#)

[show chassis pic fpc-slot pic-slot \(MX480 router with OTN Interface\) on page 1423](#)

[show chassis pic fpc-slot pic-slot \(MX2010 Router with OTN Interfaces\) on page 1423](#)

[show chassis pic fpc-slot pic-slot \(MX2010 Router\) on page 1424](#)

[show chassis pic fpc-slot pic-slot \(MX2020 Router\) on page 1424](#)

[show chassis pic fpc-slot pic-slot \(MX2020 Router with MPC5EQ and MPC6E\) on page 1424](#)

[show chassis pic fpc-slot pic-slot \(MX2020 Router with MPC6E and OTN MIC\) on page 1425](#)

[show chassis pic fpc-slot pic-slot \(MX2020 Router with MPC4E\) on page 1425](#)

[show chassis pic fpc-slot pic-slot \(MX2010 Router\) on page 1426](#)

[show chassis pic fpc-slot pic-slot \(T1600 Router with 100-Gigabit Ethernet PIC\) on page 1426](#)

[show chassis pic fpc-slot pic-slot lcc \(TX Matrix Router\) on page 1426](#)

[show chassis pic fpc-slot pic-slot lcc \(TX Matrix Plus Router\) on page 1426](#)

[show chassis pic fpc-slot pic-slot \(Next-Generation SONET/SDH SFP\) on page 1427](#)

[show chassis pic fpc-slot pic-slot \(12-Port T1/E1\) on page 1427](#)

[show chassis pic fpc-slot 0 pic-slot 1 \(4x CHOC3 SONET CE SFP\) on page 1427](#)

[show chassis pic fpc-slot 0 pic-slot 0 \(SONET/SDH OC3/STM1 \[Multi-Rate\] MIC with SFP\) on page 1428](#)

[show chassis pic fpc-slot 3 pic-slot 0 \(8-port Channelized SONET/SDH OC3/STM1 \[Multi-Rate\] MIC with SFP\) on page 1428](#)

[show chassis pic fpc-slot 5 pic-slot 0 \(4-port Channelized SONET/SDH OC3/STM1 \[Multi-Rate\] MIC with SFP\) on page 1428](#)

[show chassis pic fpc-slot 1 pic-slot 0 \(1-port OC192/STM64 MIC with XFP\) on page 1428](#)

[show chassis pic fpc-slot 1 pic-slot 2 \(8-port DS3/E3 MIC\) on page 1429](#)

[show chassis pic fpc-slot pic-slot \(OTN\) on page 1429](#)

[show chassis pic fpc-slot pic-slot \(QFX3500 Switch\) on page 1429](#)

[show chassis pic fpc-slot pic-slot \(QFX5100 Switches and OCX Series \) on page 1429](#)

[show chassis pic interconnect-device fpc-slot pic-slot \(QFabric Systems\) on page 1429](#)

[show chassis pic node-device fpc-slot pic-slot \(QFabric System\) on page 1430](#)

[show chassis pic fpc-slot 0 pic-slot 1 \(ACX2000 Universal Access Router\) on page 1431](#)

[show chassis pic FPC-slot 1 PIC-slot 0 \(MX Routers with Media Services Blade \[MSB\]\) on page 1431](#)

[show chassis pic FPC slot 1, PIC slot 2 \(MX Routers with Media Services Blade \[MSB\]\) on page 1431](#)

[show chassis pic transport fpc-slot pic-slot \(PTX Series Packet Transport Routers\) on page 1431](#)
[show chassis pic transport fpc-slot pic-slot \(MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC\) on page 1431](#)
[show chassis pic fpc-slot 0 pic-slot 0 \(ACX5096 Router\) on page 1431](#)
[show chassis pic fpc-slot 0 pic-slot 0 \(ACX5048 Router\) on page 1435](#)
[show chassis pic fpc-slot 0 pic-slot 0 \(ACX500 Router\) on page 1436](#)
[show chassis pic fpc-slot 0 pic-slot 1 \(ACX500 Router\) on page 1436](#)
[show chassis pic transport fpc-slot pic-slot \(PTX Series Packet Transport Routers\) on page 1436](#)
[show chassis pic transport fpc-slot pic-slot \(MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC\) on page 1436](#)
[show chassis pic fpc-slot 7 pic-slot 1 \(MX960 Router MPC10E-15C-MRATE Line Card\) on page 1436](#)

Output Fields Table 92 on page 1415 lists the output fields for the **show chassis pic** command. Output fields are listed in the approximate order in which they appear.

Table 92: show chassis pic Output Fields

| Field Name | Field Description |
|-------------------------|---|
| Type | <p>PIC type.</p> <p>NOTE: On the 1-port OC192/STM64 MICs with the SDH framing mode, the type is displayed as MIC-3D-1STM64-XFP and with the SONET framing mode, the type is displayed as MIC-3D-1OC192-XFP. By default, the 1-port OC192/STM64 MICs displays the type as MIC-3D-1OC192-XFP.</p> |
| Account Layer2 Overhead | (MX Series routers) Indicates whether functionality to count the Layer 2 overhead bytes in the interface statistics at the PIC level is enabled or disabled. |
| ASIC type | Type of ASIC on the PIC. |
| State | <p>Status of the PIC. State is displayed only when a PIC is in the slot.</p> <ul style="list-style-type: none"> • Online— PIC is online and running. • Offline—PIC is powered down. • Empty—No PIC is present. • Present—PIC is plugged in. The PIC is not powered on or operational. • Onlining—PIC is in the process of going online. PICs and rest of the hardware is initializing. • Offlining—PIC is in the process of going offline. PIC and rest of the hardware is being shutdown down to take the offline gracefully. • Fault—PIC is in an alarmed state and the PIC is not operational. |
| PIC version | PIC hardware version. |
| Uptime | How long the PIC has been online. |

Table 92: show chassis pic Output Fields (continued)

| Field Name | Field Description |
|---|--|
| Package | (Multiservices PICs only) Services package supported: Layer-2 or Layer-3 . |
| Port Number | Port number for the PIC. |
| Cable Type | Type of cable connected to the port: LH , LX , or SX . |
| PIC Port Information (MX480 Router 100-Gigabit Ethernet CFP) | Port-level information for the PIC. <ul style="list-style-type: none"> • Port—Port number • Cable type—Type of optical transceiver installed. • Fiber type—Type of fiber. SM is single-mode. • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. • Wavelength—Wavelength of the transmitted signal. Uplinks and downlinks are always 1550 nm. There is a separate fiber for each direction • Xcvr Firmware—Transceiver firmware version. |
| PIC Port Information (MX960 Router Bidirectional Optics) | Port-level information for the PIC. <ul style="list-style-type: none"> • Port—Port number • Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed. Uplink interfaces display -U. Down link interfaces display -D. • Fiber type—Type of fiber. SM is single-mode. • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. <ul style="list-style-type: none"> • BX10-10-km bidirectional optics. • BX40-40-km bidirectional optics. • SFP-LX-40-km SFP optics. • Wavelength—Wavelength of the transmitted signal. Uplinks are always 1310 nm. Downlinks are either 1490 nm or 1550 nm. |
| PIC Port Information (Next-Generation SONET/SDH SFP) | Port-level information for the next-generation SONET/SDH SFP PIC. <ul style="list-style-type: none"> • Port—Port number. • Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed. • Fiber type—Type of fiber: SM (single-mode) or MM (multimode). • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. • Wavelength—Wavelength of the transmitted signal. Next-generation SONET/SDH SFPs use 1310 nm. |

Table 92: show chassis pic Output Fields (continued)

| Field Name | Field Description |
|--|--|
| PIC port information (MX104 router) | Port-level information for the PIC. <ul style="list-style-type: none"> • Port—Port number • Cable type—Type of optical transceiver installed. • Fiber type—Type of fiber. SM is single-mode. • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. • Wavelength—Wavelength of the transmitted signal. • Xcvr Firmware—Firmware version of the transceiver. |
| Port speed information | Information pertaining to port speed: <ul style="list-style-type: none"> • Port—Port number. • PFE—Packet Forwarding Engine slot number. • Capable Port Speed—Speed supported by each port. |
| Multirate Mode | Rate-selectability status for the MIC: Enabled or Disabled . |
| Channelization | Indicates whether channelization is enabled or disabled on the DS3/E3 MIC. |
| Administrative State | Indicates the administrative state of the PIC. Possible values are: In Service (Default) and Out of Service. |
| Operational State | Indicates the operational state of the PIC. Possible values are: Normal and Fault. |

Sample Output

show chassis pic fpc-slot pic-slot

```

user@host> show chassis pic fpc-slot 2 pic-slot 0
PIC fpc slot 2 pic slot 0 information:
  Type                10x 1GE(LAN), 1000 BASE
  ASIC type           H chip
  State               Online
  PIC version         1.1
  Uptime              1 day, 50 minutes, 58 seconds
PIC Port Information:
  Port      Cable      Xcvr      Xcvr Vendor
  Number    Type        Vendor Name  Part Number
  0         GIGE 1000EX  FINISAR CORP.  FTRJ8519P1BNL-J3
  1         GIGE 1000EX  FINISAR CORP.  FTRJ-8519-7D-JUN

```

show chassis pic fpc-slot pic-slot (PIC Offline)

```

user@host> show chassis pic fpc-slot 1 pic-slot 0
PIC fpc slot 1 pic slot 0 information:
  State              Offline

```

show chassis pic fpc-slot pic-slot (FPC Offline)

```
user@host> show chassis pic fpc-slot 1 pic-slot 0
FPC 1 is not online
```

show chassis pic fpc-slot pic-slot (FPC Not Present)

```
user@host> show chassis pic fpc-slot 4 pic-slot 0
FPC slot 4 is empty
```

show chassis pic fpc-slot pic-slot (PIC Not Present)

```
user@host> show chassis pic fpc-slot 5 pic-slot 2
FPC 5, PIC 2 is empty
```

show chassis pic fpc-slot 3 pic-slot 0 (M120 Router)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
PC slot 3, PIC slot 0 information:
  Type                2x G/E IQ, 1000 BASE
  ASIC type            IQ GE 2 VLAN-TAG FPGA
  State                Online
  PIC version          1.16
  Uptime               3 hours, 3 minutes

PIC Port Information:
  Port      Cable      Xcvr      Xcvr Vendor
  Number    Type        Vendor Name  Part Number
  0         GIGE 1000SX  FINISAR CORP.  FTRJ8519P1BNL-J3
  1         GIGE 1000SX  FINISAR CORP.  FTRJ-8519-7D-JUN
```

show chassis pic fpc-slot pic-slot (MX150)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                Virtual
  State                Online
  PIC version          0.0
  Uptime               7 days, 19 hours, 44 minutes, 40 seconds

PIC port information:
  Fiber      Xcvr vendor      Wave-      Xcvr
  Port Cable type  type  Xcvr vendor      part number  length
Firmware
  10  GIGE 1000T  n/a  Methode Elec.    SP7041-M1-JN  n/a      0.0
  11  GIGE 1000T  n/a  Methode Elec.    SP7041-M1-JN  n/a      0.0
```

show chassis pic fpc-slot pic-slot (MX104 Router)

```
user@host> show chassis pic fpc-slot 1 pic-slot 1
```

```
FPC slot 1, PIC slot 1 information:
  Type                10x 1GE(LAN) -E  SFP
  State                Online
  PIC version          1.1
  Uptime               1 hour, 30 minutes, 59 seconds

PIC port information:
```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr |
|------|---------------|------------|---------------|------------------|-------------|------|
| 3 | GIGE 1000T | n/a | Methode Elec. | SP7041-M1-JN | n/a | 0.0 |
| 6 | GIGE 1000LX10 | SM | FINISAR CORP. | FTLF1318P2BTL-J1 | 1310 nm | 0.0 |
| 8 | GIGE 1000T | n/a | Methode Elec. | SP7041-M1-JN | n/a | 0.0 |
| 9 | GIGE 1000T | n/a | Methode Elec. | SP7041-M1-JN | n/a | 0.0 |

show chassis pic fpc-slot pic-slot (MX960 Router with Bidirectional Optics)

```
user@host> show chassis pic fpc-slot 4 pic-slot 1

FPC slot 4, PIC slot 1 information:
  Type                10x 1GE(LAN)
  Account Layer2 Overhead Enabled
  State                Online
  PIC version          0.0
  Uptime               18 days, 5 hours, 41 minutes, 54 seconds

PIC port information:
```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wavelength |
|------|---------------------|------------|------------------|------------------|------------|
| 0 | SFP-1000BASE-BX10-D | SM | SumitomoElectric | SBP6H44-J3-BW-49 | 1490 nm |
| 1 | SFP-1000BASE-BX10-D | SM | SumitomoElectric | SBP6H44-J3-BW-49 | 1490 nm |
| 2 | SFP-1000BASE-BX10-D | SM | SumitomoElectric | SBP6H44-J3-BW-49 | 1490 nm |
| 3 | SFP-1000BASE-BX10-D | SM | OCP | TRXBG1LXDBVM2-JW | 1490 nm |
| 4 | SFP-1000BASE-BX10-D | SM | OCP | TRXBG1LXDBVM2-JW | 1490 nm |
| 5 | SFP-1000BASE-BX10-U | SM | SumitomoElectric | SBP6H44-J3-BW-31 | 1310 nm |
| 6 | SFP-1000BASE-BX10-U | SM | SumitomoElectric | SBP6H44-J3-BW-31 | 1310 nm |
| 7 | SFP-1000BASE-BX10-U | SM | OCP | TRXBG1LXDBBMH-J1 | 1310 nm |
| 8 | SFP-1000BASE-BX10-U | SM | OCP | TRXBG1LXDBBMH-J1 | 1310 nm |
| 9 | SFP-1000BASE-BX10-U | SM | SumitomoElectric | SBP6H44-J3-BW-31 | 1310 nm |

show chassis pic fpc-slot pic-slot (MX480 Router with 100-Gigabit Ethernet MIC)

```
user@host> show chassis pic fpc-slot 1 pic-slot 2

FPC slot 1, PIC slot 2 information:
  Type                1X100GE CFP
  State                Online
  PIC version          2.10
  Uptime               4 minutes, 48 seconds

PIC port information:
```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wavelength |
|------|--------------|------------|---------------|------------------|------------|
| 0 | 100GBASE LR4 | SM | FINISAR CORP. | FTLC1181RDNS-J3 | 1310 nm |

```
Xcvr vendor
firmware version
1.8
```

show chassis pic fpc-slot pic-slot (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```
user@host>show chassis pic fpc-slot 1 pic-slot 2
```

```
FPC slot 1, PIC slot 2 information:
```

```
Type          AS-MXC
State          Online
PIC version    1.0
Uptime         11 hours, 18 minutes, 3 seconds
```

show chassis pic fpc-slot pic-slot (MX960 Router with MPC5EQ)

```
user@host> show chassis pic fpc-slot 0 pic-slot 3
```

```
FPC slot 0, PIC slot 3 information:
```

```
Type          1X100GE CFP2 OTN
State          Online
PIC version    0.0
Uptime         1 hour, 22 minutes, 42 seconds
```

```
PIC port information:
```

| | Fiber | Xcvr vendor | Wave- | Xcvr |
|-----------------|--------------|-------------|-------------|------------------------------|
| Port Cable type | type | Xcvr vendor | part number | length |
| Firmware | | | | |
| 0 | 100GBASE LR4 | n/a | Oclaro Inc. | TRB5E20FNF-LF150 1309 nm 1.0 |

show chassis pic fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
```

```
FPC slot 3, PIC slot 0 information:
```

```
Type          1X100GE DWDM CFP2-ACO
State          Online
PIC version    1.3
Uptime         9 hours, 4 minutes, 43 seconds
```

```
PIC port information:
```

| | Fiber | Xcvr vendor | Wave- | Xcvr |
|-----------------|------------|-------------|-------------|--------------------------|
| Port Cable type | type | Xcvr vendor | part number | length |
| Firmware | | | | |
| 0 | 100G LH | SM | OCLARO | TRB100AJ-01 1528.77 nm - |
| | 1568.36 nm | 20.10 | | |

show chassis pic fpc-slot pic-slot

```
user@host> show chassis pic fpc-slot 1 pic-slot 1
```

```
FPC slot 1, PIC slot 1 information:
```

```
Type          MIC1-MACSEC
```


| | | | | | | | | |
|-------------------------|-------------|---------------------|-------------------------------|-------------|-----------------|--------|-------|------|
| State | | | Online | | | | | |
| PIC version | | | 1.5 | | | | | |
| Uptime | | | 2 hours, 52 minutes, 1 second | | | | | |
| PIC port information: | | | | | | | | |
| | | | Fiber | | Xcvr vendor | | Wave- | Xcvr |
| Port | Cable type | | type | Xcvr vendor | part number | length | | |
| Firmware | | | | | | | | |
| 8 | 40GBASE SR4 | | MM | AVAGO | AFBR-79EQDZ-JU2 | 850 nm | 0.0 | |
| 10 | 40GBASE SR4 | | MM | AVAGO | AFBR-79EQDZ-JU2 | 850 nm | 0.0 | |
| Port speed information: | | | | | | | | |
| Port | PFE | Capable | Port Speeds | | | | | |
| 0 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 1 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 2 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 3 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 4 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 5 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 6 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 7 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 8 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 9 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 10 | 0 | 4x10GE, 40GE, 100GE | | | | | | |
| 11 | 0 | 4x10GE, 40GE, 100GE | | | | | | |

show chassis pic fpc-slot pic-slot (MX10003 Routers)

```
user@host > show chassis pic fpc-slot 0 pic-slot 0
```

| | | | | | | | |
|-------------------------------------|-------------|----------------------------------|-------------|-----------------|--|--------|------|
| FPC slot 0, PIC slot 1 information: | | | | | | | |
| Type | | MIC1 | | | | | |
| State | | Online | | | | | |
| PIC version | | 1.5 | | | | | |
| Uptime | | 13 hours, 54 minutes, 33 seconds | | | | | |
| PIC port information: | | | | | | | |
| | | Fiber | | Xcvr vendor | | Wave- | Xcvr |
| Port | Cable type | type | Xcvr vendor | part number | | length | |
| Firmware | | | | | | | |
| 0 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU2 | | 850 nm | 0.0 |
| 11 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU2 | | 850 nm | 0.0 |
| Port speed information: | | | | | | | |
| Port | PFE | Capable | Port Speeds | | | | |
| 0 | 0 | 4x10GE, | 40GE, 100GE | | | | |
| 1 | 0 | 4x10GE, | 40GE, 100GE | | | | |
| 2 | 0 | 4x10GE, | 40GE, 100GE | | | | |
| 3 | 0 | 4x10GE, | 40GE, 100GE | | | | |
| 4 | 1 | 4x10GE, | 40GE, 100GE | | | | |
| 5 | 1 | 4x10GE, | 40GE, 100GE | | | | |
| 6 | 1 | 4x10GE, | 40GE, 100GE | | | | |
| 7 | 1 | 4x10GE, | 40GE, 100GE | | | | |

| | | |
|----|---|---------------------|
| 8 | 2 | 4x10GE, 40GE, 100GE |
| 9 | 2 | 4x10GE, 40GE, 100GE |
| 10 | 2 | 4x10GE, 40GE, 100GE |
| 11 | 2 | 4x10GE, 40GE, 100GE |

show chassis pic fpc-slot pic-slot (MX204 Routers)

```
user@host > show chassis pic fpc-slot 0 pic-slot 0
```

FPC slot 0, PIC slot 0 information:

| | |
|-------------|--|
| Type | 4XQSP28 PIC |
| State | Online |
| PIC version | 0.0 |
| Uptime | 2 days, 7 hours, 6 minutes, 10 seconds |

PIC port information:

| | | Fiber | Xcvr vendor | Wave- | Xcvr |
|------|------------------------|-------|-----------------|-----------------|-------------|
| Port | Cable type | type | Xcvr vendor | part number | length |
| 0 | 100GBASE SR4 REV 01 | MM | JUNIPER-FINISAR | FTLC9551REPM-J1 | 850 nm 0.0 |
| 1 | 4X10GBASE SR REV 01 | MM | AVAGO | AFBR-79EEPZ-JU2 | 850 nm 0.0 |
| 2 | 100GBASE LR4 REV 01 | SM | JUNIPER-FINISAR | FTLC1151RDPL-J3 | 1302 nm 0.0 |
| 3 | 100GBASE LR4 REV 01 | SM | JUNIPER-FINISAR | FTLC1151RDPL-J3 | 1302 nm 0.0 |

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---------------------|
| 0 | 0 | 4x10GE, 40GE, 100GE |
| 1 | 0 | 4x10GE, 40GE, 100GE |
| 2 | 0 | 4x10GE, 40GE, 100GE |
| 3 | 0 | 4x10GE, 40GE, 100GE |

show chassis pic fpc-slot pic-slot (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```
user@host > show chassis pic fpc-slot 4 pic-slot 0
```

FPC slot 4, PIC slot 0 information:

| | |
|-------------|--|
| Type | 5X100GE DWDM CFP2-ACO |
| State | Online |
| PIC version | 1.17 |
| Uptime | 1 day, 5 hours, 15 minutes, 17 seconds |

PIC port information:

| | | Fiber | Xcvr vendor | Wave- | Xcvr |
|------|----------------------------|-------|-----------------|--------------|--------------|
| Port | Cable type | type | Xcvr vendor | part number | length |
| 0 | 100G LH 1568.36 nm 1.0 | SM | MULTILANE SAL | ML4030-ACO-2 | 1528.77 nm - |
| 1 | 100G LH 1568.36 nm 1.0 | SM | MULTILANE SAL | ML4030-ACO-2 | 1528.77 nm - |
| 2 | 100G LH 1568.36 nm 1.16 | SM | JUNIPER-FUJITSU | FIM38500/222 | 1528.77 nm - |

```

3    100G LH          SM    FUJITSU          FIM38500/222    1528.77 nm -
1568.36 nm 1.16
4    100G LH          SM    FUJITSU          FIM38500/222    1528.77 nm -
1568.36 nm 1.16

```

show chassis pic fpc-slot pic-slot (MX480 Router with MPC4E)

```

user@host> show chassis pic fpc-slot 3 pic-slot 0
FPC slot 3, PIC slot 0 information:
  Type          4x10GE SFPP
  State          Online
  PIC version    0.0
  Uptime        41 seconds

PIC port information:

```

| | | Fiber | | Xcvr vendor | Wave- | Xcvr |
|----------|------------|-------|--------------|----------------|--------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | |
| Firmware | | | | | | |
| 0 | 10GBASE SR | MM | OPNEXT, INC. | TRS2001EM-0014 | 850 nm | 0.0 |
| 1 | 10GBASE SR | MM | OPNEXT, INC. | TRS2001EM-0014 | 850 nm | 0.0 |

show chassis pic fpc-slot pic-slot (MX480 router with OTN Interface)

```

user@host> show chassis pci fpc-slot 4 pic-slot 0
FPC slot 4, PIC slot 0 information:
  Type          12X10GE SFPP OTN
  State          Online
  PIC version    0.0
  Uptime        5 hours, 28 minutes, 23 seconds

PIC port information:

```

| | | Fiber | | Xcvr vendor | Wave- | Xcvr |
|----------|------------|-------|---------------|------------------|--------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | |
| Firmware | | | | | | |
| 0 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 1 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 2 | 10GBASE SR | MM | OPNEXT, INC. | TRS2001EM-0014 | 850 nm | 0.0 |

show chassis pic fpc-slot pic-slot (MX2010 Router with OTN Interfaces)

```

user@host> show chassis pic fpc-slot 9 pic-slot 0
FPC slot 9, PIC slot 0 information:
  Type          2X100GE CFP2 OTN
  State          Online
  PIC version    1.9
  Uptime        3 hours, 56 minutes, 16 seconds

PIC port information:

```

| | | Fiber | | Xcvr vendor | Wave- | Xcvr |
|--|--|-------|--|-------------|-------|------|
|--|--|-------|--|-------------|-------|------|

| Port | Cable type | type | Xcvr vendor | part number | length | |
|----------|----------------|------|-------------|--------------|---------|-----|
| Firmware | | | | | | |
| 0 | 100GBASE LR4-D | SM | FUJITSU | FIM37300/222 | 1310 nm | 1.3 |
| 1 | 100GBASE SR10 | MM | AVAGO | AFBR-8420Z | n/a | 1.0 |

show chassis pic fpc-slot pic-slot (MX2010 Router)

```
user@host> show chassis pic fpc-slot 9 pic-slot 3
```

FPC slot 9, PIC slot 3 information:

```
Type                1X100GE CFP
Account Layer2 Overhead Enabled
State                Online
PIC version          0.0
Uptime               14 hours, 51 seconds
```

show chassis pic fpc-slot pic-slot (MX2020 Router)

```
user@host> show chassis pic fpc-slot 19 pic-slot 3
```

FPC slot 19, PIC slot 3 information:

```
Type                4x 10GE(LAN) SFP+
Account Layer2 Overhead Enabled
State                Online
PIC version          0.0
Uptime               1 day, 11 hours, 26 minutes, 36 seconds
```

PIC port information:

| | | Fiber | | Xcvr vendor | Wave- | Xcvr |
|----------|------------|-------|------------------|----------------|--------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | |
| Firmware | | | | | | |
| 0 | 10GBASE SR | MM | SumitomoElectric | SPP5200SR-J6-M | 850 nm | 0.0 |
| 1 | 10GBASE SR | MM | SumitomoElectric | SPP5200SR-J6-M | 850 nm | 0.0 |
| 2 | 10GBASE SR | MM | SumitomoElectric | SPP5200SR-J6-M | 850 nm | 0.0 |
| 3 | 10GBASE SR | MM | SumitomoElectric | SPP5200SR-J6-M | 850 nm | 0.0 |

show chassis pic fpc-slot pic-slot (MX2020 Router with MPC5EQ and MPC6E)

```
user@host> show chassis pic fpc-slot 18 pic-slot 2
```

FPC slot 18, PIC slot 2 information:

```
Type                3X40GE QSFP
State                Online
PIC version          0.0
Uptime               6 minutes, 31 seconds
```

PIC port information:

| | | Fiber | | Xcvr vendor | Wave- | Xcvr |
|----------|-------------|-------|-------------|------------------|--------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | |
| Firmware | | | | | | |
| 0 | 40GBASE SR4 | MM | AVAGO | AFBR-79E4Z-D-JU2 | 850 nm | 0.0 |

| | | | | | | |
|---|-------------|----|-------|------------------|--------|-----|
| 1 | 40GBASE SR4 | MM | AVAGO | AFBR-79E4Z-D-JU2 | 850 nm | 0.0 |
| 2 | 40GBASE SR4 | MM | AVAGO | AFBR-79E4Z-D-JU2 | 850 nm | 0.0 |

show chassis pic fpc-slot pic-slot (MX2020 Router with MPC6E and OTN MIC)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
```

FPC slot 0, PIC slot 1 information:

```
Type          24X10GE SFPP OTN
State          Online
PIC version    1.1
Uptime        1 hour, 33 minutes, 59 seconds
```

PIC port information:

| | | Fiber | | Xcvr vendor | | Wave- | Xcvr |
|----------|------------|-------|------------------|------------------|---------|-------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | | |
| Firmware | | | | | | | |
| 7 | 10GBASE SR | MM | SumitomoElectric | SPP5200SR-J6-M | 850 nm | 0.0 | |
| 9 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 | |
| 12 | 10GBASE LR | SM | FINISAR CORP. | FTLX1472M3BNL-J3 | 1310 nm | 0.0 | |
| 20 | 10GBASE ZR | SM | FINISAR CORP. | FTLX1871M3BNL-J3 | 1550 nm | 0.0 | |
| 21 | 10GBASE ER | SM | FINISAR CORP. | FTLX1671D3BTL-J4 | 1550 nm | 0.0 | |
| 22 | 10GBASE LR | SM | SOURCEPHOTONICS | SPP10SLREDFCJNP | 1310 nm | 0.0 | |
| 23 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BNL-J1 | 1310 nm | 0.0 | |

show chassis pic fpc-slot pic-slot (MX2020 Router with MPC4E)

```
user@host> show chassis pic fpc-slot 14 pic-slot 0
```

FPC slot 14, PIC slot 2 information:

```
Type          4x10GE SFPP
State          Online
PIC version    0.0
Uptime        1 day, 14 hours, 49 minutes, 9 seconds
```

PIC port information:

| | | Fiber | | Xcvr vendor | | Wave- | Xcvr |
|----------|------------|-------|------------------|--------------|--------|-------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | | |
| Firmware | | | | | | | |
| 0 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 | |
| 1 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 | |
| 3 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 | |

show chassis pic fpc-slot pic-slot (MX2010 Router)

```

user@host> show chassis pic fpc-slot 9 pic-slot 3

FPC slot 9, PIC slot 3 information:
  Type           1X100GE CFP
  Account Layer2 Overhead  Enabled
  State           Online
  PIC version     0.0
  Uptime          14 hours, 51 seconds

```

show chassis pic fpc-slot pic-slot (T1600 Router with 100-Gigabit Ethernet PIC)

```

user@host> run show chassis pic fpc-slot 3 pic-slot 1

FPC slot 3, PIC slot 1 information:
  Type           100GE SLOT1
  ASIC type       Brooklyn 100GE FPGA
  State           Online
  PIC version     1.3
  Uptime          10 minutes, 44 seconds

PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wavelength |
|------|--------------|------------|-------------|-------------------------|------------|
| 0 | 100GBASE LR4 | SM | Opnext Inc. | TRC5E20ENFSF000F | 1310 nm |

show chassis pic fpc-slot pic-slot lcc (TX Matrix Router)

```

user@host> show chassis pic fpc-slot 1 pic-slot 1 lcc 0

lcc0-re0:
-----
PIC fpc slot 1 pic slot 1 information:
  Type           4x OC-3 SONET, SMIR
  ASIC type       D chip
  State           Online
  PIC version     1.2
  Uptime          5 days, 2 hours, 12 minutes, 8 seconds

```

show chassis pic fpc-slot pic-slot lcc (TX Matrix Plus Router)

```

user@host> show chassis pic pic-slot 0 fpc-slot 8

lcc0-re0:
-----
FPC slot 8, PIC slot 0 information:
  Type           1x 10GE(LAN/WAN)
  State           Online
  Uptime          2 hours, 46 minutes, 23 seconds

PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | part number | Wavelength |
|------|------------|------------|---------------|-----------------|------------|
| 0 | 10GBASE ZR | SM | Opnext Inc. | TRF7061BN-LF150 | 1550 nm |
| 0 | 10GBASE ZR | SM | FINISAR CORP. | FTRX-1811-3-J2 | 1550 nm |

show chassis pic fpc-slot pic-slot (Next-Generation SONET/SDH SFP)

```
user@host> show chassis pic fpc-slot 4 pic-slot 0
```

FPC slot 4, PIC slot 0 information:

```
Type                4x OC-3 1x OC-12 SFP
ASIC type            D FPGA
State                Online
PIC version           1.3
Uptime                1 day, 50 minutes, 4 seconds
```

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wavelength |
|------|------------------|------------|---------------|-------------------------|------------|
| 0 | OC48 short reach | SM | FINISAR CORP. | FTRJ1321P1BTL-J2 | 1310 nm |
| 1 | OC3 short reach | MM | OCF | TRPA03MM3BAS-JE | 1310 nm |
| 2 | OC3 short reach | MM | OCF | TRXA03MM3BAS-JW | 1310 nm |
| 3 | OC12 inter reach | SM | FINISAR CORP. | FTLF1322P1BTR | 1310 nm |

show chassis pic fpc-slot pic-slot (12-Port T1/E1)

```
user@host> show chassis pic fpc-slot 0 pic-slot 3
```

FPC slot 0, PIC slot 3 information:

```
Type                12x T1/E1 CE
State                Online
PIC version           1.1
CPU load average      1 percent
Interrupt load average 0 percent
Total DRAM size       128 MB
Memory buffer utilization 100 percent
Memory heap utilization 4 percent
Uptime                1 day, 22 hours, 28 minutes, 12 seconds
Internal Clock Synchronization Normal
```

show chassis pic fpc-slot 0 pic-slot 1 (4x CHOC3 SONET CE SFP)

```
user@host> show chassis pic fpc-slot 0 pic-slot 1
```

FPC slot 0, PIC slot 1 information:

```
Type                4x CHOC3 SONET CE SFP
State                Online
PIC version           1.3
CPU load average      1 percent
Interrupt load average 0 percent
Total DRAM size       128 MB
Memory buffer utilization 99 percent
Memory heap utilization 4 percent
Uptime                1 day, 22 hours, 55 minutes, 37 seconds
Internal Clock Synchronization Normal
```

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wavelength |
|------|-----------------|------------|-------------|-------------------------|------------|
| 0 | OC3 short reach | MM | AVAGO | HFBR-57E0P-JU2 | n/a |
| 1 | OC3 short reach | MM | AVAGO | HFBR-57E0P-JU2 | n/a |
| 3 | OC3 long reach | SM | OPNEX INC | TRF5456AVLB314 | 1310 nm |

show chassis pic fpc-slot 0 pic-slot 0 (SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```

user@host> show chassis pic fpc-slot 0 pic-slot 0

FPC slot 0, PIC slot 0 information:
  Type          MIC-3D-80C30C12-40C48
  State          Online
  PIC version    1.8
  Uptime         3 days, 22 hours, 3 minutes, 50 seconds

PIC port information:
  Port  Cable type      Fiber type  Xcvr vendor      Xcvr vendor      Wavelength
      1  OC12 inter reach SM    FINISAR CORP    FTRJ1322P1BTR-J3 1310 nm
      7  OC12 inter reach SM    FINISAR CORP    FTRJ1322P1BTR-J3 1310 nm
Multirate Mode          Enabled

```

show chassis pic fpc-slot 3 pic-slot 0 (8-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```

user@host> show chassis pic fpc-slot 3 pic-slot 0

FPC slot 3, PIC slot 0 information:
  Type          MIC-3D-8CHOC3-4CHOC12
  State          Online
  PIC version    1.9
  Uptime         1 hour, 21 minutes, 24 seconds

PIC port information:
  Port  Cable type      Fiber type  Xcvr vendor      Xcvr vendor      Wavelength
      0  OC12 short reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm
      1  OC12 short reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm
      2  OC12 inter reach SM    FINISAR CORP.    FTRJ1322P1BTR-J2 1310 nm
      4  OC12 short reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm
      5  OC12 short reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm
      6  OC12 short reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm
      7  OC12 short reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm

```

show chassis pic fpc-slot 5 pic-slot 0 (4-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```

user@host> show chassis pic fpc-slot 5 pic-slot 0

FPC slot 5, PIC slot 0 information:
  Type          MIC-3D-4CHOC3-2CHOC12
  State          Online
  PIC version    1.9
  Uptime         1 hour, 21 minutes

PIC port information:
  Port  Cable type      Fiber type  Xcvr vendor      Xcvr vendor      Wavelength
      1  OC12 inter reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm
      2  OC12 inter reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm
      3  OC12 short reach SM    FINISAR CORP.    FTRJ1322P1BTR-J3 1310 nm

```

show chassis pic fpc-slot 1 pic-slot 0 (1-port OC192/STM64 MIC with XFP)

```

user@host> show chassis pic fpc-slot 1 pic-slot 0

```



```
FPC slot 1, PIC slot 0 information:
  Type          MIC-3D-10C192-XFP
  State          Online
  PIC version    1.2
  Uptime         1 day, 11 hours, 4 minutes, 6 seconds

PIC port information:
  Port  Cable type      Fiber  Xcvr vendor      Xcvr vendor      Wavelength
  0     OC192 short reach n/a   FINISAR CORP.    FTLX1412M3BCL-J3 1310 nm
```

show chassis pic fpc-slot 1 pic-slot 2 (8-port DS3/E3 MIC)

```
user@host> show chassis pic fpc-slot 1 pic-slot 2

FPC slot 1, PIC slot 2 information:
  Type          MIC-3D-8DS3-E3
  State          Online
  PIC version    1.10
  Uptime         4 days, 1 hour, 29 minutes, 19 seconds
  Channelization Mode Disabled
```

show chassis pic fpc-slot pic-slot (OTN)

```
user@host> show chassis pic fpc-slot 5 pic-slot 0

PIC fpc slot 5 pic slot 0 information:
  Type          1x10GE(LAN),OTN
  ASIC type      H chip
  State          Online
  PIC version    1.0
  Uptime         5 minutes, 50 seconds
```

show chassis pic fpc-slot pic-slot (QFX3500 Switch)

```
user@switch> show chassis pic fpc-slot 0 pic-slot 0

FPC slot 0, PIC slot 0 information:
  Type 48x 10G-SFP+ Builtin
  State Online
  Uptime 3 days, 3 hours, 5 minutes, 20 seconds
```

show chassis pic fpc-slot pic-slot (QFX5100 Switches and OCX Series)

```
user@switch> show chassis pic fpc-slot 0 pic-slot 0

FPC slot 0, PIC slot 0 information:
  Type          Unknown Builtin
  State          Online
  Uptime         1 day, 17 hours, 5 minutes, 9 seconds
```

show chassis pic interconnect-device fpc-slot pic-slot (QFabric Systems)

```
user@switch> show chassis pic interconnect-device interconnect1 fpc-slot 9 pic-slot 0

FPC slot 9, PIC slot 0 information:
  Type          16x 40G-GE Builtin
```

| | |
|--------|---------------------------------|
| State | Online |
| Uptime | 2 hours, 47 minutes, 40 seconds |

show chassis pic node-device fpc-slot pic-slot (QFabric System)

```
user@switch> show chassis pic node-device node1 pic-slot 0
```

FPC slot node1, PIC slot 0 information:

| | |
|--------|---------------------------------|
| Type | 48x 10G-SFP+Built-in |
| State | Online |
| Uptime | 2 hours, 52 minutes, 37 seconds |

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wavelength |
|------|------------|------------|------------------|-------------------------|------------|
| 0 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 1 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 2 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 3 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 4 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 5 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 6 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 7 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 8 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 9 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 10 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 11 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 12 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 13 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 14 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 15 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 16 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 17 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 18 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 19 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 20 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 21 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 22 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 23 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 24 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 25 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 26 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 27 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 28 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 29 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 30 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 31 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 32 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 33 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 34 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 35 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 36 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 37 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 38 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 39 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 40 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 41 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 42 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 43 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 44 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |

| | | | | | |
|----|------------|----|------------------|--------------|--------|
| 45 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 46 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |
| 47 | 10GBASE SR | MM | SumitomoElectric | SPP5101SR-J3 | 850 nm |

show chassis pic fpc-slot 0 pic-slot 1 (ACX2000 Universal Access Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 1
```

FPC slot 0, PIC slot 1 information:

| | |
|--------|---|
| Type | 8x 1GE(LAN) RJ45 Built-in |
| State | Online |
| Uptime | 6 days, 2 hours, 51 minutes, 11 seconds |

show chassis pic FPC-slot 1 PIC-slot 0 (MX Routers with Media Services Blade [MSB])

```
user@switch> show chassis pic fpc-slot 1 pic-slot 0
```

FPC slot 1, PIC slot 0 information:

| | |
|-------------|----------------------------------|
| Type | AS-MSB |
| State | Online |
| PIC version | 1.6 |
| Uptime | 11 hours, 17 minutes, 56 seconds |

show chassis pic FPC slot 1, PIC slot 2 (MX Routers with Media Services Blade [MSB])

```
user@switch> show chassis pic fpc-slot 1 pic-slot 2
```

| | |
|-------------|---------------------------------|
| Type | AS-MXC |
| State | Online |
| PIC version | 1.0 |
| Uptime | 11 hours, 18 minutes, 3 seconds |

show chassis pic transport fpc-slot pic-slot (PTX Series Packet Transport Routers)

```
user@host> show chassis pic transport fpc-slot 2 pic-slot 0
```

| | |
|-----------------------|------------|
| Administrative State: | In Service |
| Operational State: | Normal |

show chassis pic transport fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```
user@host> show chassis pic transport fpc-slot 3 pic-slot 0
```

| | |
|-----------------------|------------|
| Administrative State: | In Service |
| Operational State: | Normal |

show chassis pic fpc-slot 0 pic-slot 0 (ACX5096 Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
```

FPC slot 0, PIC slot 0 information:

| | |
|-------------|----------------------------------|
| Type | 96x10G-8x40G |
| State | Online |
| PIC version | 2.9 |
| Uptime | 21 hours, 28 minutes, 13 seconds |

| PIC port information: | | Fiber | | Xcvr vendor | Wave- | Xcvr |
|-----------------------|-------------|-------|------------------|------------------|---------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | |
| Firmware | | | | | | |
| 0 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 1 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BCL-J1 | 1310 nm | 0.0 |
| 3 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 4 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 5 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 6 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 7 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 8 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 9 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 10 | 10GBASE SR | MM | OPNEXT, INC. | TRS2001EN-0014 | 850 nm | 0.0 |
| 11 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 12 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 13 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 14 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 15 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 16 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 17 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 18 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 19 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BCL-J1 | 1310 nm | 0.0 |
| 20 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BNL-J1 | 1310 nm | 0.0 |
| 21 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 22 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 23 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 24 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 25 | 10GBASE USR | MM | FINISAR CORP. | FTLX8570D3BCL-J1 | 850 nm | 0.0 |
| 26 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 27 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 28 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |

| | | | | | | |
|----|---------------|----|------------------|------------------|---------|-----|
| 29 | GIGE 1000SX | MM | FINISAR CORP. | FTLF8519P3BNL-J1 | 850 nm | 0.0 |
| 31 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 32 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 33 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 34 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 35 | 10GBASE USR | MM | FINISAR CORP. | FTLX8570D3BCL-J1 | 850 nm | 0.0 |
| 36 | 10GBASE USR | MM | FINISAR CORP. | FTLX8570D3BCL-J1 | 850 nm | 0.0 |
| 37 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 38 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 40 | GIGE 1000LX10 | SM | FINISAR CORP. | FTLF1318P2BTL-J1 | 1310 nm | 0.0 |
| 41 | 10GBASE LR | SM | OPNEXT, INC | TRS5021EN-S201 | 1310 nm | 0.0 |
| 42 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BCL-J1 | 1310 nm | 0.0 |
| 43 | 10GBASE LR | SM | SumitomoElectric | SPP5100LR-J3 | 1310 nm | 0.0 |
| 44 | 10GBASE LR | SM | SumitomoElectric | SPP5100LR-J3 | 1310 nm | 0.0 |
| 45 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BCL-J1 | 1310 nm | 0.0 |
| 46 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BCL-J1 | 1310 nm | 0.0 |
| 47 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 48 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 49 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 50 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 51 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 52 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 53 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 54 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 55 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 56 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 57 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 58 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 59 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 60 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |

| | | | | | | |
|----|-------------|----|------------------|------------------|---------|-----|
| 61 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 62 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 63 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 64 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 65 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 66 | 10GBASE SR | MM | SumitomoElectric | SPP5200SR-J6-M | 850 nm | 0.0 |
| 67 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 68 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 69 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 70 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 71 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BNL-J1 | 1310 nm | 0.0 |
| 72 | 10GBASE LR | SM | FINISAR CORP. | FTLX1471D3BCL-J1 | 1310 nm | 0.0 |
| 73 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 74 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 75 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 76 | 10GBASE SR | MM | SumitomoElectric | SPP5100SR-J3 | 850 nm | 0.0 |
| 77 | 10GBASE USR | MM | OPNEXT, INC. | TRS20A0EN-0014 | 850 nm | 0.0 |
| 78 | 10GBASE USR | MM | OPNEXT, INC. | TRS20A0EN-0014 | 850 nm | 0.0 |
| 79 | 10GBASE LRM | MM | OPNEXT INC | TRS5001EN-0014 | 1310 nm | 0.0 |
| 80 | 10GBASE LRM | MM | OPNEXT INC | TRS5001EN-0014 | 1310 nm | 0.0 |
| 81 | 10GBASE USR | MM | OPNEXT, INC. | TRS20A0EN-0014 | 850 nm | 0.0 |
| 82 | 10GBASE USR | MM | OPNEXT, INC. | TRS20A0EN-0014 | 850 nm | 0.0 |
| 83 | 10GBASE USR | MM | OPNEXT, INC. | TRS20A0EN-0014 | 850 nm | 0.0 |
| 84 | 10GBASE USR | MM | OPNEXT, INC. | TRS20A0EN-0014 | 850 nm | 0.0 |
| 85 | 10GBASE LR | SM | OPNEXT, INC | TRS5021EN-S201 | 1310 nm | 0.0 |
| 86 | 10GBASE ER | SM | OPNEXT, INC | TRS7050EN-S201 | 1550 nm | 0.0 |
| 87 | 10GBASE LRM | MM | OPNEXT INC | TRS5001EN-0014 | 1310 nm | 0.0 |
| 88 | 10GBASE LRM | MM | OPNEXT INC | TRS5001EN-0014 | 1310 nm | 0.0 |
| 89 | 10GBASE LRM | MM | OPNEXT INC | TRS5001EN-0014 | 1310 nm | 0.0 |
| 90 | 10GBASE LRM | MM | OPNEXT INC | TRS5001EN-0014 | 1310 nm | 0.0 |

| | | | | | | | |
|-----|---------|-------|-----|------------------|------------------|---------|-----|
| 91 | 10GBASE | USR | MM | FINISAR CORP. | FTLX8570D3BCL-J1 | 850 nm | 0.0 |
| 92 | 10GBASE | USR | MM | FINISAR CORP. | FTLX8570D3BCL-J1 | 850 nm | 0.0 |
| 93 | 10GBASE | LR | SM | SumitomoElectric | SPP5100LR-J3 | 1310 nm | 0.0 |
| 94 | 10GBASE | LR | SM | FINISAR CORP. | FTLX1471D3BNL-J1 | 1310 nm | 0.0 |
| 95 | 10GBASE | SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 96 | 40GBASE | SR4 | MM | AVAGO | AFBR-79E4Z-D-JU1 | 850 nm | 0.0 |
| 97 | 40GBASE | SR4 | MM | AVAGO | AFBR-79E4Z-D-JU1 | 850 nm | 0.0 |
| 98 | 40GBASE | SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |
| 99 | 40GBASE | SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |
| 100 | 40GBASE | CU 1M | n/a | Molex Inc. | 1110409055 | n/a | 0.0 |
| 101 | 40GBASE | CU 1M | n/a | Molex Inc. | 1110409055 | n/a | 0.0 |
| 102 | 40GBASE | CU 1M | n/a | Molex Inc. | 1110409055 | n/a | 0.0 |
| 103 | 40GBASE | CU 1M | n/a | Molex Inc. | 1110409055 | n/a | 0.0 |

show chassis pic fpc-slot 0 pic-slot 0 (ACX5048 Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
```

FPC slot 0, PIC slot 0 information:

```

Type          96x10G-8x40G
State         Online
PIC version    2.9
Uptime        1 day, 5 hours, 27 minutes, 25 seconds

```

PIC port information:

| | | Fiber | | Xcvr vendor | Wave- | Xcvr |
|------|-------------|-------|---------------|------------------|--------|------|
| Port | Cable type | type | Xcvr vendor | part number | length | |
| 0 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 10 | GIGE 1000SX | MM | FINISAR CORP. | FTLF8519P3BNL-J1 | 850 nm | 0.0 |
| 14 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 20 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 30 | GIGE 1000SX | MM | FINISAR CORP. | FTLF8519P2BNL-J1 | 850 nm | 0.0 |
| 41 | 10GBASE SR | MM | OPNEXT, INC. | TRS2001EN-0014 | 850 nm | 0.0 |
| 46 | GIGE 1000SX | MM | FINISAR CORP. | FTLF8519P2BNL-J1 | 850 nm | 0.0 |
| 64 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |

| | | | | | | |
|-----|-------------|----|-------|-----------------|--------|-----|
| 78 | GIGE 1000SX | MM | AVAGO | AFBR-5715PZ-JU2 | 850 nm | 0.0 |
| 96 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |
| 99 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |
| 100 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |

show chassis pic fpc-slot 0 pic-slot 0 (ACX500 Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
```

FPC slot 0, PIC slot 0 information:

| | |
|--------|----------------------------------|
| Type | 2x 1GE(LAN) SFP Builtin |
| State | Online |
| Uptime | 17 hours, 54 minutes, 45 seconds |

show chassis pic fpc-slot 0 pic-slot 1 (ACX500 Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 1
```

FPC slot 0, PIC slot 1 information:

| | |
|--------|----------------------------------|
| Type | 4x 1GE(LAN) RJ45, SFP Builtin |
| State | Online |
| Uptime | 17 hours, 54 minutes, 45 seconds |

show chassis pic transport fpc-slot pic-slot (PTX Series Packet Transport Routers)

```
user@host> show chassis pic transport fpc-slot 2 pic-slot 0
```

| | |
|-----------------------|------------|
| Administrative State: | In Service |
| Operational State: | Normal |

show chassis pic transport fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```
user@host> show chassis pic transport fpc-slot 3 pic-slot 0
```

| | |
|-----------------------|------------|
| Administrative State: | In Service |
| Operational State: | Normal |

show chassis pic fpc-slot 7 pic-slot 1 (MX960 Router MPC10E-15C-MRATE Line Card)

```
user@router> show chassis pic fpc-slot 7 pic-slot 1
```

FPC slot 7, PIC slot 1 information:

| | |
|-------------|---------------------------------|
| Type | MRATE-5xQSFPP |
| State | Online |
| PIC version | 0.0 |
| Uptime | 3 hours, 33 minutes, 21 seconds |

PIC port information:

| JNPR | Fiber | Xcvr vendor | Wave- | Xcvr |
|-----------------------|-------|-----------------|-----------------|-------------|
| Port Cable type | type | Xcvr vendor | part number | length |
| Firmware Rev | | | | |
| 0 100GBASE LR4 REV 01 | SM | JUNIPER-FINISAR | FTLC1151RDPL-J3 | 1302 nm 0.0 |

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---------------------|
| 0 | 1 | 4x10GE, 40GE, 100GE |
| 1 | 1 | 4x10GE, 40GE, 100GE |
| 2 | 1 | 4x10GE, 40GE, 100GE |
| 3 | 1 | 4x10GE, 40GE, 100GE |
| 4 | 1 | 4x10GE, 40GE, 100GE |

show chassis power

- List of Syntax**
- Syntax on page 1438
 - Syntax (MX Series Router) on page 1438
 - Syntax (MX2020 Universal Routing Platforms) on page 1438
 - Syntax (PTX Series) on page 1438
 - Syntax (MX2010 and, MX10003, MX2008 Universal Routing Platforms) on page 1438
 - Syntax (MX10008 Universal Routing Platforms) on page 1438
 - Syntax (EX9200, EX9253 Switches) on page 1438

Syntax show chassis power

Syntax (MX Series Router)

```
show chassis power
<all-members>
<local>
<member member-id>
<detail>
```

Syntax (MX2020 Universal Routing Platforms)

```
show chassis power
<detail>
```

Syntax (PTX Series)

```
show chassis power
<detail>
```

Syntax (MX2010 and, MX10003, MX2008 Universal Routing Platforms)

```
show chassis power
<detail>
```

Syntax (MX10008 Universal Routing Platforms)

```
show chassis power
<detail>
<sequence>
```

Syntax (EX9200, EX9253 Switches)

```
show chassis power
<detail>
```

Release Information

Command introduced in Junos OS Release 10.0.

Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.

Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.

Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.

Command introduced in Junos OS Release 12.3 for EX9200 switches, with **detail** option added in Junos OS Release 15.2.

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 18.2 for EX9253 Switches.
 Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.

Description (EX9200 switches, MX Series 5G Universal Routing Platforms and PTX Series Packet Transport Routers only) Display power limits and usage information for the AC or DC power sources.

- On EX9200 switches and the MX Series 5G Universal Routing Platforms, power is supplied by Power Entry Modules (PEMs).



NOTE: The new high-capacity (4100 W) enhanced DC PEM on MX960 routers includes a new design that can condition the input voltage. This results in the output voltage differing from the input voltage. The earlier generation of DC PEMs coupled the input power directly to the output, thereby making it safe to assume that the output voltage was equal to the input voltage.

- On the MX2020 Universal Routing Platforms, the power system consists of three components: the power supply modules (PSMs), the power distribution module (PDM), and the power midplane. The power feed is connected to the PDM. The PDM delivers power to the power midplane. The power midplane supplies power to the PSMs. The MX2020 router chassis provides 3+3 (2500W/80A) or 4+4 (2100W/60A) PSM redundancy for the critical FRUs with two power zones.
- On the MX2010 and MX2008 Universal Routing Platforms, the power system consists of three components: the power supply modules (PSMs), the power distribution module (PDM), and the power midplane. The power feed is connected to the PDM. The PDM delivers power to the power midplane. The power midplane supplies power to the PSMs. Unlike the MX2020 router chassis, the MX2010 and MX2008 router chassis does not provide redundancy for the critical FRUs because there is only one power zone.

Starting from Junos OS Release 17.3, MX10003 routers support DC (1100W), AC High (1600W), and AC Low (800W) power supply units.

- On the PTX Series Packet Transport Routers, power is supplied by power supply modules (PSMs). On PTX5000 routers, the power feeds connect to the power distribution units (PDUs).
- Starting with Junos OS Release 14.1, the **show chassis power <detail>** operational mode command output displays power usage 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-P1A) and other components in a PTX5000 Packet Transport Router. The output also displays power usage information for each PIC that

is connected to the router. This command also displays power usage information for MX Series routers that have a MPC5EQ MPC installed.

- Starting in Junos OS Release 18.4R1, on MX240 routers and EX9204 switches, the enhanced AC PEM in high-line power configuration supplies a power output of 2400 W. On Junos OS versions prior to 18.4R1, this PEM supplied only 2050 W of power.

Options **none**—Display basic power usage information for the AC and DC power sources.

all-members—(MX Series routers only) (Optional) Display power usage information for all members of the Virtual Chassis configuration.

detail—(Optional) Include power usage for specific FRUs.

local—(MX Series routers only) (Optional) Display power usage information for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display power usage information for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

Required Privilege Level

view

Related Documentation

- [show chassis power sequence on page 1468](#)
- [Checklist for Monitoring Power Supplies](#)

List of Sample Output

[show chassis power \(MX960 Router with DC PEM\) on page 1443](#)
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[show chassis power detail \(Junos OS Evolved\) on page 1466](#)

Output Fields [Table 93 on page 1441](#) lists the output fields for the **show chassis power** command. Output fields are listed in the approximate order in which they appear.

Table 93: show chassis power Output Fields:

| Field Name | Field Description | Level of Output |
|-------------------|---|-----------------|
| PEM number | <p>(EX9200 switches and MX Series routers only) AC or DC PEM number on the chassis. The following output fields are displayed for the PEM:</p> <ul style="list-style-type: none"> • State—State of the PEM: <ul style="list-style-type: none"> • Online—PEM is present in the slot and online. • Empty—PEM is not present in the slot. • Present—PEM is present in the slot, but not online. • AC/DC Input—OK or Check—State of the AC or DC input power feed with the number of active and expected feeds (one or two). For a DC input power feed, this output field also displays the reference voltage input with maximum input voltage displayed in mV (in parentheses) for the AC or DC PEM. • Capacity—Actual power input capacity with maximum capacity displayed (in parentheses) in watts. <p>NOTE: The maximum actual power capacity for AC and DC PEMs is:</p> <ul style="list-style-type: none"> • MX960 AC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • MX960 DC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • MX480 AC PEM—2520 W if it is high-line. 1450 W if it is low-line. • MX480 DC PEM—2240 W if the DIP switch is off. 2440 W if the DIP switch is on. • MX240 AC PEM—2240 W if it is high-line. 2440 W if it is low-line. • MX240 DC PEM—2240 W if the DIP switch is off. 2440 W if the DIP switch is on. • EX9204 AC PEM—2050 W if it is high-line. 1167 W if it is low-line. • EX9204 DC PEM—2400 W if the DIP switch is off. 2600 W if the DIP switch is on. • EX9208 AC PEM—2050 W if it is high-line. 1167 W if it is low-line. • EX9208 DC PEM—2400 W if the DIP switch is off. 2600 W if the DIP switch is on. • EX9214 AC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • EX9214 DC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • DC Output—DC power output in Watts for the specified zone, at the specified amps and voltage (A @ V), and load and percentage utilization of the maximum capacity) for the zone. | All levels |

Table 93: show chassis power Output Fields: (continued)

| Field Name | Field Description | Level of Output |
|--------------------|--|-----------------|
| System | <p>(EX9200 switches, MX Series, MX2020 routers, MX2010 routers, and MX2008 routers only) Overall power statistics for the system zone.</p> <p>The following output fields are displayed for MX Series routers:</p> <ul style="list-style-type: none"> • <i>Zone number</i>: <ul style="list-style-type: none"> • Capacity—Maximum power capacity applicable for the zone, in watts. • Allocated power—Actual capacity allocated for the zone, in watts, with remaining power displayed in parentheses. • Actual usage—Actual power usage for the zone, in watts. • Total system capacity—Cumulative power capacity of all the zones, in watts. • Total remaining capacity—Difference between the Total system capacity and cumulative Allocated power of all the zones, in watts. <p>The following output fields are displayed for MX2010, MX2020, and MX2008 routers:</p> <ul style="list-style-type: none"> • Capacity—Maximum power capacity applicable for the zone, in watts. • Allocated power—Actual capacity allocated for the zone, in watts, with remaining power displayed in parentheses. • Actual usage—Actual power usage for the zone, in watts. <p>NOTE: For MX2020 routers, there are two power subsystems (Lower Zone and Upper Zone) and the listed output fields are displayed for each zone.</p> | All levels |
| Total Power | (PTX Series only) Total power used by the switch (displayed in watts). | All levels |
| PDU number | (PTX5000 only) ID number of the power distribution unit (PDU) on the chassis. | All levels |

Table 93: show chassis power Output Fields: (continued)

| Field Name | Field Description | Level of Output |
|-------------------|--|-----------------|
| PSM number | <p>(PTX Series, MX2020 routers, MX2010 routers, and MX2008 routers only) ID number of the power supply module..</p> <p>(PTX Series) The following output fields are displayed for each PSM:</p> <ul style="list-style-type: none"> • Input (V)—Voltage supplied to the PSM. • Used (W)—Actual power usage for the PSM (measured in watts). <p>NOTE: Starting with Junos OS Release 14.1, no output is displayed for Input (v) and Used (W) fields for missing PSMs; unlike in earlier releases where 0 was displayed for missing PSMs.</p> <p>(MX2010, MX2020, and MX2008 routers) The following output fields are displayed for each PSM:</p> <ul style="list-style-type: none"> • State—State of the PSM: <ul style="list-style-type: none"> • Online—PSM is present in the slot and online. • Empty—PSM is not present in the slot. • Present—PSM is present in the slot but not online. • DC Input—State of the DC input power feed with the number of active or expected feeds (in parentheses). • Capacity—Actual power input capacity and maximum capacity (in parentheses) displayed in watts. <p>NOTE: The maximum capacity for AC and DC PSMs is:</p> <ul style="list-style-type: none"> • MX2010/MX2020/MX2008 AC PSM—2500 W. • MX2010/MX2020/MX2008 DC PSM—2100 W if the DIP switch is at 60A settings. 2500 W if the DIP switch is at 80A settings. • DC Output—DC power output in watts for the specified zone at the specified amperes and voltage (A at V), and load and percentage utilization of the maximum capacity for the zone. | All levels |
| Item | <p>Actual power usage (measured in watts) for the following FRUs:</p> <ul style="list-style-type: none"> • Fan Tray n—Power usage for the specified fan tray. • REn/CBn—Power usage for the specified Routing Engines and Control Boards • SIB/CCG/FPD—Power usage for the Switch Interface Board, Centralized Clock Generator (PTX5000 only), and Front Panel Display (craft interface). • FPC n—Power usage for the FPC in the slot specified. <p>NOTE: MX Series routers must have a MPC5EQ MPC installed to view FRU power usage with the detail command.</p> | detail |

Sample Output

show chassis power (MX960 Router with DC PEM)

```
user@host> show chassis power
PEM 0:
  State:    Online
```

```

DC input: OK (2 feed expected, 2 feed connected)
DC input: 48.0 V input (57000 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 513 W (zone 0, 9 A at 57 V, 12% of capacity)

PEM 1:
State: Online
DC input: OK (2 feed expected, 2 feed connected)
DC input: 48.0 V input (57000 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 228 W (zone 1, 4 A at 57 V, 5% of capacity)

PEM 2:
State: Online
DC input: OK (2 feed expected, 2 feed connected)
DC input: 48.0 V input (57000 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 513 W (zone 0, 9 A at 57 V, 12% of capacity)

PEM 3:
State: Online
DC input: OK (2 feed expected, 2 feed connected)
DC input: 48.0 V input (57000 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 342 W (zone 1, 6 A at 57 V, 8% of capacity)

System:
Zone 0:
Capacity: 4100 W (maximum 4100 W)
Allocated power: 1680 W (2420 W remaining)
Actual usage: 1026 W
Zone 1:
Capacity: 4100 W (maximum 4100 W)
Allocated power: 1263 W (2837 W remaining)
Actual usage: 570 W
Total system capacity: 8200 W (maximum 8200 W)
Total remaining power: 5257 W

```

show chassis power (MX960 Router with AC PEM)

```

user@host> show chassis power

PEM 0:
State: Online
AC input: OK (2 feed expected, 2 feed connected)
Capacity: 4100 W (maximum 4100 W)
DC output: 0 W (zone 0, 0 A at 56 V, 0% of capacity)

PEM 1:
State: Present
AC input: Check (2 feed expected, 1 feed connected)
Capacity: 1700 W (maximum 4100 W)

PEM 2:
State: Empty
Input: Absent

PEM 3:
State: Online
AC input: OK (1 feed expected, 1 feed connected)

```



```

Capacity: 1700 W (maximum 1700 W)

System:
Zone 0:
  Capacity:      4100 W (maximum 4100 W)
  Allocated power: 540 W (3560 W remaining)
  Actual usage:  0 W
Zone 1:
  Capacity:      0 W (maximum 0 W)
  Allocated power: 0 W (0 W remaining)
  Actual usage:  0 W
Total system capacity: 4100 W (maximum 4100 W)
Total remaining power: 3560 W

```

show chassis power (MX960 Router with MPC5EQ)

```

user@host> show chassis power

PEM 0:
  State:      Online
  AC input:   OK (2 feed expected, 2 feed connected)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  1197 W (zone 0, 21 A at 57 V, 29% of capacity)

PEM 1:
  State:      Online
  AC input:   OK (2 feed expected, 2 feed connected)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  2451 W (zone 1, 43 A at 57 V, 59% of capacity)

PEM 2:
  State:      Online
  AC input:   OK (2 feed expected, 2 feed connected)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  1083 W (zone 0, 19 A at 57 V, 26% of capacity)

PEM 3:
  State:      Empty
  Input:      Absent

System:
Zone 0:
  Capacity:      4100 W (maximum 4100 W)
  Allocated power: 3508 W (592 W remaining)
  Actual usage:  2280 W
Zone 1:
  Capacity:      4100 W (maximum 4100 W)
  Allocated power: 3341 W (759 W remaining)
  Actual usage:  2451 W
Total system capacity: 8200 W (maximum 8200 W)
Total remaining power: 1351 W

```

show chassis power detail (MX960 Router with MPC5EQ)

```

user@host> show chassis power detail

PEM 0:
  State:      Online
  DC input:   OK (2 feed expected, 2 feed connected)

```

```

DC input: 48.0 V input (57500 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 798 W (zone 0, 14 A at 57 V, 19% of capacity)

PEM 1:
State: Online
DC input: OK (2 feed expected, 2 feed connected)
DC input: 48.0 V input (57500 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 1311 W (zone 1, 23 A at 57 V, 31% of capacity)

PEM 2:
State: Online
DC input: OK (2 feed expected, 2 feed connected)
DC input: 48.0 V input (57500 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 855 W (zone 0, 15 A at 57 V, 20% of capacity)

PEM 3:
State: Online
DC input: OK (2 feed expected, 2 feed connected)
DC input: 48.0 V input (57500 mV)
Capacity: 4100 W (maximum 4100 W)
DC output: 912 W (zone 1, 16 A at 57 V, 22% of capacity)

System:
Zone 0:
Capacity: 4100 W (maximum 4100 W)
Allocated power: 2497 W (1603 W remaining)
Actual usage: 1653 W
Zone 1:
Capacity: 4100 W (maximum 4100 W)
Allocated power: 3336 W (764 W remaining)
Actual usage: 2223 W
Total system capacity: 8200 W (maximum 8200 W)
Total remaining power: 2367 W

Item          Used(W)
FPC 0         255
FPC 10        341

```

show chassis power (MX480 Router with AC PEM)

```

user@host> show chassis power

PEM 0:
State: Online
AC input: OK (1 feed expected, 1 feed connected)
Capacity: 2520 W (maximum 2520 W)
DC output: 472 W (zone 0, 8 A at 59 V, 18% of capacity)

PEM 1:
State: Online
AC input: OK (1 feed expected, 1 feed connected)
Capacity: 2520 W (maximum 2520 W)
DC output: 472 W (zone 0, 8 A at 59 V, 18% of capacity)

PEM 2:
State: Online
AC input: OK (1 feed expected, 1 feed connected)

```

```

Capacity: 2520 W (maximum 2520 W)
DC output: 118 W (zone 0, 2 A at 59 V, 4% of capacity)

PEM 3:
State:      Empty
Input:      Absent

System:
Maximum capacity: 5040 W
Allocated capacity: 1675 W (33% of maximum)
Remaining capacity: 3365 W
Actual usage:      1062 W

```

show chassis power (MX240 Router with DC PEM)

```

user@host> show chassis power

PEM 0:
State:      Online
DC input:   OK (1 feed expected, 1 feed connected)
DC input:   48.0 V input (53500 mV)
Capacity:   2400 W (maximum 2400 W)
DC output:  318 W (zone 0, 6 A at 53 V, 13% of capacity)

PEM 1:
State:      Online
DC input:   OK (1 feed expected, 1 feed connected)
DC input:   48.0 V input (54000 mV)
Capacity:   2400 W (maximum 2400 W)
DC output:  0 W (zone 0, 0 A at 54 V, 0% of capacity)

PEM 2:
State:      Online
DC input:   OK (1 feed expected, 1 feed connected)
DC input:   48.0 V input (52500 mV)
Capacity:   2400 W (maximum 2400 W)
DC output:  312 W (zone 0, 6 A at 52 V, 13% of capacity)

PEM 3:
State:      Online
DC input:   OK (1 feed expected, 1 feed connected)
DC input:   48.0 V input (55000 mV)
Capacity:   2400 W (maximum 2400 W)
DC output:  0 W (zone 0, 0 A at 55 V, 0% of capacity)

System:
Maximum capacity: 2400 W
Allocated capacity: 1270 W (52% of maximum)
Remaining capacity: 1130 W
Actual usage:      630 W

```

show chassis power (MX2010 Router)

```

user@host > show chassis power

PSM 0:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2500 W (maximum 2500 W)

```

```
DC output: 1022.06 W (19.75 A at 51.75 V, 40.88% of capacity)

PSM 1:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  996.19 W (19.25 A at 51.75 V, 39.85% of capacity)

PSM 2:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  1022.06 W (19.75 A at 51.75 V, 40.88% of capacity)

PSM 3:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  1004.25 W (19.50 A at 51.50 V, 40.17% of capacity)

PSM 4:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  996.19 W (19.25 A at 51.75 V, 39.85% of capacity)

PSM 5:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  1017.12 W (19.75 A at 51.50 V, 40.69% of capacity)

PSM 6:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  1009.12 W (19.50 A at 51.75 V, 40.37% of capacity)

PSM 7:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  996.19 W (19.25 A at 51.75 V, 39.85% of capacity)

PSM 8:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  1004.25 W (19.50 A at 51.50 V, 40.17% of capacity)

System:
  Capacity:           22500 W (maximum 22500 W)
  Allocated power:    12888 W (9612 W remaining)
  Actual usage:       9067.44 W
```

show chassis power (MX2020 Router)

```
user@host > show chassis power
```

```
PSM 0:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  858.44 W (Lower Zone, 16.75 A at 51.25 V, 34.34% of capacity)

PSM 1:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  854.25 W (Lower Zone, 16.75 A at 51.00 V, 34.17% of capacity)

PSM 2:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  858.44 W (Lower Zone, 16.75 A at 51.25 V, 34.34% of capacity)

PSM 3:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  867.00 W (Lower Zone, 17.00 A at 51.00 V, 34.68% of capacity)

PSM 4:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  871.25 W (Lower Zone, 17.00 A at 51.25 V, 34.85% of capacity)

PSM 5:
  State:      Empty
  Input:      Absent

PSM 6:
  State:      Empty
  Input:      Absent

PSM 7:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  867.00 W (Lower Zone, 17.00 A at 51.00 V, 34.68% of capacity)

PSM 8:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  879.75 W (Lower Zone, 17.25 A at 51.00 V, 35.19% of capacity)

PSM 9:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 10:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
```

```

DC output: 615.00 W (Upper Zone, 12.00 A at 51.25 V, 29.29% of capacity)

PSM 11:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 12:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 13:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  612.00 W (Upper Zone, 12.00 A at 51.00 V, 29.14% of capacity)

PSM 14:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  627.81 W (Upper Zone, 12.25 A at 51.25 V, 29.90% of capacity)

PSM 15:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  627.81 W (Upper Zone, 12.25 A at 51.25 V, 29.90% of capacity)

PSM 16:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  615.00 W (Upper Zone, 12.00 A at 51.25 V, 29.29% of capacity)

PSM 17:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

System:
  Upper Zone:
    Capacity:      18900 W (maximum 22500 W)
    Allocated power: 12900 W (6000 W remaining)
    Actual usage:   5596.62 W
  Lower Zone:
    Capacity:      17500 W (maximum 17500 W)
    Allocated power: 12900 W (4600 W remaining)
    Actual usage:   6056.12 W
  Total system capacity: 36400 W (maximum 40000 W)
  Total remaining power: 10600 W

```

show chassis power (MX2020 Router with MPC5EQ and MPC6E)

```
user@host> show chassis power
```

```
PSM 0:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 1:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  538.12 W (Lower Zone, 10.50 A at 51.25 V, 25.62% of capacity)

PSM 2:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  538.12 W (Lower Zone, 10.50 A at 51.25 V, 25.62% of capacity)

PSM 3:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 4:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 5:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 6:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 7:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 8:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 9:
  State:      Empty
  Input:      Absent

PSM 10:
  State:      Empty
```

```

Input:      Absent

PSM 11:
State:      Empty
Input:      Absent

PSM 12:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  515.00 W (Upper Zone, 10.00 A at 51.50 V, 24.52% of capacity)

PSM 13:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  517.50 W (Upper Zone, 10.00 A at 51.75 V, 24.64% of capacity)

PSM 14:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  515.00 W (Upper Zone, 10.00 A at 51.50 V, 24.52% of capacity)

PSM 15:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  527.88 W (Upper Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 16:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  530.44 W (Upper Zone, 10.25 A at 51.75 V, 25.26% of capacity)

PSM 17:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  515.00 W (Upper Zone, 10.00 A at 51.50 V, 24.52% of capacity)

System:
Upper Zone:
Capacity:    12600 W (maximum 15000 W)
Allocated power: 9436 W (3164 W remaining)
Actual usage: 3120.81 W
Lower Zone:
Capacity:    18900 W (maximum 22500 W)
Allocated power: 10842 W (8058 W remaining)
Actual usage: 4810.00 W
Total system capacity: 31500 W (maximum 37500 W)
Total remaining power: 11222 W

```

show chassis power detail (MX2020 Router with MPC5EQ and MPC6E)

```
user@host> show chassis power detail
```



```
PSM 0:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 1:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  538.12 W (Lower Zone, 10.50 A at 51.25 V, 25.62% of capacity)

PSM 2:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  538.12 W (Lower Zone, 10.50 A at 51.25 V, 25.62% of capacity)

PSM 3:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 4:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  515.00 W (Lower Zone, 10.00 A at 51.50 V, 24.52% of capacity)

PSM 5:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 6:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 7:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 8:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  530.44 W (Lower Zone, 10.25 A at 51.75 V, 25.26% of capacity)

PSM 9:
  State:      Empty
  Input:      Absent

PSM 10:
  State:      Empty
```

```

Input:      Absent

PSM 11:
State:      Empty
Input:      Absent

PSM 12:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  517.50 W (Upper Zone, 10.00 A at 51.75 V, 24.64% of capacity)

PSM 13:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  517.50 W (Upper Zone, 10.00 A at 51.75 V, 24.64% of capacity)

PSM 14:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  515.00 W (Upper Zone, 10.00 A at 51.50 V, 24.52% of capacity)

PSM 15:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  527.88 W (Upper Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 16:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  517.50 W (Upper Zone, 10.00 A at 51.75 V, 24.64% of capacity)

PSM 17:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2100 W (maximum 2500 W)
DC output:  515.00 W (Upper Zone, 10.00 A at 51.50 V, 24.52% of capacity)

System:
Upper Zone:
Capacity:    12600 W (maximum 15000 W)
Allocated power: 9436 W (3164 W remaining)
Actual usage: 3110.38 W
Lower Zone:
Capacity:    18900 W (maximum 22500 W)
Allocated power: 10842 W (8058 W remaining)
Actual usage: 4799.69 W
Total system capacity: 31500 W (maximum 37500 W)
Total remaining power: 11222 W

Item          Used(W)
FPC 0         0
FPC 4         0
FPC 9        719
FPC 10       681
FPC 17       656

```

| | |
|--------|---|
| FPC 18 | 0 |
| FPC 19 | 0 |

show chassis power (MX2020 Router with 240-V high-voltage DC PSMs and PDMs)

```
user@host> show chassis power
```

```
PSM 0:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  197.81 W (Lower Zone, 3.75 A at 52.75 V, 7.91% of capacity)

PSM 1:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  171.44 W (Lower Zone, 3.25 A at 52.75 V, 6.86% of capacity)

PSM 2:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  184.62 W (Lower Zone, 3.50 A at 52.75 V, 7.38% of capacity)

PSM 3:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  184.62 W (Lower Zone, 3.50 A at 52.75 V, 7.38% of capacity)

PSM 4:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  183.75 W (Lower Zone, 3.50 A at 52.50 V, 7.35% of capacity)

PSM 5:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  196.88 W (Lower Zone, 3.75 A at 52.50 V, 7.88% of capacity)

PSM 6:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  183.75 W (Lower Zone, 3.50 A at 52.50 V, 7.35% of capacity)

PSM 7:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
  Capacity:   2500 W (maximum 2500 W)
  DC output:  196.88 W (Lower Zone, 3.75 A at 52.50 V, 7.88% of capacity)

PSM 8:
  State:      Online
  DC input:   OK (INP1 feed expected, INP1 feed connected)
```

```
Capacity: 2500 W (maximum 2500 W)
DC output: 196.88 W (Lower Zone, 3.75 A at 52.50 V, 7.88% of capacity)

PSM 9:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 144.38 W (Upper Zone, 2.75 A at 52.50 V, 5.78% of capacity)

PSM 10:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 145.06 W (Upper Zone, 2.75 A at 52.75 V, 5.80% of capacity)

PSM 11:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 131.88 W (Upper Zone, 2.50 A at 52.75 V, 5.28% of capacity)

PSM 12:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 143.69 W (Upper Zone, 2.75 A at 52.25 V, 5.75% of capacity)

PSM 13:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 143.69 W (Upper Zone, 2.75 A at 52.25 V, 5.75% of capacity)

PSM 14:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 145.06 W (Upper Zone, 2.75 A at 52.75 V, 5.80% of capacity)

PSM 15:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 144.38 W (Upper Zone, 2.75 A at 52.50 V, 5.78% of capacity)

PSM 16:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 130.62 W (Upper Zone, 2.50 A at 52.25 V, 5.22% of capacity)

PSM 17:
State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 157.50 W (Upper Zone, 3.00 A at 52.50 V, 6.30% of capacity)

System:
Upper Zone:
Capacity: 22500 W (maximum 22500 W)
```

```

    Allocated power: 6757 W (15743 W remaining)
    Actual usage: 1286.25 W
  Lower Zone:
    Capacity: 22500 W (maximum 22500 W)
    Allocated power: 7240 W (15260 W remaining)
    Actual usage: 1696.62 W
  Total system capacity: 45000 W (maximum 45000 W)
  Total remaining power: 31003 W

```

show chassis power (MX2008 Router)

```

user@host> show chassis power

PSM 0:
  State: Empty
  Input: Absent

PSM 1:
  State: Online
  DC input: OK (Both feed expected, Both feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 424.88 W (8.25 A at 51.50 V, 17.00% of capacity)

PSM 2:
  State: Online
  DC input: OK (Both feed expected, Both feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 435.62 W (8.50 A at 51.25 V, 17.42% of capacity)

PSM 3:
  State: Online
  DC input: OK (Both feed expected, Both feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 437.75 W (8.50 A at 51.50 V, 17.51% of capacity)

PSM 4:
  State: Online
  DC input: OK (Both feed expected, Both feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 424.88 W (8.25 A at 51.50 V, 17.00% of capacity)

PSM 5:
  State: Online
  DC input: OK (Both feed expected, Both feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 437.75 W (8.50 A at 51.50 V, 17.51% of capacity)

PSM 6:
  State: Online
  DC input: OK (Both feed expected, Both feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 424.88 W (8.25 A at 51.50 V, 17.00% of capacity)

PSM 7:
  State: Online
  DC input: OK (Both feed expected, Both feed connected)
  Capacity: 2500 W (maximum 2500 W)
  DC output: 422.81 W (8.25 A at 51.25 V, 16.91% of capacity)

PSM 8:

```

```
State:      Empty
Input:      Absent

System:
Capacity:   17500 W (maximum 17500 W)
Allocated power: 8440 W (9060 W remaining)
Actual usage: 3008.56 W
```

show chassis power (MX10003)

```
user@host> show chassis power
```

```
PEM 0:
State:      Empty
Input:      Absent

PEM 1:
State:      Empty
Input:      Absent

PEM 2:
State:      Online
Capacity:   1100 W (maximum 1100 W)
DC input:   OK (1 feed expected, 1 feed connected)
DC output:  432 W (zone 0, 36 A at 12 V, 39% of capacity)

PEM 3:
State:      Empty
Input:      Absent

PEM 4:
State:      Online
Capacity:   1100 W (maximum 1100 W)
DC input:   OK (1 feed expected, 1 feed connected)
DC output:  420 W (zone 0, 35 A at 12 V, 38% of capacity)

PEM 5:
State:      Online
Capacity:   1100 W (maximum 1100 W)
DC input:   OK (1 feed expected, 1 feed connected)
DC output:  468 W (zone 0, 39 A at 12 V, 42% of capacity)

System:
Zone 0:
Capacity:   3300 W (maximum 3300 W)
Allocated power: 2301 W (999 W remaining)
Actual usage: 1320 W
Total system capacity: 3300 W (maximum 3300 W)
Total remaining power: 999 W
```

show chassis power (MX10008)

```
user@host> show chassis power
```

```
PEM 0:
State:      Online
Capacity:   2700 W (maximum 2700 W)
AC input:   OK (Both feed expected, Both feed connected)
```

```

DC output: 1248 W (zone 0, 104 A at 12 V, 46% of capacity)

PEM 1:
  State:      Online
  Capacity:   2700 W (maximum 2700 W)
  AC input:   OK (Both feed expected, Both feed connected)
  DC output:  1248 W (zone 0, 104 A at 12 V, 46% of capacity)

PEM 2:
  State:      Online
  Capacity:   2700 W (maximum 2700 W)
  AC input:   OK (Both feed expected, Both feed connected)
  DC output:  1260 W (zone 0, 105 A at 12 V, 46% of capacity)

PEM 3:
  State:      Present
  Capacity:   2700 W (maximum 2700 W)
  AC input:   Not ready

PEM 4:
  State:      Present
  Capacity:   2700 W (maximum 2700 W)
  AC input:   Not ready

PEM 5:
  State:      Present
  Capacity:   2700 W (maximum 2700 W)
  AC input:   Not ready

System:
  Zone 0:
    Capacity:      8100 W (maximum 8100 W)
    Allocated power: 7105 W (995 W remaining)
    Actual usage:   3756 W
    Total system capacity: 8100 W (maximum 8100 W)
    Total remaining power: 995 W

```

show chassis power (PTX5000 Packet Transport Router)

```

user@host> show chassis power

```

| Chassis Power | Input(V) | Used(W) |
|---------------|----------|---------|
| Total Power | | 4006 |
| PDU 0 | | 1986 |
| PSM 0 | | |
| Input 1 | 54 | 149 |
| PSM 1 | | |
| Input 1 | 54 | 377 |
| PSM 2 | | |
| Input 1 | 54 | 745 |
| PSM 3 | | |
| Input 1 | 54 | 715 |
| PDU 1 | | 2020 |
| PSM 0 | | |
| Input 1 | 54 | 246 |
| PSM 1 | | |
| Input 1 | 54 | 332 |

| | | |
|---------|----|-----|
| PSM 2 | | |
| Input 1 | 54 | 721 |
| PSM 3 | | |
| Input 1 | 54 | 721 |

show chassis power (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis power
```

| Chassis Power | Input(V) | Used(W) |
|---------------|----------|---------|
| Total Power | | 4402 |
| PDU 0 | | 2104 |
| PSM 0 | | |
| Input 1 | 53 | 229 |
| Input 2 | 53 | 375 |
| PSM 1 | | |
| PSM 2 | | |
| Input 1 | 53 | 248 |
| Input 2 | 53 | 323 |
| PSM 3 | | |
| PSM 4 | | |
| Input 1 | 53 | 206 |
| Input 2 | 53 | 255 |
| PSM 5 | | |
| PSM 6 | | |
| Input 1 | 53 | 206 |
| Input 2 | 53 | 262 |
| PSM 7 | | |
| PDU 1 | | 2298 |
| PSM 0 | | |
| PSM 1 | | |
| Input 1 | 53 | 289 |
| Input 2 | 53 | 267 |
| PSM 2 | | |
| PSM 3 | | |
| Input 1 | 53 | 309 |
| Input 2 | 53 | 315 |
| PSM 4 | | |
| PSM 5 | | |
| Input 1 | 53 | 335 |
| Input 2 | 53 | 220 |
| PSM 6 | | |
| PSM 7 | | |
| Input 1 | 53 | 308 |
| Input 2 | 53 | 255 |

show chassis power detail (PTX5000 Packet Transport Router)

```
user@host> show chassis power detail
```

| Chassis Power | Input(V) | Used(W) |
|---------------|----------|---------|
| Total Power | | 3997 |
| PDU 0 | | 1975 |

| | | |
|-------------|---------|------|
| PSM 0 | | |
| Input 1 | 54 | 136 |
| PSM 1 | | |
| Input 1 | 54 | 377 |
| PSM 2 | | |
| Input 1 | 54 | 741 |
| PSM 3 | | |
| Input 1 | 54 | 721 |
| PDU 1 | | 2022 |
| PSM 0 | | |
| Input 1 | 54 | 235 |
| PSM 1 | | |
| Input 1 | 54 | 332 |
| PSM 2 | | |
| Input 1 | 54 | 726 |
| PSM 3 | | |
| Input 1 | 54 | 729 |
| Item | Used(W) | |
| Fan Tray 0 | 49 | |
| Fan Tray 1 | 127 | |
| Fan Tray 2 | 117 | |
| RE0/CB0 | 109 | |
| RE1/CB1 | 100 | |
| SIB/CCG/FPD | 375 | |
| FPC 0 | 381 | |
| FPC 1 | 0 | |
| FPC 2 | 447 | |
| FPC 3 | 560 | |
| FPC 4 | 0 | |
| FPC 5 | 448 | |
| FPC 6 | 379 | |
| FPC 7 | 388 | |

show chassis power detail (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis power detail
```

| Chassis Power | Input(V) | Used(W) |
|---------------|----------|---------|
| Total Power | | 4394 |
| PDU 0 | | 2095 |
| PSM 0 | | |
| Input 1 | 53 | 222 |
| Input 2 | 53 | 368 |
| PSM 1 | | |
| PSM 2 | | |
| Input 1 | 53 | 248 |
| Input 2 | 53 | 329 |
| PSM 3 | | |
| PSM 4 | | |
| Input 1 | 53 | 212 |
| Input 2 | 53 | 248 |
| PSM 5 | | |
| PSM 6 | | |
| Input 1 | 53 | 206 |
| Input 2 | 53 | 262 |
| PSM 7 | | |

| | | |
|---------|----|------|
| PDU 1 | | 2299 |
| PSM 0 | | |
| PSM 1 | | |
| Input 1 | 53 | 296 |
| Input 2 | 53 | 260 |
| PSM 2 | | |
| PSM 3 | | |
| Input 1 | 53 | 309 |
| Input 2 | 53 | 315 |
| PSM 4 | | |
| PSM 5 | | |
| Input 1 | 53 | 342 |
| Input 2 | 53 | 214 |
| PSM 6 | | |
| PSM 7 | | |
| Input 1 | 53 | 308 |
| Input 2 | 53 | 255 |

| Item | Used(W) |
|-----------|---------|
| Fan Trays | 252 |
| RE0/CB0 | 93 |
| RE1/CB1 | 92 |
| SIB | 360 |
| FPC 0 | 369 |
| PIC 0 | 16 |
| PIC 1 | 0 |
| FPC 1 | 0 |
| FPC 2 | 437 |
| PIC 0 | 44 |
| PIC 1 | 38 |
| FPC 3 | 740 |
| PIC 0 | 41 |
| PIC 1 | 46 |
| FPC 4 | 732 |
| PIC 0 | 74 |
| PIC 1 | 37 |
| FPC 5 | 0 |
| FPC 6 | 0 |
| FPC 7 | 0 |

show chassis power detail (PTX10008 Router)

```
user@host> show chassis power detail
```

PEM 0:

```
State:      Online
Capacity:   2700 W (maximum 2700 W)
AC input:   OK (No feed expected, Both feed connected)
DC output:  1164 W (zone 0, 97 A at 12 V, 43% of capacity)
```

PEM 1:

```
State:      Online
Capacity:   2700 W (maximum 2700 W)
AC input:   OK (Both feed expected, Both feed connected)
DC output:  1188 W (zone 0, 99 A at 12 V, 44% of capacity)
```

PEM 2:

```
State:      Online
```

```

Capacity: 2700 W (maximum 2700 W)
AC input: OK (No feed expected, Both feed connected)
DC output: 1188 W (zone 0, 99 A at 12 V, 44% of capacity)

PEM 3:
  State: Empty
  Input: Absent

PEM 4:
  State: Empty
  Input: Absent

PEM 5:
  State: Empty
  Input: Absent

System:
  Zone 0:
    Capacity: 8100 W (maximum 8100 W)
    Allocated power: 7160 W (940 W remaining)
    Actual usage: 3540 W
    Total system capacity: 8100 W (maximum 8100 W)
    Total remaining power: 940 W

Item                Used(W)
Fan Tray 0          475
Fan Tray 1          475
RE0/CB0              42
RE1/CB1              46

```

show chassis power detail (PTX10016 Router)

```
user@host> show chassis power detail
```

```

PEM 0:
  State: Online
  Capacity: 2500 W (maximum 2500 W)
  DC input: OK (Both feed expected, Both feed connected)
  DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 1:
  State: Online
  Capacity: 2500 W (maximum 2500 W)
  DC input: OK (Both feed expected, Both feed connected)
  DC output: 456 W (zone 0, 38 A at 12 V, 18% of capacity)

PEM 2:
  State: Online
  Capacity: 2500 W (maximum 2500 W)
  DC input: OK (Both feed expected, Both feed connected)
  DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 3:
  State: Online
  Capacity: 2500 W (maximum 2500 W)
  DC input: OK (Both feed expected, Both feed connected)
  DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

```

```

PEM 4:
  State:      Online
  Capacity:   2500 W (maximum 2500 W)
  DC input:   OK (INP2 feed expected, INP2 feed connected)
  DC output:  432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 5:
  State:      Online
  Capacity:   2500 W (maximum 2500 W)
  DC input:   OK (INP2 feed expected, INP2 feed connected)
  DC output:  432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 6:
  State:      Online
  Capacity:   2500 W (maximum 2500 W)
  DC input:   OK (INP2 feed expected, INP2 feed connected)
  DC output:  420 W (zone 0, 35 A at 12 V, 16% of capacity)

PEM 7:
  State:      Online
  Capacity:   2500 W (maximum 2500 W)
  DC input:   OK (INP2 feed expected, INP2 feed connected)
  DC output:  432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 8:
  State:      Online
  Capacity:   2500 W (maximum 2500 W)
  DC input:   OK (INP2 feed expected, INP2 feed connected)
  DC output:  432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 9:
  State:      Online
  Capacity:   2500 W (maximum 2500 W)
  DC input:   OK (INP2 feed expected, INP2 feed connected)
  DC output:  420 W (zone 0, 35 A at 12 V, 16% of capacity)

System:
  Zone 0:
    Capacity:      25000 W (maximum 25000 W)
    Allocated power: 9550 W (15450 W remaining)
    Actual usage:   4320 W
    Total system capacity: 25000 W (maximum 25000 W)
    Total remaining power: 15450 W

Item                Used(W)
Fan Tray 0          975
Fan Tray 1          975
RE0/CB0              42
RE1/CB1              46

```

show chassis power detail (EX9208 Switch)

```
user@host> show chassis power detail
```

```

PEM 0:
  State:      Present
  AC input:   Out of range (1 feed expected, 1 feed connected)
  Capacity:   2050 W (maximum 2050 W)
  DC output:  0 W (zone 0, 0 A at 0 V, 0% of capacity)

```

```

PEM 1:
  State:    Present
  AC input: Out of range (1 feed expected, 1 feed connected)
  Capacity: 2050 W (maximum 2050 W)
  DC output: 0 W (zone 0, 0 A at 0 V, 0% of capacity)

PEM 2:
  State:    Present
  AC input: Out of range (1 feed expected, 1 feed connected)
  Capacity: 2050 W (maximum 2050 W)
  DC output: 0 W (zone 0, 0 A at 0 V, 0% of capacity)

PEM 3:
  State:    Online
  AC input: OK (1 feed expected, 1 feed connected)
  Capacity: 2050 W (maximum 2050 W)
  DC output: 754 W (zone 0, 13 A at 58 V, 36% of capacity)

System:
  Zone 0:
    Capacity:      2050 W (maximum 2050 W)
    Allocated power: 1478 W (572 W remaining)
    Actual usage:   754 W
    Total system capacity: 2050 W (maximum 2050 W)
    Total remaining power: 572 W

```

show chassis power detail (EX9253 Switch)

```

user@switch> show chassis power detail

PEM 0:
  State:    Online
  Capacity: 1600 W (maximum 1600 W)
  AC input: OK (1 feed expected, 1 feed connected)
  DC output: 564 W (zone 0, 47 A at 12 V, 35% of capacity)

PEM 1:
  State:    Present
  Input:     Absent

PEM 2:
  State:    Empty
  Input:     Absent

PEM 3:
  State:    Empty
  Input:     Absent

PEM 4:
  State:    Present
  Input:     Absent

PEM 5:
  State:    Online
  Capacity: 1600 W (maximum 1600 W)
  AC input: OK (1 feed expected, 1 feed connected)
  DC output: 612 W (zone 0, 51 A at 12 V, 38% of capacity)

System:
  Zone 0:

```

```

Capacity:          3200 W (maximum 3200 W)
Allocated power:   2157 W (1043 W remaining)
Actual usage:      1176 W
Total system capacity: 3200 W (maximum 3200 W)
Total remaining power: 1043 W

```

| Item | Used(W) |
|------------|---------|
| FPC 0 | 555 |
| FPC 1 | 543 |
| Fan Tray 0 | 12 |
| Fan Tray 1 | 13 |
| Fan Tray 2 | 12 |
| Fan Tray 3 | 12 |
| RE0/CB0 | 55 |

show chassis power (Junos OS Evolved)

```
user@router> show chassis power
```

| Chassis Power | Input(V) | Used(W) |
|---------------|-------------------------|---------|
| Total Power | | 1444 |
| PDU 0 | | 1444 |
| PSM 1 | | |
| Input 1 | 202 | 703 |
| Capacity: | 3000 W (maximum 3000 W) | |
| PSM 2 | | |
| Input 1 | 202 | 741 |
| Capacity: | 3000 W (maximum 3000 W) | |

Starting in Junos OS Evolved Release 19.1R1, the **show chassis power** output does not display the PSM state and the system summary information.

show chassis power detail (Junos OS Evolved)

```
user@router> show chassis power detail
```

| Chassis Power | Input(V) | Used(W) |
|---------------|-------------------------|---------|
| Total Power | | 1461 |
| PDU 0 | | 1461 |
| PSM 1 | | |
| Input 1 | 203 | 700 |
| Capacity: | 3000 W (maximum 3000 W) | |
| PSM 2 | | |
| Input 1 | 202 | 761 |
| Capacity: | 3000 W (maximum 3000 W) | |

| Item | Used(W) |
|------------------|---------|
| Routing Engine 0 | 122 |
| CB 0 | 266 |
| FPC 0 | 428 |
| FPC 1 | 370 |
| Fan Tray 1 | 22 |
| Fan Tray 2 | 21 |

```
Fan Tray 3          27

System:
Zone 0:
  Capacity:          6000 W (maximum 6000 W)
  Allocated power:   2700 W (3300 W remaining)
  Actual usage:      1455 W
  Total system capacity: 6000 W (maximum 6000 W)
  Total remaining power: 3300 W
```

Starting in Junos OS Evolved Release 19.1R1, the **show chassis power detail** output does not display the PSM state.

show chassis power sequence

| | |
|---------------------------------|---|
| Syntax | show chassis power sequence |
| Release Information | <p>Command introduced in Junos OS Release 10.0.</p> <p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.</p> |
| Description | <p>(MX Series 5G Universal Routing Platforms only) Show power-on sequence for the chassis Dense Port Concentrators (DPCs).</p> <p>(PTX Series Packet Transport Routers, MX2010 and MX2020 routers only) Show power-on sequence for FPCs installed in the chassis.</p> |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> show chassis power on page 1438 |
| List of Sample Output | <p>show chassis power sequence (MX Series) on page 1468</p> <p>show chassis power sequence (MX2010 Routers) on page 1469</p> <p>show chassis power sequence (MX2020 Routers) on page 1469</p> <p>show chassis power sequence (PTX5000 Packet Transport Router) on page 1469</p> |
| Output Fields | <p>Table 94 on page 1468 lists the output fields for the show chassis power sequence command. Output fields are listed in the approximate order in which they appear.</p> |

Table 94: show chassis power sequence Output Fields

| Field Name | Field Description |
|-----------------------------------|---|
| Chassis FRU Power Sequence | <p>(MX Series) Power-on sequence for the DPCs in the chassis. The numbers indicate the slot number of the DPCs.</p> <p>(PTX Series, MX2010 and MX2020 routers only) Power-on sequence for the FPCs in the chassis. The numbers indicate the slot number of the FPC.</p> |

Sample Output

show chassis power sequence (MX Series)

```
user@host> show chassis power sequence
Chassis FRU Power Sequence: 3 4 5 6 7 8 9 10 11 0 1 2
```


show chassis power sequence (MX2010 Routers)

```
user@host > show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7 8 9
```

show chassis power sequence (MX2020 Routers)

```
user@host > show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
```

show chassis power sequence (PTX5000 Packet Transport Router)

```
user@host> show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7
```

show chassis psd

Syntax `show chassis psd`

Release Information Command introduced in Junos OS Release 9.1.

Description (Root System Domain [RSD] only) Display information about Protected System Domains (PSDs). A PSD is initially created by the RSD configuration. An RSD and PSDs are supported on a T320 or T640 router, or a T1600 routing node, or a TX Matrix Plus Platform that is interconnected with the JCS1200 platform.



NOTE: RSD configuration is not supported on a routing matrix based on TX Matrix Plus router with 3D SIBs.

Options This command has no options.

Additional Information For more information about PSDs, RSDs, and the JCS1200 platform, see the *Junos OS Protected System Domain Feature Guide for Routing Devices*.

Required Privilege Level view

List of Sample Output [show chassis psd on page 1471](#)

Output Fields [Table 95 on page 1470](#) lists the output fields for the `show chassis psd` command. Output fields are listed in the approximate order in which they appear.

Table 95: show chassis psd Output Fields

| Field Name | Field Description |
|------------------|---|
| Slot Description | PSD identification. |
| State | PSD status: <ul style="list-style-type: none"> • Online—PSD is online and running. • Offline—PSD is powered down. |
| Uptime | Length of time that the PSD has been up and running. |

Sample Output

show chassis psd

```
{master}
```

```
user@host> show chassis psd
```

| Slot | Description | State | Uptime |
|------|-------------|--------|----------------------------------|
| 1 | | Online | 12 hours, 19 minutes, 51 seconds |
| 2 | | Online | 2 hours, 18 minutes, 17 seconds |
| 3 | | Online | 12 hours, 19 minutes, 51 seconds |

show chassis redundancy feb

| | |
|---------------------------------|--|
| Syntax | <pre>show chassis redundancy feb <errors> <redundancy-group group-name></pre> |
| Release Information | Command introduced in Junos OS Release 8.2. |
| Description | (M120 routers only) Display information about the status of configured Forwarding Engine Board (FEB) redundancy groups. |
| Options | <p>none—Display information about the status of all configured FEB redundancy groups.</p> <p>redundancy-group group-name—(Optional) Display information about the specified configured redundancy group.</p> <p>errors—(Optional) Display information about any errors encountered on the components in configured redundancy groups or on links between a FEB and a Flexible PIC Concentrator (FPC).</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis redundancy feb slot on page 521 • <i>Configuring FEB Redundancy on the M120 Router</i> • <i>Understanding Switching Control Board Redundancy</i> |
| List of Sample Output | <p>show chassis redundancy feb on page 1473</p> <p>show chassis redundancy feb redundancy-group grp1 on page 1473</p> <p>show chassis redundancy feb redundancy-group grp0 errors on page 1474</p> |
| Output Fields | Table 96 on page 1472 lists the output fields for the show chassis redundancy feb command. Output fields are listed in the approximate order in which they appear. |

Table 96: show chassis redundancy feb Output Fields

| Field name | Field Description |
|------------|--|
| Group | Name of configured redundancy group. |
| FEB | Slot number of each FEB included in redundancy groups. |
| State | State of each FEB: <ul style="list-style-type: none"> • Online—FEB is online and running. • Offline—FEB is powered down. |

Table 96: show chassis redundancy feb Output Fields (continued)

| Field name | Field Description |
|------------------|--|
| Priority | (Standard and redundancy-group option) Status of FEB in the redundancy group: Backup , Primary , Other , or null. |
| Connected FPCs | (Standard and redundancy-group option) Slot number of each FPC connected to the FEB. The status Check is displayed when an error might have occurred. |
| Redundancy State | (Standard and redundancy-group option) Status of the FEB: <ul style="list-style-type: none"> • Active—FEB is currently active. • Ready—Backup FEB is ready for a switchover • Not Ready—Backup FEB is not ready for a switchover. |
| Auto-failover | (Standard and redundancy-group option) Automatic failover status of redundancy group: Enabled or Disabled . |
| Switch-reason | (Standard and redundancy-group option) Reason a switchover occurred to the backup FEB in the redundancy group. |
| Hard error: Yes | (errors option only) Displayed when a hard error occurs on a FEB. |
| FPC | (errors option only) Slot number and status of FPC: link ok or link error . |
| Fabric plane | (errors option only) Slot number and status of fabric plane. |

Sample Output

show chassis redundancy feb

```

user@host> show chassis redundancy feb
Group:      cfpc
FEB  State      Priority  Connected FPCs  Redundancy state
0    Offline     Backup
1    Online      5         Active
Auto-failover: Enabled
Group:      grp0
FEB  State      Priority  Connected FPCs  Redundancy state
3    Offline     Backup
5    Online      Primary  0         Active
Auto-failover: Enabled

```

show chassis redundancy feb redundancy-group grp1

```

user@host> show chassis redundancy feb redundancy-group grp1
Group:      grp1
FEB  State      Priority  Connected FPCs  Redundancy state
0    Online     Other    0         Active
1    Online     Other    1         Active
4    Online     Primary  4         Active
5    Online     Backup   0         Ready

```

```
Autofailover: Enabled
Switch-reason: Switchover from CLI
```

show chassis redundancy feb redundancy-group grp0 errors

```
user@host> show chassis redundancy feb redundancy-group grp0 errors
```

```
Group: grp0
  FEB: 0    State: Online
    FPC 0 link OK
    Fabric plane 0 OK
    Fabric plane 1 OK
    Fabric plane 2 OK
    Fabric plane 3 OK
  FEB: 1    State: Online
    FPC 0 link OK
    Fabric plane 0 OK
    Fabric plane 1 OK
    Fabric plane 2 OK
    Fabric plane 3 OK
  FEB: 2    State: Online
    FPC 2 link OK
    Fabric plane 0 OK
    Fabric plane 1 OK
    Fabric plane 2 OK
    Fabric plane 3 OK
  FEB: 3    State: Online
    FPC 3 link OK
    Fabric plane 0 OK
    Fabric plane 1 OK
    Fabric plane 2 OK
    Fabric plane 3 OK
  FEB: 4    State: Online
    FPC 4 link OK
    Fabric plane 0 OK
    Fabric plane 1 OK
    Fabric plane 2 OK
    Fabric plane 3 OK
  FEB: 5    State: Online
    FPC 5 link OK
    Fabric plane 0 OK
    Fabric plane 1 OK
    Fabric plane 2 OK
    Fabric plane 3 OK
```

show chassis routing-engine

- List of Syntax**
- Syntax on page 1475
 - Syntax (ACX Series Universal Metro Routers) on page 1475
 - Syntax (EX Series Switches) on page 1475
 - Syntax (QFX Series) on page 1475
 - Syntax (MX Series Routers) on page 1475
 - Syntax (MX2010 Universal Routing Platforms) on page 1475
 - Syntax (MX2020 Universal Routing Platforms) on page 1476
 - Syntax (MX104 Universal Routing Platforms) on page 1476
 - Syntax (MX204 and MX10003 Universal Routing Platforms) on page 1476
 - Syntax (PTX Series Packet Transport Routers) on page 1476
 - Syntax (T Series Routers) on page 1476
 - Syntax (TX Matrix Routers) on page 1476
 - Syntax (TX Matrix Plus Routers) on page 1476

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 <i>slot</i> > |
| Syntax (MX104 Universal Routing Platforms) | show chassis routing-engine |
| Syntax (MX204 and MX10003 Universal Routing Platforms) | show chassis routing-engine < <i>slot</i> > <bios> <errors> |
| Syntax (PTX Series Packet Transport Routers) | show chassis routing-engine |
| Syntax (T Series Routers) | show chassis routing-engine <bios <i>slot</i> > |
| Syntax (TX Matrix Routers) | show chassis routing-engine <bios <i>slot</i> > <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Routers) | show chassis routing-engine <bios <i>slot</i> > <lcc <i>number</i> sfc <i>number</i> > |
| 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 on page 522](#)
- [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 1481](#)
[show chassis routing-engine \(M10 Router\) on page 1482](#)
[show chassis routing-engine \(M20 Router\) on page 1482](#)
[show chassis routing-engine \(M40 Router\) on page 1483](#)
[show chassis routing-engine \(M120 Router\) on page 1483](#)
[show chassis routing-engine \(M160 Router\) on page 1484](#)
[show chassis routing-engine \(MX104 Router\) on page 1485](#)
[show chassis routing-engine \(MX240 Router\) on page 1486](#)
[show chassis routing-engine \(MX480 Router\) on page 1486](#)
[show chassis routing-engine \(MX960 Router\) on page 1487](#)
[show chassis routing-engine \(MX2010 Router\) on page 1488](#)
[show chassis routing-engine \(MX2020 Router\) on page 1489](#)
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[show chassis routing-engine \(MX204 Router\) on page 1491](#)
[show chassis routing-engine \(T320 Router\) on page 1491](#)
[show chassis routing-engine \(T640 Router\) on page 1492](#)
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[show chassis routing-engine \(TX Matrix Router\) on page 1494](#)
[show chassis routing-engine lcc \(TX Matrix Router\) on page 1496](#)
[show chassis routing-engine bios \(TX Matrix Router\) on page 1496](#)
[show chassis routing-engine \(TX Matrix Plus Router\) on page 1496](#)
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[show chassis routing-engine interconnect-device \(QFabric Systems\) on page 1500](#)
[show chassis routing-engine \(PTX Series Packet Transport Router\) on page 1500](#)
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[show chassis routing-engine \(EX9251 Switch\) on page 1502](#)
[show chassis routing-engine \(ACX2000 Universal Metro Router\) on page 1502](#)
[show chassis routing-engine \(ACX1000 Universal Metro Router\) on page 1503](#)

[show chassis routing-engine](#) (Displaying the guest reboot reason on PTX5000, MX240, MX480, MX960 < MX2010, and MX2020) on page 1503

Output Fields [Table 97 on page 1479](#) lists the output fields for the **show chassis routing-engine** command. Output fields are listed in the approximate order in which they appear.

Table 97: 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. |

Table 97: show chassis routing-engine Output Fields (continued)

| Field Name | Field Description |
|-------------------------------|--|
| 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. |
| 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 97: 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 | Master |
| Election priority | Master (default) |
| Temperature | 33 degrees C / 91 degrees F |
| CPU temperature | 32 degrees C / 89 degrees F |
| DRAM | 16323 MB (16384 MB installed) |
| Memory utilization | 7 percent |

```

5 sec CPU utilization:
  User          1 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          98 percent
1 min CPU utilization:
  User          2 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          97 percent
5 min CPU utilization:
  User          1 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          97 percent
15 min CPU utilization:
  User          1 percent
  Background    0 percent
  Kernel        1 percent
  Interrupt     0 percent
  Idle          97 percent
Model          RE-S-1800x4
Serial ID      9009122628
Start time     2019-05-29 21:58:46 PDT
Uptime         11 days, 5 hours, 8 minutes, 55 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages: 1 minute   5 minute  15 minute
                  0.28      0.22     0.22

```

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        34 degrees C / 93 degrees F
  CPU temperature    33 degrees C / 91 degrees F
  DRAM               16325 MB (16384 MB installed)
  Memory utilization 7 percent
5 sec CPU utilization:
  User          1 percent
  Background    0 percent
  Kernel        3 percent
  Interrupt     1 percent
  Idle          95 percent
1 min CPU utilization:
  User          0 percent
  Background    0 percent
  Kernel        3 percent
  Interrupt     0 percent
  Idle          97 percent
5 min CPU utilization:
  User          0 percent
  Background    0 percent

```

```

Kernel                3 percent
Interrupt              0 percent
Idle                  97 percent
15 min CPU utilization:
User                  0 percent
Background            0 percent
Kernel                2 percent
Interrupt              0 percent
Idle                  97 percent
Model                 RE-S-1800x4
Serial ID              9013043129
Start time             2019-04-29 13:07:15 CEST
Uptime                 15 days, 22 hours, 42 minutes, 57 seconds
Last reboot reason     Router rebooted after a normal shutdown.
Load averages:         1 minute   5 minute  15 minute
                       0.17       0.20     0.22

Routing Engine status:
Slot 1:
Current state          Backup
Election priority       Backup (default)
Temperature             33 degrees C / 91 degrees F
CPU temperature         32 degrees C / 89 degrees F
DRAM                   16330 MB (16384 MB installed)
Memory utilization      9 percent
5 sec CPU utilization:
User                   0 percent
Background             0 percent
Kernel                 0 percent
Interrupt              0 percent
Idle                   100 percent
Model                 RE-S-1800x4
Serial ID              9013043081
Start time             2019-04-29 13:05:17 CEST
Uptime                 15 days, 22 hours, 44 minutes, 52 seconds
Last reboot reason     0x1:power cycle/failure
Load averages:         1 minute   5 minute  15 minute
                       0.17       0.17     0.12

```

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
```

```
lcc0-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.17
```

```
lcc2-re0:
```

```
-----
Routing Engine BIOS Version: V1.0.0

```

show chassis routing-engine (TX Matrix Plus Router)

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

```
sfc0-re0:
```

```
-----
Routing Engine status:
```

```
Slot 0:
```

```
Current state Master
```

```

Election priority      Master (default)
Temperature           27 degrees C / 80 degrees F
CPU temperature       42 degrees C / 107 degrees F
DRAM                 3327 MB
Memory utilization    12 percent
CPU utilization:
  User                0 percent
  Background          0 percent
  Kernel              2 percent
  Interrupt           0 percent
  Idle                98 percent
Model                RE-TXP-SFC
Serial ID             737A-1024
Start time            2009-05-11 17:39:49 PDT
Uptime                3 hours, 45 minutes, 25 seconds
Last reboot reason    Router rebooted after a normal shutdown.
Load averages:        1 minute   5 minute   15 minute
                      0.00       0.00       0.00

```

Routing Engine status:

Slot 1:

```

Current state         Backup
Election priority     Backup (default)
Temperature           29 degrees C / 84 degrees F
CPU temperature       43 degrees C / 109 degrees F
DRAM                 3327 MB
Memory utilization    11 percent
CPU utilization:
  User                0 percent
  Background          0 percent
  Kernel              0 percent
  Interrupt           0 percent
  Idle                100 percent
Model                RE-TXP-SFC
Serial ID             737A-1024
Start time            2009-05-11 17:08:54 PDT
Uptime                4 hours, 16 minutes, 52 seconds
Last reboot reason    0x1:power cycle/failure

```

lcc0-re0:

Routing Engine status:

Slot 0:

```

Current state         Master
Election priority     Master (default)
Temperature           30 degrees C / 86 degrees F
CPU temperature       43 degrees C / 109 degrees F
DRAM                 3327 MB
Memory utilization    9 percent
CPU utilization:
  User                0 percent
  Background          0 percent
  Kernel              2 percent
  Interrupt           0 percent
  Idle                98 percent
Model                RE-TXP-LCC
Serial ID             737F-1024
Start time            2009-05-11 17:40:32 PDT
Uptime                3 hours, 44 minutes, 51 seconds
Last reboot reason    Router rebooted after a normal shutdown.
Load averages:        1 minute   5 minute   15 minute

```

```

                                0.00      0.00      0.00
Routing Engine status:
  Slot 1:
    Current state                Backup
    Election priority            Backup (default)
    Temperature                  30 degrees C / 86 degrees F
    CPU temperature              43 degrees C / 109 degrees F
    DRAM                        3327 MB
    Memory utilization           9 percent
    CPU utilization:
      User                       0 percent
      Background                 0 percent
      Kernel                     0 percent
      Interrupt                  0 percent
      Idle                       100 percent
    Model                        RE-TXP-LCC
    Serial ID                    737F-1024
    Start time                   2009-05-06 17:31:32 PDT
    Uptime                       5 days, 3 hours, 54 minutes, 19 seconds
    Last reboot reason           Router rebooted after a normal shutdown.

```

show chassis routing-engine lcc (TX Matrix Plus Router)

```

user@host> show chassis routing-engine 0 lcc 0
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 scb

| | |
|---------------------------------|--|
| Syntax | show chassis scb |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40 router only) Display System Control Board (SCB) status information. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> <i>Checklist for Monitoring the SCB</i> |
| List of Sample Output | show chassis scb on page 1506 |
| Output Fields | Table 98 on page 1504 lists the output fields for the show chassis scb command. Output fields are listed in the approximate order in which they appear. |

Table 98: show chassis scb Output Fields

| Field Name | Field Description |
|-----------------------|---|
| Temperature | Temperature of the air passing by the SCB, in degrees Celsius. |
| CPU utilization | Total percentage of CPU being used by the SCB's processor. |
| Interrupt utilization | Of the total CPU being used by the SCB's processor, the percentage being used for interrupts. |
| Heap utilization | Percentage of heap space being used by the SCB's processor. |
| Buffer utilization | Percentage of buffer space being used by the SCB's processor. |
| DRAM | Total DRAM available to the SCB's processor. |
| Start time | Time when the SCB started running. |
| Uptime | How long the SCB has been running. |

Table 98: show chassis scb Output Fields (continued)

| Field Name | Field Description |
|----------------------------------|--|
| Internet Processor memory | <p>Information about the memory of the Internet Processor ASIC on the SCB:</p> <ul style="list-style-type: none">• IP routes—Number of IP routes known to the Internet Processor.• MPLS routes—Number of MPLS routes known to the Internet Processor.• SRAM banks enabled—Which SRAM banks are enabled.• SRAM size—Size of SCB SRAM, in bytes.• SRAM used—Amount of SRAM used, in bytes.• SRAM utilization—Percentage of SRAM used. |

Sample Output

show chassis scb

```
user@host> show chassis scb
```

```
SCB status:
  Temperature:          30 Centigrade
  CPU utilization:       5 percent
  Interrupt utilization: 0 percent
  Heap utilization:      0 percent
  Buffer utilization:     2 percent
  DRAM:                  64 Mbytes
  Start time:            1998-10-28 18:35:46 UTC
  Uptime:                6 minutes, 16 seconds
  Internet Processor memory:
    IP routes:           16
    MPLS routes:         1
    SRAM banks enabled:  [ 1 1 1 1 ]
    SRAM size:           4 Mbytes
    SRAM used:           256 bytes
    SRAM utilization:    0 percent
```

show chassis sfb

| | |
|--|---|
| List of Syntax | Syntax on page 1507 Syntax (MX10008 Universal Edge Routers) on page 1507 |
| Syntax | <pre>show chassis sfb <all-members> <local> <member <i>member-id</i>> < slot <i>sfb-slot-number</i>></pre> |
| Syntax (MX10008 Universal Edge Routers) | <pre>show chassis sfb errors < slot <i>sfb-slot-number</i>></pre> |
| Release Information | <p>Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms. Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.</p> |
| Description | Display chassis information about the Switch Fabric Board (SFB). |
| Options | <p>none—Display chassis information about all Switch Fabric Boards.</p> <p>all-members—(Optional) Display chassis information about the SFB in all members of the Virtual Chassis configuration.</p> <p>local—(Optional) Display chassis information about the SFB in the local member of the Virtual Chassis.</p> <p>member <i>member-id</i>—(Optional) Display chassis information about the SFB in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p> <p><i>sfb-slot-number</i>—(Optional) Display chassis information about the specified Switch Fabric Board. For MX2020, MX2010, and MX2008 routers, replace <i>sfb-slot-number</i> with a value from 0 through 7.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis sfb on page 530 |
| List of Sample Output | show chassis sfb (MX2020 Router) on page 1508 show chassis sfb (MX2010 Router) on page 1508 |

[show chassis sfb \(MX2008 Router\) on page 1508](#)
[show chassis sfb \(MX10008 Router\) on page 1509](#)

Output Fields Table 99 on page 1508 lists the output fields for the **show chassis sfb** command. Output fields are listed in the approximate order in which they appear.

Table 99: show chassis sfb Output Fields

| Field Name | Field Description |
|------------|---|
| Slot | Slot number. |
| State | Status of the SFB. <ul style="list-style-type: none"> • Online—The SFB is online and running. • Offline— SFB is powered down. |
| Uptime | How long the Routing Engine has been connected to the SFB and, therefore, how long the SFB has been up and running. |

Sample Output

show chassis sfb (MX2020 Router)

```
user@host> show chassis sfb
```

| Slot | State | Uptime |
|------|--------|---------------------------------|
| 0 | Online | 6 hours, 11 minutes, 33 seconds |
| 1 | Online | 6 hours, 11 minutes, 27 seconds |
| 2 | Online | 6 hours, 11 minutes, 21 seconds |
| 3 | Online | 6 hours, 11 minutes, 15 seconds |
| 4 | Online | 6 hours, 11 minutes, 8 seconds |
| 5 | Online | 6 hours, 11 minutes, 2 seconds |
| 6 | Online | 6 hours, 10 minutes, 57 seconds |
| 7 | Online | 6 hours, 10 minutes, 51 seconds |

show chassis sfb (MX2010 Router)

```
user@host> show chassis sfb
```

| Slot | State | Uptime |
|------|---------|---------------------------------------|
| 0 | Online | 6 hours, 48 minutes, 28 seconds |
| 1 | Online | 6 hours, 48 minutes, 23 seconds |
| 2 | Online | 6 hours, 48 minutes, 17 seconds |
| 3 | Offline | --- Restarting unresponsive board --- |
| 4 | Online | 6 hours, 48 minutes, 12 seconds |
| 5 | Online | 6 hours, 48 minutes, 6 seconds |
| 6 | Online | 6 hours, 48 minutes |
| 7 | Online | 6 hours, 47 minutes, 55 seconds |

show chassis sfb (MX2008 Router)

```
user@host> show chassis sfb
```

| Slot | State | Uptime |
|------|--------|--|
| 0 | Online | 10 days, 6 hours, 52 minutes, 38 seconds |

| | | |
|---|--------|--|
| 1 | Online | 10 days, 6 hours, 52 minutes, 32 seconds |
| 2 | Online | 10 days, 6 hours, 52 minutes, 26 seconds |
| 3 | Online | 10 days, 6 hours, 52 minutes, 20 seconds |
| 4 | Online | 10 days, 6 hours, 52 minutes, 15 seconds |
| 5 | Online | 10 days, 6 hours, 52 minutes, 9 seconds |
| 6 | Online | 10 days, 6 hours, 52 minutes, 3 seconds |
| 7 | Online | 10 days, 6 hours, 51 minutes, 58 seconds |

show chassis sfb (MX10008 Router)

```
user@host> show chassis sfb
```

| Slot | State | Uptime |
|------|--------|----------------------------------|
| 0 | Online | 21 hours, 25 minutes, 50 seconds |
| 1 | Online | 21 hours, 25 minutes, 22 seconds |
| 2 | Online | 21 hours, 24 minutes, 55 seconds |
| 3 | Online | 21 hours, 24 minutes, 27 seconds |
| 4 | Online | 21 hours, 23 minutes, 56 seconds |
| 5 | Online | 21 hours, 23 minutes, 23 seconds |

show chassis sfb errors

Syntax `show chassis sfb errors
< slot sfb-slot-number>`

Release Information Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platform.

Description Display information about errors pertaining to Switch Fabric Boards (SFBs).

Options **none**—Display information about the errors pertaining to all the SFBs in the router.

sfb-slot-number—(Optional) Display information about error for the specified Switch Fabric Board.

Range: 0–5

Required Privilege Level view

Related Documentation • [request chassis sfb on page 530](#)

List of Sample Output [show chassis sfb errors slot 1\(MX10008 Router\) on page 1511](#)

Output Fields [Table 99 on page 1508](#) lists the output fields for the **show chassis sfb errors** command. Output fields are listed in the approximate order in which they appear.

Table 100: show chassis sfb errors Output Fields

| Field Name | Field Description |
|-------------|---|
| Slot | Displays the SFB slot number. |
| Name | Displays the name of the SFB. In MX10008 routers, SFB is identified as SIB. |
| DeviceID | Displays device ID. |
| Threshold | Displays the error threshold. |
| Active | Displays the number of active error instances. |
| Occurred | Displays the number of error instances occurred. |
| Cleared | Displays the number of error instances cleared. |
| Description | Displays error description. |

Sample Output

show chassis sfb errors slot 1(MX10008 Router)

```
user@host> show chassis sfb errors slot 1
```

| Slot Name | DeviceId | Threshold | Active | Occured | Cleared | Description |
|-------------------|------------|-----------|--------|---------|---------|-------------|
| 1 SIB 1_LTC3880_0 | 09204F8B00 | 1 | 0 | 0 | 0 | PF0 Core |
| 0.9V, voltage | 09204FFFFF | 1 | 0 | 0 | 0 | PF0 Core |
| 0.9V, I2C Access | | | | | | |
| SIB 1_LTC3880_1 | 09204D8B00 | 1 | 0 | 0 | 0 | PF0 AVDD |
| 1V, voltage | 09204DFFFF | 1 | 0 | 0 | 0 | PF0 AVDD |
| 1V, I2C Access | | | | | | |
| SIB 1_LTC3880_2 | 09204B8B00 | 1 | 0 | 0 | 0 | PF1 Core |
| 0.9V, voltage | 09204BFFFF | 1 | 0 | 0 | 0 | PF1 Core |
| 0.9V, I2C Access | | | | | | |
| SIB 1_LTC3880_3 | 0920498B00 | 1 | 0 | 0 | 0 | PF1 AVDD |
| 1V, voltage | 092049FFFF | 1 | 0 | 0 | 0 | PF1 AVDD |
| 1V, I2C Access | | | | | | |
| SIB 1_VT7505_0 | 0910408800 | 1 | 0 | 0 | 0 | HOTSWAP |
| 12V, voltage | 091040FFFF | 1 | 0 | 0 | 0 | HOTSWAP |
| 12V, I2C Access | | | | | | |
| SIB 1_TEMP_0 | 0901000000 | 1 | 0 | 0 | 0 | Intake-A |
| Temp Sensor | 0901000100 | 1 | 0 | 0 | 0 | Intake-B |
| Temp Sensor | 0901002300 | 1 | 0 | 0 | 0 | PF0 Temp |
| Sensor | | | | | | |
| SIB 1_TEMP_1 | 0902000000 | 1 | 0 | 0 | 0 | Exhaust-A |
| Temp Sensor | 0902000100 | 1 | 0 | 0 | 0 | Exhaust-B |
| Temp Sensor | 0902002300 | 1 | 0 | 0 | 0 | PF1 Temp |
| Sensor | | | | | | |

show chassis sfm

| | |
|---------------------------------|--|
| Syntax | <code>show chassis sfm</code> <code><detail <sfm-slot>></code> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M40e and M160 routers only) Display Switching and Forwarding Module (SFM) status information. |
| Options | <p>none—Display standard status information about all SFMs.</p> <p>detail—(Optional) Display detailed SFM status information.</p> <p>sfm-slot—(Optional) Display status information about the SFM in the specified slot only. For the M40e router, replace sfm-slot with 0 or 1. For the M160 router, replace sfm-slot with a value from 0 through 3.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • request chassis sfm on page 534 • request chassis sfm master switch on page 532 • <i>Switching the Global Master and Backup Roles in a Virtual Chassis Configuration</i> |
| List of Sample Output | show chassis sfm (M160 Router) on page 1513 show chassis sfm detail (M40e Router) on page 1514 show chassis sfm detail (M160 Router) on page 1514 |
| Output Fields | Table 101 on page 1512 lists the output fields for the show chassis sfm command. Output fields are listed in the approximate order in which they appear. |

Table 101: show chassis sfm Output Fields

| Field Name | Field Description | Level of Output |
|---------------|---|-----------------|
| Slot | Slot number. | All levels |
| State | Status of the SFM. State can be any of the following: <ul style="list-style-type: none"> • Online—SFM is online and running. • Online-Standby (M40e router only)—SFM is online, operating as Standby. • Offline—SFM is powered down. • Empty—No SFM is present. | All levels |
| Reason | If the status is Offline , reason for this state. | All levels |

Table 101: show chassis sfm Output Fields (continued)

| Field Name | Field Description | Level of Output |
|-------------------------------|---|-----------------|
| Temp | Temperature of air passing by the SFM, in degrees Celsius. | none specified |
| CPU Utilization (%) | Information about CPU usage. | none specified |
| Total | Total percentage of the CPU being used by the SFM's processor. | All levels |
| Interrupt | Of the total CPU being used by the SFM's processor, the percentage being used for interrupts. | All levels |
| Memory Utilization | Information about memory usage. | none specified |
| DRAM | Total DRAM available to the SFM's processor, in megabytes (MB). | All levels |
| Heap | Percentage of heap space (dynamic memory) being used by the SFM's processor. If this number exceeds 80 percent, it might indicate a software problem (memory leak). | All levels |
| Buffer | Percentage of buffer space being used by the SFM's processor for buffering internal messages. | All levels |
| SPP Temperature | Temperature of air passing by the Switch Plane Processor card, in degrees Celsius and Fahrenheit | detail |
| SPR Temperature | Temperature of air passing by the Switch Plane Router card, in degrees Celsius and Fahrenheit. | detail |
| Total CPU DRAM | Total amount of CPU DRAM being used by the SFM's processor. | detail |
| Total SSRAM | Total amount of SSRAM being used by the SFM's processor. | detail |
| Internet processor II | (M160 router only) Processor type. | detail |
| Start time | Time this SFM became active. | detail |
| Uptime | How long the SFM has been up and running. | detail |
| Packet scheduling mode | (M160 router only) Enabled or disabled. | detail |

Sample Output

show chassis sfm (M160 Router)

```
user@host> show chassis sfm
```

```
SFM status:
```

```
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
                (C)   Total  Interrupt          DRAM (MB) Heap      Buffer
```

| | | | | | | | |
|---|--------|----|---|---|----|---|---|
| 0 | Online | 39 | 0 | 0 | 64 | 0 | 6 |
| 1 | Online | 43 | 0 | 0 | 64 | 0 | 6 |
| 2 | Empty | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Empty | 0 | 0 | 0 | 0 | 0 | 0 |

show chassis sfm detail (M40e Router)

```
user@host> show chassis sfm detail
```

```
Slot 0 information:
  State                Offline
  Reason:              - power configured off
Slot 1 information:
  State                Present
  SPP temperature      0 degrees C / 32 degrees F
  SPR temperature      0 degrees C / 32 degrees F
  Total CPU DRAM       0 MB
  Total SSRAM          0 MB
```

show chassis sfm detail (M160 Router)

```
user@host> show chassis sfm detail
```

```
Slot 0 information:
  State                Online
  SPP temperature      37 degrees C / 98 degrees F
  SPR temperature      39 degrees C / 102 degrees F
  Total CPU DRAM       64 MB
  Total SSRAM          8 MB
  Internet Processor II Version 1, Foundry IBM, Part number 9
  Start time:          2004-08-17 09:23:08 PDT
  Uptime:              72 days, 1 hour, 15 minutes, 57 seconds
Slot 1 information:
  State                Online
  SPP temperature      36 degrees C / 96 degrees F
  SPR temperature      37 degrees C / 98 degrees F
  Total CPU DRAM       64 MB
  Total SSRAM          8 MB
  Internet Processor II Version 1, Foundry IBM, Part number 9
  Start time:          2004-08-17 09:23:08 PDT
  Uptime:              72 days, 1 hour, 15 minutes, 57 seconds
Slot 2 information:
....
Packet scheduling mode : Disabled
```

show chassis sibs

| | |
|---|--|
| List of Syntax | Syntax on page 1515 Syntax (TX Matrix Router) on page 1515 Syntax (TX Matrix Plus Router) on page 1515 Syntax (PTX Series Packet Transport Routers) on page 1515 |
| Syntax | show chassis sibs |
| Syntax (TX Matrix Router) | show chassis sibs <lcc number scc> |
| Syntax (TX Matrix Plus Router) | show chassis sibs <lcc number sfc number> |
| Syntax (PTX Series Packet Transport Routers) | show chassis sibs <detail> <slot> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 12.1 for the PTX Series Packet Transport Routers.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>detail and sib-slot options introduced for the PTX Packet Transport Router in Junos OS Release 12.1</p> <p>Command introduced in Junos OS Release 17.2 for PTX10008 Routers.</p> |
| Description | (M320,T Series routers, TX Matrix routers, TX Matrix Plus routers, and PTX Series routers only) Display Switch Interface Boards (SIBs) status information. |
| Options | <p>none—(TX Matrix routers and TX Matrix Plus routers only) On a TX Matrix router, display the SIB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display the SIB status for the TX Matrix Plus router and its attached routers.</p> <p>detail—(PTX Series) (Optional) Display detailed SIB status information.</p> <p>lcc number—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display SIB status information for a specified T640 router (line-card chassis or LCC) that is connected to the TX Matrix router. On a TX Matrix Plus router, display SIB status information for a specified T1600 or T4000 router (LCC) that is connected to the TX Matrix Plus router.</p> |

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

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

scc—(TX Matrix routers only) (Optional) Display SIB status information for the TX Matrix router (switch-card chassis).

sfc number—(TX Matrix Plus routers only) (Optional) Display SIB status information for the TX Matrix Plus router (switch-fabric chassis or SFC). Replace *number* with 0.

slot—(PTX Series) (Optional) Display status information about the SIB in the specified slot only. The range of values is 0 through 8.

Required Privilege Level view

Related Documentation

- [request chassis sib on page 535](#)
- [show chassis spmb sibs on page 1538](#)
- [show chassis environment sib on page 919](#)
- [Monitoring the SIBs](#)
- [M320 SIB Description](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

- [show chassis sibs \(T640 Router\) on page 1519](#)
- [show chassis sibs \(T4000 Router\) on page 1520](#)
- [show chassis sibs \(TX Matrix Router\) on page 1520](#)
- [show chassis sibs \(T1600 Router\) on page 1520](#)
- [show chassis sibs \(TX Matrix Plus Router\) on page 1521](#)
- [show chassis sibs \(TX Matrix Plus Router with 3D SIBs\) on page 1522](#)
- [show chassis sibs sfc \(TX Matrix Plus Router\) on page 1524](#)
- [show chassis sibs lcc \(TX Matrix Plus Router\) on page 1525](#)
- [show chassis sibs lcc \(TX Matrix Plus Router with 3D SIBs\) on page 1525](#)
- [show chassis sibs \(M320 Router\) on page 1525](#)
- [show chassis sibs \(PTX Series\) on page 1526](#)
- [show chassis sibs \(PTX Series\) on page 1526](#)
- [show chassis sibs \(PTX5000\) on page 1526](#)

Output Fields Table 102 on page 1517 lists the output fields for the **show chassis sibs** command. Output fields are listed in the approximate order in which they appear.

Table 102: show chassis sibs Output Fields

| Field Name | Field Description |
|------------|---|
| Slot | SIB slot number. |
| Type | (TX Matrix Plus router only) SIB type. |
| Uptime | How long the SIB has been up and running. |
| State | <p>SIB status:</p> <ul style="list-style-type: none"> • Activating—SIB is coming online; this is a transitional state. • Deactivating—SIB is going offline; this is a transitional state. • Connected—SIBs on a T1600 router are connected and trained but are either not online or are spare, because the plane on the TX Matrix Plus router (or switch-fabric chassis) is still offline. • Disconnected—SIBs on all T640 routers on the TX Matrix router (switch-card chassis) are in the Disconnected state, because a SIB on the SCC has gone offline. Likewise, SIBs on all T1600 routers on the TX Matrix Plus router (or switch-fabric chassis) are in the Disconnected state, because a SIB on the SFC has gone offline. <p>On the TX Matrix Plus router with 3D SIBs, the LCC SIB is also disconnected if the F13 SIB is online, but none of the cables are connected or trained.</p> <ul style="list-style-type: none"> • Onlining—SIB is in the process of going online. ASICs , retimers and the rest of the hardware is initializing. • Online—SIB is operational and running. • Offlining—SIB is in the process of going offline. ASICs , retimers and rest of the hardware is being shutdown down to take the offline gracefully. • Offline—SIB is powered down. <p>NOTE: If a SIB transitions to the Offline state, the command displays an appropriate reason in the output. For instance, if the SIB is taken offline using the request chassis sib command, the show chassis sibs command displays --- Offlined by cli command --- in the output.</p> <ul style="list-style-type: none"> • Spare—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic. <p>NOTE: Spare does not apply to PTX Series Packet Transport Routers, as there are no spare SIBs.</p> <ul style="list-style-type: none"> • Empty—No SIB is present. • Fault—SIB is in an alarmed state in which none of the SIB's planes are operational for one of the following reasons: <ul style="list-style-type: none"> • All onboard fabric ASICs are not operational. • Fiber-optic connector faults. • FPC connector faults. |

Table 102: show chassis sibs Output Fields (continued)

| Field Name | Field Description |
|------------|--|
| | <ul style="list-style-type: none"> SIB midplane connector faults. Fault-off—SIB is powered off due to a fault in SIB. Check—SIB is in an alarmed state due to link errors or destination errors. A SIB can transition to the Check state from the online or spare state. The Check state can be caused by the following reasons: <ul style="list-style-type: none"> Unsupported FPC installed on a router. SIB not inserted properly (such as bent pins). Destination errors are detected on the SIB. In this case, the Packet Forwarding Engine stops using the SIB to send traffic to the affected destination Packet Forwarding Engine. When a Packet Forwarding Engine cannot be reached on that plane or SIB, a destination error is reported against that SIB. <p>NOTE: For SIBs in the Check state, the output displays some additional information:</p> <ul style="list-style-type: none"> In Junos OS Release 9.6 and later, the Check state message shows the number of Packet Forwarding Engines in the plane having destination errors. For example, Check (10 destination errors) indicates 10 Packet Forwarding Engines cannot be reached on that particular SIB. If there are no destination errors, and if the SIB transitions to the Check state because of link errors only, the Check state message shows Check (0 destination errors). In Junos OS Release 9.5 and earlier, the Check state message shows Check (destination errors) if there are Packet Forwarding Engines with destination errors in this plane. However, it does not show the number of Packet Forwarding Engines having destination errors. If there are no destination errors and if the SIB transitions to the Check state because of link errors only, the Check state message shows Check (no destination errors). <p>If the SIB is in a Check state, because of destination errors, the CLI displays an additional line in the output, use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details.</p> <ul style="list-style-type: none"> Link errors are detected on the channel between the SIB and a Packet Forwarding Engine. Link errors can be detected at initialization time or runtime: <ul style="list-style-type: none"> Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The show chassis fabric fpcs command shows Plane disabled as status for this link. Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The show chassis fabric fpcs command shows Link error as the status for this link. <p>NOTE: The Check state does not apply to PTX Series Packet Transport Routers.</p> |

Table 102: show chassis sibs Output Fields (continued)

| Field Name | Field Description |
|---------------------------|--|
| | <ul style="list-style-type: none"> • SFC Error—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the Fault state (for instance, because of link errors), and then if an LCC SIB (connected to the F13 SIB) comes online, the LCC SIB transitions to the SFC Error state. This state indicates that the F13 SIB to which the LCC SIB is connected has errors. <p>NOTE: The Connected, Disconnected, and SFC Error states are only applicable to the SIBs on an LCC.</p> <ul style="list-style-type: none"> • Invalid—The specific SIB slot is not valid for 4-LCC chassis configuration. See the <i>TX Matrix Plus Hardware Guide</i> for more information about the supported SIB slots. <p>NOTE: The Invalid state is applicable to TX Matrix Plus routers only.</p> <ul style="list-style-type: none"> • Unknown—SIB is present but the state is unknown. • Present—SIB is plugged in. The SIB is not powered on or operational. |
| Fabric links | <p>Indicates status of fabric links on the SIB.</p> <ul style="list-style-type: none"> • Active—All fabric links on SIB are active. Errors detected on the SIB's fabric links, if any, are reported in the Errors column. • Unused—All fabric links on the SIB are not used for fabric traffic. |
| Errors | <p>Indicates if there is any error on the SIB.</p> <ul style="list-style-type: none"> • None—No errors • Link Errors—Fabric link errors were found on SIB RX link. • Cell drops—Fabric cell drops were found on the SIB ASIC. • Link Errors, Cell drops—Both link errors and cell drops were detected on at least one of the SIB's fabric links. • Asic Errors—A fault affecting one of the ASICs on the SIB is detected. It can be an IO error or an internal error signaled by the ASIC. |
| Link Errors | <p>indicate the number of links which are marked faulty because the errors on them have crossed threshold.</p> |
| Cable Errors | <p>Indicate the number of mandatory cables that are not connected, or in up state for that plane</p> |
| Destination Errors | <p>Indicate the number of destinations that are not reachable on this plane.</p> |

Sample Output

show chassis sibs (T640 Router)

```
user@host> show chassis sibs
```

| Slot | State | Uptime |
|------|-------------------------------|---------------------------------------|
| 0 | Empty | |
| 1 | Offline | --- Offlined by cli command --- |
| 2 | Check (21 destination errors) | 1 day, 1 hour, 32 minutes, 55 seconds |
| 3 | Check (0 destination errors) | 1 day, 1 hour, 32 minutes, 45 seconds |
| 4 | Empty | |

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

show chassis sibs (T4000 Router)

```
user@host> show chassis sibs
```

| Slot | State | Uptime |
|------|--------|---------------------------------|
| 0 | Spare | |
| 1 | Online | 3 hours, 48 minutes, 38 seconds |
| 2 | Online | 3 hours, 48 minutes, 22 seconds |
| 3 | Online | 3 hours, 48 minutes, 5 seconds |
| 4 | Online | 3 hours, 47 minutes, 49 seconds |

show chassis sibs (TX Matrix Router)

```
user@host> show chassis sibs
```

scc-re0:

| Slot | State | Uptime |
|------|---------|---|
| 0 | Empty | |
| 1 | Empty | |
| 2 | Offline | --- Offlined by cli command --- |
| 3 | Offline | |
| 4 | Online | 7 days, 21 hours, 50 minutes, 4 seconds |

lcc0-re0:

| Slot | State | Uptime |
|------|-------------------------------|---------------------------------------|
| 0 | Offline | --- Offlined by cli command --- |
| 1 | Empty | |
| 2 | Check (21 destination errors) | 1 day, 1 hour, 32 minutes, 55 seconds |
| 3 | Check (0 destination errors) | 1 day, 1 hour, 32 minutes, 45 seconds |
| 4 | Empty | |

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

show chassis sibs (T1600 Router)

```
user@host> show chassis sibs
```

| Slot | State | Uptime |
|------|----------------------------|---------------------------------|
| 0 | Check (destination errors) | 2 hours, 23 minutes, 2 seconds |
| 1 | Offline | --- Offlined by cli command --- |
| 2 | Check (destination errors) | 2 hours, 23 minutes, 3 seconds |
| 3 | Check (destination errors) | 2 hours, 23 minutes, 3 seconds |
| 4 | Check (destination errors) | 2 hours, 23 minutes, 3 seconds |

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

show chassis sibs (TX Matrix Plus Router)

```
user@host> show chassis sibs
```

```
sfc0-re0:
```

| Slot | State | Type | Link errors | Destination errors | Uptime |
|------------------------|---------|---------|-------------|--------------------|---------|
| 0 | Spare | SIB F13 | NONE | NONE | |
| 1 | Empty | | NONE | NONE | |
| 2 | Invalid | | NONE | NONE | |
| 3 | Online | SIB F13 | NONE | NONE | 1 hour, |
| 53 minutes, 19 seconds | | | | | |
| 4 | Empty | | NONE | NONE | |
| 5 | Invalid | | NONE | NONE | |
| 6 | Online | SIB F13 | NONE | NONE | 1 hour, |
| 53 minutes, 8 seconds | | | | | |
| 7 | Empty | | NONE | NONE | |
| 8 | Online | SIB F13 | NONE | NONE | 1 hour, |
| 52 minutes, 57 seconds | | | | | |
| 9 | Empty | | NONE | NONE | |
| 10 | Invalid | | NONE | NONE | |
| 11 | Online | SIB F13 | NONE | NONE | 1 hour, |
| 52 minutes, 46 seconds | | | | | |
| 12 | Empty | | NONE | NONE | |
| 13 | Invalid | | NONE | NONE | |
| 14 | Invalid | | NONE | NONE | |
| 15 | Invalid | | NONE | NONE | |
| 0/0 | Spare | SIB F2S | NONE | NONE | |
| 0/2 | Spare | SIB F2S | NONE | NONE | |
| 0/4 | Spare | SIB F2S | NONE | NONE | |
| 0/6 | Spare | SIB F2S | NONE | NONE | |
| 1/0 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 29 seconds | | | | | |
| 1/2 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 28 seconds | | | | | |
| 1/4 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 27 seconds | | | | | |
| 1/6 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 26 seconds | | | | | |
| 2/0 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 18 seconds | | | | | |
| 2/2 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 17 seconds | | | | | |
| 2/4 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 16 seconds | | | | | |
| 2/6 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 14 seconds | | | | | |
| 3/0 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 7 seconds | | | | | |
| 3/2 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 5 seconds | | | | | |
| 3/4 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 4 seconds | | | | | |
| 3/6 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 53 minutes, 3 seconds | | | | | |
| 4/0 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 52 minutes, 56 seconds | | | | | |
| 4/2 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 52 minutes, 54 seconds | | | | | |
| 4/4 | Online | SIB F2S | NONE | NONE | 1 hour, |
| 52 minutes, 53 seconds | | | | | |

```

4/6  Online          SIB F2S          NONE          NONE          1 hour,
52 minutes, 52 seconds

lcc0-re0:
-----
Slot  State          Link errors  Destination errors  Uptime
0     Spare          NONE         NONE
1     Online         NONE         NONE         1 hour, 53 minutes, 31
seconds
2     Online         NONE         NONE         1 hour, 53 minutes, 27
seconds
3     Online         NONE         NONE         1 hour, 53 minutes, 23
seconds
4     Online         NONE         NONE         1 hour, 53 minutes, 19
seconds

```

show chassis sibs (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis sibs

sfc0-re0:
-----
Slot  State          Type          Cable errors  Link errors  Destination
errors  Uptime
0     Online         SIB F13       6             NONE         NONE
      21 hours, 54 minutes, 28 seconds
1     Online         SIB F13       8             NONE         NONE
      21 hours, 54 minutes, 12 seconds
2     Invalid
3     Online         SIB F13       6             NONE         NONE
      21 hours, 57 minutes, 6 seconds
4     Online         SIB F13       8             1            NONE
      21 hours, 56 minutes, 49 seconds
5     Invalid
6     Online         SIB F13       6             NONE         NONE
      21 hours, 56 minutes, 25 seconds
7     Online         SIB F13       8             NONE         NONE
      21 hours, 56 minutes, 8 seconds
8     Online         SIB F13       6             NONE         NONE
      21 hours, 55 minutes, 43 seconds
9     Online         SIB F13       8             NONE         NONE
      21 hours, 55 minutes, 26 seconds
10    Invalid
11    Empty
12    Empty
13    Invalid
14    Invalid
15    Invalid
0/0   Online         SIB F2S      -n/a-         NONE         NONE
      21 hours, 55 minutes, 16 seconds
0/2   Online         SIB F2S      -n/a-         NONE         NONE
      21 hours, 54 minutes, 49 seconds
0/4   Online         SIB F2S      -n/a-         NONE         NONE
      21 hours, 54 minutes, 47 seconds
0/6   Online         SIB F2S      -n/a-         NONE         NONE
      21 hours, 54 minutes, 45 seconds
1/0   Online         SIB F2S      -n/a-         NONE         NONE
      21 hours, 57 minutes, 29 seconds
1/2   Online         SIB F2S      -n/a-         NONE         NONE
      21 hours, 57 minutes, 27 seconds

```

| | | | | | |
|-----|----------------------------------|---------|-------|------|------|
| 1/4 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 57 minutes, 25 seconds | | | | |
| 1/6 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 57 minutes, 23 seconds | | | | |
| 2/0 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes, 48 seconds | | | | |
| 2/2 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes, 46 seconds | | | | |
| 2/4 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes, 43 seconds | | | | |
| 2/6 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes, 41 seconds | | | | |
| 3/0 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes, 6 seconds | | | | |
| 3/2 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes, 4 seconds | | | | |
| 3/4 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes, 2 seconds | | | | |
| 3/6 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 56 minutes | | | | |
| 4/0 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 55 minutes, 24 seconds | | | | |
| 4/2 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 55 minutes, 22 seconds | | | | |
| 4/4 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 55 minutes, 20 seconds | | | | |
| 4/6 | Online | SIB F2S | -n/a- | NONE | NONE |
| | 21 hours, 55 minutes, 18 seconds | | | | |

lcc0-re0:

| Slot | State | Cable errors | Link errors | Destination errors | Uptime |
|------|--------|--------------|-------------|--------------------|----------------------------------|
| 0 | Online | 6 | NONE | NONE | 21 hours, 47 minutes, 29 seconds |
| 1 | Online | 6 | NONE | NONE | 21 hours, 47 minutes, 50 seconds |
| 2 | Online | 6 | NONE | NONE | 21 hours, 47 minutes, 43 seconds |
| 3 | Online | 6 | NONE | NONE | 21 hours, 47 minutes, 36 seconds |
| 4 | Empty | NONE | NONE | NONE | |

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

lcc4-re0:

| Slot | State | Cable errors | Link errors | Destination errors | Uptime |
|------|--------|--------------|-------------|--------------------|----------------------------------|
| 0 | Online | 6 | NONE | NONE | 21 hours, 57 minutes, 1 second |
| 1 | Online | 6 | NONE | NONE | 21 hours, 57 minutes, 21 seconds |
| 2 | Online | 6 | NONE | NONE | 21 hours, 57 minutes, 14 seconds |
| 3 | Online | 6 | NONE | NONE | 21 hours, 57 minutes, 7 seconds |
| 4 | Empty | NONE | NONE | NONE | |

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

lcc7-re0:

| Slot | State | Cable errors | Link errors | Destination errors | Uptime |
|------|-------|--------------|-------------|--------------------|--------|
|------|-------|--------------|-------------|--------------------|--------|

```

0    Online                2          NONE          NONE          21 hours,
56 minutes, 54 seconds
1    Online                2          NONE          NONE          21 hours,
57 minutes, 21 seconds
2    Online                2          NONE          NONE          21 hours,
57 minutes, 12 seconds
3    Online                2          NONE          NONE          21 hours,
57 minutes, 3 seconds
4    Empty                NONE        NONE          NONE
use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

show chassis sibs sfc (TX Matrix Plus Router))

```
user@host> show chassis sibs sfc 0
```

```
sfc0-re0:
```

```

-----
Slot State                Type          Link errors  Destination errors  Uptime
0    Spare                SIB F13      NONE         NONE
1    Empty
2    Invalid
3    Online                SIB F13      NONE         NONE          12 hours,
6 minutes, 22 seconds
4    Empty
5    Invalid
6    Online                SIB F13      NONE         NONE          12 hours,
6 minutes, 11 seconds
7    Empty
8    Online                SIB F13      NONE         NONE          12 hours,
6 minutes
9    Empty
10   Invalid
11   Online                SIB F13      NONE         NONE          12 hours,
5 minutes, 49 seconds
12   Empty
13   Invalid
14   Invalid
15   Invalid
0/0  Spare                SIB F2S      NONE         NONE
0/2  Spare                SIB F2S      NONE         NONE
0/4  Spare                SIB F2S      NONE         NONE
0/6  Spare                SIB F2S      NONE         NONE
1/0  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 32 seconds
1/2  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 31 seconds
1/4  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 30 seconds
1/6  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 29 seconds
2/0  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 21 seconds
2/2  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 20 seconds
2/4  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 19 seconds
2/6  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 17 seconds
3/0  Online                SIB F2S      NONE         NONE          12 hours,
6 minutes, 10 seconds

```


| | | | | | |
|-----|-----------------------|---------|------|------|-----------|
| 3/2 | Online | SIB F2S | NONE | NONE | 12 hours, |
| | 6 minutes, 9 seconds | | | | |
| 3/4 | Online | SIB F2S | NONE | NONE | 12 hours, |
| | 6 minutes, 7 seconds | | | | |
| 3/6 | Online | SIB F2S | NONE | NONE | 12 hours, |
| | 6 minutes, 6 seconds | | | | |
| 4/0 | Online | SIB F2S | NONE | NONE | 12 hours, |
| | 5 minutes, 59 seconds | | | | |
| 4/2 | Online | SIB F2S | NONE | NONE | 12 hours, |
| | 5 minutes, 57 seconds | | | | |
| 4/4 | Online | SIB F2S | NONE | NONE | 12 hours, |
| | 5 minutes, 56 seconds | | | | |
| 4/6 | Online | SIB F2S | NONE | NONE | 12 hours, |
| | 5 minutes, 55 seconds | | | | |

show chassis sibs lcc (TX Matrix Plus Router)

```
user@host> show chassis sibs lcc 0
```

```
lcc0-re0:
```

| Slot | State | Link errors | Destination errors | Uptime |
|------|--------|-------------|--------------------|-----------------------|
| 0 | Online | NONE | NONE | 20 hours, 14 minutes, |
| | | | | 50 seconds |
| 1 | Fault | NONE | NONE | |
| 2 | Online | NONE | NONE | 20 hours, 15 minutes, |
| | | | | 2 seconds |
| 3 | Online | NONE | NONE | 20 hours, 14 minutes, |
| | | | | 58 seconds |
| 4 | Online | NONE | NONE | 20 hours, 14 minutes, |
| | | | | 54 seconds |

show chassis sibs lcc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis sibs lcc 0
```

```
lcc0-re0:
```

| Slot | State | Cable errors | Link errors | Destination errors | Uptime |
|------|--------------|--------------|-------------|--------------------|-----------------------|
| 0 | Disconnected | NONE | NONE | NONE | 17 hours, |
| | | | | | 2 minutes, 37 seconds |
| 1 | Online | NONE | NONE | NONE | 17 hours, |
| | | | | | 3 minutes, 6 seconds |
| 2 | Online | NONE | NONE | NONE | 17 hours, |
| | | | | | 2 minutes, 59 seconds |
| 3 | Online | NONE | NONE | NONE | 17 hours, |
| | | | | | 2 minutes, 52 seconds |
| 4 | Online | NONE | NONE | NONE | 17 hours, |
| | | | | | 2 minutes, 44 seconds |

show chassis sibs (M320 Router)

```
user@host> show chassis sibs
```

| | | |
|---|---------|---------------------------------|
| 0 | Online | 1 hour, 18 minutes, 3 seconds |
| 1 | Offline | --- Offlined by cli command --- |
| 2 | Online | 1 hour, 18 minutes, 18 seconds |
| 3 | Online | 1 hour, 18 minutes, 3 seconds |

show chassis sibs (PTX Series)

```
user@host> show chassis sibs
```

| Slot | State | Fabric links | Errors |
|------|---------|--------------|-------------|
| 0 | Online | Active | Asic Errors |
| 1 | Online | Active | Link Errors |
| 2 | Online | Active | None |
| 3 | Online | Active | Cell drops |
| 4 | Offline | Unused | None |
| 5 | Online | Active | None |
| 6 | Online | Active | None |
| 7 | Online | Active | None |
| 8 | Online | Active | None |

show chassis sibs (PTX Series)

```
user@host> show chassis sibs detail
```

Slot 4 information

| | |
|--------------|-------------------------|
| State | Offline |
| Reason | Offlined by cli command |
| Fabric links | Unused |
| Errors | None |

show chassis sibs (PTX5000)

The **show chassis sibs** command displays only the non-empty slots.

```
user@host> show chassis sibs
```

| Slot | State | Fabric links | Errors |
|------|--------|--------------|--------|
| 1 | Online | Unused | None |
| 2 | Online | Unused | None |
| 3 | Online | Unused | None |
| 4 | Online | Unused | None |
| 6 | Fault | Unused | None |
| 7 | Online | Unused | None |

show chassis spmb

| | |
|--|--|
| List of Syntax | Syntax on page 1527 Syntax (MX Series Routers) on page 1527 Syntax (T4000 Routers) on page 1527 Syntax (TX Matrix Routers) on page 1527 Syntax (TX Matrix Plus Routers) on page 1527 |
| Syntax | show chassis spmb |
| Syntax (MX Series Routers) | show chassis spmb <all-members> <local> <member <i>member-id</i> > |
| Syntax (T4000 Routers) | show chassis spmb <sibs> |
| Syntax (TX Matrix Routers) | show chassis spmb <sibs> <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Routers) | show chassis spmb <sibs> <lcc <i>number</i> sfc <i>number</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. sibs option introduced for the T1600 and TX Matrix Plus routers in Junos OS Release 9.6. Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms. Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms. all-members , local , and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers. Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms. |
| Description | (T Series routers, MX2010, MX2020, and MX2008 routers only) Display Switch Processor Mezzanine Board (SPMB) status information. |
| Options | none —(TX Matrix, TX Matrix Plus router, MX2010, MX2020, and MX2008 routers only) On a TX Matrix router, display SPMB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display SPMB status for the TX Matrix Plus router and its attached routers. On MX2010, MX2020, and MX2008 routers, display the SPMB status for the routers. |

all-members—(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in all members of the Virtual Chassis configuration.

lcc number—(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix router, display information about the SPMB on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display information about the SPMB on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

local—(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in the local member of the Virtual Chassis.

member member-id—(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in the specified member of the Virtual Chassis. Replace *member-id* with the value 0 or 1.

scc—(TX Matrix routers only) (Optional) Display information about the SPMB on the TX Matrix router (switch-card chassis).

sfc number—(TX Matrix Plus router only) (Optional) Display information about the SPMB on the TX Matrix Plus router (switch-fabric chassis). Replace *number* with 0.

sibs—(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix Plus router, display information about the SIBs on the TX Matrix router (switch-card chassis). On a TX Matrix Plus router, display information about the SIBs on The TX Matrix Plus router (switch-fabric chassis). The **sibs** option has the following sub-options:

lcc number (TX Matrix, TX Matrix Plus router only) (Optional) On a TX Matrix router, display information about the SIBs on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display information about the SIBs on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

scc number—(TX Matrix routers only) (Optional) Display information about the SIBs on the TX Matrix router (switch-card chassis). Replace *number* variable with 0.

sfc number—(TX Matrix Plus router only) (Optional) Display information about the SIBs on the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

Required Privilege Level view

Related Documentation

- [request chassis sib on page 535](#)
- [request chassis spmb restart on page 545](#)
- [show chassis spmb sibs on page 1538](#)

List of Sample Output

- [show chassis spmb on page 1530](#)
- [show chassis spmb \(MX2010 Router\) on page 1530](#)
- [show chassis spmb \(MX2020 Router\) on page 1531](#)
- [show chassis spmb \(MX2008 Router\) on page 1531](#)
- [show chassis spmb \(T4000 Router\) on page 1531](#)
- [show chassis spmb lcc \(TX Matrix Router\) on page 1532](#)
- [show chassis spmb scc \(TX Matrix Router\) on page 1532](#)
- [show chassis spmb \(T1600 Router\) on page 1532](#)
- [show chassis spmb sibs \(T1600 Router\) on page 1532](#)
- [show chassis spmb \(TX Matrix Plus Router\) on page 1533](#)
- [show chassis spmb lcc \(TX Matrix Plus Router\) on page 1534](#)
- [show chassis spmb scc \(TX Matrix Plus Router\) on page 1535](#)
- [show chassis spmb sibs \(TX Matrix Plus Router\) on page 1535](#)
- [show chassis spmb lcc \(TX Matrix Plus router with 3D SIBs\) on page 1536](#)
- [show chassis spmb sfc \(TX Matrix Plus router with 3D SIBs\) on page 1537](#)

Output Fields [Table 103 on page 1530](#) lists the output fields for the **show chassis spmb** command. Output fields are listed in the approximate order in which they appear.

Table 103: show chassis spmb Output Fields

| Field Name | Field Description |
|-------------------------------|---|
| Slot | SPMB slot number: 0 or 1. |
| State | SPMB status: <ul style="list-style-type: none"> • Online—SPMB is operational and running. • Offline—SPMB is powered down. |
| Total CPU Utilization (%) | Total percentage of CPU being used by the SPMB processor. |
| Interrupt CPU Utilization (%) | Of the total CPU being used by the SPMB processor, the percentage being used for interrupts. |
| Memory Heap Utilization (%) | Percentage of heap space (dynamic memory) being used by the FPC processor. If this number exceeds 80 percent, there may be a software problem (memory leak). |
| Buffer Utilization (%) | Percentage of buffer space being used by the SPMB processor for buffering internal messages. |
| Start time | Time at which the SPMB last came online. |
| Uptime | How long the SPMB has been up and running. |

Sample Output

show chassis spmb

```

user@host> show chassis spmb

Slot 0 information:
  State                Online
  Total CPU Utilization 1%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization     40%
  Start time:           2001-08-27 14:05:04 PDT
  Uptime:                46 minutes, 36 seconds

```

show chassis spmb (MX2010 Router)

```

user@host> show chassis spmb

Slot 0 information:
  State                Online
  Total CPU Utilization 12%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 1%
  Buffer Utilization     22%
  Start time:           2012-10-04 15:34:29 PDT
  Uptime:                7 hours, 10 minutes, 15 seconds
Slot 1 information:
  State                Online - Standby

```

```

Total CPU Utilization      1%
Interrupt CPU Utilization  0%
Memory Heap Utilization   0%
Buffer Utilization        22%
Start time:               2012-10-02 14:34:54 PDT
Uptime:                   2 days, 8 hours, 9 minutes, 50 seconds

```

show chassis spmb (MX2020 Router)

```

user@host> show chassis spmb

Slot 0 information:
  State                Online
  Total CPU Utilization 100%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 3%
  Buffer Utilization    22%
  Start time:          2012-10-03 14:58:26 PDT
  Uptime:               1 day, 12 hours, 16 minutes, 14 seconds

Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    22%
  Start time:          2012-10-03 14:58:27 PDT
  Uptime:               1 day, 12 hours, 16 minutes, 13 seconds

```

show chassis spmb (MX2008 Router)

```

user@host> show chassis spmb

Slot 0 information:
  State                Online
  Start time:          2017-05-04 02:53:36 PDT
  Uptime:               10 days, 7 hours, 1 minute, 14 seconds

Slot 1 information:
  State                Online - Standby
  Start time:          2017-05-04 02:53:36 PDT
  Uptime:               10 days, 7 hours, 1 minute, 14 seconds

```

show chassis spmb (T4000 Router)

```

user@host> show chassis spmb

Slot 0 information:
  State                Online
  Total CPU Utilization 18%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    22%
  Start time:          2012-02-09 22:51:09 PST
  Uptime:               2 hours, 25 minutes, 45 seconds

Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%

```

```

Buffer Utilization      22%
Start time:            2012-02-09 22:51:10 PST
Uptime:                2 hours, 25 minutes, 44 seconds

```

show chassis spmb lcc (TX Matrix Router)

```
user@host> show chassis spmb lcc 0
```

```
lcc0-re0:
```

```

-----
Slot 0 information:
State                      Online
Total CPU Utilization      0%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         42%
Start time:                2004-08-05 18:43:38 PDT
Uptime:                    8 days, 55 minutes, 52 seconds

```

show chassis spmb scc (TX Matrix Router)

```
user@host> show chassis spmb scc
```

```
scc-re0:
```

```

-----
Slot 0 information:
State                      Online
Total CPU Utilization      1%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         42%
Start time:                2004-08-05 18:43:37 PDT
Uptime:                    8 days, 1 hour, 6 minutes, 51 seconds

```

show chassis spmb (T1600 Router)

```
user@host> show chassis spmb
```

```

Slot 0 information:
State                      Online
Total CPU Utilization      2%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         24%
Start time:                2009-05-07 22:34:03 PDT
Uptime:                    3 days, 4 hours, 14 minutes, 33 seconds
Slot 1 information:
State                      Online - Standby
Total CPU Utilization      0%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         24%
Start time:                2009-05-07 22:34:02 PDT
Uptime:                    3 days, 4 hours, 14 minutes, 34 seconds

```

show chassis spmb sibs (T1600 Router)

```
user@host> show chassis spmb sibs
```


| Slot | State | Uptime |
|------|--------------|---|
| 0 | Check | 3 days, 4 hours, 11 minutes, 59 seconds |
| 1 | Disconnected | 3 days, 4 hours, 12 minutes, 36 seconds |
| 2 | Disconnected | 3 days, 4 hours, 12 minutes, 26 seconds |
| 3 | Disconnected | 3 days, 4 hours, 12 minutes, 17 seconds |
| 4 | Disconnected | 3 days, 4 hours, 12 minutes, 8 seconds |

show chassis spmb (TX Matrix Plus Router)

```
user@host> show chassis spmb
```

```
sfc0-re0:
```

```
-----
```

```
Slot 0 information:
```

| | |
|---------------------------|-------------------------|
| State | Online |
| Total CPU Utilization | 84% |
| Interrupt CPU Utilization | 0% |
| Memory Heap Utilization | 0% |
| Buffer Utilization | 24% |
| Start time: | 2009-05-11 01:25:20 PDT |
| Uptime: | 46 minutes, 6 seconds |

```
Slot 1 information:
```

| | |
|---------------------------|-------------------------|
| State | Online - Standby |
| Total CPU Utilization | 0% |
| Interrupt CPU Utilization | 0% |
| Memory Heap Utilization | 0% |
| Buffer Utilization | 24% |
| Start time: | 2009-05-11 01:25:20 PDT |
| Uptime: | 46 minutes, 6 seconds |

```
lcc0-re1:
```

```
-----
```

```
Slot 0 information:
```

| | |
|---------------------------|-------------------------|
| State | Online - Standby |
| Total CPU Utilization | 0% |
| Interrupt CPU Utilization | 0% |
| Memory Heap Utilization | 0% |
| Buffer Utilization | 24% |
| Start time: | 2009-05-11 01:25:09 PDT |
| Uptime: | 46 minutes, 24 seconds |

```
Slot 1 information:
```

| | |
|---------------------------|-------------------------|
| State | Online |
| Total CPU Utilization | 5% |
| Interrupt CPU Utilization | 0% |
| Memory Heap Utilization | 0% |
| Buffer Utilization | 24% |
| Start time: | 2009-05-11 01:25:08 PDT |
| Uptime: | 46 minutes, 25 seconds |

```
lcc1-re1:
```

```
-----
```

```
Slot 0 information:
```

| | |
|---------------------------|-------------------------|
| State | Online - Standby |
| Total CPU Utilization | 1% |
| Interrupt CPU Utilization | 0% |
| Memory Heap Utilization | 0% |
| Buffer Utilization | 24% |
| Start time: | 2009-05-11 01:25:09 PDT |
| Uptime: | 46 minutes, 24 seconds |

```
Slot 1 information:
```

```

State                               Online
Total CPU Utilization               5%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   24%
Start time:                         2009-05-11 01:25:10 PDT
Uptime:                             46 minutes, 23 seconds

```

```
lcc2-re1:
```

```
-----
Slot 0 information:
```

```

State                               Online - Standby
Total CPU Utilization               0%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   24%
Start time:                         2009-05-11 01:25:08 PDT
Uptime:                             46 minutes, 25 seconds

```

```
Slot 1 information:
```

```

State                               Online
Total CPU Utilization               5%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   24%
Start time:                         2009-05-11 01:25:10 PDT
Uptime:                             46 minutes, 23 seconds

```

```
lcc3-re1:
```

```
-----
Slot 0 information:
```

```

State                               Online - Standby
Total CPU Utilization               1%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   24%
Start time:                         2009-05-11 01:25:10 PDT
Uptime:                             46 minutes, 23 seconds

```

```
Slot 1 information:
```

```

State                               Online
Total CPU Utilization               5%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   24%
Start time:                         2009-05-11 01:25:09 PDT
Uptime:                             46 minutes, 24 seconds

```

show chassis spmb lcc (TX Matrix Plus Router)

```
user@host> show chassis spmb lcc 2
```

```
lcc2-re1:
```

```
-----
Slot 0 information:
```

```

State                               Online - Standby
Total CPU Utilization               0%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   24%
Start time:                         2009-05-11 01:25:08 PDT
Uptime:                             45 minutes, 18 seconds

```

```

Slot 1 information:
  State                Online
  Total CPU Utilization 6%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:10 PDT
  Uptime:              45 minutes, 16 seconds

```

show chassis spmb scc (TX Matrix Plus Router)

```

user@host> show chassis spmb sfc 0
sfc0-re0:
-----
Slot 0 information:
  State                Online
  Total CPU Utilization 87%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:20 PDT
  Uptime:              43 minutes, 32 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization    24%
  Start time:          2009-05-11 01:25:20 PDT
  Uptime:              43 minutes, 32 seconds

```

show chassis spmb sibs (TX Matrix Plus Router)

```

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

```

| Slot | State | Type | Uptime |
|------|---------|---------|--------------------------------|
| 0 | Online | SIB F13 | 1 hour, 18 minutes, 54 seconds |
| 1 | Online | SIB F13 | 1 hour, 18 minutes, 45 seconds |
| 2 | Invalid | | |
| 3 | Online | SIB F13 | 1 hour, 20 minutes, 21 seconds |
| 4 | Online | SIB F13 | 1 hour, 20 minutes, 18 seconds |
| 5 | Invalid | | |
| 6 | Online | SIB F13 | 1 hour, 19 minutes, 51 seconds |
| 7 | Fault | SIB F13 | |
| 8 | Online | SIB F13 | 1 hour, 19 minutes, 17 seconds |
| 9 | Online | SIB F13 | 1 hour, 19 minutes, 13 seconds |
| 10 | Invalid | | |
| 11 | Online | SIB F13 | 1 hour, 17 minutes, 54 seconds |
| 12 | Online | SIB F13 | 1 hour, 17 minutes, 51 seconds |
| 13 | Invalid | | |
| 14 | Invalid | | |
| 15 | Invalid | | |
| 0/0 | Online | SIB F2S | 1 hour, 18 minutes, 52 seconds |
| 0/2 | Online | SIB F2S | 1 hour, 18 minutes, 51 seconds |
| 0/4 | Online | SIB F2S | 1 hour, 18 minutes, 49 seconds |
| 0/6 | Online | SIB F2S | 1 hour, 18 minutes, 48 seconds |

| | | | |
|-----|--------|---------|--------------------------------|
| 1/0 | Online | SIB F2S | 1 hour, 20 minutes, 16 seconds |
| 1/2 | Online | SIB F2S | 1 hour, 20 minutes, 15 seconds |
| 1/4 | Online | SIB F2S | 1 hour, 20 minutes, 14 seconds |
| 1/6 | Online | SIB F2S | 1 hour, 20 minutes, 13 seconds |
| 2/0 | Online | SIB F2S | 1 hour, 19 minutes, 48 seconds |
| 2/2 | Online | SIB F2S | 1 hour, 19 minutes, 47 seconds |
| 2/4 | Online | SIB F2S | 1 hour, 19 minutes, 46 seconds |
| 2/6 | Online | SIB F2S | 1 hour, 19 minutes, 44 seconds |
| 3/0 | Online | SIB F2S | 1 hour, 19 minutes, 24 seconds |
| 3/2 | Online | SIB F2S | 1 hour, 19 minutes, 22 seconds |
| 3/4 | Online | SIB F2S | 1 hour, 19 minutes, 21 seconds |
| 3/6 | Online | SIB F2S | 1 hour, 19 minutes, 20 seconds |
| 4/0 | Online | SIB F2S | 1 hour, 18 minutes, 2 seconds |
| 4/2 | Online | SIB F2S | 1 hour, 18 minutes |
| 4/4 | Online | SIB F2S | 1 hour, 17 minutes, 58 seconds |
| 4/6 | Online | SIB F2S | 1 hour, 17 minutes, 58 seconds |

lcc0-re1:

| Slot | State | Uptime |
|------|--------|--------------------------------|
| 0 | Online | 1 hour, 18 minutes, 58 seconds |
| 1 | Online | 1 hour, 20 minutes, 25 seconds |
| 2 | Fault | |
| 3 | Online | 1 hour, 18 minutes, 30 seconds |
| 4 | Online | 1 hour, 18 minutes, 28 seconds |

lcc1-re1:

| Slot | State | Uptime |
|------|--------|--------------------------------|
| 0 | Online | 1 hour, 18 minutes, 58 seconds |
| 1 | Online | 1 hour, 20 minutes, 26 seconds |
| 2 | Fault | |
| 3 | Online | 1 hour, 18 minutes, 22 seconds |
| 4 | Online | 1 hour, 18 minutes, 20 seconds |

lcc2-re1:

| Slot | State | Uptime |
|------|--------|--------------------------------|
| 0 | Online | 1 hour, 18 minutes, 19 seconds |
| 1 | Online | 1 hour, 20 minutes, 25 seconds |
| 2 | Fault | |
| 3 | Online | 1 hour, 18 minutes, 17 seconds |
| 4 | Online | 1 hour, 18 minutes, 15 seconds |

lcc3-re1:

| Slot | State | Uptime |
|------|--------|--------------------------------|
| 0 | Online | 1 hour, 18 minutes, 27 seconds |
| 1 | Online | 1 hour, 20 minutes, 24 seconds |
| 2 | Fault | |
| 3 | Online | 1 hour, 18 minutes, 25 seconds |
| 4 | Online | 1 hour, 18 minutes, 23 seconds |

show chassis spmb lcc (TX Matrix Plus router with 3D SIBs)

```
user@host > show chassis spmb lcc 0
```

lcc0-re1:

Slot 0 information:

```

State                               Online - Standby
Total CPU Utilization               0%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   0%
Start time:                         2013-02-08 00:57:20 PST
Uptime:                             19 minutes, 43 seconds
Slot 1 information:
State                               Online
Total CPU Utilization               0%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   22%
Start time:                         2013-02-08 00:56:59 PST
Uptime:                             20 minutes, 4 seconds

```

show chassis spmb sfc (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis spmb sfc o
```

```
sfc0-re0:
```

```

-----
Slot 0 information:
State                               Online
Total CPU Utilization               0%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   0%
Start time:                         2013-02-06 19:16:55 PST
Uptime:                             1 day, 6 hours, 2 minutes, 59 seconds
Slot 1 information:
State                               Online - Standby
Total CPU Utilization               0%
Interrupt CPU Utilization            0%
Memory Heap Utilization              0%
Buffer Utilization                   0%
Start time:                         2013-02-06 19:16:53 PST
Uptime:                             1 day, 6 hours, 3 minutes, 1 second

```

show chassis spmb sibs

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 1538 Syntax (TX Matrix Router) on page 1538 Syntax (TX Matrix Plus Router) on page 1538 |
| Syntax | show chassis spmb sibs |
| Syntax (TX Matrix Router) | show chassis spmb sibs <lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | show chassis spmb sibs <lcc <i>number</i> sfc <i>number</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. |
| Description | (T Series routers only) Display Switch Processor Mezzanine Board (SPMB) Switch Interface Board (SIB) status information. |
| Options | <p>none—(TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display the SIB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display the SIB status for the TX Matrix Plus router and its attached routers.</p> <p>lcc <i>number</i>—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display SIB status information for a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display SIB status information for a specified router (line-card chassis) that is connected to a TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. <p>scc—(TX Matrix router only) (Optional) Display SIB status information for the TX Matrix router (switch-card chassis).</p> |

sfc—(TX Matrix Plus router only) (Optional) Display SIB status information for the TX Matrix Plus router (or switch-fabric chassis).

Additional Information On a T Series router, you can use either this command or the **show chassis sibs** command to produce the same output. The **show chassis sibs** command is supported on the M320 router and on the T Series routers.

Required Privilege Level view

Related Documentation

- [show chassis sibs on page 1515](#)
- [request chassis sib on page 535](#)
- [request chassis spmb restart on page 545](#)

List of Sample Output

[show chassis spmb sibs \(T320 Router\) on page 1540](#)
[show chassis-spmb-sibs \(T1600 Router\) on page 1540](#)
[show chassis spmb sibs \(T4000 Router\) on page 1541](#)
[show chassis spmb sibs \(TX Matrix Router\) on page 1541](#)
[show chassis spmb sibs lcc \(TX Matrix Router\) on page 1541](#)
[show chassis spmb sibs scc \(TX Matrix Router\) on page 1541](#)
[show chassis spmb sibs \(TX Matrix Plus Router\) on page 1541](#)
[show chassis spmb sibs sfc \(TX Matrix Plus Router\) on page 1542](#)

Output Fields [Table 104 on page 1539](#) lists the output fields for the **show chassis spmb sibs** command. Output fields are listed in the approximate order in which they appear.

Table 104: show chassis spmb sibs Output Fields

| Field Name | Field Description |
|------------|--|
| Slot | <p>SIB slot number:</p> <ul style="list-style-type: none"> • T640 router, T1600 router or TX Matrix router—0 through 4 • TX Matrix Plus router: <ul style="list-style-type: none"> • TXP-F13 SIB Slots—0 through 16 • TXP-F2S SIB Slots —0 – 4/[0 2 4 6] • T320 router—0 through 2 |

Table 104: show chassis spmb sibs Output Fields (continued)

| Field Name | Field Description |
|---------------|--|
| State | <p>SIB status:</p> <ul style="list-style-type: none"> • Disconnected—SIBs on all T640 routers on the TX Matrix router (switch-card chassis) are in the Disconnected state, because a SIB on the SCC has gone offline. Likewise, SIBs on all T1600 or T4000 routers on the TX Matrix Plus router (or switch-fabric chassis) are in the Disconnected state, because a SIB on the SFC has gone offline. • Online—SPMB is operational and running. • Offline—SPMB is powered down. • Spare—SIB is redundant and will move to active state if one of the working SIBs fail to pass traffic. • Empty—No SPMB is present. • Fault—SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Check—SIB is in alarmed state where the SIB's plane is partially operational for the following reasons: <ul style="list-style-type: none"> • SIB is not inserted properly. • Two or more links between the SIB and PFE fails. |
| Uptime | How long the SIB has been up and running. |

Sample Output

show chassis spmb sibs (T320 Router)

```
user@host> show chassis spmb sibs
```

```
Slot  State
0      Spare
1      Online
2      Online
```

show chassis-spmb-sibs (T1600 Router)

```
user@host> show chassis spmb sibs
```

```
Slot  State
0      Spare
1      Online
2      Empty
3      Online
4      Offline
```


show chassis spmb sibs (T4000 Router)

```
user@host> show chassis spmb sibs
```

| Slot | State | Uptime |
|------|--------|---------------------------------|
| 0 | Spare | |
| 1 | Online | 2 hours, 28 minutes, 13 seconds |
| 2 | Online | 2 hours, 27 minutes, 57 seconds |
| 3 | Online | 2 hours, 27 minutes, 40 seconds |
| 4 | Online | 2 hours, 27 minutes, 24 seconds |

show chassis spmb sibs (TX Matrix Router)

```
user@host> show chassis spmb sibs
```

| Slot | State |
|------|---------|
| 0 | Online |
| 1 | Online |
| 2 | Empty |
| 3 | Online |
| 4 | Offline |

show chassis spmb sibs lcc (TX Matrix Router)

```
user@host> show chassis spmb sibs lcc 0
```

```
lcc0-re0:
```

| Slot | State | Uptime |
|------|--------------|--------------------------------|
| 0 | Empty | |
| 1 | Empty | |
| 2 | Empty | |
| 3 | Disconnected | 8 days, 48 minutes, 58 seconds |
| 4 | Online | 8 days, 48 minutes, 57 seconds |

show chassis spmb sibs scc (TX Matrix Router)

```
user@host> show chassis spmb sibs scc
```

```
scc-re0:
```

| Slot | State | Uptime |
|------|---------|------------------------------|
| 0 | Empty | |
| 1 | Empty | |
| 2 | Empty | |
| 3 | Offline | |
| 4 | Online | 8 days, 54 minutes, 1 second |

show chassis spmb sibs (TX Matrix Plus Router)

```
user@host> show chassis spmb sibs
```

```
sfc0-re0:
```

| Slot | State | Type | Uptime |
|------|---------|---------|--------------------------------|
| 0 | Online | SIB F13 | 1 hour, 52 minutes, 55 seconds |
| 1 | Empty | | |
| 2 | Invalid | | |

```

3   Online           SIB F13      1 hour, 53 minutes, 3 seconds
4   Empty
5   Invalid
6   Empty
7   Empty
8   Empty
9   Empty
10  Invalid
11  Empty
12  Empty
13  Invalid
14  Invalid
15  Invalid
0/0 Online           SIB F2S      1 hour, 53 minutes, 2 seconds
0/2 Online           SIB F2S      1 hour, 53 minutes, 1 second
0/4 Online           SIB F2S      1 hour, 52 minutes, 59 seconds
0/6 Online           SIB F2S      1 hour, 52 minutes, 58 seconds
1/0 Online           SIB F2S      1 hour, 53 minutes, 10 seconds
1/2 Online           SIB F2S      1 hour, 53 minutes, 8 seconds
1/4 Online           SIB F2S      1 hour, 53 minutes, 7 seconds
1/6 Online           SIB F2S      1 hour, 53 minutes, 6 seconds
2/0 Empty
2/2 Empty
2/4 Empty
2/6 Empty
3/0 Empty
3/2 Empty
3/4 Empty
3/6 Empty
4/0 Empty
4/2 Empty
4/4 Empty
4/6 Empty

```

lcc0-re0:

```

-----
Slot  State           Uptime
0   Online           1 hour, 53 minutes, 1 second
1   Online           1 hour, 53 minutes, 3 seconds
2   Empty
3   Empty
4   Empty

```

lcc1-re1:

```

-----
Slot  State           Uptime
0   Online           1 hour, 47 minutes, 13 seconds
1   Online           1 hour, 47 minutes, 15 seconds
2   Empty
3   Empty
4   Empty

```

show chassis spmb sibs sfc (TX Matrix Plus Router)

```
user@host> show chassis spmb sibs sfc 0
```

sfc0-re0:

```

-----
Slot 0 information:
State           Online

```

```
Total CPU Utilization      16%
Interrupt CPU Utilization   0%
Memory Heap Utilization     0%
Buffer Utilization          24%
Start time:                 2009-06-17 20:59:47 PDT
Uptime:                     1 hour, 56 minutes, 30 seconds

Slot 1 information:
State                       Online - Standby
Total CPU Utilization       0%
Interrupt CPU Utilization    0%
Memory Heap Utilization     0%
Buffer Utilization          24%
Start time:                 2009-06-17 20:59:48 PDT
Uptime:                     1 hour, 56 minutes, 29 seconds
```

show chassis synchronization

List of Syntax [Syntax on page 1544](#)
 [Syntax \(on ACX500 Series\) on page 1544](#)
 [Syntax \(on EX9251 Switches\) on page 1544](#)

Syntax show chassis synchronization
 <clock-module> <(re0 | re1 | routing-engine (backup | both | local | master | other))>>
 <extensive>
 <backup | master>
 <interface *interface-name*>

Syntax (on ACX500 Series) show chassis synchronization
 <gnss>
 <extensive>
 <backup | master>

Syntax (on EX9251 Switches) show chassis synchronization
 <clock-module
 <extensive>
 <interface *interface-name*>

Release Information Command introduced in Junos OS Release 7.6 for M320 routers.
 Command introduced in Junos OS Release 8.3 for M40e routers.
 Command introduced in Junos OS Release 9.3 for M120 routers.
 Command introduced in Junos OS Release 10.2 for T320, T640, and T1600 routers.
 Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.
 Command introduced in Junos OS Release 12.2 for ACX Series routers.
 Command introduced in Junos OS Release 12.3X54–D20 for ACX500 Series routers.
 Command introduced in Junos OS Release 17.2 for PTX10008 Routers.
 Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.

Description (ACX Series, M320, M40e, M120, T320, T640, and T1600 routers and PTX Series Packet Transport Routers only) Display information about the external clock source currently used for chassis synchronization.

Options **clock-module**—Display clock module information. You can optionally specify one of these Routing Engine qualifiers:

re0—Routing Engine 0

re1—Routing Engine 1

routing-engine (backup | both | local | master | other)—Routing Engine type

extensive—(Optional) Display clock synchronization information in detail.

interface *interface-name*—(Optional) Display clock synchronization information for the specified interface.

backup—(Optional) Display clock synchronization information about the backup clock.

master— (Optional) Display clock synchronization information about the master clock.

Required Privilege Level maintenance

Related Documentation

- [request chassis synchronization switch on page 549](#)
- *Configuring Clock Synchronization Interface on MX Series Routers*
- *Supported Time Synchronization Standard*
- *Configuring External Clock Synchronization for ACX Series Routers*

List of Sample Output

[show chassis synchronization on page 1546](#)
[show chassis synchronization master on page 1547](#)
[show chassis synchronization backup on page 1547](#)
[show chassis synchronization extensive on page 1547](#)
[show chassis synchronization \(T320, T640, and T1600 Routers\) on page 1548](#)
[show chassis synchronization \(PTX Series Packet Transport Routers\) on page 1548](#)
[show chassis synchronization clock-module \(PTX Series Packet Transport Routers\) on page 1548](#)
[show chassis synchronization extensive \(ACX Series Routers\) on page 1549](#)
[show chassis synchronization extensive \(ACX500 Series Routers\) on page 1550](#)
[show chassis synchronization gnss \(ACX500 Series Routers\) on page 1550](#)
[show chassis synchronization gnss extensive \(ACX500 Series Routers\) on page 1550](#)
[show chassis synchronization clock-module \(EX9251 Switches\) on page 1551](#)

Output Fields [Table 105 on page 1545](#) lists the output fields for the **show chassis synchronization** command. Output fields are listed in the approximate order in which they appear.
[show chassis synchronizations](#)
[show chassis synchronizations](#)
[show chassis synchronization](#)

Table 105: show chassis synchronization Output Fields

| Field Name | Field Description |
|---------------|--|
| Current state | <p>Indicates current status of external clock sources:</p> <ul style="list-style-type: none"> • backup—Source is currently the backup clock source. • master—Source is currently the master clock source. • Online-Master—(PTX Series Packet Transport Routers) Source is the master clock. Source is online. • Online-Standby—(PTX Series Packet Transport Routers) Source is the standby (backup) clock. Source is online. |

Table 105: show chassis synchronization Output Fields (continued)

| Field Name | Field Description |
|-------------------------|---|
| Current clock state | Indicates current source of external synchronization: <ul style="list-style-type: none"> internal—Source is providing its own clocking. locked to master CB—(M320, M40e, and M120 routers) Source is locked to master clock source. locked to master SCG—(T320, T640, and T1600 routers) Source is locked to master clock source. locked to master CCG—(PTX Series Packet Transport Routers) Source is locked to master clock source. |
| SNMP trap status | Denotes the SNMP trap generation status (Enabled or Disabled) on ACX Series routers. |
| Selected for | Number of seconds this clock has been the master or backup clock source. |
| Selected since | Timestamp for establishment as master or backup clock source. |
| Deviation (in ppm) | Difference in clock timing, in parts per million (ppm). <p>NOTE: Starting in Junos OS Release 16.1R2, if the clock source is locked and the deviation exceeds 10 ppm, the status of the configured source is displayed in the command output as in-use. This status indicates that the clock source is locked even though the clock has significant deviation.</p> |
| Last deviation (in ppm) | Previous difference in clock timing, if any, in ppm. |
| Configured sources | Information about clock sources eligible for selection as master clock. |
| Source | Information about external clock sources. |
| Priority | Indicates priority of external clock sources: <ul style="list-style-type: none"> primary—Source is a primary reference. secondary—Source is a secondary reference. |
| Deviation (in ppm) | Current difference in clock timing, in ppm: <ul style="list-style-type: none"> measuring—Establishing source deviation. number—Deviation in ppm. |
| Last deviation (in ppm) | Previous difference in clock timing, in ppm: <ul style="list-style-type: none"> number—Deviation in ppm. |
| Status | Indicates status of external sources: <ul style="list-style-type: none"> present—Source is configured and present. qualified—Source is eligible for synchronization source. |

Sample Output

show chassis synchronization

```
user@host> show chassis synchronization
```

```

Clock Synchronization Status :
  Clock module on CB 0
    Current state      : master
    Current clock state : internal
    Selected for       : 18 hours, 12 minutes, 43 seconds
    Selected since     : 2008-09-10 03:27:47 PDT
    Deviation (in ppm) : +0.00
    Last deviation (in ppm): +0.00
Clock Synchronization Status :
  Clock module on CB 1
    Current state      : backup
    Current clock state : locked to master CB
    Selected for       : 1 day, 12 hours, 49 minutes, 20 seconds
    Selected since     : 2008-09-09 08:51:10 PDT

```

show chassis synchronization master

```

user@host> show chassis synchronization master

Clock Synchronization Status :
  Clock module on CB 0
    Current state      : master
    Current clock state : internal
    Selected for       : 8 days, 21 minutes, 12 seconds
    Selected since     : 2008-08-27 21:05:40 PDT
    Deviation (in ppm) : +0.00
    Last deviation (in ppm): +0.00

```

show chassis synchronization backup

```

user@host> show chassis synchronization backup

Clock Synchronization Status :
  Clock module on CB 1
    Current state      : backup
    Current clock state : locked to master CB
    Selected for       : 34 days, 20 hours, 17 minutes, 8 seconds
    Selected since     : 2008-08-01 01:22:16 PDT

```

show chassis synchronization extensive

```

user@host> show chassis synchronization extensive

Clock Synchronization Status :
  Clock module on CB 0
    Current state      : master
    Current clock state : internal
    Selected for       : 8 days, 36 minutes, 29 seconds
    Selected since     : 2008-08-27 21:05:40 PDT
    Deviation (in ppm) : +0.00
    Last deviation (in ppm): +0.00
Clock Synchronization Status :
  Clock module on CB 1
    Current state      : backup
    Current clock state : locked to master CB
    Selected for       : 34 days, 20 hours, 19 minutes, 53 seconds
    Selected since     : 2008-08-01 01:22:16 PDT

```

show chassis synchronization (T320, T640, and T1600 Routers)

```
user@host> show chassis synchronization
```

```

Clock Synchronization Status :
  Clock module on SCG 0
    Current state           : master
    Current clock state     : locked to external-a
    Selected for            : 2 hours, 28 minutes, 4 seconds
    Selected since          : 2006-02-17 01:12:58 PST
    Configured sources
      Source      Priority  Deviation    Last deviation  Status
                  (in ppm) (in ppm)
      external-a  primary   measuring    -0.10           in-use
      external-b  secondary -0.10        -0.10           qualified
Clock Synchronization Status :
  Clock module on SCG 1
    Current state           : backup
    Current clock state     : locked to master SCG
    Selected for            : 19 hours, 49 minutes, 14 seconds
    Selected since          : 2006-02-16 07:51:48 PST
    Configured sources
      Source      Priority  Deviation    Last deviation  Status
                  (in ppm) (in ppm)
      external-a  primary   -0.25        -0.25           qualified
      external-b  secondary -0.25        -0.25           qualified

```

show chassis synchronization (PTX Series Packet Transport Routers)

```
user@host> show chassis synchronization
```

```

Clock Synchronization Status :
  Clock module on CCG 0
    Current state           : Online - Master
    Current clock state     : internal
    Selected for            : 1 hour, 24 minutes, 21 seconds
    Selected since          : 2011-03-21 15:59:37 PDT
    Deviation (in ppm)      : +0.51
    Last deviation (in ppm) : +0.51
Clock Synchronization Status :
  Clock module on CCG 1
    Current state           : Online - Standby
    Current clock state     : locked to master CCG
    Selected for            : 1 hour, 39 minutes, 12 seconds
    Selected since          : 2011-03-21 15:44:46 PDT

```

show chassis synchronization clock-module (PTX Series Packet Transport Routers)

```
user@host> show chassis synchronization clock-module
```

```
re0:
```

```

-----
Clock Synchronization Status :
  Clock module on CCG 0
    Current state           : Online - Master
    Current clock state     : locked to bits-a
    Selected for            : 1 minute, 24 seconds
    Selected since          : 2015-06-22 15:01:33 PDT
    Deviation (in ppm)      : unknown
    Last deviation (in ppm) : unknown

```



```

Configured sources
Source      Priority  Deviation    Last deviation  Status
              (in ppm)    (in ppm)
ro
  bits-a    primary  unknown      unknown         unknown
  fpc-2     secondary unknown      unknown         unknown
Clock Synchronization Status :
Clock module on CCG 1
Current state      : Online - Standby
Current clock state : locked to master CCG
Selected for       : 1 hour, 39 minutes, 52 seconds
Selected since     : 2015-06-22 13:23:05 PDT
Deviation (in ppm) : unknown
Last deviation (in ppm): unknown
Configured sources
Source      Priority  Deviation    Last deviation  Status
              (in ppm)    (in ppm)
  bits-a    primary  unknown      unknown         unknown
  fpc-2     secondary unknown      unknown         unknown

```

This following sample output displays the status of configured sources as **in-use#**. This status indicates that the clock source is locked even though the clock has significant deviation in timing.

```
user@host> show chassis synchronization clock-module
```

```

re0:
-----
Clock Synchronization Status :
Clock module on CB 0
Current state      : Online - Master
Current clock state : locked to fpc-12
Selected for       : 7 seconds
Selected since     : 2016-08-16 09:39:07 PDT
Deviation (in ppm) : 10.00
Last deviation (in ppm): 8.75
Configured sources
Source      Priority  Deviation    Last deviation  Status
              (in ppm)    (in ppm)
  fpc-12    primary  10.00        8.75           in-use#

```

show chassis synchronization extensive (ACX Series Routers)

```
user@host> show chassis synchronization extensive
```

```

Current clock status : Locked
Clock locked to      : Primary
SNMP trap status    : Enabled

Configured sources:

Interface           : ge-0/0/7
Status              : Secondary      Index       : 136
Clock source state   : Clk qualified Priority    : 3
Configured QL        : SEC             ESMC QL     : PRC
Clock source type    : ifd             Clock Event : Clock qualified
Interface State      : Up,sec,ESMC Rx(SSM 0x2),ESMC TX(QL PRC/SSM 0x2),

```

```

Interface      : ge-0/1/1
Status         : Primary      Index      : 138
Clock source state : Clk qualified Priority : 2
Configured QL   : SEC         ESMC QL    : PRC
Clock source type : ifd         Clock Event : Clock locked
Interface State  : Up,pri,ESMC Rx(SSM 0x2),ESMC TX(QL DNU/SSM 0xf)

```

show chassis synchronization extensive (ACX500 Series Routers)

```
user@host> show chassis synchronization extensive
```

```

Current clock status : Locked
Clock locked to      : Primary

```

Configured ports:

```

Name           : gnss
Current ToD     : Mon Aug 10 08:50:52 2015
Last ToD update : Mon Aug 10 08:50:51 2015
GPS receiver status : Synchronized
UTC Pending     : FALSE
UTC Offset      : 36

```

One PPS status : Active

show chassis synchronization gnss (ACX500 Series Routers)

```
user@host> show chassis synchronization gnss
```

```

Receiver Status      : Good
Constellation        : GPS & GLONASS
Cable delay compensation : 0
Antenna Status       : GPS Antenna Good

```

show chassis synchronization gnss extensive (ACX500 Series Routers)

```
user@host> show chassis synchronization gnss extensive
```

```

Receiver Status      : Good
Constellation        : GPS & GLONASS
Cable delay compensation : 0
Antenna Status       : GPS Antenna Good
Position             : 12 56' 35.740410'' N   : 77 41' 32.228191'' E
Altitude             : 841 meters
Number of satellites : 17
Satellite List:

```

| Sat No | Signal Level | Status | Type | Mode(T=Timing/P=Position) |
|--------|--------------|----------|------|---------------------------|
| 17 | 34 dBHZ | Acquired | GPS | T,P |
| 24 | 38 dBHZ | Acquired | GPS | T,P |
| 12 | 31 dBHZ | Acquired | GPS | T,P |
| 2 | 37 dBHZ | Acquired | GPS | T,P |
| 5 | 48 dBHZ | Acquired | GPS | T,P |
| 20 | 35 dBHZ | Acquired | GPS | T,P |
| 28 | 42 dBHZ | Acquired | GPS | T,P |
| 6 | 40 dBHZ | Acquired | GPS | T,P |

| | | | | | |
|----|----|------|----------|---------|------|
| 71 | 41 | dBHZ | Acquired | GLONASS | T,P |
| 70 | 46 | dBHZ | Acquired | GLONASS | T,P |
| 76 | 36 | dBHZ | Acquired | GLONASS | T,P |
| 75 | 45 | dBHZ | Acquired | GLONASS | T,P |
| 72 | 40 | dBHZ | Acquired | GLONASS | T,P |
| 15 | 18 | dBHZ | Acquired | GPS | NONE |
| 13 | 36 | dBHZ | Acquired | GPS | NONE |
| 74 | 41 | dBHZ | Acquired | GLONASS | NONE |
| 77 | 19 | dBHZ | Acquired | GLONASS | NONE |

show chassis synchronization clock-module (EX9251 Switches)

```
user@switch> show chassis synchronization clock-module
```

```
re0:
```

```
-----
Clock module on SCB0
Current role      : master
```

show chassis synchronization (MX Series Routers)

Syntax show chassis synchronization
 <clock-module <(re0 | re1 | routing-engine (backup | both | local | master | other))>>
 <extensive>
 <interface *interface-name*>

Release Information Command introduced in Junos OS Release 10.4.
 Command introduced in Junos OS Release 13.3 for MX2020 routers.
 clock-module option introduced in Junos OS Release 12.2.
 Command introduced in Junos OS Release 17.3R1 for MX10003 Universal Routing Platforms.
 Command introduced in Junos OS Release 17.4 for MX204 Universal Routing Platforms.

Description Display information about clocks used for chassis synchronization.



NOTE: In hybrid mode, the EEC in the MPC derives frequency synchronization from Synchronous Ethernet and the phase and time of day from PTP; however, the **show chassis synchronization extensive** operational mode command output displays the lock status that is derived from the EEC located on the SCB.

**NOTE:**

The Switch Control Board (SCB) framer in MX Series routers supports only the first-generation Synchronization Status Message (SSM) format. Therefore, whenever the router needs to transmit an SSM value of `st3e` or `tnc` via an external interface, an SSM value of `st3` is transmitted. However, on a Synchronous Ethernet interface, an ESMC packet with the unadjusted SSM is transmitted. The term *unadjusted* here means:

- If the `receive-quality` statement at the `[edit chassis synchronization selection-mode]` hierarchy level is configured, the originally received SSM value `st3e` or `tnc` (corresponding to the currently active Synchronous Ethernet clock interface) is transmitted.
- If the configured `quality` statement at the `[edit chassis synchronization selection-mode]` hierarchy level is configured, the originally configured SSM value of `st3e` or `tnc` (corresponding to the currently active Synchronous Ethernet clock interface) is transmitted.

Note that when the external interface receives an SSM value of either `st3e` or `tnc`, the SCB framer does not recognize either of these SSM codes, and therefore, it reports that the Do Not Use (DNU) quality value has been received.

SCBE2 does not support SSM when you configure the following framing format values on the external interface at the `[edit chassis synchronization interfaces external]` hierarchy level:

- `sf` for the `t1-options` statement
- `g704-no-crc` for the `e1-options` statement

Options `clock-module`—(MX240, MX480, MX960, MX10003, MX204, MX2010, MX2020, and MX2008 routers with Enhanced MX Switch Control Board;) (Optional) Display clock module information. You can optionally specify one of these Routing Engine qualifiers:

`re0`—Routing Engine 0

`re1`—Routing Engine 1

`routing-engine (backup | both | local | master | other)`—Routing Engine type

`extensive`—(Optional) Display clock synchronization information in detail.

`interface interface-name`—(Optional) Display clock synchronization information for the specified interface.

Required Privilege Level maintenance

- Related Documentation**
- [Configuring an External Clock Synchronization Interface for MX Series Routers](#)
 - [Configuring External Clock Synchronization for ACX Series Routers](#)
 - [Example: Configuring Framing Mode for Synchronous Ethernet on MX Series Routers with 10-Gigabit Ethernet MIC](#)
 - [request chassis synchronization mode on page 547](#)
 - [show chassis synchronization on page 1544](#)
 - [synchronization \(MX Series\) on page 434](#)
 - [Synchronous Ethernet Overview](#)

- List of Sample Output**
- [show chassis synchronization on page 1558](#)
 - [show chassis synchronization extensive on page 1558](#)
 - [show chassis synchronization extensive \(Synchronous Ethernet with link down\) on page 1559](#)
 - [show chassis synchronization extensive \(Synchronous Ethernet with physical interface not restored\) on page 1559](#)
 - [show chassis synchronization extensive \(Synchronous Ethernet configured on ineligible slot 10\) on page 1559](#)
 - [show chassis synchronization extensive \(on MX104 Router\) on page 1560](#)
 - [show chassis synchronization clock-module \(MX10003 Router\) on page 1560](#)
 - [show chassis synchronization clock-module \(MX204 Router\) on page 1561](#)
 - [show chassis synchronization interface on page 1561](#)
 - [show chassis synchronization clock-module on page 1561](#)
 - [show chassis synchronization \(configured external clock interface\) on page 1562](#)
 - [show chassis synchronization clock-module \(configured external clock interface\) on page 1562](#)
 - [show chassis synchronization extensive \(configured external clock interface\) on page 1562](#)
 - [show chassis synchronization clock-module \(configured external clock interfaces\) on page 1563](#)
 - [show chassis synchronization extensive \(configured external clock interface\) on page 1563](#)

- Output Fields** [Table 106 on page 1554](#) lists the output fields for the **show chassis synchronization** command. Output fields are listed in the approximate order in which they appear.

Table 106: show chassis synchronization Output Fields

| Field Name | Field Description | Level of Output |
|-----------------------------|---|-----------------|
| Current clock status | Indicates the current status of chassis synchronization: <ul style="list-style-type: none"> • Locked—Clock is operational. • Holdover—Clock is not operational. • Freerun—Clock is locked to the free-run local oscillator. | none |

Table 106: show chassis synchronization Output Fields (continued)

| Field Name | Field Description | Level of Output |
|----------------------------|---|------------------|
| Clock locked to | Indicates whether the clock is locked to either the primary source or the secondary source. | none |
| Configured sources | Heading for the list of interfaces configured for chassis synchronization and their subsequent status indicators. | none |
| Source name | Indicates the configured interface that is the source. The external source name indicates the external clock interface. | none |
| Configured Priority | Indicates the priority configured for the interface. | none |
| Interface Status | Indicates the status of the interface as primary , secondary , or n/a (external). | none |
| Configured quality | Indicates the configured quality of the interface. <ul style="list-style-type: none"> • prs—Primary reference source—Stratum 1 • st2—Stratum 2 • tnc—Transit node clock • st3e—Stratum 3E • st3—Stratum 3 • smc—SONET minimum clock • st4—Stratum 4 • prc—Primary reference clock • ssu-a—Synchronization supply unit A • ssu-b—Synchronization supply unit B • sec—SDH equipment clock | none |
| Interface | Indicates the configured interface: <ul style="list-style-type: none"> • ge-fpc/pic/port—Indicates the interface type and which FPC, PIC, and port are configured. | extensive |
| Status | Indicates the synchronization status of the indicated interface, as follows: <ul style="list-style-type: none"> • Primary—This interface is the selected primary chassis clock source. • Secondary—This interface is the selected secondary chassis clock source. • n/a—This interface is not a selected clock source. | extensive |
| Index | Unique numeric identifier for the established Synchronous Ethernet configuration. | extensive |
| Clock source state | Indicates the status of the Synchronous Ethernet clock source: <ul style="list-style-type: none"> • Clk qualified—The Synchronous Ethernet clock source is qualified. • n/a—The Synchronous Ethernet clock source is not qualified. | extensive |

Table 106: show chassis synchronization Output Fields (continued)

| Field Name | Field Description | Level of Output |
|-----------------------------|---|------------------|
| Priority | Indicates the configured priority. The range is from 1 through 5. The following values indicate whether the parameter is not specified or undefined: <ul style="list-style-type: none"> • Default(8)—The parameter is not specified. • -—The parameter is undefined or out of range. | extensive |
| Configured QL | Indicates the configured source interface quality level (QL), which is dependent on the source interface and option. The following quality levels are supported and the configured QL is indicated: <ul style="list-style-type: none"> • prc ssu-a ssu-b sec—Network option-1 QLs • prs st2 tnc st3e st3 smc st4—Network option-2 QLs | extensive |
| ESMC QL | Indicates the configured Ethernet Synchronization Message Channel (ESMC) quality level: <ul style="list-style-type: none"> • DNU—Network option-1 source • DSU—Network option-2 source | extensive |
| Clock source type | Indicates that the configured chassis synchronization clock source is one of the following types: <ul style="list-style-type: none"> • ifd—Uses the free-run local oscillator. • extern—Uses a configured qualified clock source. | extensive |
| Clock Event | Indicates the event clock status: <ul style="list-style-type: none"> • Clock locked—Clock is established. • n/a—Clock is not established. | extensive |
| Configuration flags | Indicates Ext for external interface configuration | |
| Wait-to-restore time | Indicates the amount of time in minutes for the port signal to be up before the port is opened to receive and transmit Ethernet Synchronization messages. | extensive |
| Hold-off time | Indicates the amount of time in milliseconds for hold off time for Synchronous Ethernet interfaces and external clock source interfaces to prevent rapid successive switching. If an interface goes down, hold-off time delays short signal failures from being sent to the clock selection process. | extensive |
| Kernel flags | Indicates the Synchronous Ethernet software operational status: <ul style="list-style-type: none"> • Up—The Synchronous Ethernet software is operational for the configured interface. • pri—The source is the selected primary clock source. • Dn—The Synchronous Ethernet software is not operational for the configured interface. | extensive |

Table 106: show chassis synchronization Output Fields (continued)

| Field Name | Field Description | Level of Output |
|-------------------------|---|-----------------|
| Ineligibility reason | <p>Indicates the reason the interface is ineligible for the Synchronous Ethernet operation, including the following:</p> <ul style="list-style-type: none"> • Link Down—The link between the Synchronous Ethernet interfaces is not operational. • Not restored—The Synchronous Ethernet link has not yet been restored because it is waiting for the specified wait-to-restore time to elapse. • Forbidden slot—Slot 10 is not supported. • Interface unit missing—The unit parameter is not set or is invalid. • Locked—The paired interface is not available. • No cfg—Synchronous Ethernet is not configured. • RX Disabled—The receiving interface is disabled. • Undefined/invalid QL—The QL mode is not specified in the configuration or, if specified, is not supported. <p>NOTE: When GPS is configured as the clock source and the quality-mode-enable statement is configured, the Current Lock Status is displayed as Locked but Undefined/invalid QL is displayed as the Ineligibility reason. As a workaround, configure the no-ssm-support statement at the [edit chassis synchronization source interfaces interface-name] hierarchy level.</p> <ul style="list-style-type: none"> • System initialization in progress—The remote system is performing initialization and not currently available for synchronization. • Unsupported interface—The configured interface does not support Synchronous Ethernet. | extensive |
| Clock module on | Indicates whether the clock module is on the Switch Control Board SCB0 or SCB1 . | clock-module |
| Current role | <p>Indicates the role of the clock module:</p> <ul style="list-style-type: none"> • master—The clock module is on the primary SCB, which is the active chassis clock source. • backup—The clock module is on the backup SCB, which mirrors the state of the active clock. | clock-module |
| Current state | <p>Indicates the state of the clock module:</p> <ul style="list-style-type: none"> • freerun—The clock module is in free-run mode. When the system starts up, the default clock module state is free-run. • acquiring-lock on—The clock module is attempting to acquire a lock on the specified clock source. • locked to—The clock module is locked to the specified clock source. • holdover on—The clock module is in holdover mode on the specified clock source. Prior to the specified clock source becoming invalid, the clock module was locked on the source and holdover data was collected. • holdover—The clock module has transitioned into holdover prior to locking on a valid clock source and collecting holdover data. | clock-module |
| Monitored clock sources | Displays information about monitored clock sources. | clock-module |

Table 106: show chassis synchronization Output Fields (continued)

| Field Name | Field Description | Level of Output |
|------------------|--|---------------------|
| Interface | Indicates the interface type and which FPC, PIC, and port are configured: <ul style="list-style-type: none"> external—External clock source ge-fpc/pic/port—Line Synchronous Ethernet or PTP slave xe-fpc/pic/port—Line Synchronous Ethernet or PTP slave | clock-module |
| Type | Indicates the type of clock source: <ul style="list-style-type: none"> t1—BITS T1 framed e1—BITS E1 framed 2048khz—BITS unframed 2048 KHz frequency source syncE—Synchronous Ethernet frequency source ptp—PTP slave source ptp-hybrid—PTP slave source using Synchronous Ethernet for frequency | clock-module |
| Status | Indicates the status of the clock source: <ul style="list-style-type: none"> failed—The clock source is in the failed state. qualifying—The clock source is being qualified. qualified—The clock source is qualified and can be selected as the chassis clock source. qualified-selected—The clock source is qualified and selected as the chassis clock source. | clock-module |

Sample Output

show chassis synchronization

```

user@host> show chassis synchronization

Current clock status: Locked
Clock locked to : Primary

Configured sources
Source      Configured   Interface   Configured
Name        Priority     Status      Quality
-----
ge-1/0/0    -           Primary     PRC

```

Sample Output

show chassis synchronization extensive

```

user@host> show chassis synchronization extensive

Current clock status: Locked
Clock locked to      : Primary

Configured sources:

```

```

Interface       : ge-1/0/0
Status          : Primary           Index : 143
Clock source state : Clk qualified  Priority : -
Configured QL    : PRC              ESMC QL : DNU
Clock source type : ifd              Clock Event : Clock locked
Kernel flags     : Up,pri,
Wait-to-restore time : 1
Hold-off time    : 1200
Interface State  : Up,ESMC TX(QL SEC/SSM 0xb),

```

Sample Output

show chassis synchronization extensive (Synchronous Ethernet with link down)

```

user@host> show chassis synchronization extensive

Current clock status : Holdover
Configured sources:

Interface       : ge-1/0/2
Status          : n/a               Index      : 142
Clock source state : n/a             Priority    : Default(8)
Configured QL    : SSU-B            ESMC QL     : DNU
Clock source type : ifd              Clock Event : n/a
Kernel flags     : Dn,
Ineligibility reason: Link Down,
Wait-to-restore time : 1
Hold-off time    : 1200
Interface State  : Up,ESMC TX(QL SEC/SSM 0xb),

```

Sample Output

show chassis synchronization extensive (Synchronous Ethernet with physical interface not restored)

```

user@host> show chassis synchronization extensive

Current clock status : Holdover
Configured sources:

Interface       : ge-1/0/2
Status          : n/a               Index      : 142
Clock source state : n/a             Priority    : Default(8)
Configured QL    : SSU-B            ESMC QL     : DNU
Clock source type : ifd              Clock Event : n/a
Kernel flags     : Restoring in 13s,ESMC TX(QL DNU/SSM 0xf),
Ineligibility reason: Not restored,
Wait-to-restore time : 1
Hold-off time    : 1200
Interface State  : Up,ESMC TX(QL SEC/SSM 0xb),

```

Sample Output

show chassis synchronization extensive (Synchronous Ethernet configured on ineligible slot 10)

```

user@host> show chassis synchronization extensive

Current clock status : Holdover
Configured sources:

```

```

Interface          : ge-10/0/2 # Note: configuration 10/x/y (slot 10), which
does not support Synchronous Ethernet
Status             : n/a          Index       : 142
Clock source state  : n/a          Priority    : Default(8)
Configured QL      : SSU-B        ESMC QL     : DNU
Clock source type   : ifd          Clock Event : n/a
Kernel flags       : Up,
Ineligibility reason: Forbidden slot,
Wait-to-restore time : 1
Hold-off time       : 1200
Interface State     : Up,ESMC TX(QL SEC/SSM 0xb),

```

Sample Output

show chassis synchronization extensive (on MX104 Router)

```

user@host> show chassis synchronization extensive

Current clock status : Locked
Clock locked to      : Primary

Configured interfaces:

Name          : bits
Signal type    : e1 (g704 hdb3 sa4)
Rx status      : active
Tx status      : active

Configured sources:

Interface      : bits
Status         : Primary      Index       : 2
Clock source state : Clk qualified Priority    : Default(7)
Configured QL    : SEC        ESMC QL       : SEC
Clock source type : extern     Clock Event   : Clock locked
Wait-to-restore  : 5 min      Hold-off     : 1000 ms
Interface State  : Up,pri,ESMC Rx(SSM 0xb)

```

Sample Output

show chassis synchronization clock-module (MX10003 Router)

```

user@host> show chassis synchronization extensive

Current clock status : Locked
Clock locked to      : Primary
SNMP trap status     : Disabled

Configured sources:

Interface : et-0/1/3
Status    : Secondary Index : 563
Clock source state : Clk qualified Priority : 1
Configured QL     : PRC ESMC QL : DNU
Clock source type  : ifd Clock Event : Clock qualified
Wait-to-restore    : 0 min Hold-off : 1000 ms
Interface State    : Up,sec,ESMC TX(QL PRC/SSM 0x2),

```

```

Interface : et-0/1/7
Status : n/a Index : 567
Clock source state : n/a Priority : 3
Configured QL : PRC ESMC QL : DNU
Clock source type : ifd Clock Event : n/a
Wait-to-restore : 0 min Hold-off : 1000 ms
Interface State : Up,ESMC TX(QL PRC/SSM 0x2),

Interface : et-0/1/8
Status : Primary Index : 568
Clock source state : Clk qualified Priority : 1
Configured QL : PRC ESMC QL : DNU
Clock source type : ifd Clock Event : Clock locked
Wait-to-restore : 0 min Hold-off : 1000 ms
Interface State : Up,pri,ESMC TX(QL DNU/SSM 0xf),

Interface : et-1/1/1
Status : n/a Index : 555
Clock source state : n/a Priority : 5
Configured QL : PRC ESMC QL : DNU
Clock source type : ifd Clock Event : n/a
Wait-to-restore : 0 min Hold-off : 1000 ms
Interface State : Dn,
Ineligibility reason: Link Down

```

Sample Output

show chassis synchronization clock-module (MX204 Router)

```
user@host> show chassis synchronization clock-module
```

```
re0:
```

```
-----
Clock module on SCB0
Current role      : master

```

Sample Output

show chassis synchronization interface

```
user@host> show chassis synchronization interface ge-1/0/2
```

```
Current clock status : Locked
Clock locked to      : Primary

```

Sample Output

show chassis synchronization clock-module

```
user@host> show chassis synchronization clock-module
```

```

Clock module on SCB0
Current role      : master
Current state     : locked to ge-4/1/0

```

```

State for      : 0 days, 00 hrs, 00 mins, 15 secs
State since    : Mon Jun  6 07:29:40 2011
Monitored clock sources
Interface      Type      Status
ge-4/1/0      syncE      qualified-selected
ge-4/3/0      syncE      qualified

```

show chassis synchronization (configured external clock interface)

```

user@host> show chassis synchronization

Current clock status : Free-run

Configured interfaces:
Name      Signal type      Rx status      Tx status
external  e1 (g704 ami sa4)      loss of signal squelched

Configured outputs:
Interface  Tx status  Minimum QL  Tx QL
external   squelched  SEC         DNU

Configured sources:
Source      Configured  Interface  Configured
Name        Priority    Status     Quality
external    Default(6) n/a        SSU-A

```

show chassis synchronization clock-module (configured external clock interface)

```

user@host> show chassis synchronization clock-module

re0:
-----

Clock module on SCB0
Current role      : master
Current state     : freerun
State for        : 2 days, 06 hrs, 16 mins, 57 secs
State since      : Wed Nov 14 08:02:07 2012
Monitored clock sources
Interface      Type      Status
external      e1        failed

```

show chassis synchronization extensive (configured external clock interface)

```

user@host> show chassis synchronization extensive

Current clock status: Locked
Clock locked to      : Primary

Configured sources:
Interface      : xe-2/0/10
Status         : Primary      Index : 227
Clock source state : Clk qualified Priority : Default (8)
Configured QL    : SEC        ESMC QL : SEC
Clock source type : ifd        Clock Event : Clock locked
Kernel flags     : Up,pri, ESMC Rx(SSM 0xb),ESMC TX(QL DNU/SSM 0xf),

```

show chassis synchronization clock-module(configured external clock interfaces)

```

user@host> show chassis synchronization clock-module

re0:
-----

Clock module on SCB0
  Current role      : master
  Current state     : locked to xe-2/0/10
  State for         : 29 days, 10 hrs, 06 mins, 23 secs
  State since       : Wed Jun 7 21:55:23 2014
  Monitored clock sources
    Interface      Type      Status
    xe-2/0/10      syncE      qualified-selected

```

show chassis synchronization extensive (configured external clock interface)

```

user@host> show chassis synchronization extensive

Current clock status : Free-run

Configured interfaces:

Name      : external
Signal type : e1 (g704 ami sa4)
Rx status  : loss of signal
Tx status  : squelched
LED color  : red

Configured outputs:

Interface      : external
Tx status      : squelched (holdover data invalid)
Minimum QL     : SEC           Tx QL       : DNU
Holdover mode  : enabled       Wander filter : disabled
Source mode    : chassis       Source Tx DNU : disabled
Holdover data  : invalid
Current state   : holdover
  State for    : 2 days, 06 hrs, 03 mins, 46 secs
  State since   : Wed Nov 14 08:02:09 2012

Configured sources:

Interface      : external
Status         : n/a           Index      : 0
Clock source state : n/a       Priority    : Default(6)
Configured QL    : SSU-A       ESMC QL    : DNU
Clock source type : extern     Clock Event : n/a
Interface State  : Dn,ESMC Rx(SSM 0xf),
Ineligibility reason: Link Down,

```

show chassis temperature-thresholds

List of Syntax

- Syntax on page 1564
- Syntax (TX Matrix Routers) on page 1564
- Syntax (TX Matrix Plus Routers) on page 1564
- Syntax (MX Series Routers) on page 1564
- Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms) on page 1564
- Syntax (QFX Series) on page 1564
- Syntax (PTX Series) on page 1564
- Syntax (EX9251, EX9253 Switches) on page 1564

Syntax show chassis temperature-thresholds

Syntax (TX Matrix Routers) show chassis temperature-thresholds
<lcc *number* | scc>

Syntax (TX Matrix Plus Routers) show chassis temperature-thresholds
<lcc *number* | sfc *number*>

Syntax (MX Series Routers) show chassis temperature-thresholds
<all-members>
<local>
<member *member-id*>
<satellite [slot-id *slot-ID* | device-alias *alias-name*]>

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 *name*>
<node-device *name*>

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

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[show chassis temperature-thresholds \(MX150\) on page 1568](#)
[show chassis temperature-thresholds \(MX104 Router\) on page 1568](#)
[show chassis temperature-thresholds \(MX240, MX480, MX960 Routers with Application Services Modular Line Card\) on page 1569](#)
[show chassis temperature-thresholds \(MX480 Router with MPC4E\) on page 1569](#)
[show chassis temperature-thresholds \(MX2010 Router with MPC7E, MPC8E, and MPC9E\) on page 1569](#)
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[show chassis temperature-thresholds \(TX Matrix Plus Router\) on page 1597](#)
[show chassis temperature-thresholds lcc \(TX Matrix Plus Router\) on page 1598](#)
[show chassis temperature-thresholds sfc \(TX Matrix Plus Router\) on page 1598](#)
[show chassis temperature-thresholds \(TX Matrix Plus routers with 3D SIBs\) on page 1599](#)
[show chassis temperature-thresholds \(QFX3500 Switch and QFX3600\) on page 1601](#)
[show chassis temperature-thresholds interconnect-device \(QFabric System\) on page 1601](#)
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[show chassis temperature-thresholds \(PTX1000 Packet Transport Router\) on page 1603](#)
[show chassis temperature-thresholds \(MX Routers with Media Services Blade \[MSB\]\) on page 1603](#)
[show chassis temperature-thresholds \(EX9251 Switches\) on page 1604](#)
[show chassis temperature-thresholds \(EX9253 switches\) on page 1605](#)

Output Fields [Table 107 on page 1567](#) lists the output fields for the **show chassis temperature-thresholds** command. Output fields are listed in the approximate order in which they appear.

Table 107: 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
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | |
|------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 70 | 80 | 95 | 95 | 110 | 110 |
| Routing Engine 1 | 70 | 80 | 95 | 95 | 110 | 110 |
| FPC 0 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 1 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 2 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 3 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 4 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 5 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 6 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 7 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 8 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 9 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 10 | 55 | 60 | 75 | 65 | 90 | 80 |
| FPC 11 | 55 | 60 | 75 | 65 | 90 | 80 |

show chassis temperature-thresholds (MX150)

```
user@host> show chassis temperature-thresholds
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) | |
|----------------|--------------------------|------|-----------------------------|------|--------------------------|------|------------------------------|------|
| | Normal | High | Normal | High | Normal | High | Normal | High |
| FPC 0 Sensor 1 | 43 | 65 | 68 | 68 | 70 | 70 | 70 | 70 |
| FPC 0 Sensor 2 | 43 | 65 | 68 | 68 | 70 | 70 | 70 | 70 |
| FPC 0 Coretemp | 78 | 94 | 100 | 100 | 105 | 105 | 105 | 105 |

show chassis temperature-thresholds (MX104 Router)

```
user@host> show chassis temperature-thresholds
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) | |
|------------------|--------------------------|------|-----------------------------|------|--------------------------|------|------------------------------|------|
| | Normal | High | Normal | High | Normal | High | Normal | High |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 | 75 | 65 |
| Routing Engine 0 | 55 | 80 | 95 | 95 | 105 | 100 | 105 | 100 |

show chassis temperature-thresholds (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```
user@host> show chassis temperature-thresholds
```

| Fan speed (degrees C) | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) | |
|--------------------------|-----------------------------|------|--------------------------|---------|------------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Item | | | | | | |
| 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 (degrees C) | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) | |
|--------------------------|-----------------------------|------|--------------------------|---------|------------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Item | | | | | | |
| 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 with MPC7E, MPC8E, and MPC9E)

```
user@ host> show chassis temperature-thresholds
```

| Fire Shutdown (degrees C) | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | |
|------------------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Item | | | | | | |
| Bad fan | | | | | | |
| Normal | | | | | | |

| | | | | | |
|--------------------------|----|----|-----|-----|-----|
| FPC 3 Intake | 53 | 59 | 72 | 67 | 80 |
| 75 85 | | | | | |
| FPC 3 Exhaust A | 77 | 85 | 98 | 93 | 103 |
| 98 108 | | | | | |
| FPC 3 Exhaust B | 54 | 62 | 80 | 75 | 103 |
| 98 108 | | | | | |
| FPC 3 EA0 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA0_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 EA0_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 EA1 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA1_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 EA1_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 PEX Chip | 74 | 82 | 100 | 100 | 105 |
| 105 110 | | | | | |
| FPC 3 EA2 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA2_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 EA2_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 EA3 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA3_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 EA3_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 3 EA0_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA0_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA0_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA0_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA0_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA0_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA1_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA1_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA1_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA1_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA1_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA1_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA2_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA2_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |

| | | | | | |
|--------------------------|----|----|-----|-----|-----|
| FPC 3 EA2_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA2_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA2_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA2_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA3_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA3_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA3_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA3_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 3 EA3_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 3 EA3_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 4 Intake | 46 | 55 | 65 | 60 | 81 |
| 76 90 | | | | | |
| FPC 4 Exhaust A | 61 | 70 | 80 | 75 | 100 |
| 95 110 | | | | | |
| FPC 4 Exhaust B | 61 | 70 | 80 | 75 | 95 |
| 90 105 | | | | | |
| FPC 4 EA0 Chip | 86 | 95 | 105 | 100 | 117 |
| 112 123 | | | | | |
| FPC 4 EA0_XR0 Chip | 86 | 95 | 105 | 100 | 110 |
| 105 116 | | | | | |
| FPC 4 EA0_XR1 Chip | 86 | 95 | 105 | 100 | 115 |
| 110 121 | | | | | |
| FPC 4 EA1 Chip | 86 | 95 | 105 | 100 | 117 |
| 112 123 | | | | | |
| FPC 4 EA1_XR0 Chip | 86 | 95 | 105 | 100 | 110 |
| 105 116 | | | | | |
| FPC 4 EA1_XR1 Chip | 86 | 95 | 105 | 100 | 115 |
| 110 121 | | | | | |
| FPC 4 PCIE_SW Chip | 81 | 90 | 105 | 100 | 115 |
| 110 121 | | | | | |
| FPC 4 EA0_HMC0 DRAM botm | 86 | 95 | 105 | 100 | 115 |
| 110 121 | | | | | |
| FPC 4 EA0_HMC1 DRAM botm | 86 | 95 | 105 | 100 | 115 |
| 110 121 | | | | | |
| FPC 4 EA1_HMC0 DRAM botm | 86 | 95 | 105 | 100 | 115 |
| 110 121 | | | | | |
| FPC 4 EA1_HMC1 DRAM botm | 86 | 95 | 105 | 100 | 115 |
| 110 121 | | | | | |
| FPC 7 Intake | 53 | 59 | 72 | 67 | 80 |
| 75 85 | | | | | |
| FPC 7 Exhaust A | 77 | 85 | 98 | 93 | 103 |
| 98 108 | | | | | |
| FPC 7 Exhaust B | 54 | 62 | 80 | 75 | 103 |
| 98 108 | | | | | |
| FPC 7 EA0 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 7 EA0_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 7 EA0_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |

| | | | | | |
|--------------------------|----|----|-----|-----|-----|
| FPC 7 EA1 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 7 EA1_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 7 EA1_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 7 PEX Chip | 74 | 82 | 100 | 100 | 105 |
| 105 110 | | | | | |
| FPC 7 EA2 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 7 EA2_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 7 EA2_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 7 EA3 Chip | 64 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 7 EA3_XR0 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 7 EA3_XR1 Chip | 79 | 87 | 102 | 102 | 106 |
| 106 108 | | | | | |
| FPC 7 EA0_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA0_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA0_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA0_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA0_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA0_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA1_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA1_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA1_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA1_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA1_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA1_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA2_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA2_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA2_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA2_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA2_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA2_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA3_HMC0 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA3_HMC0 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |

| | | | | | |
|--------------------------|----|----|-----|-----|-----|
| FPC 7 EA3_HMC1 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA3_HMC1 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |
| FPC 7 EA3_HMC2 Logic die | 81 | 89 | 103 | 103 | 107 |
| 107 111 | | | | | |
| FPC 7 EA3_HMC2 DRAM botm | 76 | 84 | 98 | 98 | 102 |
| 102 106 | | | | | |

As per the above output, the MPC7E, MPC8E, and MPC9E are installed in the FPC slots 4, 7, and 3, respectively.

show chassis temperature-thresholds (MX2010 Router)

```
user@host> show chassis temperature-thresholds
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) | |
|---------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|------------------------------|--|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal | |
| 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
```

| Item | Fan speed | | Yellow alarm | | Red alarm | | Fire Shutdown |
|---------------------|-----------------------|---------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|
| | (degrees C) Normal | (degrees C) High | (degrees C) Normal | (degrees C) Bad fan | (degrees C) Normal | (degrees C) Bad fan | (degrees C) 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 (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (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 | 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
```

| Shutdown | Fan speed | | Yellow alarm | | Red alarm | | Fire |
|----------------------|-------------|------|--------------|---------|-------------|---------|------|
| | (degrees C) | | (degrees C) | | (degrees C) | | |
| | Normal | High | Normal | Bad fan | Normal | Bad fan | |
| (degrees C) | | | | | | | |
| Item | | | | | | | |
| Normal | | | | | | | |
| 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 96 | 70 | 75 | 81 | 78 | 91 | 88 |
| CB 0 Exhaust4 105 | 75 | 80 | 90 | 87 | 100 | 97 |
| CB 1 Inlet1 85 | 55 | 60 | 65 | 62 | 75 | 72 |
| CB 1 Inlet2 90 | 45 | 50 | 61 | 58 | 80 | 77 |
| CB 1 Inlet3 90 | 57 | 62 | 68 | 65 | 80 | 77 |
| CB 1 Inlet4 95 | 55 | 60 | 80 | 77 | 90 | 87 |
| CB 1 Exhaust1 85 | 55 | 60 | 65 | 62 | 75 | 72 |
| CB 1 Exhaust2 90 | 50 | 55 | 60 | 57 | 80 | 77 |
| CB 1 Exhaust3 96 | 70 | 75 | 81 | 78 | 91 | 88 |
| CB 1 Exhaust4 105 | 75 | 80 | 90 | 87 | 100 | 97 |
| SFB 0 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 0 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |
| SFB 0 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 0 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 0 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| SFB 0 SFB2-PF-die 120 | 88 | 93 | 98 | 95 | 118 | 115 |
| SFB 1 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 1 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |
| SFB 1 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 1 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 1 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| SFB 1 SFB2-PF-die 120 | 88 | 93 | 98 | 95 | 118 | 115 |
| SFB 2 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 2 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |
| SFB 2 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 2 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 2 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| SFB 2 SFB2-PF-die 120 | 88 | 93 | 98 | 95 | 118 | 115 |
| SFB 3 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 3 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |

| | | | | | | |
|----------------------------|----|----|----|----|-----|-----|
| SFB 3 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 3 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 3 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| SFB 3 SFB2-PF-die 120 | 88 | 93 | 98 | 95 | 118 | 115 |
| SFB 4 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 4 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |
| SFB 4 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 4 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 4 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| SFB 4 SFB2-PF-die 120 | 88 | 93 | 98 | 95 | 118 | 115 |
| SFB 5 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 5 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |
| SFB 5 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 5 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 5 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| SFB 5 SFB2-PF-die 120 | 88 | 93 | 98 | 95 | 118 | 115 |
| SFB 6 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 6 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |
| SFB 6 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 6 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 6 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| SFB 6 SFB2-PF-die 120 | 88 | 93 | 98 | 95 | 118 | 115 |
| SFB 7 Inlet1 81 | 49 | 54 | 62 | 59 | 76 | 73 |
| SFB 7 Inlet2 88 | 65 | 70 | 71 | 68 | 83 | 80 |
| SFB 7 Exhaust1 80 | 45 | 50 | 61 | 58 | 75 | 72 |
| SFB 7 Exhaust2 85 | 60 | 65 | 69 | 66 | 80 | 77 |
| SFB 7 SFB2-PF-local 100 | 65 | 70 | 75 | 72 | 95 | 92 |
| 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 100 | 70 | 75 | 90 | 85 | 95 | 90 |
| ADC 7 Intake 80 | 50 | 55 | 65 | 65 | 75 | 75 |
| ADC 7 Exhaust 80 | 50 | 55 | 65 | 65 | 75 | 75 |

| | | | | | | |
|----------------------|----|----|----|----|----|----|
| ADC 7 ADC-XF1 100 | 70 | 75 | 90 | 85 | 95 | 90 |
| ADC 7 ADC-XF0 100 | 70 | 75 | 90 | 85 | 95 | 90 |

show chassis temperature-thresholds (MX10003 Router)

```
user@host> 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 0 102 | 48 | 54 | 85 | 85 | 100 | 100 | |
| Routing Engine 1 102 | 48 | 54 | 85 | 85 | 100 | 100 | |
| CB 0 Exhaust Temp Sensor 95 | 60 | 65 | 75 | 75 | 85 | 85 | |
| CB 0 Inlet Temp Sensor 95 | 60 | 65 | 75 | 75 | 85 | 85 | |
| CB 0 CPU DIE Temp Sensor 110 | 83 | 90 | 98 | 98 | 105 | 105 | |
| CB 1 Exhaust Temp Sensor 95 | 60 | 65 | 75 | 75 | 85 | 85 | |
| CB 1 Inlet Temp Sensor 95 | 60 | 65 | 75 | 75 | 85 | 85 | |
| CB 1 CPU DIE Temp Sensor 110 | 83 | 90 | 98 | 98 | 105 | 105 | |
| FPC 0 Intake Temp Sensor 95 | 40 | 45 | 75 | 70 | 85 | 80 | |
| FPC 0 Exhaust-A Temp Sensor 100 | 55 | 60 | 85 | 80 | 90 | 90 | |
| FPC 0 Exhaust-B Temp Sensor 100 | 55 | 60 | 85 | 80 | 90 | 90 | |
| FPC 0 EA0 Chip 110 | 87 | 92 | 97 | 97 | 105 | 105 | |
| FPC 0 EA0-XR0 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 | |
| FPC 0 EA0-XR1 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 | |
| FPC 0 EA1 Chip 110 | 87 | 92 | 97 | 97 | 105 | 105 | |
| FPC 0 EA1-XR0 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 | |
| FPC 0 EA1-XR1 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 | |
| FPC 0 EA2 Chip 110 | 87 | 92 | 97 | 97 | 105 | 105 | |
| FPC 0 EA2-XR0 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 | |
| FPC 0 EA2-XR1 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 | |
| FPC 0 PF Chip 120 | 89 | 94 | 104 | 104 | 120 | 120 | |
| FPC 0 EA0_HMC0 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 | |

| | | | | | | |
|------------------------------------|----|----|-----|-----|-----|-----|
| FPC 0 EA0_HMC0 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA0_HMC1 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA0_HMC1 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA0_HMC2 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA0_HMC2 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA1_HMC0 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA1_HMC0 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA1_HMC1 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA1_HMC1 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA1_HMC2 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA1_HMC2 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA2_HMC0 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA2_HMC0 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA2_HMC1 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA2_HMC1 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA2_HMC2 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA2_HMC2 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 Intake Temp Sensor 95 | 40 | 45 | 75 | 70 | 85 | 80 |
| FPC 1 Exhaust-A Temp Sensor 100 | 55 | 60 | 85 | 80 | 90 | 90 |
| FPC 1 Exhaust-B Temp Sensor 100 | 55 | 60 | 85 | 80 | 90 | 90 |
| FPC 1 EA0 Chip 110 | 87 | 92 | 97 | 97 | 105 | 105 |
| FPC 1 EA0-XR0 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 1 EA0-XR1 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 1 EA1 Chip 110 | 87 | 92 | 97 | 97 | 105 | 105 |
| FPC 1 EA1-XR0 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 1 EA1-XR1 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 1 EA2 Chip 110 | 87 | 92 | 97 | 97 | 105 | 105 |
| FPC 1 EA2-XR0 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 1 EA2-XR1 Chip 125 | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 1 PF Chip 120 | 89 | 94 | 104 | 104 | 120 | 120 |

| | | | | | | |
|------------------------------|----|----|-----|-----|-----|-----|
| FPC 1 EA0_HMC0 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA0_HMC0 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA0_HMC1 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA0_HMC1 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA0_HMC2 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA0_HMC2 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA1_HMC0 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA1_HMC0 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA1_HMC1 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA1_HMC1 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA1_HMC2 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA1_HMC2 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA2_HMC0 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA2_HMC0 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA2_HMC1 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA2_HMC1 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 1 EA2_HMC2 Logic die 125 | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 1 EA2_HMC2 DRAM botm 125 | 83 | 88 | 98 | 98 | 120 | 120 |

show chassis temperature-thresholds (MX10008 Router)

```
user@host> show chassis temperature-thresholds
```

| Fire Shutdown | | Fan speed | | Yellow alarm | | Red alarm |
|----------------------------|-------------|-------------|------|--------------|---------|-----------|
| C) | (degrees C) | (degrees C) | | (degrees C) | | (degrees |
| Item | | Normal | High | Normal | Bad fan | Normal |
| 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 | 85 | 95 | 30 | 35 | 80 | 80 85 |
| CB 1 Intake B Temp Sensor | 85 | 95 | 30 | 35 | 80 | 80 85 |
| CB 1 Exhaust A Temp Sensor | 85 | 95 | 40 | 45 | 80 | 80 85 |
| CB 1 Exhaust B Temp Sensor | 85 | 95 | 40 | 45 | 80 | 80 85 |
| CB 1 Middle Temp Sensor | 85 | 95 | 40 | 45 | 80 | 80 85 |
| FPC 0 Intake-A Temp Sensor | 85 | 90 | 52 | 62 | 72 | 72 85 |
| FPC 0 Exhaust-A Temp Sensor | 103 | 108 | 75 | 85 | 98 | 98 103 |
| FPC 0 Exhaust-B Temp Sensor | 103 | 108 | 75 | 85 | 98 | 98 103 |
| FPC 0 EA0 Temp Sensor | 100 | 105 | 62 | 72 | 90 | 90 100 |
| FPC 0 EA0_XR0 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA0_XR1 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA1 Temp Sensor | 100 | 105 | 62 | 72 | 90 | 90 100 |
| FPC 0 EA1_XR0 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA1_XR1 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA2 Temp Sensor | 100 | 105 | 62 | 72 | 90 | 90 100 |
| FPC 0 EA2_XR0 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA2_XR1 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA3 Temp Sensor | 100 | 105 | 62 | 72 | 90 | 90 100 |
| FPC 0 EA3_XR0 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA3_XR1 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA4 Temp Sensor | 100 | 105 | 62 | 72 | 90 | 90 100 |
| FPC 0 EA4_XR0 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA4_XR1 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA5 Temp Sensor | 100 | 105 | 62 | 72 | 90 | 90 100 |
| FPC 0 EA5_XR0 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA5_XR1 Temp Sensor | 105 | 108 | 77 | 87 | 100 | 100 105 |
| FPC 0 EA0_HMC0 Logic die | 110 | 115 | 79 | 89 | 103 | 103 110 |
| FPC 0 EA0_HMC0 DRAM botm | 105 | 110 | 74 | 84 | 98 | 98 105 |
| FPC 0 EA0_HMC1 Logic die | 110 | 115 | 79 | 89 | 103 | 103 110 |
| FPC 0 EA0_HMC1 DRAM botm | | | 74 | 84 | 98 | 98 105 |

| | | | | | | |
|--------------------------|-----|----|----|-----|-----|-----|
| 105 | 110 | | | | | |
| 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 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA0_XR0 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA0_XR1 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA1 Temp Sensor | 62 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA1_XR0 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA1_XR1 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA2 Temp Sensor | 62 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA2_XR0 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA2_XR1 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA3 Temp Sensor | 62 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA3_XR0 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA3_XR1 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA4 Temp Sensor | 62 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA4_XR0 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA4_XR1 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA5 Temp Sensor | 62 | 72 | 90 | 90 | 100 |
| 100 105 | | | | | |
| FPC 3 EA5_XR0 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA5_XR1 Temp Sensor | 77 | 87 | 100 | 100 | 105 |
| 105 108 | | | | | |
| FPC 3 EA0_HMC0 Logic die | 79 | 89 | 103 | 103 | 110 |
| 110 115 | | | | | |
| FPC 3 EA0_HMC0 DRAM botm | 74 | 84 | 98 | 98 | 105 |
| 105 110 | | | | | |
| FPC 3 EA0_HMC1 Logic die | 79 | 89 | 103 | 103 | 110 |
| 110 115 | | | | | |
| FPC 3 EA0_HMC1 DRAM botm | 74 | 84 | 98 | 98 | 105 |
| 105 110 | | | | | |
| FPC 3 EA0_HMC2 Logic die | 79 | 89 | 103 | 103 | 110 |
| 110 115 | | | | | |
| FPC 3 EA0_HMC2 DRAM botm | 74 | 84 | 98 | 98 | 105 |
| 105 110 | | | | | |
| FPC 3 EA1_HMC0 Logic die | 79 | 89 | 103 | 103 | 110 |
| 110 115 | | | | | |
| FPC 3 EA1_HMC0 DRAM botm | 74 | 84 | 98 | 98 | 105 |
| 105 110 | | | | | |
| FPC 3 EA1_HMC1 Logic die | 79 | 89 | 103 | 103 | 110 |
| 110 115 | | | | | |
| FPC 3 EA1_HMC1 DRAM botm | 74 | 84 | 98 | 98 | 105 |

| | | | | | | |
|--------------------------|-----|----|-----|-----|-----|--|
| 105 | 110 | | | | | |
| FPC 3 EA1_HMC2 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA1_HMC2 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA2_HMC0 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA2_HMC0 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA2_HMC1 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA2_HMC1 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA2_HMC2 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA2_HMC2 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA3_HMC0 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA3_HMC0 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA3_HMC1 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA3_HMC1 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA3_HMC2 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA3_HMC2 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA4_HMC0 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA4_HMC0 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA4_HMC1 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA4_HMC1 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA4_HMC2 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA4_HMC2 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA5_HMC0 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA5_HMC0 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA5_HMC1 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA5_HMC1 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| FPC 3 EA5_HMC2 Logic die | 79 | 89 | 103 | 103 | 110 | |
| 110 | 115 | | | | | |
| FPC 3 EA5_HMC2 DRAM botm | 74 | 84 | 98 | 98 | 105 | |
| 105 | 110 | | | | | |
| SFB 0 Intake-A | 65 | 75 | 85 | 85 | 95 | |
| 95 | 105 | | | | | |
| SFB 0 Intake-B | 65 | 75 | 85 | 85 | 95 | |
| 95 | 105 | | | | | |
| SFB 0 Exhaust-A | 75 | 85 | 95 | 95 | 95 | |
| 95 | 105 | | | | | |
| SFB 0 Exhaust-B | 75 | 85 | 95 | 95 | 95 | |

| | | | | | | |
|-----------------|-----|----|----|-----|-----|-----|
| 95 | 105 | | | | | |
| SFB 0 PF0 | | 65 | 75 | 100 | 100 | 105 |
| 105 | 115 | | | | | |
| SFB 0 PF1 | | 65 | 75 | 100 | 100 | 105 |
| 105 | 115 | | | | | |
| 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 |
| Item | (degrees C) | Normal | High | Normal | Bad fan | Normal |
| Bad fan | Normal | | | | | |
| Routing Engine | | 48 | 54 | 85 | 85 | 100 |
| 100 | 102 | | | | | |
| CB Top Right Inlet Sensor | | 35 | 40 | 63 | 63 | 85 |
| 85 | 95 | | | | | |
| CB Top Left Inlet Sensor | | 40 | 45 | 65 | 65 | 85 |
| 85 | 95 | | | | | |
| CB Top Right Exhaust Sensor | | 45 | 50 | 68 | 68 | 85 |
| 85 | 95 | | | | | |
| CB Top Left Exhaust Sensor | | 65 | 70 | 78 | 78 | 85 |
| 85 | 95 | | | | | |
| CB CPU Core-0 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| CB CPU Core-1 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| CB CPU Core-2 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| CB CPU Core-3 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| CB CPU Core-4 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| CB CPU Core-5 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| CB CPU Core-6 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| CB CPU Core-7 Temp | | 65 | 70 | 80 | 80 | 90 |
| 90 | 100 | | | | | |
| FPC EA0_HMC0 Logic die | | 85 | 90 | 95 | 95 | 105 |
| 105 | 110 | | | | | |
| FPC EA0_HMC0 DRAM botm | | 80 | 85 | 90 | 90 | 105 |
| 105 | 110 | | | | | |
| FPC EA0_HMC1 Logic die | | 85 | 90 | 95 | 95 | 105 |
| 105 | 110 | | | | | |
| FPC EA0_HMC1 DRAM botm | | 80 | 85 | 90 | 90 | 105 |
| 105 | 110 | | | | | |
| FPC EA0 Chip | | 92 | 97 | 103 | 103 | 109 |
| 109 | 115 | | | | | |
| FPC EA0-XR0 Chip | | 85 | 90 | 98 | 98 | 103 |
| 103 | 110 | | | | | |
| FPC EA0-XR1 Chip | | 85 | 90 | 98 | 98 | 103 |
| 103 | 110 | | | | | |

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 | 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 Intake Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| CB 0 Exhaust Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| CB 0 CPU Die Temp Sensor | 40 | 45 | 95 | 95 | 100 | 100 | |
| 110 | | | | | | | |
| CB 1 Intake Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| CB 1 Exhaust Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| CB 1 CPU Die Temp Sensor | 40 | 45 | 95 | 95 | 100 | 100 | |
| 110 | | | | | | | |
| FPC 0 Intake-A Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 0 Intake-B Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 0 Exhaust-A Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 0 Exhaust-B Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 0 Exhaust-C Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 0 PE0 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 0 PE1 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 0 PE2 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 0 LCPU Temp Sensor | 40 | 45 | 95 | 95 | 100 | 100 | |
| 110 | | | | | | | |
| FPC 5 Intake-A Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 5 Intake-B Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 5 Exhaust-A Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 5 Exhaust-B Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 5 Exhaust-C Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| FPC 5 PE0 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 5 PE1 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 5 PE2 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 5 PE3 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |

| | | | | | | | |
|-----------------------------|----|----|-----|-----|-----|-----|--|
| 115 | | | | | | | |
| FPC 5 PE4 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 5 PE5 Temp Sensor | 40 | 45 | 100 | 100 | 105 | 105 | |
| 115 | | | | | | | |
| FPC 5 LCPU Temp Sensor | 40 | 45 | 95 | 95 | 100 | 100 | |
| 110 | | | | | | | |
| FPC 6 Intake-A Temp Sensor | 30 | 35 | 80 | 80 | 85 | 85 | |
| 95 | | | | | | | |
| 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) | | (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 |
| 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 | | Yellow alarm | | Red alarm | |
|------------------|-------------|------|--------------|---------|-------------|---------|
| | (degrees C) | | (degrees C) | | (degrees C) | |
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| SIB F13 0 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 3 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 6 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 8 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 11 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 12 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 16 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 17 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 18 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 19 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 20 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 21 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 22 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 23 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 24 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 25 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 26 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 27 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 28 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 29 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 30 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 31 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 32 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 33 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 34 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 35 | 64 | 70 | 76 | 72 | 90 | 84 |

```
lcc0-re0:
```

| Fan speed | Yellow alarm | Red alarm |
|-----------|--------------|-----------|
|-----------|--------------|-----------|

| Item | (degrees C) | | (degrees C) | | (degrees C) | |
|------------------|-------------|------|-------------|---------|-------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| FPC 1 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 3 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 4 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 6 | 56 | 62 | 75 | 63 | 83 | 76 |
| 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 |

| Item | (degrees C) | | (degrees C) | | (degrees C) | |
|------------------|-------------|------|-------------|---------|-------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| 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 (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 100 | 48 | 54 | 65 | 55 | 75 | 65 | |
| Routing Engine 0 115 | 70 | 75 | 90 | 87 | 102 | 97 | |
| Routing Engine 1 115 | 70 | 75 | 90 | 87 | 102 | 97 | |
| SIB F13 0 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F13 0 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F13 4 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F13 4 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F13 6 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |

| | | | | | | | |
|----------------------------|-------------|------|--------------|---------|-------------|---------|------|
| SIB F13 6 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 16 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 16 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 17 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 17 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 18 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 18 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 19 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 19 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 24 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 24 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 25 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 25 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 26 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 26 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| SIB F2S 27 Board 95 | 60 | 65 | 78 | 75 | 85 | 80 | |
| SIB F2S 27 XF Junction 107 | 70 | 75 | 82 | 74 | 105 | 100 | |
| lcc0-re0: | | | | | | | |
| ----- | | | | | | | |
| Shutdown | Fan speed | | Yellow alarm | | Red alarm | | Fire |
| (degrees C) | (degrees C) | | (degrees C) | | (degrees C) | | |
| Item | Normal | High | Normal | Bad fan | Normal | Bad fan | |
| Normal | | | | | | | |
| Chassis default 100 | 48 | 54 | 65 | 55 | 75 | 65 | |
| Routing Engine 0 102 | 55 | 65 | 85 | 85 | 100 | 100 | |
| FPC 0 95 | 63 | 68 | 75 | 70 | 90 | 83 | |
| FPC 1 95 | 56 | 62 | 75 | 63 | 83 | 76 | |
| FPC 7 95 | 56 | 62 | 75 | 63 | 83 | 76 | |
| SIB 0 95 | 64 | 70 | 76 | 72 | 87 | 84 | |
| SIB 0 ASIC Junction 107 | 63 | 68 | 75 | 70 | 105 | 100 | |
| SIB 2 95 | 64 | 70 | 76 | 72 | 87 | 84 | |
| 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 (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | |
|------------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| rmal | | | | | | |
| FPC Sensor TopLeft I | 48 | 56 | 53 | 43 | 56 | 46 |
| FPC Sensor TopRight I | 46 | 54 | 51 | 41 | 54 | 44 |
| FPC Sensor TopLeft E | 58 | 65 | 62 | 52 | 65 | 55 |
| FPC Sensor TopRight E | 56 | 64 | 61 | 51 | 64 | 54 |
| FPC Sensor TopMiddle I | 58 | 64 | 61 | 51 | 64 | 54 |
| FPC Sensor TopMiddle E | 67 | 74 | 71 | 61 | 74 | 64 |
| FPC Sensor Bottom I | 59 | 67 | 64 | 54 | 67 | 57 |
| FPC Sensor Bottom E | 66 | 73 | 70 | 60 | 73 | 63 |
| FPC Sensor Die Temp | 69 | 75 | 72 | 62 | 75 | 65 |
| FPC Sensor Mgmt Brd I | 46 | 54 | 51 | 41 | 54 | 44 |
| FPC Sensor Switch I | 56 | 63 | 60 | 50 | 63 | 53 |

show chassis temperature-thresholds interconnect-device (QFabric System)

```
user@switch> show chassis temperature-thresholds interconnect-device interconnect1
```

| Item | Fan speed | | Yellow alarm | | Red alarm | |
|--|-----------|------|--------------|---------|-----------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| temperature-thresholds interconnect-device interconnect1 | | | | | | |
| 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
```

| Item | Fan speed | | Yellow alarm | | Red alarm | | Fire |
|------------------|-----------|------|--------------|---------|-----------|---------|------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | |
| Shutdown | | | | | | | |
| (degrees C) | | | | | | | |
| Routing Engine 0 | 80 | 90 | 95 | 85 | 105 | 95 | |
| 115 | | | | | | | |
| CB 0 Exhaust A | 60 | 65 | 78 | 75 | 85 | 80 | |
| 95 | | | | | | | |
| CB 0 Exhaust B | 60 | 65 | 78 | 75 | 85 | 80 | |
| 95 | | | | | | | |
| CB 1 Exhaust A | 60 | 65 | 78 | 75 | 85 | 80 | |
| 95 | | | | | | | |
| CB 1 Exhaust B | 60 | 65 | 78 | 75 | 85 | 80 | |
| 95 | | | | | | | |
| FPC 3 Exhaust A | 80 | 90 | 95 | 85 | 105 | 95 | |
| 115 | | | | | | | |

| | | | | | | |
|------------------------|----|----|----|----|-----|----|
| FPC 3 Exhaust B 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TL5 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TQ5 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TL6 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TQ6 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TL1 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TQ1 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TL2 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TQ2 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TL4 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TQ4 115 | 80 | 90 | 95 | 85 | 105 | 95 |
| FPC 3 TL7 115 | 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 | 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 | | | | | | | |
| 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 (degrees C) Item | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) | |
|----------------------------------|-----------------------------|------|--------------------------|---------|------------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Normal | | | | | | |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| 100 | | | | | | |
| Routing Engine 0 | 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 (degrees C) Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire (degrees C) |
|---------------------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|---------------------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | |
| Normal | | | | | | | |
| Routing Engine | | | 48 | 54 | 85 | 85 | 100 |
| 100 102 | | | | | | | |
| CB Top Right Inlet Sensor | | | 35 | 40 | 63 | 63 | 85 |
| 85 95 | | | | | | | |
| CB Top Left Inlet Sensor | | | 40 | 45 | 65 | 65 | 85 |
| 85 95 | | | | | | | |
| CB Top Right Exhaust Sensor | | | 45 | 50 | 68 | 68 | 85 |
| 85 95 | | | | | | | |
| CB Top Left Exhaust Sensor | | | 65 | 70 | 78 | 78 | 85 |
| 85 95 | | | | | | | |
| CB CPU Core-0 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |
| CB CPU Core-1 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |
| CB CPU Core-2 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |
| CB CPU Core-3 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |
| CB CPU Core-4 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |
| CB CPU Core-5 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |
| CB CPU Core-6 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |
| CB CPU Core-7 Temp | | | 65 | 70 | 80 | 80 | 90 |
| 90 100 | | | | | | | |

| | | | | | |
|------------------------|----|----|-----|-----|-----|
| FPC EA0_HMC0 Logic die | 85 | 90 | 95 | 95 | 105 |
| 105 110 | | | | | |
| FPC EA0_HMC0 DRAM botm | 80 | 85 | 90 | 90 | 105 |
| 105 110 | | | | | |
| FPC EA0_HMC1 Logic die | 85 | 90 | 95 | 95 | 105 |
| 105 110 | | | | | |
| FPC EA0_HMC1 DRAM botm | 80 | 85 | 90 | 90 | 105 |
| 105 110 | | | | | |
| FPC EA0 Chip | 92 | 97 | 103 | 103 | 109 |
| 109 115 | | | | | |
| FPC EA0-XR0 Chip | 85 | 90 | 98 | 98 | 103 |
| 103 110 | | | | | |
| FPC EA0-XR1 Chip | 85 | 90 | 98 | 98 | 103 |
| 103 110 | | | | | |

show chassis temperature-thresholds (EX9253 witches)

```
user@switch> show chassis temperature-thresholds
```

| | | Fan speed | | Yellow alarm | | Red alarm | | Fire |
|-----------------------------|-----|-------------|------|--------------|---------|-------------|---------|------|
| Shutdown | | (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 | | | | | | | |
| 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 zones (PTX Series Packet Transport Routers)

Syntax `show chassis zones
<detail>`

Release Information Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.

Description (PTX5000 Packet Transport Router only) Display the status of the two cooling system zones of the chassis. Zone 0 consists of the Routing Engine, Control Board, SIB, PMB, and the CCG, and is cooled by the vertical fan tray. Zone 1 consists of the eight (0–7) FPCs, and their respective PICs, and is cooled by the horizontal fan trays. The vertical fan tray is located at the front of the chassis. One horizontal fan tray is located at the front top of the chassis, and another is located at the front bottom of the chassis.

Options **detail**—(Optional) Display status of each FRU and fan belonging to the cooling system zones.

Required Privilege Level view

Related Documentation

- [show chassis fan on page 1000](#)
- [show chassis temperature-thresholds on page 1564](#)

List of Sample Output [show chassis zones \(PTX5000 Packet Transport Router\) on page 1608](#)
[show chassis zones detail \(PTX5000 Packet Transport Router\) on page 1609](#)

Output Fields [Table 108 on page 1608](#) lists the output fields for the **show chassis zones detail** command.

Table 108: show chassis zones detail Output Fields

| Field Name | Field Description |
|--------------------|---|
| Item | Chassis component: <ul style="list-style-type: none"> • (PTX Series Packet Transport Routers)—Information about the chassis, Routing Engines, Control Boards (CBs), Switch Interface Boards (SIBs), PICs, and Flexible PIC Concentrators (FPCs). |
| Status | Status of the specified item. Status can be OK , Absent , or Offline . |
| Measurement | Fan tray speed utilization in percentage. |

Sample Output

show chassis zones (PTX5000 Packet Transport Router)

```
user@host> show chassis zones
```

```

ZONE 0 Status
  Driving FRU          Routing Engine 1
  Temperature          62 degrees C / 143 degrees F
  Condition            OK
  Num Fans Missing     0
  Num Fans Failed      0
  Fan Duty Cycle       0

ZONE 1 Status
  Driving FRU          FPC 0 TL0
  Temperature          71 degrees C / 159 degrees F
  Condition            OK
  Num Fans Missing     0
  Num Fans Failed      0
  Fan Duty Cycle       0

```

show chassis zones detail (PTX5000 Packet Transport Router)

```
user@host> show chassis zones detail
```

```

ZONE 0 Status
Item              Status      Measurement
CB 0              OK
CB 1              OK
Routing Engine 0  OK
Routing Engine 1  OK
SIB 0             OK
SIB 1             OK
SIB 2             OK
SIB 3             OK
SIB 4             OK
SIB 5             Absent
SIB 6             Absent
SIB 7             Absent
SIB 8             Absent
Fan Tray 0        OK           Spinning at 30% fan tray speed

ZONE 1 Status
Item              Status      Measurement
FPC 0             OK
FPC 1             OK
FPC 2             OK
FPC 3             OK
FPC 4             OK
FPC 5             Absent
FPC 6             Offline
FPC 7             OK
Fan Tray 1        OK           Spinning at 33% fan tray speed
Fan Tray 2        OK           Spinning at 36% fan tray speed

```

show chassis zones

List of Syntax [Syntax on page 1610](#)
[Syntax \(MX Series Routers\) on page 1610](#)
[Syntax \(QFX Series\) on page 1610](#)

Syntax `show chassis zones
<detail>`

Syntax (MX Series Routers) `show chassis zones
<detail>
<all-members>
<local>
<member member-id>`

Syntax (QFX Series) `show chassis zones
<detail>
<interconnect-device name>`

Release Information Command introduced in Junos OS Release 11.3 for the QFX Series.
 Command introduced in Junos OS Release 12.3 for MX2020 Universal Routing Platforms.
 Command introduced in Junos OS Release 12.3 for MX2010 Universal Routing Platforms.
all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.
 Command introduced in Junos OS Release 17.2 for MX2008 Universal Routing Platforms.

Description (QFabric systems only) Display the status of the two cooling system zones on the Interconnect device. Zone 1 consists of eight (0 – 7) front cards, which are cooled by two fan trays. Zone 2 consists of two control boards and eight rear cards, which are cooled by eight (0 – 7) fan trays.

(MX2010, MX2020, and MX2008 routers only) Display the status of the cooling system zones of the chassis. Zone 0 consists of the Control Board, ten (0–9) FPCs, and their respective PICs, Switch Fabric Boards, and Adapter Cards. Zone 1 consists of the Routing Engine, Control Board, and Switch Processor Mezzanine Boards.

Options **all-members**—(MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in all members of the Virtual Chassis configuration.

detail—(MX2010, MX2020, and MX2008 routers only) (Optional) Display detailed status of the cooling system zones.

detail *device-name*— (QFabric systems only) (Optional) Display detailed status of the two cooling systems on the Interconnect device.

interconnect-device *name*— (QFabric systems only) (Optional) Display the status of the cooling zones on the Interconnect device.

local—(MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in the local member of the Virtual Chassis.

member *member-id*—(MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in the specified member of the Virtual Chassis. Replace *member-id* with the value 0 or 1.

Required Privilege Level view

Related Documentation

- [show chassis fan on page 1000](#)
- [show chassis temperature-thresholds on page 1564](#)

List of Sample Output

- [show chassis zones interconnect-device \(QFabric System\) on page 1612](#)
- [show chassis zones \(MX2010 Router\) on page 1612](#)
- [show chassis zones detail \(MX2010 Router\) on page 1613](#)
- [show chassis zones \(MX2020 Router\) on page 1614](#)
- [show chassis zones detail \(MX2020 Router\) on page 1614](#)
- [show chassis zones \(MX2008 Router\) on page 1615](#)
- [show chassis zones detail \(MX2008 Router\) on page 1615](#)
- [show chassis beacon interconnect-device \(QFabric System\) on page 1616](#)
- [show chassis beacon interconnect-device fpc \(QFabric System\) on page 1616](#)
- [show chassis beacon node-device \(QFabric System\) on page 1616](#)
- [show chassis beacon node-device fpc \(QFabric System\) on page 1617](#)

Output Fields Table 109 on page 1611 lists the output fields for the **show chassis zones** command. Output fields are listed in the approximate order in which they appear.

Table 109: show chassis zones Output Fields

| Field Name | Field Description |
|--|--|
| Slot | FPC slot number of the device whose content is being displayed. On QFX3500 standalone switches, the number is always 0. |
| Beacon State | Status of the beacon state: <ul style="list-style-type: none"> • Off—The beacon is OFF. • On—The beacon is ON. |
| show chassis zones command output fields for MX2020, MX2010, and MX2008 routers: | |
| Driving FRU | Field replaceable unit (FRU). |
| Temperature | Temperature of the specified FRU in degrees Celsius and degrees Fahrenheit. |

Table 109: show chassis zones Output Fields (continued)

| Field Name | Field Description |
|---|--|
| Condition | Condition of the specified FRU. Condition can be HIGH TEMP , WARM TEMP , OK , and Offline . |
| Num Fans Missing | Number of fans or fan trays missing. |
| Num Fans Failed | Number of fans or fan trays that have failed. |
| Fan Duty Cycle | Fan duty cycle value. |
| show chassis zones detail command output fields for MX2020, MX2010, and MX2008 routers: | |
| Item | Chassis component: <ul style="list-style-type: none"> Information about the chassis, Routing Engines, Control Boards (CBs), Switch Fabric Boards (SFBs), PICs, Flexible PIC Concentrators (FPCs), and Adapter Cards (ADCs). |
| Measurement | Fan tray speed utilization in percentage. |
| Status | Status of the specified item. Status can be OK , Absent , or Offline . |

Sample Output

show chassis zones interconnect-device (QFabric System)

```
user@switch> show chassis zones interconnect-device interconnect1
```

```
Slot      Beacon State
FPC       0          OFF
```

show chassis zones (MX2010 Router)

```
user@host> show chassis zones
```

```
ZONE 0 Status
  Driving FRU           FPC 6
  Temperature           81 degrees C / 177 degrees F
  Condition             HIGH TEMP
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle        30

ZONE 1 Status
  Driving FRU           SFB 0 Exhaust-Zone1
  Temperature           71 degrees C / 159 degrees F
  Condition             WARM TEMP
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle        30
```


show chassis zones detail (MX2010 Router)

user@host > show chassis zones

| ZONE 0 Status | | |
|---------------|-----------|--------------------------------|
| Item | Status | Measurement |
| CB 0 | WARM TEMP | |
| CB 1 | WARM TEMP | |
| FPC 0 | HIGH TEMP | |
| FPC 1 | HIGH TEMP | |
| FPC 2 | WARM TEMP | |
| FPC 3 | HIGH TEMP | |
| FPC 4 | HIGH TEMP | |
| FPC 5 | HIGH TEMP | |
| FPC 6 | HIGH TEMP | |
| FPC 7 | HIGH TEMP | |
| FPC 8 | HIGH TEMP | |
| FPC 9 | HIGH TEMP | |
| ADC 0 | WARM TEMP | |
| ADC 1 | WARM TEMP | |
| ADC 2 | WARM TEMP | |
| ADC 3 | WARM TEMP | |
| ADC 4 | WARM TEMP | |
| ADC 5 | WARM TEMP | |
| ADC 6 | WARM TEMP | |
| ADC 7 | WARM TEMP | |
| ADC 8 | WARM TEMP | |
| ADC 9 | WARM TEMP | |
| SFB 0 | WARM TEMP | |
| SFB 1 | WARM TEMP | |
| SFB 2 | WARM TEMP | |
| SFB 3 | Offline | |
| SFB 4 | HIGH TEMP | |
| SFB 5 | WARM TEMP | |
| SFB 6 | HIGH TEMP | |
| SFB 7 | WARM TEMP | |
| Fan Tray 0 | OK | Spinning at 98% fan tray speed |
| Fan Tray 1 | OK | Spinning at 98% fan tray speed |

| ZONE 1 Status | | |
|------------------|-----------|--------------------------------|
| Item | Status | Measurement |
| CB 0 | WARM TEMP | |
| CB 1 | WARM TEMP | |
| Routing Engine 0 | OK | |
| Routing Engine 1 | OK | |
| SFB 0 | WARM TEMP | |
| SFB 1 | WARM TEMP | |
| SFB 2 | WARM TEMP | |
| SFB 3 | Offline | |
| SFB 4 | HIGH TEMP | |
| SFB 5 | WARM TEMP | |
| SFB 6 | HIGH TEMP | |
| SFB 7 | WARM TEMP | |
| SPMB 0 | OK | |
| SPMB 1 | OK | |
| Fan Tray 2 | OK | Spinning at 64% fan tray speed |
| Fan Tray 3 | OK | Spinning at 64% fan tray speed |

show chassis zones (MX2020 Router)

```
user@host> show chassis zones
```

```

ZONE 0 Status
  Driving FRU          FPC 0
  Temperature          31 degrees C / 87 degrees F
  Condition            OK
  Num Fans Missing     0
  Num Fans Failed      0
  Fan Duty Cycle       30

ZONE 1 Status
  Driving FRU          FPC 19
  Temperature          32 degrees C / 89 degrees F
  Condition            OK
  Num Fans Missing     0
  Num Fans Failed      0
  Fan Duty Cycle       30

```

show chassis zones detail (MX2020 Router)

```
user@host> show chassis zones detail
```

```

ZONE 0 Status
Item              Status      Measurement
CB 0              OK
CB 1              OK
FPC 0             OK
FPC 1             OK
FPC 2             OK
FPC 3             OK
FPC 4             OK
FPC 5             OK
FPC 6             OK
FPC 7             OK
FPC 8             OK
FPC 9             OK
ADC 0             OK
ADC 1             OK
ADC 2             OK
ADC 3             OK
ADC 4             OK
ADC 5             OK
ADC 6             OK
ADC 7             OK
ADC 8             OK
ADC 9             OK
SFB 0             OK
SFB 1             OK
SFB 2             OK
SFB 3             OK
SFB 4             OK
SFB 5             OK
SFB 6             OK
SFB 7             OK
Fan Tray 0        OK              Spinning at 38% fan tray speed
Fan Tray 1        OK              Spinning at 37% fan tray speed

ZONE 1 Status

```

| Item | Status | Measurement |
|------------------|--------|--------------------------------|
| CB 0 | OK | |
| CB 1 | OK | |
| Routing Engine 0 | OK | |
| Routing Engine 1 | OK | |
| FPC 10 | OK | |
| FPC 11 | OK | |
| FPC 12 | OK | |
| FPC 13 | OK | |
| FPC 14 | OK | |
| FPC 15 | OK | |
| FPC 16 | OK | |
| FPC 17 | OK | |
| FPC 18 | OK | |
| FPC 19 | OK | |
| ADC 10 | OK | |
| ADC 11 | OK | |
| ADC 12 | OK | |
| ADC 13 | OK | |
| ADC 14 | OK | |
| ADC 15 | OK | |
| ADC 16 | OK | |
| ADC 17 | OK | |
| ADC 18 | OK | |
| ADC 19 | OK | |
| SFB 0 | OK | |
| SFB 1 | OK | |
| SFB 2 | OK | |
| SFB 3 | OK | |
| SFB 4 | OK | |
| SFB 5 | OK | |
| SFB 6 | OK | |
| SFB 7 | OK | |
| SPMB 0 | OK | |
| SPMB 1 | OK | |
| Fan Tray 2 | OK | Spinning at 38% fan tray speed |
| Fan Tray 3 | OK | Spinning at 38% fan tray speed |

show chassis zones (MX2008 Router)

```
user@host> show chassis zones
```

```

ZONE 0 Status
  Driving FRU           Routing Engine 0
  Temperature           67 degrees C / 152 degrees F
  Condition              WARM TEMP
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle        27

```

show chassis zones detail (MX2008 Router)

```
user@host> show chassis zones detail
```

```

ZONE 0 Status
Item           Status           Measurement
CB 0           OK
CB 1           OK

```

| | | |
|------------------|--------|--------------------------------|
| Routing Engine 0 | OK | |
| Routing Engine 1 | OK | |
| FPC 0 | OK | |
| FPC 1 | Absent | |
| FPC 2 | Absent | |
| FPC 3 | OK | |
| FPC 4 | Absent | |
| FPC 5 | OK | |
| FPC 6 | Absent | |
| FPC 7 | OK | |
| FPC 8 | Absent | |
| FPC 9 | OK | |
| ADC 0 | OK | |
| ADC 1 | Absent | |
| ADC 2 | Absent | |
| ADC 3 | OK | |
| ADC 4 | Absent | |
| ADC 5 | OK | |
| ADC 6 | Absent | |
| ADC 7 | OK | |
| ADC 8 | Absent | |
| ADC 9 | Absent | |
| SFB 0 | OK | |
| SFB 1 | OK | |
| SFB 2 | OK | |
| SFB 3 | OK | |
| SFB 4 | OK | |
| SFB 5 | OK | |
| SFB 6 | OK | |
| SFB 7 | OK | |
| SPMB 0 | OK | |
| SPMB 1 | OK | |
| Fan Tray 0 | OK | Spinning at 60% fan tray speed |
| Fan Tray 1 | OK | Spinning at 58% fan tray speed |

show chassis beacon interconnect-device (QFabric System)

```
user@switch> show chassis beacon interconnect-device interconnect1
```

| | |
|------------|-----|
| Chassis | OFF |
| CB 0 | OFF |
| CB 1 | OFF |
| FC 0 FPC 0 | OFF |
| FC 1 FPC 1 | OFF |
| RC 0 FPC 8 | OFF |
| RC 1 FPC 9 | OFF |

show chassis beacon interconnect-device fpc (QFabric System)

```
user@switch> show chassis beacon interconnect-device interconnect1 fpc 0
```

| | |
|-------|----|
| FPC 0 | ON |
|-------|----|

show chassis beacon node-device (QFabric System)

```
user@switch> show chassis beacon node-device node1
```

| | |
|-------|----|
| node1 | ON |
|-------|----|

show chassis beacon node-device fpc (QFabric System)

```
user@switch> show chassis beacon node-device node1 fpc 0
```

```
FPC 0          ON
```

show pfe cfep

| | |
|---------------------------------|--|
| Syntax | show pfe cfep |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M7i routers only) Display Packet Forwarding Engine Compact Forwarding Engine Board (CFEB) status and statistics information. |
| Options | This command has no options. |
| Required Privilege Level | admin |
| List of Sample Output | show pfe cfep on page 1619 |
| Output Fields | Table 110 on page 1618 lists the output fields for the show pfe cfep command. Output fields are listed in the approximate order in which they appear. |

Table 110: show pfe cfep Output Fields

| Field Name | Field Description |
|--------------------------------------|---|
| CFEB status | <p>Status of CFEB:</p> <ul style="list-style-type: none"> Slot—CFEB slot number. State—Status of the CFEB: <ul style="list-style-type: none"> Online—CFEB is online and running. Offline—CFEB is powered down. Last State Change—Date and time the CFEB state last changed. Uptime (total)—How long the Routing Engine has been connected to the CFEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running. Failures—Number of PFE Peer detach failures. Pending—Number of messages waiting to be sent. Policer Drop Probability—Current policer drop probability. The default is high, and can be configured using the policer-drop-probability-low statement. |
| Peer message type receive qualifiers | <ul style="list-style-type: none"> Message Type—IPC Message Type. For example, interface and nexthop. Receive Qualifier – Message receive qualifier for a peer (non-None only): <ul style="list-style-type: none"> All Only this slot Selective slot |

Table 110: show pfe cfeb Output Fields (continued)

| Field Name | Field Description |
|--|---|
| PFE listener statistics | PFE listener statistics: <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened. |
| PFE IPC statistics | <ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages. |
| PFE socket-buffer mbuf depth | <ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of messages in the bucket. |
| PFE socket-buffer bytes pending transmit | <ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of bytes pending transmit. |

Sample Output

show pfe cfeb

```

user@host> show pfe cfeb

CFEB status:
  Slot:                Present
  State:                Online
  Last State Change:   2005-03-10 09:01:25 PST
  Uptime (total):      2d 00:44
  Failures:            0
  Pending:             0
  ..Policer Drop Probability: HIGH

Peer message type receive qualifiers:
  Message Type        Receive Qualifier
  -----
           TTP        A11
           IFD        A11
           IFL        A11
        Nexthop        A11
           COS        A11
           Route        A11
        SW Firewall    A11
        HW Firewall    A11
        PFE Statistics A11
        PIC Statistics A11
           Sampling    A11
        Monitoring    None

```

```

        ASP  None
        L2TP  None
        Collector  None
PIC Configuration  All
Queue Statistics  All
        (null)  None

```

PFE listener statistics:

```

Open:          1
Close:         0
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   1
Resync Fail:   0
Resync Time:   0

```

PFE IPC statistics:

| type | TX Messages | RX messages |
|------------|-------------|-------------|
| Header | 0 | 0 |
| Test | 0 | 0 |
| Interface | 562 | 14582 |
| Chassis | 0 | 0 |
| Boot | 0 | 0 |
| Next-hop | 104 | 0 |
| Jtree | 0 | 0 |
| Cprod | 0 | 0 |
| Route | 103 | 1 |
| Pfe | 3770 | 2925 |
| Dfw | 10 | 0 |
| Mastership | 0 | 0 |
| Sampling | 0 | 0 |
| GUCP | 0 | 0 |
| CoS | 50 | 0 |
| GCCP | 0 | 0 |
| GHCP | 0 | 0 |
| IRSD | 0 | 0 |
| Monitoring | 0 | 0 |
| RE | 0 | 0 |
| PIC | 0 | 0 |
| ASP cfg | 0 | 0 |
| ASP cmd | 0 | 0 |
| L2TP cfg | 0 | 0 |
| Collector | 0 | 0 |
| PIC state | 0 | 0 |
| Aggregator | 0 | 0 |
| Empty | 0 | 0 |

PFE socket-buffer mbuf depth:

| bucket | count |
|--------|-------|
| 0 | 0 |
| 1 | 0 |
| 2 | 0 |
| 3 | 0 |
| 4 | 0 |
| 5 | 0 |
| 6 | 0 |
| 7 | 0 |

| | |
|----|---|
| 8 | 0 |
| 9 | 0 |
| 10 | 0 |
| 11 | 0 |
| 12 | 0 |
| 13 | 0 |
| 14 | 0 |
| 15 | 0 |
| 16 | 0 |
| 17 | 0 |
| 18 | 0 |
| 19 | 0 |
| 20 | 0 |
| 21 | 0 |

PFE socket-buffer bytes pending transmit:

| bucket | count |
|--------|-------|
| ----- | ----- |
| 0 | 0 |
| 1 | 0 |
| 2 | 0 |
| 3 | 0 |
| 4 | 0 |
| 5 | 0 |
| 6 | 0 |
| 7 | 0 |
| 8 | 0 |
| 9 | 0 |
| 10 | 0 |
| 11 | 0 |
| 12 | 0 |
| 13 | 0 |
| 14 | 0 |
| 15 | 0 |
| 16 | 0 |
| 17 | 0 |
| 18 | 0 |
| 19 | 0 |
| 20 | 0 |
| 21 | 0 |

show pfe feb

| | |
|---------------------------------|---|
| Syntax | show pfe feb |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | (M5 and M10 routers only) Display Packet Forwarding Engine Forwarding Engine Board (FEB) status and statistics information. |
| Options | This command has no options. |
| Required Privilege Level | admin |
| List of Sample Output | show pfe feb on page 1623 show pfe feb on page 1625 |
| Output Fields | Table 111 on page 1622 lists the output fields for the show pfe feb command. Output fields are listed in the approximate order in which they appear. |

Table 111: show pfe feb Output Fields

| Field Name | Field Description |
|--------------------------------------|---|
| FEB status | <p>Status of FEB:</p> <ul style="list-style-type: none"> Slot—FEB slot number. State—State of the FEB: <ul style="list-style-type: none"> Offline—FEB is powered down. Online—FEB is operational and running. Check—FEB is in alarmed state where the Switch Interface Board (SIB) plane is partially operational for the following reasons: <ul style="list-style-type: none"> FEB is not inserted properly. Two or more links between the FEB and Packet Forwarding Engine fail. Last State Change—Date and time the CFEB state last changed. Uptime (total)—How long the Routing Engine has been connected to the FEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running. Failures—Number of PFE Peer detach failures. Pending—Number of messages waiting to be sent. Policer Drop Probability—Current policer drop probability. The default is high, and can be configured using the policer-drop-probability-low statement. |
| Peer message type receive qualifiers | <ul style="list-style-type: none"> Message Type—IPC Message Type. For example, interface and nexthop. Receive Qualifier – Message receive qualifier for a peer (non-None only): <ul style="list-style-type: none"> All Only this slot Selective slot |

Table 111: show pfe feb Output Fields (continued)

| Field Name | Field Description |
|--|---|
| PFE listener statistics | PFE listener statistics: <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened. |
| PFE IPC statistics | <ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages. |
| PFE socket-buffer mbuf depth | <ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of messages in the bucket. |
| PFE socket-buffer bytes pending transmit | <ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of bytes pending transmit. |

Sample Output

show pfe feb

```

user@host> show pfe feb

FEB status:
  Slot:                Present
  State:                Online
  Last State Change:   2005-03-11 00:33:57 PST
  Uptime (total):      1d 09:14
  Failures:            0
  Pending:              0
  ..Policer Drop Probability: HIGH

Peer message type receive qualifiers:
  Message Type        Receive Qualifier
  -----
           TTP        A11
           IFD        A11
           IFL        A11
        Nexthop        A11
           COS        A11
           Route        A11
        SW Firewall    A11
        HW Firewall    A11
        PFE Statistics A11
        PIC Statistics A11
          Sampling     A11
        Monitoring     None

```

```

        ASP  None
        L2TP  None
        Collector  None
PIC Configuration  All
Queue Statistics  All
        (null)  None

```

PFE listener statistics:

```

Open:          1
Close:         0
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   1
Resync Fail:   0
Resync Time:   0

```

PFE IPC statistics:

| type | TX Messages | RX messages |
|------------|-------------|-------------|
| Header | 0 | 0 |
| Test | 0 | 0 |
| Interface | 639 | 11889 |
| Chassis | 0 | 0 |
| Boot | 0 | 0 |
| Next-hop | 104 | 0 |
| Jtree | 0 | 0 |
| Cprod | 0 | 0 |
| Route | 940 | 0 |
| Pfe | 3008 | 1995 |
| Dfw | 9 | 0 |
| Mastership | 0 | 0 |
| Sampling | 0 | 0 |
| GUCP | 0 | 0 |
| CoS | 35 | 0 |
| GCCP | 0 | 0 |
| GHCP | 0 | 0 |
| IRSD | 0 | 0 |
| Monitoring | 0 | 0 |
| RE | 0 | 0 |
| PIC | 0 | 0 |
| ASP cfg | 0 | 0 |
| ASP cmd | 0 | 0 |
| L2TP cfg | 0 | 0 |
| Collector | 0 | 0 |
| PIC state | 0 | 0 |
| Aggregator | 0 | 0 |
| Empty | 0 | 0 |

PFE socket-buffer mbuf depth:

| bucket | count |
|--------|-------|
| 0 | 0 |
| 1 | 0 |
| 2 | 0 |
| 3 | 0 |
| 4 | 0 |
| 5 | 0 |
| 6 | 0 |

| | |
|----|---|
| 7 | 0 |
| 8 | 0 |
| 9 | 0 |
| 10 | 0 |
| 11 | 0 |
| 12 | 0 |
| 13 | 0 |
| 14 | 0 |
| 15 | 0 |
| 16 | 0 |
| 17 | 0 |
| 18 | 0 |
| 19 | 0 |
| 20 | 0 |
| 21 | 0 |

PFE socket-buffer bytes pending transmit:

| bucket | count |
|--------|-------|
| ----- | ----- |
| 0 | 0 |
| 1 | 0 |
| 2 | 0 |
| 3 | 0 |
| 4 | 0 |
| 5 | 0 |
| 6 | 0 |
| 7 | 0 |
| 8 | 0 |
| 9 | 0 |
| 10 | 0 |
| 11 | 0 |
| 12 | 0 |
| 13 | 0 |
| 14 | 0 |
| 15 | 0 |
| 16 | 0 |
| 17 | 0 |
| 18 | 0 |
| 19 | 0 |
| 20 | 0 |
| 21 | 0 |

show pfe feb

user@host> show pfe feb

FEB status:

| | |
|--------------------|-------------------------|
| Slot: | Present |
| State: | Online |
| Last State Change: | 2005-03-11 00:33:57 PST |
| Uptime (total): | 1d 09:14 |
| Failures: | 0 |
| Pending: | 0 |

Peer message type receive qualifiers:

| Message Type | Receive Qualifier |
|--------------|-------------------|
| ----- | ----- |
| TTP | All |
| IFD | All |
| IFL | All |

```

Nexthop All
COS All
Route All
SW Firewall All
HW Firewall All
PFE Statistics All
PIC Statistics All
Sampling All
Monitoring None
ASP None
L2TP None
Collector None
PIC Configuration All
Queue Statistics All
(null) None

```

PFE listener statistics:

```

Open: 1
Close: 0
Sleep: 0
Wakeup: 0
Resync Request: 0
Resync Done: 1
Resync Fail: 0
Resync Time: 0

```

PFE IPC statistics:

| type | TX Messages | RX messages |
|------------|-------------|-------------|
| ----- | ----- | ----- |
| Header | 0 | 0 |
| Test | 0 | 0 |
| Interface | 639 | 11889 |
| Chassis | 0 | 0 |
| Boot | 0 | 0 |
| Next-hop | 104 | 0 |
| Jtree | 0 | 0 |
| Cprod | 0 | 0 |
| Route | 940 | 0 |
| Pfe | 3008 | 1995 |
| Dfw | 9 | 0 |
| Mastership | 0 | 0 |
| Sampling | 0 | 0 |
| GUCP | 0 | 0 |
| CoS | 35 | 0 |
| GCCP | 0 | 0 |
| GHCP | 0 | 0 |
| IRSD | 0 | 0 |
| Monitoring | 0 | 0 |
| RE | 0 | 0 |
| PIC | 0 | 0 |
| ASP cfg | 0 | 0 |
| ASP cmd | 0 | 0 |
| L2TP cfg | 0 | 0 |
| Collector | 0 | 0 |
| PIC state | 0 | 0 |
| Aggregator | 0 | 0 |
| Empty | 0 | 0 |

PFE socket-buffer mbuf depth:

| bucket | count |
|--------|-------|
| ----- | ----- |
| 0 | 0 |
| 1 | 0 |
| 2 | 0 |
| 3 | 0 |
| 4 | 0 |
| 5 | 0 |
| 6 | 0 |
| 7 | 0 |
| 8 | 0 |
| 9 | 0 |
| 10 | 0 |
| 11 | 0 |
| 12 | 0 |
| 13 | 0 |
| 14 | 0 |
| 15 | 0 |
| 16 | 0 |
| 17 | 0 |
| 18 | 0 |
| 19 | 0 |
| 20 | 0 |
| 21 | 0 |

PFE socket-buffer bytes pending transmit:

| bucket | count |
|--------|-------|
| ----- | ----- |
| 0 | 0 |
| 1 | 0 |
| 2 | 0 |
| 3 | 0 |
| 4 | 0 |
| 5 | 0 |
| 6 | 0 |
| 7 | 0 |
| 8 | 0 |
| 9 | 0 |
| 10 | 0 |
| 11 | 0 |
| 12 | 0 |
| 13 | 0 |
| 14 | 0 |
| 15 | 0 |
| 16 | 0 |
| 17 | 0 |
| 18 | 0 |
| 19 | 0 |
| 20 | 0 |
| 21 | 0 |

show pfe fpc

| | |
|---|---|
| List of Syntax | Syntax on page 1628 Syntax (TX Matrix and TX Matrix Plus Router) on page 1628 Syntax (MX Series Router) on page 1628 |
| Syntax | <pre>show pfe fpc slot <detail extensive></pre> |
| Syntax (TX Matrix and TX Matrix Plus Router) | <pre>show pfe fpc <lcc number></pre> |
| Syntax (MX Series Router) | <pre>show pfe fpc slot <detail extensive> <all-members> <local> <member member-id></pre> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | Display Packet Forwarding Engine statistics for the specified Flexible PIC Concentrator (FPC). |
| Options | <p>slot—FPC slot number. Replace slot with a value from 0 through 2.</p> <p>detail extensive—(Optional) Display the specified level of detail.</p> <p>all-members—(MX Series routers only) (Optional) Display Packet Forwarding Engine statistics for the specified FPC in all members of the Virtual Chassis configuration.</p> <p>lcc number—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, the slot number of the T640 router (or line-card chassis) that houses the FPC. On a TX Matrix Plus router, lcc number represents the slot number of the router (or line-card chassis) that houses the FPC.</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 Packet Forwarding Engine statistics for the specified FPC in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display Packet Forwarding Engine statistics for the specified FPC in the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

Required Privilege Level admin

List of Sample Output [show pfe fpc on page 1631](#)
[show pfe fpc lcc on page 1632](#)
[show pfe fpc 0 detail on page 1634](#)
[show pfe fpc 0 \(MX 960 with DPC\) on page 1637](#)

Output Fields [Table 112 on page 1629](#) lists the output fields for the **show pfe fpc** command. Output fields are listed in the approximate order in which they appear.

Table 112: show pfe fpc Output Fields

| Field Name | Field Description |
|--------------|--|
| FPC 1 status | <p>Status of FPC 1:</p> <ul style="list-style-type: none"> Slot—FPC slot number – 1. State—State of FPC1: <ul style="list-style-type: none"> Dead—Held in reset because of errors. Diag—Slot is being ignored while the FPC is running diagnostics. Dormant—Held in reset. Empty—No FPC is present. Online—FPC is online and running. Present—FPC is detected by the chassis daemon but either is not supported by the current version of Junos OS or is inserted in the wrong slot. The output also states either Hardware Not Supported or Hardware Not in Right Slot. The FPC is coming up but not yet online. Probed—Probe is complete; awaiting restart of the Packet Forwarding Engine (PFE). Probe-wait—Waiting to be probed. Last State Change—Date and time the FPC state last changed. Uptime—How long the Routing Engine has been connected to the FEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running. Failures—Number of PFE Peer detach failures. Pending—Number of messages waiting to be sent. Route Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for routing tables. Can be configured with the memory-enhanced statement. |

Table 112: show pfe fpc Output Fields (continued)

| Field Name | Field Description |
|---|---|
| PFE listener statistics | PFE listener statistics: <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened. |
| PFE IPC statistics | <ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages. |
| GFPC 0 status | Status of GFPC 0: <ul style="list-style-type: none"> • Slot—GFPC slot number – 0. • State—State of GFPC. • Last State Change—Date and time the GFPC state last changed. |
| Peer message type receive qualifiers [non-NONE(s) only] | <ul style="list-style-type: none"> • IPC Msg Type—IPC Message Type. For example, interface, nexthop. • Receive Qualifier—Message receive qualifier for a peer (non-NONE(s) only): |
| IFSTATE BITS SET | IFSTATE clients that have registered to receive the message types this slot is listening to. |
| PFE listener statistics | PFE listener statistics: <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened. |
| PFE IPC statistics | <ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages. |
| PFE socket-buffer mbuf depth | <ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of messages in the bucket. |
| PFE socket-buffer bytes pending transmit | <ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of bytes pending transmit. |

Table 112: show pfe fpc Output Fields (continued)

| Field Name | Field Description |
|---------------|--|
| GFPC 2 status | <p>Status of GFPC 2:</p> <ul style="list-style-type: none"> Slot—GFPC slot number – 2. State—State of GFPC. Last State Change—Date and time the GFPC state last changed. Route Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for routing tables. Can be configured with the memory-enhanced statement. Filter Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for firewall filters. Can be configured with the memory-enhanced statement. |
| XDPC status | <p>XDPC status:</p> <ul style="list-style-type: none"> Slot—Present or empty. State—Online or offline. Last State Change—Date and time the DPC state last changed. Uptime (total)—Length of time the DPC has been online. Failures—Number of DPC failures. Pending—Number of messages waiting to be sent. Route Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for routing tables. Can be configured with the memory-enhanced statement. Policer Drop Probability—Current policer drop probability. The default is high, and can be configured using the policer-drop-probability-low statement. |

Sample Output

show pfe fpc

```

user@host> show pfe fpc 1

FPC 1 status:
  Slot:           Present
  State:          Online
  Last State Change: 2000-01-10 18:12:27 UTC
  Uptime:         1d 03:31
  Failures:       0
  Pending:        0
  Route Memory Enhanced: 0
PFE listener statistics:
  Open:           1
  Close:          0
  Sleep:          0
  Wakeup:         0
  Resync Request: 0
  Resync Done:    0
  Resync Fail:    0
  Resync Time:    0

PFE IPC statistics:
  type           TX Messages  RX messages

```

| | | |
|-----------|------|------|
| Header | 0 | 0 |
| Test | 0 | 0 |
| Interface | 2251 | 2219 |
| Chassis | 0 | 0 |
| Boot | 0 | 0 |
| Next-hop | 0 | 0 |
| Jtree | 0 | 0 |
| Cprod | 0 | 0 |
| Route | 0 | 0 |
| Pfe | 0 | 1 |
| Dfw | | |

show pfe fpc lcc

```
user@host> show pfe fpc 0 lcc 0
```

```
lcc0-re0:
```

```
GFPC 0 status:
```

```
Slot:          Present
State:          Online
Last State Change: 2009-06-17 21:00:35 PDT
Uptime (total):  02:31:45
Failures:        0
Pending:         0
```

```
Peer message type receive qualifiers [ non-NONE(s) only ]:
```

| IPC Msg Type (subtype) | Receive Qualifier |
|------------------------|-------------------|
| Interface (0) | All |
| Interface (1) | All |
| Interface (2) | All |
| Interface (3) | All |
| Interface (4) | All |
| Interface (5) | All |
| Interface (6) | All |
| Interface (7) | All |
| Interface (8) | All |
| Interface (9) | All |
| Interface (10) | All |
| Interface (11) | All |
| Interface (12) | All |
| Interface (13) | All |
| Interface (14) | All |
| Interface (15) | All |
| Interface (16) | All |
| Interface (17) | All |
| Interface (18) | All |
| Interface (19) | All |
| Interface (20) | Slot only |
| Interface (21) | All |
| ... | |
| Next-hop (0) | All |
| Next-hop (1) | All |
| Next-hop (2) | All |
| Next-hop (3) | All |
| Next-hop (4) | All |
| Next-hop (5) | Always TRUE |
| ... | |

```

Route          (0)      All
Route          (1)      All
Route          (2)      All
Route          (3)      All
Route          (4)      All
Route          (5)      All
Route          (6)      All
Route          (7)      All
Route          (8)      All

...
Pfe            (1)      Always TRUE
Pfe            (3)      Always TRUE
Pfe            (5)      Always TRUE

...
Dfw            (0)      All
Dfw            (1)      All
Dfw            (2)      All
Dfw            (3)      All

...
Sampling       (1)      All
Sampling       (2)      All
Sampling       (3)      All
CoS            (0)      All
CoS            (1)      All
CoS            (2)      All
CoS            (3)      All

...
PIC            (1)      Always TRUE
PIC            (3)      Always TRUE

...
GenCfg         (8)      All
GenCfg         (15)     All

...
IFSTATE BITS SET:
-----
IFD
IFL
IFF
IFA
RTTABLE
ROUTE
NEXTHOP
FIREWALL
NAME TABLE
COS_FABRIC
COS_POLICY
COS_RED
COS_REWRT_TABLE
COS_REWRT_IFLMAP
COS_CLASS_TABLE
COS_CLASS_IFLMAP
COS_POLICER
COS_SHAPER
SAMPLE
RTCOS
SYSCONF
IFVP
SADB

```

```

IFVC
COS_FC_QUEUE
COS_FRAGMAP_TABLE
COS_FRAGMAP_IFLMAP
Generic config
Mesh group

PFE listener statistics:
Open:          1
Close:         0
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   1
Resync Fail:   0
Resync Time:   0

PFE IPC statistics:
Type (subtype)      TX Messages    RX messages
-----
Interface ( 3)      165             0
Interface ( 4)      81             0
Interface ( 5)       0            190
Interface ( 8)     145             0
Interface ( 9)     425             0
Interface (10)      24             0
...

PFE socket-buffer mbuf depth:
bucket      count
-----
0           0
1           0
2           0

PFE socket-buffer bytes pending transmit:
bucket      count
-----
0           0
1           0
...

```

show pfe fpc 0 detail

```

user@host> show pfe fpc 0 detail

GFPC 2 status:
Slot:          Present
State:         Online
Last State Change: 2010-11-16 03:55:25 PST
Uptime (total): 00:11:06
Failures:      1
Pending:       0
Route Memory Enhanced: 0
Filter Memory Enhanced: 1

Peer message type receive qualifiers [ non-NONE(s) only ]:
IPC Msg Type (subtype)      Receive Qualifier
-----
Interface (0)              All

```

```

Interface      (1)      All
Interface      (2)      All
Interface      (3)      All
Interface      (4)      All
Interface      (5)      All
Interface      (6)      All
Interface      (7)      All
Interface      (8)      All
Interface      (9)      All
Interface      (10)     All
Interface      (11)     All
...
Next-hop       (0)      All
Next-hop       (1)      All
Next-hop       (2)      All
Next-hop       (3)      All
Next-hop       (4)      All
Next-hop       (5)      All
...
Route          (0)      All
Route          (1)      All
Route          (2)      All
Route          (3)      All
Route          (4)      All
Route          (5)      All
...
Pfe            (1)      Always TRUE
Pfe            (3)      Always TRUE
Pfe            (5)      Always TRUE
...
Dfw            (0)      All
Dfw            (1)      All
Dfw            (2)      All
Dfw            (3)      All
...
Sampling       (1)      All
Sampling       (2)      All
Sampling       (3)      All
CoS            (0)      All
CoS            (1)      All
CoS            (2)      All
CoS            (3)      All
CoS            (4)      All
...
PIC            (1)      Always TRUE
PIC            (3)      Always TRUE
...
GenCfg         (8)      All
GenCfg         (15)     All
...
IFSTATE BITS SET:
-----
      IFD
      IFL
      IFF
      IFA
      RTTABLE
      ROUTE
      NEXTHOP
      FIREWALL

```

```

NAME TABLE
COS_FABRIC
COS_POLICY
COS_RED
COS_REWRT_TABLE
COS_REWRT_IFLMAP
COS_CLASS_TABLE
COS_CLASS_IFLMAP
COS_POLICER
COS_SHAPER
SAMPLE
RTCOS
SYSCONF
IFVP
SADB
IFVC
COS_FC_QUEUE
COS_FRAGMAP_TABLE
COS_FRAGMAP_IFLMAP
Generic config
Mesh group

```

PFE listener statistics:

```

Open:          2
Close:         1
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   2
Resync Fail:   0
Resync Time:   0

```

PFE IPC statistics:

| Type (subtype) | TX Messages | RX messages |
|----------------|-------------|-------------|
| ----- | ----- | ----- |
| Interface (3) | 104 | 0 |
| Interface (5) | 0 | 8 |
| Interface (8) | 85 | 0 |
| Interface (9) | 67 | 0 |
| Interface (10) | 4 | 0 |
| ... | | |
| Next-hop (1) | 364 | 0 |
| Next-hop (3) | 12 | 0 |
| Next-hop (11) | 33 | 0 |
| Next-hop (23) | 39 | 0 |
| Route (1) | 331 | 0 |
| Route (2) | 34 | 0 |
| Route (3) | 1 | 0 |
| Route (6) | 1 | 0 |
| Route (9) | 48 | 0 |
| Pfe (1) | 0 | 1 |
| Pfe (3) | 1 | 0 |
| Pfe (4) | 0 | 1 |
| Pfe (5) | 1 | 0 |
| ... | | |
| Dfw (1) | 20 | 0 |
| Dfw (18) | 1 | 0 |
| GenCfg (8) | 45 | 0 |
| GenCfg (15) | 1 | 0 |

show pfe fpc 0 (MX 960 with DPC)

user@host> show pfe fpc 0

XDPC 0 status:

```

Slot:           Present
State:          Online
Last State Change: 2012-08-07 13:13:01 PDT
Uptime (total):  21:01:41
Failures:        0
Pending:         0
Route Memory Enhanced: 0
Policer Drop Probability: HIGH

```

Peer message type receive qualifiers [non-NONE(s) only]:

| IPC Msg Type (subtype) | Receive Qualifier |
|------------------------|-------------------|
|------------------------|-------------------|

| | | |
|-----------|------|-----------|
| Interface | (0) | All |
| Interface | (1) | All |
| Interface | (2) | All |
| Interface | (3) | All |
| Interface | (4) | All |
| Interface | (5) | All |
| Interface | (6) | All |
| Interface | (7) | All |
| Interface | (8) | All |
| Interface | (9) | All |
| Interface | (10) | All |
| Interface | (11) | All |
| Interface | (12) | All |
| Interface | (13) | All |
| Interface | (14) | All |
| Interface | (15) | All |
| Interface | (16) | All |
| Interface | (17) | All |
| Interface | (18) | All |
| Interface | (19) | All |
| Interface | (20) | Slot only |
| Interface | (21) | All |
| Interface | (22) | Slot only |
| Interface | (23) | All |
| Interface | (24) | All |
| Interface | (25) | All |
| Interface | (26) | All |
| Interface | (27) | All |
| Interface | (28) | All |
| Interface | (29) | All |
| Interface | (30) | All |
| Interface | (31) | All |
| Interface | (32) | All |
| Interface | (33) | All |
| Interface | (34) | All |
| Interface | (35) | All |
| Interface | (36) | All |
| Interface | (37) | All |
| Interface | (38) | All |
| Interface | (39) | All |
| Interface | (40) | All |
| Interface | (41) | All |
| Interface | (42) | Slot only |

| | | |
|-----------|-------|-----------|
| Interface | (43) | Slot only |
| Interface | (44) | Slot only |
| Interface | (45) | All |
| Interface | (46) | All |
| Interface | (47) | All |
| Interface | (48) | Slot only |
| Interface | (49) | Slot only |
| Interface | (50) | Slot only |
| Interface | (51) | Slot only |
| Interface | (52) | All |
| Interface | (53) | All |
| Interface | (54) | All |
| Interface | (55) | All |
| Interface | (56) | Slot only |
| Interface | (57) | All |
| Interface | (58) | All |
| Interface | (59) | All |
| Interface | (60) | All |
| Interface | (61) | All |
| Interface | (62) | All |
| Interface | (63) | All |
| Interface | (64) | Slot only |
| Interface | (65) | All |
| Interface | (66) | All |
| Interface | (67) | All |
| Interface | (68) | All |
| Interface | (69) | All |
| Interface | (70) | All |
| Interface | (71) | All |
| Interface | (72) | All |
| Interface | (73) | All |
| Interface | (74) | All |
| Interface | (75) | All |
| Interface | (76) | Slot only |
| Interface | (77) | Slot only |
| Interface | (78) | Slot only |
| Interface | (79) | All |
| Interface | (80) | All |
| Interface | (81) | All |
| Interface | (82) | All |
| Interface | (83) | Slot only |
| Interface | (84) | All |
| Interface | (85) | All |
| Interface | (86) | All |
| Interface | (87) | All |
| Interface | (88) | All |
| Interface | (89) | All |
| Interface | (90) | All |
| Interface | (91) | All |
| Interface | (92) | All |
| Interface | (93) | Slot only |
| Interface | (94) | Slot only |
| Interface | (95) | Slot only |
| Interface | (96) | All |
| Interface | (97) | All |
| Interface | (98) | All |
| Interface | (99) | All |
| Interface | (100) | All |
| Interface | (101) | All |
| Interface | (102) | All |

| | | |
|-----------|-------|-----------|
| Interface | (103) | All |
| Interface | (104) | All |
| Interface | (105) | Slot only |
| Interface | (106) | Slot only |
| Interface | (107) | All |
| Interface | (108) | All |
| Interface | (109) | All |
| Interface | (110) | All |
| Interface | (111) | All |
| Interface | (112) | All |
| Interface | (113) | All |
| Interface | (114) | All |
| Interface | (115) | All |
| Interface | (116) | All |
| Interface | (117) | All |
| Interface | (118) | All |
| Interface | (119) | All |
| Interface | (120) | All |
| Interface | (121) | Slot only |
| Interface | (122) | All |
| Interface | (123) | All |
| Interface | (124) | All |
| Interface | (125) | Slot only |
| Interface | (126) | Slot only |
| Interface | (127) | Slot only |
| Interface | (128) | All |
| Interface | (129) | All |
| Interface | (130) | All |
| Interface | (131) | All |
| Interface | (132) | All |
| Interface | (133) | All |
| Interface | (134) | All |
| Interface | (135) | All |
| Interface | (138) | All |
| Interface | (139) | All |
| Interface | (142) | All |
| Interface | (145) | All |
| Interface | (146) | All |
| Interface | (147) | All |
| Interface | (148) | All |
| Interface | (149) | All |
| Interface | (150) | Slot only |
| Interface | (151) | All |
| Interface | (152) | Slot only |
| Interface | (153) | All |
| Interface | (154) | All |
| Interface | (155) | All |
| Interface | (156) | All |
| Interface | (157) | All |
| Interface | (158) | All |
| Interface | (159) | Slot only |
| Interface | (160) | All |
| Interface | (161) | All |
| Interface | (163) | All |
| Interface | (164) | Slot only |
| Interface | (165) | Slot only |
| Interface | (167) | All |
| Interface | (168) | All |
| Interface | (169) | All |
| Interface | (170) | Slot only |

| | | |
|-----------|-------|-----------|
| Interface | (171) | Slot only |
| Interface | (172) | A11 |
| Interface | (173) | A11 |
| Interface | (174) | A11 |
| Interface | (175) | A11 |
| Interface | (176) | A11 |
| Interface | (177) | A11 |
| Interface | (178) | A11 |
| Interface | (179) | A11 |
| Interface | (180) | A11 |
| Interface | (181) | A11 |
| Interface | (182) | A11 |
| Interface | (183) | A11 |
| Interface | (184) | A11 |
| Interface | (185) | A11 |
| Interface | (186) | A11 |
| Interface | (187) | A11 |
| Interface | (188) | A11 |
| Interface | (189) | A11 |
| Interface | (190) | A11 |
| Interface | (191) | A11 |
| Interface | (192) | A11 |
| Interface | (193) | A11 |
| Interface | (194) | A11 |
| Interface | (195) | A11 |
| Interface | (196) | A11 |
| Interface | (197) | A11 |
| Interface | (198) | A11 |
| Interface | (199) | A11 |
| Interface | (200) | A11 |
| Interface | (201) | A11 |
| Interface | (202) | A11 |
| Interface | (204) | A11 |
| Interface | (205) | A11 |
| Interface | (206) | A11 |
| Interface | (207) | A11 |
| Interface | (208) | A11 |
| Interface | (209) | A11 |
| Interface | (210) | A11 |
| Interface | (211) | A11 |
| Interface | (212) | A11 |
| Interface | (213) | A11 |
| Interface | (214) | A11 |
| Interface | (215) | A11 |
| Interface | (216) | A11 |
| Interface | (217) | A11 |
| Interface | (218) | A11 |
| Interface | (219) | A11 |
| Interface | (220) | A11 |
| Interface | (221) | A11 |
| Interface | (222) | A11 |
| Interface | (223) | A11 |
| Interface | (224) | A11 |
| Interface | (225) | A11 |
| Interface | (226) | A11 |
| Interface | (227) | A11 |
| Interface | (229) | A11 |
| Interface | (230) | A11 |
| Interface | (231) | A11 |
| Interface | (232) | A11 |

| | | |
|-----------|-------|-------------|
| Interface | (233) | All |
| Interface | (234) | All |
| Interface | (235) | All |
| Interface | (236) | All |
| Interface | (237) | All |
| Interface | (238) | All |
| Interface | (239) | All |
| Next-hop | (0) | All |
| Next-hop | (1) | All |
| Next-hop | (2) | All |
| Next-hop | (3) | All |
| Next-hop | (4) | All |
| Next-hop | (5) | All |
| Next-hop | (6) | All |
| Next-hop | (7) | All |
| Next-hop | (8) | All |
| Next-hop | (9) | All |
| Next-hop | (10) | All |
| Next-hop | (11) | All |
| Next-hop | (12) | All |
| Next-hop | (13) | All |
| Next-hop | (14) | All |
| Next-hop | (15) | All |
| Next-hop | (16) | All |
| Next-hop | (17) | All |
| Next-hop | (18) | All |
| Next-hop | (19) | All |
| Next-hop | (20) | All |
| Next-hop | (21) | All |
| Next-hop | (22) | All |
| Next-hop | (23) | All |
| Next-hop | (24) | All |
| Next-hop | (25) | All |
| Next-hop | (26) | All |
| Next-hop | (27) | All |
| Next-hop | (28) | All |
| Next-hop | (29) | All |
| Next-hop | (30) | All |
| Next-hop | (31) | All |
| Next-hop | (32) | All |
| Next-hop | (33) | All |
| Next-hop | (34) | All |
| Next-hop | (35) | All |
| Next-hop | (36) | All |
| Next-hop | (37) | All |
| Next-hop | (39) | Always TRUE |
| Next-hop | (40) | All |
| Next-hop | (41) | All |
| Next-hop | (42) | All |
| Next-hop | (43) | All |
| Route | (0) | All |
| Route | (1) | All |
| Route | (2) | All |
| Route | (3) | All |
| Route | (4) | All |
| Route | (5) | All |
| Route | (6) | All |
| Route | (7) | All |
| Route | (8) | All |
| Route | (9) | All |

| | | |
|----------|------|-------------|
| Route | (10) | All |
| Route | (11) | All |
| Route | (12) | All |
| Route | (13) | All |
| Route | (14) | All |
| Route | (15) | All |
| Route | (16) | All |
| Route | (17) | All |
| Route | (18) | All |
| Route | (19) | All |
| Route | (20) | All |
| Route | (22) | All |
| Route | (23) | All |
| Route | (24) | All |
| Route | (25) | All |
| Route | (26) | All |
| Route | (27) | All |
| Route | (28) | All |
| Route | (29) | Always TRUE |
| Route | (30) | Always TRUE |
| Pfe | (1) | Always TRUE |
| Pfe | (3) | Always TRUE |
| Pfe | (5) | Always TRUE |
| Pfe | (7) | Always TRUE |
| Pfe | (10) | Always TRUE |
| Pfe | (11) | Always TRUE |
| Pfe | (12) | Always TRUE |
| Pfe | (13) | Always TRUE |
| Pfe | (14) | Always TRUE |
| Pfe | (15) | Always TRUE |
| Pfe | (35) | Always TRUE |
| Dfw | (0) | All |
| Dfw | (1) | All |
| Dfw | (2) | All |
| Dfw | (3) | All |
| Dfw | (4) | All |
| Dfw | (5) | All |
| Dfw | (6) | All |
| Dfw | (7) | All |
| Dfw | (8) | All |
| Dfw | (9) | All |
| Dfw | (10) | All |
| Dfw | (11) | All |
| Dfw | (12) | All |
| Dfw | (13) | All |
| Dfw | (14) | All |
| Dfw | (18) | All |
| Dfw | (19) | All |
| Sampling | (1) | All |
| Sampling | (2) | All |
| Sampling | (3) | All |
| CoS | (0) | All |
| CoS | (1) | All |
| CoS | (2) | All |
| CoS | (3) | All |
| CoS | (4) | All |
| CoS | (5) | All |
| CoS | (6) | All |
| CoS | (7) | All |
| CoS | (8) | All |

```

CoS          (9)          All
CoS          (10)         All
CoS          (11)         All
CoS          (12)         All
CoS          (13)         All
CoS          (14)         All
CoS          (15)         All
CoS          (16)         All
CoS          (17)         All
CoS          (18)         All
CoS          (19)         All
CoS          (20)         All
CoS          (21)         All
CoS          (22)         All
CoS          (23)         All
CoS          (27)         All
CoS          (29)         All
CoS          (31)         All
CoS          (32)         All
PIC          (1)          Always TRUE
PIC          (3)          Always TRUE
PIC          (5)          Always TRUE
PIC          (7)          Always TRUE
PIC          (10)         Always TRUE
PIC          (11)         Always TRUE
PIC          (12)         Always TRUE
PIC          (13)         Always TRUE
PIC          (14)         Always TRUE
PIC          (15)         Always TRUE
GenCfg       (2)          All
GenCfg       (4)          All
GenCfg       (5)          All
GenCfg       (6)          All
GenCfg       (8)          All
GenCfg       (9)          All
GenCfg       (10)         All
GenCfg       (15)         All
GenCfg       (17)         All
GenCfg       (24)         All
GenCfg       (27)         All
GenCfg       (29)         All
GenCfg       (31)         All
STP          (1)          All
BD           (0)          All
BD           (1)          All
BD           (2)          All

```

IFSTATE BITS SET:

```

-----
IFD
IFL
IFF
IFA
RTTABLE
ROUTE
NEXTHOP
FIREWALL
NAME TABLE
COS_FABRIC
COS_POLICY
COS_RED

```

```

COS_REWRT_TABLE
COS_REWRT_IFLMAP
COS_CLASS_TABLE
COS_CLASS_IFLMAP
COS_POLICER
COS_SHAPER
SAMPLE
RTCOS
SYSCONF
IFVP
SADB
IFVC
COS_FC_QUEUE
COS_FRAGMAP_TABLE
COS_FRAGMAP_IFLMAP
Generic config
STP
Mesh group
Bridge Domain
IFBD

```

PFE listener statistics:

```

Open:          1
Close:         0
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   1
Resync Fail:   0
Resync Time:   0

```

PFE IPC statistics:

| Type (subtype) | TX Messages | RX messages |
|----------------|-------------|-------------|
| ----- | ----- | ----- |
| Interface (3) | 131 | 0 |
| Interface (5) | 0 | 379 |
| Interface (9) | 48 | 0 |
| Interface (10) | 102 | 0 |
| Interface (11) | 1 | 0 |
| Interface (12) | 204 | 0 |
| Interface (13) | 177 | 0 |
| Interface (15) | 90 | 0 |
| Interface (23) | 49 | 0 |
| Interface (24) | 8 | 0 |
| Interface (29) | 27 | 0 |
| Interface (30) | 11 | 0 |
| Interface (33) | 101 | 0 |
| Interface (34) | 101 | 0 |
| Interface (35) | 84 | 0 |
| Interface (36) | 18 | 0 |
| Interface (37) | 38 | 0 |
| Interface (39) | 0 | 1 |
| Interface (53) | 0 | 379 |
| Interface (54) | 620 | 0 |
| Interface (55) | 2064 | 0 |
| Interface (56) | 0 | 379 |
| Interface (57) | 57 | 0 |
| Interface (58) | 1 | 0 |
| Interface (90) | 0 | 21 |
| Interface (91) | 0 | 13 |

| | | | |
|-----------|-------|------|------|
| Interface | (92) | 0 | 12 |
| Interface | (117) | 0 | 1516 |
| Interface | (138) | 0 | 758 |
| Interface | (151) | 244 | 0 |
| Interface | (163) | 124 | 0 |
| Interface | (201) | 101 | 0 |
| Interface | (226) | 91 | 0 |
| Interface | (229) | 124 | 0 |
| Interface | (238) | 205 | 0 |
| Next-hop | (1) | 159 | 0 |
| Next-hop | (2) | 5 | 0 |
| Next-hop | (3) | 16 | 0 |
| Next-hop | (11) | 51 | 0 |
| Next-hop | (23) | 12 | 0 |
| Next-hop | (40) | 3 | 0 |
| Route | (1) | 164 | 0 |
| Route | (2) | 70 | 0 |
| Route | (3) | 11 | 0 |
| Route | (6) | 1 | 0 |
| Route | (9) | 14 | 0 |
| Route | (12) | 2 | 0 |
| Route | (13) | 1 | 0 |
| Route | (22) | 4 | 0 |
| Pfe | (1) | 0 | 1 |
| Pfe | (3) | 157 | 0 |
| Pfe | (4) | 0 | 157 |
| Pfe | (5) | 158 | 0 |
| Pfe | (6) | 0 | 158 |
| Pfe | (7) | 158 | 0 |
| Pfe | (8) | 0 | 158 |
| Pfe | (9) | 0 | 1 |
| Pfe | (10) | 1 | 0 |
| Pfe | (11) | 1 | 0 |
| Pfe | (12) | 2772 | 0 |
| Pfe | (13) | 108 | 108 |
| Pfe | (15) | 158 | 0 |
| Pfe | (16) | 0 | 158 |
| Pfe | (47) | 0 | 1 |
| Dfw | (1) | 23 | 0 |
| Dfw | (2) | 1 | 0 |
| Dfw | (6) | 0 | 6 |
| Dfw | (18) | 175 | 0 |
| GenCfg | (5) | 1 | 0 |
| GenCfg | (8) | 157 | 0 |
| GenCfg | (9) | 21 | 0 |
| GenCfg | (15) | 57 | 0 |
| STP | (1) | 112 | 0 |
| STP | (2) | 0 | 98 |
| STP | (5) | 0 | 97 |

show fib-local-accounting ip

Syntax `show fib-local-accounting ip`

Release Information Command introduced in Junos OS Release 12.3 for MX Series routers.

Description Display the number of packets that were sent to an anchor MPC due to FIB localization.

Required Privilege Level view

Related Documentation

- [fib-remote on page 297](#)
- [fib-local on page 297](#)
- *Example: Configuring Packet Forwarding Engine FIB Localization*

Sample Output

show fib-local-accounting ip

```
user@host> show fib-local-accounting ip
```

```
PFE 0
  fe_addr      packets      bytes
  28           0           0
  29           0           0
  30           0           0
  31           0           0
PFE 1
  fe_addr      packets      bytes
  28           0           0
  29           0           0
  30           0           0
  31           0           0
```

show ptp aggregated-ethernet interfaces

| | |
|---------------------------------|--|
| Syntax | <code>show ptp aggregated-ethernet interfaces</code> |
| Release Information | Command introduced in Junos OS Release 17.2R1. |
| Description | Display the information related to aggregated Ethernet bundles. |
| Options | This command has no options. |
| Required Privilege Level | View |
| Related Documentation | <ul style="list-style-type: none"> <i>Precision Time Protocol Overview</i> |
| Output Fields | Table 113 on page 1647 lists the output fields for the <code>show ptp aggregated-ethernet interfaces</code> command. Output fields are listed in the approximate order in which they appear. |

Table 113: show ptp aggregated-ethernet interfaces

| Field Name | Field Description |
|------------------|---|
| Bundle | Name of the aggregated Ethernet bundle. |
| Primary | Primary interface in an aggregated Ethernet bundle. <ul style="list-style-type: none"> active—Indicates that the link is actively receiving ptp packets. down—Indicates that the link is down. |
| Secondary | Secondary interface in an aggregated Ethernet bundle. <ul style="list-style-type: none"> active—Indicates that the link is actively receiving ptp packets. ready—Indicates that the link is ready to take over if the primary link fails. |
| Role | Role of the aggregated Ethernet bundle: <ul style="list-style-type: none"> Master, Slave, or Stateful |

Sample Output

show ptp aggregated-ethernet interfaces

```
user@host> show ptp aggregated-ethernet interfaces
```

```
bundle      primary      secondary      role
ae0.0       ge-1/0/1 (active)  ge-5/0/5 (ready)  slave
ae2.0       ge-5/0/1 (down)   ge-6/1/1 (active)  master
```

show ptp aggregated-ethernet interfaces (stateful ports)

```
user@host> show ptp aggregated-ethernet interfaces
```

| AE Bundle | Ifstate | Primary | Secondary | Role |
|-----------|---------|-------------------|----------------------|----------|
| ae0.0 | Up | et-11/0/5(active) | et-11/1/2(secondary) | Stateful |

show ptp clock

| | |
|---------------------------------|---|
| Syntax | show ptp clock |
| Release Information | Command introduced in Junos OS Release 12.2. Command introduced in Junos OS Release 12.3 for ACX Series Routers. Command introduced in Junos OS Release 17.3 for QFX Series switches. |
| Description | (ACX Series, MX80, MX240, MX480, MX960 routers, and QFX Series switches) Display the details of the clock configured on the node. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • <i>IEEE 1588v2 PTP Boundary Clock Overview</i> • <i>IEEE 1588v2 Precision Timing Protocol (PTP)</i> • <i>Precision Time Protocol Overview</i> |
| List of Sample Output | show ptp clock on page 1651 show ptp clock (ACX Series Routers) on page 1651 |
| Output Fields | Table 114 on page 1649 lists the output fields for the show ptp clock command. Output fields are listed in the approximate order in which they appear. |

Table 114: show ptp clock Output Fields

| Field Name | Field Description |
|-----------------------|--|
| Slot Number | Number of the FPC or MIC slot. |
| Two-step Clock | Whether the clock provides time information which is a combination of an event message and a subsequent general message: True or False . |
| Clock Identity | Clock identity of the slave or client as defined in IEEE 1588. |
| Total Ports on Device | Total number of PTP ports on the router. |
| Clock Class | Attribute of an ordinary or boundary clock that denotes the traceability of the time or frequency distributed by the grandmaster clock. |
| Clock Accuracy | Indicates the expected accuracy of a clock when it is the grandmaster, or in the event it becomes the grandmaster. |

Table 114: show ptp clock Output Fields (continued)

| Field Name | Field Description |
|-------------------------------|---|
| Log Variance | Represents an estimate of the variations of the local clock when it is not synchronized via PTP to another clock. |
| Clock Priority1 | Priority value of the clock. Lower value takes precedence. |
| Clock Priority2 | Prioritize the masters to avoid confusion when the Clock Priority1 value is the same for different masters in a network. |
| UTC Offset | Offset between International Atomic Time (TAI) and Coordinated Universal Time (UTC) times. The value is 34 seconds as of January 2012. |
| Leap59 | When TRUE , the last minute of the current UTC day has only 59 seconds (instead of the 60 SI seconds). |
| Leap61 | When TRUE , the last minute of the current UTC day has 61 seconds (instead of the 60 SI seconds). |
| Time Traceable | When TRUE , the timescale and the UTC offset are traceable to a primary reference. |
| Frequency Traceable | When TRUE , frequency determining the timescale is traceable to a primary reference. |
| Time Source | Time source external to the Precision Time Protocol (PTP), which provides time and/or frequency as appropriate. The time source is traceable to the international standards laboratories maintaining clocks that form the basis for the International Atomic Time (TAI) and Universal Coordinated Time (UTC) timescales. Examples of these are Global Positioning System (GPS), NTP, and National Institute of Standards and Technology (NIST) timeservers. |
| Delay Req Sending Time | Interval in seconds between the delay-request messages sent by the slave to the master. |
| Steps Removed | Number of boundary clocks between the local clock and the foreign master clock. |
| Slave-only | Set to TRUE , when the system is used in ordinary slave clock mode; otherwise, FALSE . |
| Parent Id | EUI-64 clock identifier of the immediate upstream master clock. |
| GMC Id | EUI-64 clock identifier of the grandmaster clock. |
| GMC Class | Denotes the grandmaster clock's traceability of the distributed time or frequency. |
| GMC Accuracy | Indicates the expected accuracy of the grandmaster clock. |
| GMC Variance | Represents an estimate of the variations of the grandmaster clock. |
| GMC Priority1 | Priority1 -value of the grandmaster clock. |
| GMC Priority2 | Priority2 -value of the grandmaster clock. |

Sample Output

show ptp clock

```
user@host> run show ptp clock
```

Clock Details:

| | | |
|-------------------------|---------------------------|------------------------|
| Slot Number | : 7 | |
| Default Data: | | |
| Two-step Clock | : FALSE | Clock Identity : |
| 00:05:85:ff:fe:73:ef:d0 | | |
| Total Ports on Device | : 0 | Clock Class : 255 |
| Clock Accuracy | : 49 | Log Variance : -12944 |
| Clock Priority1 | : 128 | Clock Priority2: 128 |
| UTC Offset | : 33 | Leap59 : FALSE |
| Leap61 | : FALSE | Time Traceable : FALSE |
| Frequency Traceable | : FALSE | Time master : 0 |
| Delay Req Sending Time: | 0 | Steps Removed : 1 |
| Slave-only | : NA | |
| Parent Data: | | |
| Parent Id | : 00:18:0b:ff:ff:20:01:62 | |
| GMC Id | : 00:18:0b:ff:ff:20:01:62 | GMC Class : 52 |
| GMC Accuracy | : 254 | GMC Variance : 11952 |
| GMC Priority1 | : 0 | GMC Priority2 : 0 |
| Global Data: | | |
| UTC Offset | : 34 | Leap-59 : FALSE |
| Leap-61 | : FALSE | Time traceable : FALSE |
| Freq Traceable | : FALSE | Time Scale : FALSE |
| Time master | : 160 | |

show ptp clock (ACX Series Routers)

```
user@host> run show ptp clock
```

Clock Details:

| | | |
|-------------------------|---------------------------|------------------------|
| Slot Number | : 0 | |
| Default Data: | | |
| Two-step Clock | : FALSE | Clock Identity : |
| 84:18:88:ff:fe:c0:7a:00 | | |
| Total Ports on Device | : 0 | Clock Class : 255 |
| Clock Accuracy | : 34 | Log Variance : 15353 |
| Clock Priority1 | : 128 | Clock Priority2: 128 |
| UTC Offset | : 0 | Leap59 : FALSE |
| Leap61 | : FALSE | Time Traceable : FALSE |
| Frequency Traceable | : FALSE | Time Source : 0 |
| Delay Req Sending Time: | 0 | Steps Removed : 0 |
| Slave-only | : NA | |
| Parent Data: | | |
| Parent Id | : 00:00:64:ff:fe:01:01:02 | |
| GMC Id | : 00:00:64:ff:fe:01:01:02 | GMC Class : 80 |
| GMC Accuracy | : 35 | GMC Variance : 0 |
| GMC Priority1 | : 128 | GMC Priority2 : 128 |
| Global Data: | | |
| UTC Offset | : 0 | Leap-59 : FALSE |
| Leap-61 | : FALSE | Time tracable : FALSE |
| Freq Traceable | : FALSE | Time Scale : FALSE |
| Time source | : 16 | |

show ptp hybrid

Syntax `show ptp hybrid
<config | status>`

Release Information Command introduced in Junos OS Release 12.2R2.

Description Display the current configuration and current operation mode of the slave.

Options **config**—Display the PTP source to Synchronous Ethernet interface mappings.
status—Display the current hybrid mode operational status.

Required Privilege Level View

Related Documentation

- *Understanding Hybrid Mode*

Output Fields [Table 113 on page 1647](#) lists the output fields for the **show ptp hybrid** command. Output fields are listed in the approximate order in which they appear.

Table 115: show ptp hybrid Output Fields

| Field Name | Field Description |
|---------------------------------------|--|
| ptp source | Displays the IP address of the PTP source. |
| sync source | Displays the interface name of the Synchronous Ethernet source through which the PTP source is traceable. |
| Configured Mode | Displays the current configured mode of the router as Hybrid . |
| Operating Mode | Displays the current operation mode: Hybrid or None . |
| PTP Reference | Displays the IP address and the interface name of the PTP reference clock. |
| Synchronous Ethernet Reference | Displays the interface name of the Synchronous Ethernet reference clock. |
| Lock state | Displays the current lock state of the router: Locked , Initializing , or Acquiring . |

Table 115: show ptp hybrid Output Fields (continued)

| Field Name | Field Description |
|-------------------------------|--|
| Lock state description | <p>Displays the description for the current lock state of the router:</p> <ul style="list-style-type: none"> • Initializing—Hybrid mode is being initialized. • Acquiring Frequency—Synchronous Ethernet source identified for frequency synchronization, acquiring frequency-related data from master clock. • Frequency Locked, Acquiring Phase—Frequency locked from the Synchronous Ethernet source, acquiring phase-related data from master clock. • Frequency and Phase Locked—Slave clock is frequency and phase synchronized with master clock. |

Sample Output

show ptp hybrid config

```
user@host> show ptp hybrid config

ptp source          synce source
100.1.1.2           ge-1/1/2
```

show ptp hybrid status

```
user@host> show ptp hybrid status

Hybrid Mode Status:
Configured Mode       : Hybrid
Operating Mode        : Hybrid
PTP Reference          : 100.1.1.2, ge-1/0/0.0
Synchronous Ethernet Reference : ge-1/1/2
Lock state             : Locked
Lock state description : Frequency and Phase Locked
```

show ptp lock-status

| | |
|---------------------------------|---|
| Syntax | <code>show ptp lock-status</code> |
| Release Information | Command introduced in Junos OS Release 12.2. Command introduced in Junos OS Release 17.3 for the QFX Series. |
| Description | (ACX Series, MX80, MX240, MX480, MX960 routers, and QFX Series switches) Display information about the lock status of the slave. The output verifies whether the slave is aligned to the grandmaster (master clock) or not. |
| Options | detail —Display detailed information about the lock status of the slave. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • <i>IEEE 1588v2 PTP Boundary Clock Overview</i> • <i>IEEE 1588v2 Precision Timing Protocol (PTP)</i> • <i>Precision Time Protocol Overview</i> |
| List of Sample Output | show ptp lock-status on page 1655 show ptp lock-status (ACX Series) on page 1655 show ptp lock-status detail (ACX Series) on page 1655 show ptp lock-status detail (with IPv6 addresses for PTP master/slave) on page 1656 show ptp lock-status detail (with IPv6 addresses for PTP master/slave with AE interface) on page 1656 show ptp lock-status detail (with IPv6 addresses for PTP master/slave with loopback interface) on page 1656 |
| Output Fields | Table 116 on page 1654 lists the output fields for the show ptp lock-status command. Output fields are listed in the approximate order in which they appear. |

Table 116: show ptp lock-status Output Fields

| Field Name | Field Description |
|-------------------|---|
| Lock State | State of the slave clock with respect to its master clock: <ul style="list-style-type: none"> • Freerun • Holdover • Phase Aligned • Acquiring • Initializing • Freq locked |

Table 116: show ptp lock-status Output Fields (continued)

| Field Name | Field Description |
|--------------------------------|---|
| Phase offset | Time offset information of a slave clock with respect to its master clock. Precision of this time offset is 1 nanosecond. |
| State since | Date, time, and how long ago the lock status of the PTP client or slave clock changed. The format is State since: year-month-day hour:minute:second:timezone (hour:minute:second ago) . For example, State since: 2002-04-26 10:52:40 PDT (04:33:20 ago) . On ACX Series routers, this field is displayed in Junos OS Release 15.1 and later. |
| Selected Master Details | <p>Details include the following:</p> <ul style="list-style-type: none"> • Upstream Master address—The address of the remote master from which the slave acquires the clock. • Slave interface—The slave interface on this router corresponding to the Master above. <p>NOTE: On ACX Series router, if the PTP lock state is FREERUN, then the Selected Master Details field is not shown.</p> |

Sample Output

show ptp lock-status

```
user@host> run show ptp lock-status
```

```
Lock Status:
```

```
Lock State      : 5 (PHASE ALIGNED)
Phase offset    : 0.000000001 sec
```

show ptp lock-status (ACX Series)

```
user@host> show ptp lock-status
```

```
Lock Status:
```

```
Lock State      : 1 (FREERUN)
Phase offset    : 0.000000869 sec
```

show ptp lock-status detail (ACX Series)

```
user@host> show ptp lock-status detail
```

```
Lock Status:
```

```
Lock State      : 5 (PHASE ALIGNED)
State since     : 2014-09-10 11:24:11 PDT (00:02:51 ago)
```

```
Phase offset    : 0.000000030 sec
```

```
Selected Master Details:
```

```
Upstream Master address : 13.13.13.1
Slave interface         : ge-0/1/5.0
```

show ptp lock-status detail (with IPv6 addresses for PTP master/slave)

```
user@host> show ptp lock-status detail
```

```
Lock Status:
```

```
Lock State      : 5 (PHASE ALIGNED)
```

```
Phase offset    : -0.000000010 sec
```

```
Selected Master Details:
```

```
Upstream Master address : 2001:cdba:0000:0000:0000:0000:3257:9652
```

```
Slave interface        : ge-0/2/0.0
```

```
Parent Id             : 84:18:88:ff:fe:c0:34:00
```

```
GMC Id                : 00:18:0b:ff:fe:20:03:14
```

show ptp lock-status detail (with IPv6 addresses for PTP master/slave with AE interface)

```
user@host> show ptp lock-status detail
```

```
Lock Status:
```

```
Lock State      : 5 (PHASE ALIGNED)
```

```
Phase offset    : -0.000000016 sec
```

```
State since     : 2018-10-17 01:53:29 UTC (01:09:37 ago)
```

```
Selected Master Details:
```

```
Upstream Master address : 2003::a
```

```
Slave interface        : ae0.0
```

```
Parent Id             : 12:34:56:78:9a:bc:de:01
```

```
GMC Id                : 12:34:56:78:9a:bc:de:01
```

show ptp lock-status detail (with IPv6 addresses for PTP master/slave with loopback interface)

```
user@host> show ptp lock-status detail
```

```
Lock Status:
```

```
Lock State      : 5 (PHASE ALIGNED)
```

```
Phase offset    : -0.000000016 sec
```

```
State since     : 2018-10-17 01:53:29 UTC (01:09:37 ago)
```

```
Selected Master Details:
```

```
Upstream Master address : 2003::a
```

```
Slave interface        : lo0.0
```

```
Parent Id             : 12:34:56:78:9a:bc:de:01
```

```
GMC Id                : 12:34:56:78:9a:bc:de:01
```

show ptp master

| | |
|---------------------------------|---|
| Syntax | <code>show ptp master</code> <code><brief detail interface></code> |
| Release Information | Command introduced in Junos OS Release 12.2. Command introduced in Junos OS Release 17.3 for the QFX Series. |
| Description | (MX80, MX240, MX480, MX960 routers, and the QFX Series) Display information about the configured master and the status of the master. |
| Options | brief —Display information about the master in brief. detail —Display information about the master in detail. interface —Display information about the configured interface of the master. |
| Required Privilege Level | View |
| Related Documentation | <ul style="list-style-type: none"> • <i>Precision Time Protocol Overview</i> • <i>Configuring the Precision Time Protocol G.8275.2 Enhanced Profile (Telecom Profile)</i> |
| Output Fields | Table 117 on page 1657 lists the output fields for the show ptp master command. Output fields are listed in the approximate order in which they appear. |

Table 117: show ptp master Output Fields

| Field Name | Field Description |
|---|---|
| Interface | Name of the interface configured for Precision Time Protocol (PTP) on the master. |
| Status | Status of the Precision Time Protocol master: <ul style="list-style-type: none"> • Master or Slave • Active or Inactive • Initializing or Down |
| Local Address | IP or MAC address of the configured master clock. |
| Status (Local address Status) | Status of the local address of the interface: <ul style="list-style-type: none"> • Configured or Not configured • Master or Slave • Active or Inactive |

Table 117: show ptp master Output Fields (continued)

| Field Name | Field Description |
|--|--|
| Status (Remote address Status) | Status of the remote address of the interface on the QFX Series: <ul style="list-style-type: none"> • Configured or Not configured • Master or Slave • Active or Inactive |
| Total Remote Slaves | Number of remote slaves. |
| Slave Address | IP or MAC address of the slave. |
| Status (Slave Address Status) | Status of the address of the slave: <ul style="list-style-type: none"> • Configured or Not configured • Master or Slave • Active or Inactive or Ready |

Sample Output

show ptp master

```
user@host> run show ptp master brief
PTP Master Interface Configured:

Master Interface      Status
ge-7/0/2.0           Master, Active
```

show ptp master detail (Enterprise Profile on the QFX Series)

```
user@host> run show ptp master detail
PTP Master Interface Details:
Interface   : xe-0/0/6:1.0
Status      : Master, Active
Clock Info  :
  Local Address: 50.50.50.1      Status: Configured, Master, Active
  Remote Address: 224.0.1.129
  Total Remote Slaves: 1
```

show ptp master detail (Enterprise Profile with dynamically learned master and slave interfaces for each physical interface on the QFX Series)

```
user@host> run show ptp slave detail
PTP Master Interface Details:

Interface   : xe-0/0/31:3.0
Status      : Master, Active
Clock Info  :
  Local Address: 10.10.10.2      Status: Configured, Master, Active
  Remote Address: 10.10.10.1      Status: Learned, Slave, Active
  Remote Address: 224.0.1.129    Status: Configured, Slave, Active
```

```

Total Remote Slaves: 2

Interface : xe-0/0/35:3.0
Status    : Master, Active
Clock Info :
  Local Address: 10.2.2.1      Status: Configured, Master, Active
  Remote Address: 10.2.2.24    Status: Learned, Slave, Active
  Remote Address: 10.2.2.29    Status: Learned, Slave, Active
  Remote Address: 10.2.2.30    Status: Learned, Slave, Active
  Remote Address: 10.2.2.32    Status: Learned, Slave, Active
  Remote Address: 10.2.2.35    Status: Learned, Slave, Active
  Remote Address: 10.2.2.52    Status: Learned, Slave, Active
  Remote Address: 10.2.2.61    Status: Learned, Slave, Active
  Remote Address: 224.0.1.129  Status: Configured, Slave, Active
Total Remote Slaves: 8

```

show ptp master detail

```

user@host> run show ptp master detail

PTP Master Interface Details:
Interface : ge-7/0/2.0
Status    : Master, Active
Clock Info :
  Local Address: 10.0.0.1      Status: Configured, Master, Active
  Total Remote Slaves: 0
  Slave IP: 10.0.0.2          Status: Configured, Slave, Active

```

show ptp master detail (with IPv6 addresses for PTP master/slave)

```

user@host> run show ptp master detail

PTP Master Interface Details:
Interface : ge-0/1/5.0
Status    : Master, Active
Clock Info :
  Local Address: 84:18:88:c0:60:a1 Status: Configured, Master, Active
  Remote Address: [Slave Mac]      Status: Configured, Slave, Active
Total Remote Slaves: 1

```

show ptp master detail (with IPv6 addresses for PTP master/slave using loopback interface on the QFX Series)

```

user@host> run show ptp master detail

PTP Master Interface Details:
Interface : lo0.0
Status    : Master, Active
Clock Info :
  Local Address: 2001::1:132      Status: Configured, Master, Active
  Remote Address: 2002::1        Status: SECURE AUTO SLAVE,
                                   Sig State: Ann + Sync
  Remote Address: 3001::1:133    Status: SECURE AUTO SLAVE,
                                   Sig State: Ann + Sync
Total Remote Slaves: 2

```

show ptp interface ge-7/0/2.0

```

user@host> run show ptp master interface ge-7/0/2.0

```

PTP Master Interface Configured:

| Master Interface | Status |
|------------------|----------------|
| ge-7/0/2.0 | Master, Active |

show ptp path-trace detail

| | |
|---------------------------------|---|
| Syntax | show ptp path-trace detail |
| Release Information | Command introduced in Junos OS Release 13.3R4. |
| Description | (MX80, MX240, MX480, and MX960 routers) Display the details of the path an announce message takes in a PTP ring topology. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • <i>IEEE 1588v2 PTP Boundary Clock Overview</i> • <i>Precision Time Protocol Overview</i> |
| List of Sample Output | show ptp path-trace detail on page 1661 |
| Output Fields | Table 118 on page 1661 lists the output fields for the show ptp path-trace detail command. Output fields are listed in the approximate order in which they appear. |

Table 118: show ptp path-trace detail Output Fields

| Field Name | Field Description |
|-----------------------|---|
| Hop Count | The count of the next router in a network trail where the announce message is received. |
| Member Clock Identity | Clock identity of the slave or client as defined in IEEE 1588. |

Sample Output

show ptp path-trace detail

```

user@host> show ptp path-trace detail
Hop count      Member Clock Identity
  1             00:05:85:ff:fe:74:1f:d0
  2             00:05:85:ff:fe:73:ef:d0

```

show ptp phy-timestamping-interfaces

| | |
|---------------------------------|--|
| Syntax | show ptp phy-timestamping-interfaces |
| Release Information | Command introduced in Junos OS Release 17.1R1. |
| Description | Display information about the interfaces that have PHY timestamping enabled. PHY timestamping is the timestamping of the IEEE 1588 event packets at the physical layer. Timestamping the packet at the physical layer eliminates the noise or the packet delay variation (PDV) that is introduced by the Packet Forwarding Engine. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> <i>Precision Time Protocol Overview</i> |
| List of Sample Output | show ptp phy-timestamping-interfaces on page 1662 |
| Output Fields | Table 33 on page 561 lists the output fields for the show ptp phy-timestamping-interfaces command. Output fields are listed in the approximate order in which they appear. |

Table 119: show-ptp-phy-timestamping-interfaces

| Field Name | Field Description |
|---------------------------|--|
| PHY time-stamp interfaces | Name of the interface configured for phy-timestamping. |

Sample Output

show ptp phy-timestamping-interfaces

```
user@host> show ptp phy-timestamping-interfaces
PHY time-stamp interfaces:
xe-0/2/1
xe-4/1/3
```

show ptp port

| | |
|---------------------------------|--|
| Syntax | <code>show ptp port</code> <code><brief detail></code> <code>ifl <i>logical-interface-name</i></code> |
| Release Information | Command introduced in Junos OS Release 12.2. <i>ifl logical-interface-name</i> added in Junos OS Release 16.1. |
| Description | (MX80, MX240, MX480, and MX960 routers) Display information about the number of ports created according to the configuration. For each unique local IP address, one Precision Time Protocol port is created. |
| Options | brief —Display information about the PTP port in brief. detail —Display information about the PTP port in detail. <i>logical-interface-name</i> —Display PTP port information for a specific logical interface. |
| Required Privilege Level | View |
| Related Documentation | <ul style="list-style-type: none"> • <i>Precision Time Protocol Overview</i> |
| Output Fields | Table 120 on page 1663 lists the output fields for the show ptp port command. Output fields are listed in the approximate order in which they appear. |

Table 120: show ptp port Output Fields

| Field Name | Field Description |
|--------------------|---|
| Local Interface | Local logical interface. |
| Local IP | IP address of the interface acting as the slave. |
| Remote IP | IP address of the remote node. |
| Clock Stream | Unique index for each session created. |
| Clock Identity | IP address of the slave. |
| Port State | Status of the port: PTP listening or PTP initializing . |
| Delay Req Interval | Interval in seconds between the delay request messages sent by the slave to the master. |
| Announce Interval | Logarithmic mean interval for the announce messages to be sent by the master. |

Table 120: show ptp port Output Fields (continued)

| Field Name | Field Description |
|-----------------------------------|--|
| Announce Timeout | Number of times the announce interval message has to pass between the slave and the master without receipt of an announce message. |
| Sync Interval | Logarithmic mean interval for sync interval messages to be sent by the master. |
| Delay Mechanism | Type of delay mechanism used. |
| Port Number | PTP port number. |
| Operating Mode | Clock mode of the node. |
| Master Clock ID | Unique clock-identity of the master. |
| Previous Announce Messages | Previous announce messages. |
| Current Announce Message | Current announce messages. |

Sample Output

show ptp port brief

```
user@host> run show ptp port brief
```

```
PTP port-data:
Local IP      : 10.0.0.1      Remote IP      : 10.0.0.2
Clock Stream  : 1            Clock Identity : 00:05:85:ff:fe:73:ef:d0
Port State    : Listening     Delay Req Interval: -4
Announce Interval : 1        Announce Timeout : 3
Sync Interval : -6          Delay Mechanism  : End-to-end
Port Number   : 2            Operating Mode   : Master only

Local IP      : 10.10.1.10    Remote IP      : 10.10.1.2
Clock Stream  : 0            Clock Identity : 00:05:85:ff:fe:73:ef:d0
Port State    : Listening     Delay Req Interval: -4
Announce Interval : 1        Announce Timeout : 3
Sync Interval : -6          Delay Mechanism  : End-to-end
Port Number   : 1            Operating Mode   : BMC Mode
```

show ptp port detail

```
user@host> run show ptp port detail
```

```
PTP port-data:
Local IP      : 10.0.0.1      Remote IP      : 10.0.0.2
Clock Stream  : 1            Clock Identity : 00:05:85:ff:fe:73:ef:d0
Port State    : Listening     Delay Req Interval: -4
Announce Interval : 1        Announce Timeout : 3
Sync Interval : -6          Delay Mechanism  : End-to-end
Port Number   : 2            Operating Mode   : Master only
```

```

Local IP       : 10.10.1.10      Remote IP       : 10.10.1.2
Clock Stream   : 0               Clock Identity   : 00:05:85:ff:fe:73:ef:d0
Port State     : Listening        Delay Req Interval: -4
Announce Interval : 1           Announce Timeout : 3
Sync Interval  : -6             Delay Mechanism  : End-to-end
Port Number    : 1              Operating Mode   : BMC Mode

```

Foreign Master Clock Details:

```

Master Clock Id       : 00:18:0b:ff:ff:20:01:62
Previous Announce Messages : 8
Current Announce Messages : 1

```

user@host> show ptp port ifl ge-1/0/5.0

```

PTP port-data:
Local Interface   : ge-1/0/5.0
Local Address     : 2001:db8:00:05:85:73:b0:aa
Remote Address    : 2001:db8:01:80:c2:00:00:0e
Clock Stream      : 0               Clock Identity   : 2001:db8::85:ff:fe:73:b7:d0
Port State        : Master          Delay Req Interval: -4
Announce Interval : 1               Announce Timeout : 3
Sync Interval     : -6              Delay Mechanism  : End-to-end
Port Number       : 1               Operating Mode   : Master only

```

show ptp slave

| | |
|---------------------------------|---|
| Syntax | <code>show ptp slave</code> <code><brief detail interface></code> |
| Release Information | Command introduced in Junos OS Release 12.2. Command introduced in Junos OS Release 17.3 for the QFX Series. |
| Description | (MX80, MX240, MX480, MX960 routers, and the QFX Series) Display information about the configured slave and the status of the slave. |
| Options | brief —Display information about the slave in detail. detail —Display information about the slave in detail. interface —Display information about the configured interface of the slave. |
| Required Privilege Level | View |
| Related Documentation | <ul style="list-style-type: none"> <i>Precision Time Protocol Overview</i> <i>Configuring the Precision Time Protocol G.8275.2 Enhanced Profile (Telecom Profile)</i> |
| Output Fields | Table 121 on page 1666 lists the output fields for the show ptp slave command. Output fields are listed in the approximate order in which they appear. |

Table 121: show ptp slave Output Fields

| Field Name | Field Description |
|--------------------------------------|---|
| Interface | Name of the interface configured for Precision Time Protocol. |
| Status | Status of the Precision Time Protocol slave: <ul style="list-style-type: none"> Master or Slave Active or Inactive Initializing or Down |
| Interface | Interface configured on the slave. |
| Local Address | IP or MAC address of the local interface. |
| Status (Local address Status) | Status of the local address of the interface acting as the slave: <ul style="list-style-type: none"> Configured or Unconfigured Master or Slave Active or Inactive or Ready |

Table 121: show ptp slave Output Fields (continued)

| Field Name | Field Description |
|--|--|
| Status (Remote address Status) | Status of the remote address of the interface on the QFX Series: <ul style="list-style-type: none"> • Configured or Not configured • Master or Slave • Active or Inactive |
| Total Remote Masters | Number of remote masters. |
| Remote Master | IP or MAC address of the remote node. |
| Status (Slave IP Address Status) | Status of the address of the master: <ul style="list-style-type: none"> • Configured or Unconfigured • Master or Slave • Active or Inactive |

Sample Output

show ptp slave

```
user@host> run show ptp slave
PTP Slave Interfaces Configured:

Slave Interface      Status
ge-7/0/0.0          Slave, Active
```

show ptp slave detail

```
user@host> run show ptp slave detail
PTP Slave Interface Details:

Interface           : ge-7/0/0.0
Status              : Slave, Active
Clock Info
  Local address     : 10.10.1.10          Status: Configured, Slave, Active
  Total Remote Masters: 0
  Remote Master: 10.10.1.2          Status: Configured, Master, Active
```

show ptp slave detail (with IPv6 addresses for PTP master/slave)

```
user@host> run show ptp slave detail
PTP Slave Interface Details:

Interface           : ge-0/1/5.0
Status              : Slave, Active
Clock Info
  Local Address     2001:cdba:0000:0000:0000:3257:9653      Status:
Configured, Slave, Active
  Remote Master:: 2001:cdba:0000:0000:0000:3257:9652 Status: Configured,
```

```
Master, Active
Total Remote Masters: 1
```

show ptp slave detail (with IPv6 addresses for PTP master/slave using AE interface on the QFX Series)

```
user@host> run show ptp slave detail
```

```
PTP Slave Interface Details:
```

```
Interface      : ae0.0
Status         : Slave, Active
Clock Info
  Local Address : 2003::b           Status: Configured, Slave, Active
  Remote Master: 2003::a           Status: Configured, Master, Active
  Total Remote Masters: 1
```


show ptp stateful detail

| | |
|---------------------------------|---|
| Syntax | show ptp stateful detail |
| Release Information | Command introduced in Junos OS Release 17.1R1. |
| Description | Display information about the stateful interfaces. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • <i>Precision Time Protocol Overview</i> |
| List of Sample Output | show ptp stateful detail on page 1669 |
| Output Fields | Table 33 on page 561 lists the output fields for the show ptp stateful detail command. Output fields are listed in the approximate order in which they appear. |

Table 122: show ptp stateful detail

| Field Name | Field Description |
|----------------------------------|--|
| Interface | Name of the configured stateful interface. |
| Status | Status of the stateful interface: stateful and active or inactive. |
| Local Address | MAC address of the configured stateful interfaces. |
| Status (of local address) | Status of the local address of the interface: <ul style="list-style-type: none"> • Configured or not configured • Active or inactive |
| Port Status | Status of the port configured: <ul style="list-style-type: none"> • Master or slave |
| Remote Address | MAC address of the remote stateful interface. |

Sample Output

show ptp stateful detail

```
user@host> show ptp stateful detail
```

```
Interface : ge-7/0/1.0
Status    : Stateful, Active
Clock Info :
  Local Address: 01:00:5E:90:10:00  Status: Configured, Active
  Port Status: Slave
  Remote Address: 01:00:5E:90:10:FF
```

show synchronous-ethernet esmc statistics

| | |
|---------------------------------|---|
| Syntax | <pre>show synchronous-ethernet esmc statistics <brief interface <i>interface-name</i>> <detail interface <i>interface-name</i>> < interface <i>interface-name</i>> < interface <i>interface-name</i> (brief detail)></pre> |
| Release Information | <p>Command introduced in Junos OS Release 11.2R4 for MX Series 5G Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 14.2R1 for PTX Series Packet Transport Routers.</p> |
| Description | (MX5, MX10, MX40, MX80, MX80-T, MX240, MX480, MX960, MX2010, MX2020 , and PTX Series routers only) Display the Synchronous Ethernet ESMC statistics. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • <i>Synchronous Ethernet Overview</i> • <i>Configuring an External Clock Synchronization Interface for MX Series Routers</i> • request chassis synchronization mode on page 547 • request chassis synchronization switch on page 549 • show synchronous-ethernet global-information on page 1675 • show synchronous-ethernet esmc transmit on page 1673 • clear synchronous-ethernet esmc statistics on page 473 |
| List of Sample Output | <p>show synchronous-ethernet esmc statistics on page 1672</p> <p>show synchronous-ethernet esmc statistics detail on page 1672</p> <p>show synchronous-ethernet esmc statistics interface (PTX) on page 1672</p> |
| Output Fields | Table 123 on page 1671 lists the output fields for the show synchronous-ethernet esmc statistics command. Output fields are listed in the approximate order in which they appear. |

Table 123: show synchronous-ethernet esmc statistics Output Fields

| Field Name | Field Description |
|----------------|---|
| Interface Name | interface-slot/pic/port —Displays the name of the interface for which the ESMC statistics are displayed. |
| Transmit Count | number —Displays the number of ESMC packets transmitted. |
| Receive Count | number —Displays the number of ESMC packets received. |

Sample Output

show synchronous-ethernet esmc statistics

```
user@host> show synchronous-ethernet esmc statistics

ESMC statistics:
Interface Name      Transmit Count      Receive Count
ge-1/0/4            3540                0
ge-1/0/2            3539                0
ge-1/2/4            3540                0
```

show synchronous-ethernet esmc statistics detail

```
user@host> show synchronous-ethernet esmc statistics detail

ESMC Statistics:

Interface Name   : xe-2/0/10
Transmit Count   : 40908                      Receive Count       : 40534
Total Drop Count: 336                      Ineligible Drop Count: 0
Adjacency Count  : 4
```

show synchronous-ethernet esmc statistics interface (PTX)

```
user@host> show synchronous-ethernet esmc statistics interface et-1/1/0:0

ESMC statistics:
Interface Name      Transmit Count      Receive Count
et-1/1/0:0          358                338
```

show synchronous-ethernet esmc transmit

| | |
|---------------------------------|---|
| Syntax | <pre>show synchronous-ethernet esmc transmit <brief interface <i>interface-name</i>> <detail interface <i>interface-name</i>> < interface <i>interface-name</i>> < interface <i>interface-name</i> (brief detail)></pre> |
| Release Information | <p>Command introduced in Junos OS Release 11.2R4 for MX80 Universal Routing Platforms.</p> <p>Command introduced in Junos OS Release 14.2R1 for PTX Series Routers.</p> |
| Description | (MX5, MX10, MX40, MX80, MX80-T, MX240, MX480, MX960, MX2010, MX2020, and PTX Series routers only) Display the Synchronous Ethernet ESMC transmit interface details. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • <i>Synchronous Ethernet Overview</i> • <i>Configuring an External Clock Synchronization Interface for MX Series Routers</i> • request chassis synchronization mode on page 547 • request chassis synchronization switch on page 549 • show synchronous-ethernet global-information on page 1675 • show synchronous-ethernet esmc statistics on page 1671 |
| List of Sample Output | show synchronous-ethernet esmc transmit on page 1674 |
| Output Fields | Table 124 on page 1673 lists the output fields for the show synchronous-ethernet esmc transmit detail command. Output fields are listed in the approximate order in which they appear. |

Table 124: show synchronous-ethernet esmc transmit detail Output Fields

| Field Name | Field Description |
|----------------|---|
| Interface name | interface-slot/pic/port —Displays the name of the interface for which the ESMC transmit details are displayed. |
| Status | string —Displays the ESMC transmit interface status details. |

Sample Output

```
user@host# show synchronous-ethernet esmc transmit detail
```

ESMC Transmit interface details:

| | |
|--------------------------|------------------------------------|
| Interface name: ge-1/0/4 | Status: ESMC Tx (QL SSU-A/SSM 0x4) |
| Interface name: ge-1/0/2 | Status: ESMC Tx (QL DNU/SSM 0xf) |
| Interface name: ge-1/2/4 | Status: ESMC Tx (QL SSU-A/SSM 0x4) |

show synchronous-ethernet esmc transmit

```
user@host> show synchronous-ethernet esmc transmit
```

```
ESMC Transmit interfaces:  
xe-2/0/10
```

show synchronous-ethernet esmc transmit (PTX)

```
user@host> show synchronous-ethernet esmc transmit
```

```
ESMC Transmit interfaces:  
et-1/1/0:0  
et-2/0/22:3
```

show synchronous-ethernet global-information

| | |
|---------------------------------|--|
| Syntax | <code>show synchronous-ethernet global-information</code> <code><brief></code> |
| Release Information | Command introduced in Junos OS Release 11.2R4 for MX80-T, MX5, MX10, MX40, MX240, MX480, and MX960 routers. Command introduced in Junos OS Release 14.2R1 for PTX Series Routers. |
| Description | (MX5, MX10, MX40, MX80, MX80-T, MX240, MX480, MX960, and PTX routers only) Display information about the global configuration for Synchronous Ethernet chassis synchronization. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • Synchronous Ethernet Overview • Configuring an External Clock Synchronization Interface for MX Series Routers • request chassis synchronization mode on page 547 • show synchronous-ethernet esmc statistics on page 1671 • show synchronous-ethernet esmc transmit on page 1673 |
| List of Sample Output | show synchronous-ethernet global-information (MX) on page 1676 show synchronous-ethernet global-information (PTX) on page 1676 |
| Output Fields | Table 125 on page 1675 lists the output fields for the show synchronous-ethernet global-information command. Output fields are listed in the approximate order in which they appear. |

Table 125: show synchronous-ethernet global-information Output Fields

| Field Name | Field Description |
|-------------------------------|---|
| Network option | (option-1(EEC1) option-2(EEC2)) —Displays the network option configuration, either option-1(EEC1) or option-2(EEC2). |
| Clock mode | (free-run auto-select) —Displays the configured mode of operation. The clock source can be either from the free-run local oscillator or from an external qualified clock. The default is auto-select mode. |
| QL mode | (enable disable) —Displays the configured quality level mode configuration. The default is disable. |
| Switchover mode | (revertive non-revertive) —Displays the configured synchronization clock switching mode. The default mode is revertive. |
| Config change holdover | seconds —Displays the time interval to wait before selecting the new clock source during a configuration change. The default value is 30 seconds. |

Table 125: show synchronous-ethernet global-information Output Fields (continued)

| Field Name | Field Description |
|----------------------------|--|
| Switchover holdover | seconds —Displays the time interval to wait before selecting the new clock source during switchover. The default value is 30 seconds. |
| Reboot holdover | seconds —Displays the time interval to wait before selecting the new clock source during reboot. The default value is 120 seconds. |

Sample Output

show synchronous-ethernet global-information (MX)

```

user@host# show synchronous-ethernet global-information
Global Configuration:

Network option       : option-1(EEC1)
Clock mode           : Auto-select
QL mode              : Disabled
Switchover mode       : Revertive
Config change holdover : 15 seconds
Switchover holdover   : 30 seconds
Reboot holdover       : 120 seconds

```

show synchronous-ethernet global-information (PTX)

```

user@host# show synchronous-ethernet global-information
Global Configuration:

Network option       : option-1(EEC1)
Clock mode           : Auto-select
Max transmit quality : PRC
QL mode              : Disabled
Clock selection mode  : Config-QL based
Switchover mode       : Revertive
Config change holdover : 15 seconds
Switchover holdover   : 30 seconds
Reboot holdover       : 120 seconds
RE Status             : Master
Global Wait to Restore : 0 min

```


show system errors active

| | |
|---------------------------------|--|
| Syntax | <pre>show system errors active <detail [<i>fru slot-number</i> [<i>scope error-scope</i>] [<i>category error-category</i>]]> <<i>fru slot-number</i>></pre> |
| Release Information | Command introduced in Junos OS Release 18.2R1. |
| Description | Display information collected by the J-Insight fault monitoring feature. Specifically, display summary or detailed information about the active errors based on FRU, error scope, or error category. |
| Options | <p>none—Display a brief summary of the system error information for all applicable FRUs.</p> <p>category <i>error-category</i>—(Optional) Display system error information based on error category. An error category categorizes errors into various subgroups under a specific error scope level. Values include: core, functional, io, memory, processing, storage, and switch.</p> <p>detail—(Optional) Display detailed system error information.</p> <p><i>fru slot-number</i>—(Optional) Display system error information for a specific FRU. FRU options include fpc, re, and sib.</p> <p>scope <i>error-scope</i>—(Optional) Display system error information based on error scope. An error scope provides a level of classification above error category. Values include: board, pfe, and scope-all.</p> |
| Required Privilege Level | admin |
| Related Documentation | <ul style="list-style-type: none"> • <i>J-Insight Device Monitor Basic Configuration</i> • show system errors count on page 1682 • show system errors error-id on page 1684 • show system errors fru on page 1686 |
| List of Sample Output | show system errors active on page 1678 show system errors active fpc-slot on page 1680 show system errors active detail on page 1680 |
| Output Fields | Table 126 on page 1678 list the output fields for the show system errors active command. Output fields are listed in the approximate order in which they appear. |

Table 126: show system errors active Output Fields

| Field Name | Field Description |
|------------------------|--|
| Error Name | Name of error. |
| Identifier | Each error is uniquely identified with an error ID that is represented as a Uniform Resource Identifier (URI). |
| Description | Description of the error. |
| State | State of the error. Values are: enabled or disabled. |
| Scope | Scope classification to which the error belongs. Values include board and pfe. |
| Category | Category subgroup under the scope level to which the error belongs. Values include: core, functional, io, memory, processing, storage, and switch. |
| Level | Severity level of the error. |
| Threshold | Configured threshold value. The associated detection and recovery actions are triggered when this value is exceeded. |
| Error Limit | The maximum number of times the error is reported. |
| Support | Support details for the error type. |
| Occur count | Number of times errors of a specific scope, category, and severity level has occurred. |
| Clear count | Number of times error instances have been cleared. |
| Last occurred (ms ago) | Amount of time (in milliseconds) passed since the error last occurred. |

Sample Output

show system errors active

```
user@host> show system errors active
```

```
System Active Errors Information
CB 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
CHASSIS 0
-----
Active Minor Errors      : 0
Active Major Errors      : 5
Active Fatal Errors      : 0
FAN 0
```

```

-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FAN 1
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FAN 2
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FAN 3
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FAN 4
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FPC 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FPC 1
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FPC 2
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FPC 3
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
FPM 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
PDU 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
PICS 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
PICS 1

```

```

-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
PSM 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
PSM 1
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
PSM 2
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
PSM 3
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
RE 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
SIB 0
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
SIB 1
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0

```

show system errors active fpc-slot

```
user@host> show system errors active fpc-slot 0
```

```
System Active Errors Information
FPC 0
```

```

-----
Active Minor Errors: 0
Active Major Errors: 1
Active Fatal Errors: 0

```

show system errors active detail

```
user@host> show system errors active detail
```

```
System Active Errors Detail Information
CHASSIS 0
```

```

-----
Error Name : fan_tray_removal

```

```
Identifier : /chassis/0/hwdre/0/cm/0/fan_tray/Fan Tray 0/fan_tray_removal
Description : Fan_tray_absent
State : disabled
Scope : board
Category : functional
Level : major
Threshold : 1
Error limit : 1
Support : No help info provided
Occur count : 1
Clear count : 0
Last occurred(ms ago) : 339112691
```

show system errors count

| | |
|---------------------------------|--|
| Syntax | show system errors count |
| Release Information | Command introduced in Junos OS Release 18.2R1. |
| Description | Display information collected by the J-Insight fault monitoring feature. Specifically, display information about the number of detected errors and recovery actions triggered based on error severity level. |
| Options | This command has no options. |
| Required Privilege Level | admin |
| Related Documentation | <ul style="list-style-type: none"> • <i>J-Insight Device Monitor Basic Configuration</i> • show system errors active on page 1677 • show system errors error-id on page 1684 • show system errors fru on page 1686 |
| List of Sample Output | show system errors count on page 1682 |
| Output Fields | Table 127 on page 1682 lists the output fields for the show system errors count command. Output fields are listed in the approximate order in which they appear. |

Table 127: show system errors count Output Fields

| Field Name | Field Description |
|--------------|--|
| Level | Severity level of the error. Values are: Minor, Major, or Fatal. |
| Occurred | Number of times errors of a specific severity level occurred. |
| Cleared | Number of times errors of a specific severity level were cleared. |
| Action-Taken | Number of times a recovery action was triggered for a specific severity level. |

Sample Output

show system errors count

```
user@host> show system errors count
```

```
Level   Occurred   Cleared     Action-Taken
-----
```

| | | | |
|--------|---|---|---|
| Minor: | 0 | 0 | 0 |
| Major: | 1 | 0 | 1 |
| Fatal: | 0 | 0 | 0 |

show system errors error-id

Syntax `show system errors error-id error-id-uri`

Release Information Command introduced in Junos OS Release 19.1R1.

Description Display information collected by the J-Insight fault monitoring feature. Specifically, display information about detected errors based on the error ID Uniform Resource Identifier (URI). Only the output for errors that have occurred at least once in the system are displayed.

Options This command has no options.

Additional Information

Required Privilege Level admin

Related Documentation

- *J-Insight Device Monitor Basic Configuration*
- [show system errors active on page 1677](#)
- [show system errors count on page 1682](#)
- [show system errors fru on page 1686](#)

List of Sample Output [show system errors error-id on page 1685](#)

Output Fields [Table 128 on page 1684](#) lists the output fields for the `show system errors error-id` command. Output fields are listed in the approximate order in which they appear.

Table 128: show system errors error-id Output Fields

| Field Name | Field Description |
|-------------|--|
| Error Name | Name of error. |
| Identifier | Each error is uniquely identified with an error ID that is represented as a Uniform Resource Identifier (URI). |
| Description | Description of the error. |
| State | State of the error. Values are: enabled or disabled. |
| Scope | Scope classification to which the error belongs. Values include board and pfe. |
| Category | Category subgroup under the scope level to which the error belongs. Values include: core, functional, io, memory, processing, storage, and switch. |

Table 128: show system errors error-id Output Fields (continued)

| Field Name | Field Description |
|------------------------|--|
| Level | Severity level of the error. |
| Threshold | Configured threshold value. The associated detection and recovery actions are triggered when this value is exceeded. |
| Error Limit | The maximum number of times the error is reported. |
| Support | Support details for the error type. |
| Occur count | Number of times errors of a specific scope, category, and severity level has occurred. |
| Clear count | Number of times error instances have been cleared. |
| Last occurred (ms ago) | Amount of time (in milliseconds) passed since the error last occurred. |

Sample Output

show system errors error-id

```
user@host> show system errors error-id "/chassis/0/hwdre/0/cm/0/fan_tray/Fan Tray
0/fan_tray_removal"
```

System Errors Detail Information

CHASSIS 0

```
-----
Error Name       : fan_tray_removal
Identifier       : /chassis/0/hwdre/0/cm/0/fan_tray/Fan Tray
0/fan_tray_removal
Description      : Fan_tray_absent
State           : enabled
Scope           : board
Category        : functional
Level           : major
Threshold       : 1
Error limit     : 1
Support         : No help info provided
Occur count     : 1
Clear count     : 0
Last occurred(ms ago) : 84091182
```

show system errors fru

| | |
|---------------------------------|--|
| Syntax | show system errors fru detail [<i>fru slot-number</i>] |
| Release Information | Command introduced in Junos OS Release 18.2R1. |
| Description | Display information collected by the J-Insight fault monitoring feature. Specifically, display information about detected errors based on the FRU. |
| Options | <p>none—Display a brief summary of the system error information for the FRU.</p> <p>detail—(Optional) Display detailed system error information.</p> <p>fru slot-number—(Optional) Display system error information for a specific FRU. FRU options include fpc, re, and sib.</p> |
| Required Privilege Level | admin |
| Related Documentation | <ul style="list-style-type: none"> • <i>J-Insight Device Monitor Basic Configuration</i> • show system errors active on page 1677 • show system errors count on page 1682 • show system errors error-id on page 1684 |
| List of Sample Output | <p>show system errors fru detail on page 1687</p> <p>show system errors fru detail (Junos OS Evolved) on page 1705</p> |
| Output Fields | <p>Table 129 on page 1686 lists the output fields for the show system errors fru command. Output fields are listed in the approximate order in which they appear.</p> |

Table 129: show system errors fru Output Fields

| Field Name | Field Description |
|------------|--|
| FRU | FRU identification number. |
| Scope | An error scope provides a level of classification above error category. Error scope values are: pfe and board. |
| Category | An error category categorizes errors into various subgroups under a specific error scope level. Values include: functional, io, memory, processing, storage, and switch. |
| Level | Severity level of the error. |

Table 129: show system errors fru Output Fields (continued)

| Field Name | Field Description |
|--------------|--|
| Occurred | Number of times errors of a specific scope, category, and severity level has occurred. |
| Cleared | Number of times errors of a specific scope, category, and severity level were cleared. |
| Threshold | Configured threshold value. The associated detection and recovery actions are triggered when this value is exceeded. |
| Action-Taken | Number of times a user-configured recovery action was triggered for errors of a specific scope, category, and severity level . |
| Action | Action that is triggered when the threshold value is exceeded. |

Sample Output

show system errors fru detail

```
user@host> show system errors fru detail
```

| Fru | Scope | Category | Level | Occurred | Cleared | Threshold | Action-Taken |
|------|--------------------|------------|-------|----------|---------|-----------|--------------|
| CB 0 | | | | | | | |
| | board | | | | | | |
| | | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | | io | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | | memory | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |

| | | | | | | | |
|-----------|-------|--------------------|-------|---|---|----|----|
| CHASSIS 0 | board | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | switch | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | functional | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 5 | 0 | 1 | 10 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | io | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | memory | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | processing | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | storage | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | switch | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| FAN 0 | board | functional | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | io | Minor | 0 | 0 | 10 | 0 |
| | | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | |
|-------|--------------------|-------|---|---|----|---|
| FAN 1 | memory | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |

| | | | | | | | |
|-------|--------------------|--|-------|---|---|----|---|
| FAN 2 | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | board | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | processing | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | storage | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | switch | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| FAN 3 | CM ALARM RESET | | | | | | |
| | board | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | | |
| | | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |

| | | | | | | | |
|-------|--------------------|--|-------|---|---|----|---|
| FAN 4 | processing | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | storage | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | switch | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | board | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | processing | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | storage | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | switch | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| FPC 0 | board | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |

| | | | | | |
|--------------------|------------|-------|---|---|----|
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | io | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | memory | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | processing | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | storage | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | switch | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | pfe | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | io | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | memory | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | processing | Minor | 0 | 0 | 10 |
| GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| LOG | storage | Minor | 0 | 0 | 10 |

| | | | | | | |
|-------|--------------------|-------|---|---|----|---|
| FPC 1 | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | pfe | | | | | |
| | | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | | | | | |

| | | | | | | |
|-------|--------------------|--------------------|-------|---|---|----|
| FPC 2 | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | memory | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | processing | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | storage | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | switch | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | | Fatal | 0 | 0 | 1 |
| | board | | | | | |
| | | functional | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | io | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | memory | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | processing | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | storage | Minor | 0 | 0 | 10 |
| | | LOG | Major | 0 | 0 | 1 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 |
| | DISABLE PFE | Fatal | 0 | 0 | 1 | 0 |
| | | switch | Minor | 0 | 0 | 10 |
| | | LOG | | | | |

| | | | | | | |
|-------|--------------------|--------------------|-------|---|----|---|
| FPC 3 | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | DISABLE PFE | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | GET STATE CM ALARM | Major | 0 | 0 | 1 |
| | io | Fatal | 0 | 0 | 1 | 0 |
| | | DISABLE PFE | | | | |
| | | Minor | 0 | 0 | 10 | 0 |
| | memory | LOG | | | | |
| | | GET STATE CM ALARM | Major | 0 | 0 | 1 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | processing | DISABLE PFE | | | | |
| | | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | storage | GET STATE CM ALARM | Major | 0 | 0 | 1 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | DISABLE PFE | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | GET STATE CM ALARM | Major | 0 | 0 | 1 |
| | board | Fatal | 0 | 0 | 1 | 0 |
| | | DISABLE PFE | | | | |
| | | Minor | 0 | 0 | 10 | 0 |
| | functional | LOG | | | | |
| | | GET STATE CM ALARM | Major | 0 | 0 | 1 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | io | DISABLE PFE | | | | |
| | | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | memory | GET STATE CM ALARM | Major | 0 | 0 | 1 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | DISABLE PFE | | | | |
| | | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | GET STATE CM ALARM | Major | 0 | 0 | 1 |
| | | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | |
|-------|--------------------|-------|---|---|----|---|
| FPM 0 | DISABLE PFE | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | pfe | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |

| | | | | | | | |
|-------|--------------------|--|------------------|---|---|----|---|
| PDU 0 | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | io Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | memory Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | processing Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | storage Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | switch Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | board | | | | | | |
| | LOG | | functional Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | io Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | memory Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | processing Minor | 0 | 0 | 10 | 0 |
| | GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | | |
|--------|--------------------|-------|-------|---|----|---|---|
| PICS 0 | storage | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | switch | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | board | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | functional | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | io | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | memory | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | processing | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | storage | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | switch | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| PICS 1 | board | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | functional | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | io | Minor | 0 | 0 | 10 | 0 | |
| | | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | |
|-------|--------------------|----------------|-------|---|---|----|
| PSM 0 | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | | | | |
| | LOG | memory | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | processing | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | storage | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | switch | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |
| | LOG | board | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |
| | LOG | functional | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |
| | LOG | io | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |
| | LOG | memory | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |
| | LOG | processing | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |
| | LOG | storage | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |
| | LOG | | Minor | 0 | 0 | 10 |
| | | | Major | 0 | 0 | 1 |
| | | | Fatal | 0 | 0 | 1 |

| | | | | | | |
|-------|----------------|--------------------|---|---|----|---|
| PSM 1 | switch | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | board | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| PSM 2 | switch | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | board | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | | | | |
| | CM ALARM RESET | Fatal | 0 | 0 | 1 | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |

| | | | | | | |
|-------|--------------------|----------------|-------|---|---|----|
| PSM 3 | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | | | | |
| | LOG | processing | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | storage | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | switch | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | board | Minor | 0 | 0 | 10 |
| | | functional | Minor | 0 | 0 | 10 |
| | | LOG | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | CM ALARM RESET | | | | |
| | LOG | io | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | memory | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | processing | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | storage | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | LOG | switch | Minor | 0 | 0 | 10 |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | | |
|--------------------|--------------------|-------|---|----|----|---|--|
| RE 0 | board | | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 | |
| LOG | | | | | | | |
| | Major | 0 | 0 | 1 | 0 | | |
| GET STATE CM ALARM | | | | | | | |
| | Fatal | 0 | 0 | 1 | 0 | | |
| CM ALARM RESET | | | | | | | |
| storage | Minor | 0 | 0 | 10 | 0 | | |
| LOG | | | | | | | |
| | Major | 0 | 0 | 1 | 0 | | |
| GET STATE CM ALARM | | | | | | | |
| | Fatal | 0 | 0 | 1 | 0 | | |
| CM ALARM RESET | | | | | | | |
| switch | Minor | 0 | 0 | 10 | 0 | | |
| LOG | | | | | | | |
| | Major | 0 | 0 | 1 | 0 | | |
| GET STATE CM ALARM | | | | | | | |
| | Fatal | 0 | 0 | 1 | 0 | | |
| CM ALARM RESET | | | | | | | |
| SIB 0 | board | | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | RESET | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | RESET | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | RESET | | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 | |
| LOG | | | | | | | |

| | | | | | | |
|-------|--------------------|--------------------|-------|---|----|----|
| SIB 1 | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | RESET | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | RESET | | | | |
| | | switch | Minor | 0 | 0 | 10 |
| | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 |
| | | RESET | | | | |
| | switch | functional | Minor | 0 | 0 | 10 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | RESET | | | | |
| | | io | Minor | 0 | 0 | 10 |
| | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 |
| | | RESET | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | RESET | | | | |
| | | processing | Minor | 0 | 0 | 10 |
| | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 |
| | | RESET | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | RESET | | | | |
| | | switch | Minor | 0 | 0 | 10 |
| | LOG | Major | 0 | 0 | 1 | 0 |
| | | GET STATE CM ALARM | Fatal | 0 | 0 | 1 |
| | | RESET | | | | |
| | board | functional | Minor | 0 | 0 | 10 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | |
|--------------------|------------|-------|---|---|----|---|
| RESET | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| switch | | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| GET STATE CM ALARM | | | | | | |

| | | | | | | |
|--------------------|--------|-------|---|---|----|---|
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | switch | Minor | 0 | 0 | 10 | 0 |
| GET STATE CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |

show system errors fru detail (Junos OS Evolved)

```
user@router# show system errors fru detail
```

| Fru | Scope | Category | Level | Occurred | Cleared | Threshold |
|-----------|--------------------|------------|-------|----------|---------|-----------|
| CB 0 | | | | | | |
| | board | | | | | |
| | | functional | Minor | 1 | 0 | 10 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | | io | Minor | 0 | 0 | 10 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | | memory | Minor | 0 | 0 | 10 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | | processing | Minor | 0 | 0 | 10 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | | storage | Minor | 0 | 0 | 10 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | | switch | Minor | 0 | 0 | 10 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| CHASSIS 0 | | | | | | |
| | board | | | | | |
| | | functional | Minor | 0 | 0 | 10 |
| | LOG | | | | | |
| | | Major | 1 | 0 | 1 | 2 |

| | | | | | | | |
|-------|--------------------|--|-------|---|---|----|---|
| FAN 1 | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | processing | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | storage | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | switch | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | board | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | processing | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | | |
| | | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | storage | | Minor | 0 | 0 | 10 | 0 |

| | | | | | | | |
|-------|--------------------|--|-------|---|---|----|---|
| FAN 2 | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | switch | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | board | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | processing | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | storage | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | switch | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| FAN 3 | board | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |

| | | | | | | |
|-------|--------------------|-------|----|----|----|----|
| FPC 0 | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 2 | 0 | 10 | 4 |
| | LOG | | | | | |
| | | Major | 21 | 21 | 1 | 63 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |

| | | | | | | | |
|-------|-------------|--|-------|---|---|----|---|
| FPC 1 | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | pfe | | | | | | |
| | functional | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | processing | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | storage | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | switch | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | board | | | | | | |
| | functional | | Minor | 2 | 0 | 10 | 4 |
| | LOG | | Major | 1 | 0 | 1 | 2 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | io | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE | | | | | | |
| | memory | | Minor | 0 | 0 | 10 | 0 |
| | LOG | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | | |

| | | | | | | |
|-------|------------------------------|-------|---|---|----|---|
| FPM 0 | DISABLE PFE processing | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |
| | DISABLE PFE storage | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE switch | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | DISABLE PFE pfe functional | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |
| | DISABLE PFE io | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE memory | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | DISABLE PFE processing | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |
| | DISABLE PFE storage | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | DISABLE PFE switch | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |
| | | LOG | | | | |
| | DISABLE PFE board functional | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | | Minor | 0 | 0 | 10 | 0 |

| | | | | | | |
|-------|--------------------|-------|---|---|----|---|
| PDU 0 | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | Major | 0 | 0 | 1 | 0 |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | |
|--------|--------------------|-------|---|---|----|---|
| PICS 0 | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| PICS 1 | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |

| | | | | | | |
|-------|--------------------|-------|---|---|----|---|
| PSM 0 | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | | |
|-------|--------------------|-------|---|---|----|---|--|
| PSM 1 | CM ALARM RESET | | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | board | | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| PSM 2 | CM ALARM RESET | | | | | | |
| | board | | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 | |
| | LOG | | | | | | |
| | | Major | 0 | 0 | 1 | 0 | |
| | GET STATE CM ALARM | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | |
| | CM ALARM RESET | | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 | |

| | | | | | | |
|-------|--------------------|-------|---|---|----|---|
| PSM 3 | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| | | | | | | |
| | LOG | | | | | |
| | GET STATE CM ALARM | Major | 0 | 0 | 1 | 0 |
| | | Fatal | 0 | 0 | 1 | 0 |

| | | | | | | |
|-------|--------------------|-------|---|---|----|---|
| RE 0 | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | io | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | memory | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | processing | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | storage | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | CM ALARM RESET | | | | | |
| | switch | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | GET STATE CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| SIB 0 | CM ALARM RESET | | | | | |
| | board | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | RESET | | | | | |
| | io | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | RESET | | | | | |
| | memory | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |
| | LOG | | | | | |
| | | Major | 0 | 0 | 1 | 0 |
| | CM ALARM | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 |
| | RESET | | | | | |
| | processing | | | | | |
| | functional | Minor | 0 | 0 | 10 | 0 |

| | | | | | | |
|----------|------------|-------|---|---|----|---|
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | io | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | memory | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | processing | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | storage | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | switch | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | switch | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | functional | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | io | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | memory | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | processing | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |
| RESET | | Fatal | 0 | 0 | 1 | 0 |
| LOG | storage | Minor | 0 | 0 | 10 | 0 |
| CM ALARM | | Major | 0 | 0 | 1 | 0 |

| | | | | | | |
|----------|--------|-------|---|---|----|---|
| CM_ALARM | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |
| | switch | Minor | 0 | 0 | 10 | 0 |
| LOG | | Major | 0 | 0 | 1 | 0 |
| CM_ALARM | | Fatal | 0 | 0 | 1 | 0 |
| RESET | | | | | | |

Starting in Junos OS Evolved Release 19.1R1, the **show system errors fru detail** output shows error details not just for FPCs but also for other components such as fan, PSM, CB, and chassis.

